

Teacher's Guide

COMPUTER APPLICATIONS TECHNOLOGY

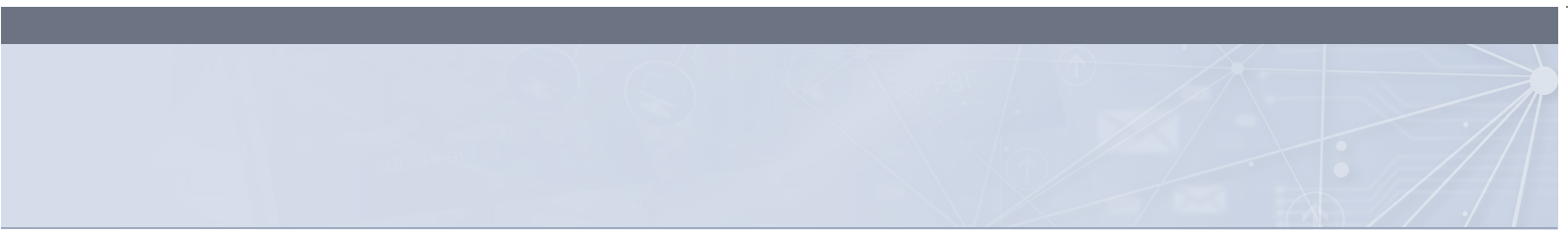
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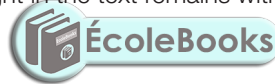
MTN South Africa, through MTN SA Foundation, is a proud supporter of the CAT and IT digital books.

As an organisation rooted in technology, we believe in providing a new bold digital world to the communities we operate in. This unique digital book provides the fundamental knowledge necessary for a sound grounding from which to make practical use of the complete and indispensable application-oriented information regarding Computer Applications Technology (CAT) and Information Technology (IT). It is a foundational reference for today's secondary school learners and teachers alike - as well as for the next generation of CAT and IT students.

Computer Applications Technology Teacher's Guide Grade 10
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INTRODUCTION TO CAT

Welcome to the *CAT Grade 10 Teacher's Guide*. This book was developed to guide teachers and provide suggested answers that can be used when assessing learners throughout the year.

The *CAT Grade 10 Theory Book* and the *CAT Grade 10 Practical Book* provide learners with interesting, stimulating and challenging learning activities that have been carefully designed and developed so that there is a clear progression of knowledge and skills throughout the FET Phase. These books will make Computer Applications Technology an interesting, exciting and meaningful subject that learners will enjoy.

The *CAT Grade 10 Teacher's Guide* has been designed so that teachers are able to observe and assess their learners' progress and take any corrective measures when necessary. This book is aligned to the CAPS curriculum.

On pages viii – xi you will find the Annual Teaching Plan, which outlines the units, activities and timeframe allocated for each chapter.

HOW THE TEACHER'S GUIDE IS STRUCTURED

Each **Theory** chapter is indicated by this colour:

The screenshot shows a digital interface for a chapter overview. At the top, it says 'TERM 1' and 'CHAPTER 1'. The main title is 'BASIC CONCEPTS OF COMPUTING'. Below this is a 'CHAPTER OVERVIEW' section with a list of units:

Unit	Description
Unit 1.1	General model of a computer
Unit 1.2	Hardware and software
Unit 1.3	Types of computers
Unit 1.4	Advantages and disadvantages of using computers
Unit 1.5	Data and information management

Below the table, it states: 'The following learning outcomes are covered by this chapter:'

- define Information and Communication Technologies (ICTs) and Information Technology
- provide an overview of a general model of a computer

Each **Practical** chapter is indicated by this colour:

ALGORITHMS

TERM 1

CHAPTER 1

CHAPTER OVERVIEW

Unit 1.1	Basics of algorithms
Unit 1.2	Algorithm quality
Unit 1.3	Creating algorithms
Unit 1.4	Flowcharts

The following learning outcomes are covered by this chapter:

- explain what an algorithm is
- give examples of algorithms in everyday life
- produce an algorithm to solve a problem
- test algorithms to determine the quality and accuracy
- compare algorithms considering, for example, order and precision
- use tools, such as a basic flowchart to represent an algorithm

For each chapter we have indicated what resources you will need and the teaching time allocated for the content in the CAPS curriculum.

Each unit then has suggested answers for the activities in the Theory and Practical Books.

GRADE: 10 DATE: TEACHING TIME: 4 hours

Resources	Each learner should have access to: <ul style="list-style-type: none"> IT 10 Practical Book IT 10 Theory Book QR Code Reader Computer with Delphi IDE loaded onto it
Vocabulary	Learners will need to understand the following terms for this chapter: <ul style="list-style-type: none"> input device – any hardware or peripheral device that allows you to enter data into computer or interact with a computer storage device – a hardware device that is used for storing data random-access memory (RAM) – motherboard, that allows info and retrieved on a computer processing device – a hardware device that processes a set of instructions, and the results are sent to the output device output device – a device that allows the user to see or hear the results of the instructions that are sent to it communication device – is a device that allows data to be sent over a wire or wireless network RSI (Repetitive Strain Injury) – often results from overuse of the hand and wrist, and can affect the bone ergonomics – the study of how people interact with their environment. The goal is to create an environment that fits the user's physical needs

UNIT 1.1 Basics of algorithms

Have a class discussion on the list of instructions that the learners would give for each task. Explain that each task is made up of 'algorithms' or a set of instructions e.g. to call a friend:

- pick up the phone
- type in the phone number or locate the phone number on the contact list
- tap on the call button
- wait for your friend to answer
- reply

It is important that learners understand computer programs are simply lists of instructions (algorithms). If an algorithm is not correct, it will cause an error in the program you are writing.

Example 1.1

Learners discuss the algorithm to make a cup of hot chocolate and what to do if it is not exactly to their taste. Learners think and talk to their friend about how their algorithm for making hot chocolate (or coffee or tea) would be different to the one in the example.

Activity 1.1 Memorandum

1.1.1 Learners follow the algorithm.

1.1.2 Learners compare their picture with their partner and discuss:

- Are your pictures different? Yes
- Can you explain why? Learners interpreted the drawings differently
- What was difficult about following the instructions? The instructions were not specific enough
- What was missing from the instructions? The instructions missed details such as the direction for each line, or its angle to the previous line, its length and so on

ANNUAL TEACHING PLAN - OVERVIEW OF TERMS (THEORY)

LAYOUT	DESCRIPTION	HOURS	TERM
Topic 1	Systems technologies		
Module 1	Computer management	12 hours	
Chapter 1	Concepts of computing	2 hours	1
Chapter 2	Using a computer	6 hours	1
Chapter 3	File management	2 hours	1
Chapter 4	File and print management	2 hours	2
Module 2	Hardware and software	11,5 hours	
Chapter 5	Hardware	3 hours	1
Chapter 6	Extended hardware concepts	3,5 hours	2
Chapter 7	Computer software	2 hours	1
Chapter 8	Extended software concepts	3 hours	2
Topic 2	Network technologies		
Module 3	Networks	4 hours	
Chapter 9	Introduction to networks	2 hours	2
Chapter 10	Types of Networks: PAN/HAN	2 hours	3
Topic 3	Internet technologies		
Module 4	Internet and the WWW	2 hours	
Chapter 11	The internet and World Wide Web	2 hours	3
Module 5	Electronic communication	6 hours	
Chapter 12	Internet communication	4 hours	3
Chapter 13	Social Implications: Email and Internet	2 hours	3
Topic 4	Information management		
Module 6	Information management and PAT	16 hours	
Chapter 14	Information Management		
Unit 14.1	Concepts used in information management	1 hours	2
Unit 14.2	Practical Assessment Task (PAT) overview	1 hours	2
Unit 14.3	Sifting data	6 hours	3
Unit 14.4	Processing data	4 hours	4
Unit 14.5	Presenting data	4 hours	4

ANNUAL TEACHING PLAN - OVERVIEW OF TERMS (PRACTICAL)

LAYOUT	DESCRIPTION	HOURS	TERM
Topic 5	Solution development		
Module 1	Word processing	46 hours	
Chapter 1	Introduction to Word Processing	6 hours	1
Chapter 2	Text basics in Word Processing	7 hours	1
Chapter 3	Page layout and view option in Word Processing	6 hours	1
Chapter 4	Graphics, shapes and diagrams in Word Processing	5 hours	1
Chapter 5	Paragraphs in Word Processing	6 hours	2
Chapter 6	Tables in Word Processing	6 hours	2
Chapter 7	Reviewing and layout in Word Processing	6 hours	3
Chapter 8	Templates and help in Word Processing	4 hours	3
Module 2	Spreadsheets	20 hours	
Chapter 9	Introduction to spreadsheets	3 hours	2
Chapter 10	Formatting, editing and file options	2 hours	2
Chapter 11	Introduction to functions	3 hours	2
Chapter 12	More functions	3 hours	3
Chapter 13	Workbooks and worksheets	3 hours	3
Chapter 14	Introduction to charts/graphs	6 hours	4
Module 3	Presentations	8 hours	
Chapter 15	Presentations	8 hours	3



TERM 1							
Week	Possible dates	Hours	Topic	Chapters	Informal activities	Date started	Date completed
		2 hours	1. System technologies	1. Concepts of computing	Act 1.1; Act 1.2; Act 1.3; Act 1.4; Act 1.5		
		6 hours	1. System technologies	2. Using computers	GA 2.1; Act 2.1; GA 2.2; GA 2.3; GA 2.4; GA 2.5; Act 2.2; Act 2.3		
		2 hours	1. System technologies	3. File management	GA 3.1; GA 3.2; Act 3.1; GA 3.3; GA 3.4; GA 3.5; GA 3.6; GA 3.7; GA 3.8; GA 3.9; Act 3.2; Act 3.3		
		3 hours	1. System technologies	5. Hardware	Act 5.1; Act 5.2; Act 5.3; Act 5.4; Act 5.5		
		2 hours	1. System technologies	7. Computer software	GA 7.1; GA 7.2; GA 7.3; GA 7.4; Act 7.1; Act 7.2; Act 7.3		
		6 hours	5. Solution development	1. Introduction to Word Processing	Act 1.1, Act 1.2; GA 1.1; GA 1.2; GA 1.3; Act 1.3; GA 1.4; GA 1.5; GA 1.6; Act 1.4;		
		7 hours	5. Solution development	2. Text basics in Word Processing	GA 2.1; Act 2.1; GA 2.2; Act 2.2; GA 2.3; Act 2.3; Act 2.4; GA 2.4; Act 2.4; GA 2.5; GA 2.6; Act 2.5; Act 2.6; GA 2.7; GA 2.8; GA 2.9; Act 2.7; GA2.10; GA 2.11; Act 2.8; GA 2.12; Act 2.9; GA 2.13; GA 2.14; Act 2.10; GA 2.15; Act 2.11; GA 2.16; Act 2.12; GA 2.17; GA 2.18; Act 2.13; GA 2.19; GA 2.20; Act 2.14; GA 2.21; GA 2.22; Act 2.14		
		6 hours	5. Solution development	3. Page layout and view option in Word Processing	GS 3.1; GA 3.2; Act 3.1; GA 3.3; GA 3.4; GA 3.5; Act 3.2; GA 3.6; Act 3.3; GA 3.7;		
		5 hours	5. Solution development	4. Graphics, shapes and diagrams in Word Processing	GA 4.1; Act 4.1; GA 4.2; GA 4.3; GA 4.4; Act 4.2; GA 4.5; GA 4.6; GA 4.7; GA 4.8; Act 4.3;		

TERM 2

Week	Possible dates	Hours	Topic	Chapters	Informal activities	Date started	Date completed
		2 hours	1. System technologies	4. File and print management	GA 4.1; GA 4.2; GA 4.3; GA 4.4; Act 4.1; GA 4.5; GA 4.6; Act 4.2; GA 4.7; GA 4.8; GA 4.9; GA 4.10; GA 4.11; Act 4.3		
		3,5 hours	1. System technologies	6. Extended hardware concepts	Act 6.1; Act 6.2; Act 6.3; Act 6.4		
		3 hours	1. System technologies	8. Extended software concepts	Act 8.1		
		2 hours	2. Network technologies	9. Introduction to network	Act 9.1; CS 9.1; Act 9.2		
		1 hour	4. Information management	14.1 Concepts used in information management	GA 7.1; GA 7.2; GA 7.3; GA 7.4; Act 7.1; Act 7.2; Act 7.3		
		1 hour	4. Information management	14.2 Practical Assessment Task (PAT) overview	Act 14.1		
		6 hours	5. Solution development	5. Paragraphs in Word Processing	GA 5.1; GA 5.2; GA 5.3; Act 5.1; GA 5.4; GA 5.5; GA 5.6; Act 5.2; GA 5.7; GA 5.8; GA 5.9; GA 5.10; GA 5.11; Act 5.3; GA 5.12; GA 5.13; GA 5.14; Act 5.4; GA 5.15; GA 5.16; GA 5.17; Act 5.5;		
		6 hours	5. Solution development	6. Tables in Word Processing	GA 6.1; GA 6.2; Act 6.1; GA 6.3; GA 6.4; GA 6.5; Act 6.2; GA 6.6; GA 6.7; GA 6.8; GA 6.9; GA 6.10; GA 6.11; Act 6.3; GA 6.12; Act 6.4; GA 6.13; GA 6.14; Act 6.5; GA 6.15; GA 6.16; Act 6.6; GA 6.17; GA 6.18; Act 6.7; GA 6.19; GA 6.20; Act 6.9		
		3 hours	5. Solution development	9. Introduction to spreadsheets	Act 9.1; GA 9.1; GA 9.2; Act 9.2; Act 9.3; Act 9.4; Act 9.5		

TERM 2...CONTINUED

Week	Possible dates	Hours	Topic	Chapters	Informal activities	Date started	Date completed
		2 hours	5. Solution development	10. Formatting, editing and file option	GA 10.1; GA 10.2; Act 10.1; GA 10.3; GA 10.4; Act 10.2; GA 10.5; GA 10.6; GA 10.7; GA 10.8; GA 10.9; GA 10.10; GA 10.11; GA 10.12; GA 10.13; GA 10.14; Act 10.3; GA 10.15; GA 10.16; GA 10.17; Act 10.4; GA 10.18; Act 10.5; GA 10.19; GA 10.20; GA 10.21; GA 10.22; GA 10.23; GA 10.24; GA 10.25; Act 10.6;		
		3 hours	5. Solution development	11. Introductions to functions	GA 11.1; GA 11.2; Act 11.1; GA 11.3; Act 11.2; Act 11.3		

TERM 3

Week	Possible dates	Hours	Topic	Chapters	Informal activities	Date started	Date completed
		2 hours	2. Network technologies	10. Types of networks	Act 10.1; Act 10.2		
		2 hours	3. Internet technologies	11. The Internet & the WWW	Act 11.1; GA 11.1; GA 11.2; GA 11.3; GA 11.4; Act 11.2; GA 11.5; Act 11.3; GA 11.6; GA 11.7; GA 11.8; Act 11.4		
		4 hours	3. Internet technologies	12. Internet communication	Act 12.1; Act 12.2; GA 12.1; GA 12.2; GA 12.3; GA 12.4; CS 12.1; Act 12.3;		
		2 hours	3. Internet technologies	13. Social implications	Act 13.1; Act 13.2;		
		6 hours	4. Information management	14.3 Sifting data	Act 14.2;		
		6 hours	5. Solution development	7. Reviewing and layout in Word Processing	GA 7.1; GA 7.2; GA 7.3; Act 7.1; GA 7.4; Act 7.2; GA 7.5; GA 7.6; GA 7.7; Act 7.3; GA 7.8; GA 7.9; Act 7.4; GA 7.10; GA 7.11; Act 7.5;		
		4 hours	5. Solution development	8. Templates and help in Word Processing	GA 8.1; GA 8.2; Act 8.1; GA 8.3; GA 8.4; Act 8.2; GA 8.5; GA 8.6;		
		3 hours	5. Solution development	12. More functions	Act 12.1; GA 12.1; Act 12.2; GA 12.2; Act 12.3; GA 12.3; GA 12.4; GA 12.5; Act 12.5;		

TERM 3...CONTINUED

Week	Possible dates	Hours	Topic	Chapters	Informal activities	Date started	Date completed
		3 hours	5. Solution development	13. Workbooks and worksheets	GA 13.1; GA 13.2; GA 13.3; Act 13.1; GA 13.4; Act 13.2		
		8 hours	5. Solution development	15. Presentations	GA 15.1; GA 15.2; Act 15.1; GA 15.3; GA 15.4; GA 15.5; Act 15.2; GA 15.6; GA 15.7; GA 15.8; GA 15.9; GA 15.10; GA 15.11; Act 15.3; Act 15.4; GA 15.12; Act 15.4; GA 15.13; GA 15.14; Act 15.5; GA 15.15; GA 15.16; Act 15.6; GA 15.17; GA 15.18; GA 15.19; Act 15.7; GA 15.20; Act 15.8; GA 15.21; Act 15.9;		

TERM 4

Week	Possible dates	Hours	Topic	Chapters	Informal activities	Date started	Date completed
		4 hours	4. Information management	14.4 Processing data	GA 14.1		
		4 hours	4. Information management	14.5 Presenting data	Act 14.3;		
		6 hours	5. Solution development	14. Graphs in spreadsheets	Act 14.1; GA 14.1; GA 14.2; GA 14.3; Act 14.2; Act 14.3		

HOW THE TEACHER'S GUIDE WORKS

In this Teacher's Guide, the information you may need for each lesson and some general things that may assist you in your day-to-day teaching is given.

We will start by:

- Explaining how the practical and theory textbooks work.
- Providing various best practices as per DBE booklets.
- Providing general tips, links and ideas that you can use.

After the general section, each module will focus on the following if available:

- Tips and ideas on presenting the specific information.
- Links to additional information.
- Links to websites for additional activities.
- Memorandum for the activities.

HOW THE TEXTBOOK WORKS

There are two textbooks for each grade, a theoretical textbook and a practical textbook, of which both are available in printed format as well as electronic format. The information in these textbooks are combined in learner-friendly topics, that are divided into chapters and units as per school term.

Teaching elements used in these textbooks are:

- Additional information – Information that the teacher can use to explain certain concepts to the learners that are not covered in the books.
- Animations and videos – used to explain specific concepts – only available in the e-books.
- Box – information that does not flow directly from the text, but forms part of the overall concept.
- Case studies – this can be used in class to support the information covered in the unit. The questions should be discussed with the learners in class or can be given as an informal activity.
- Glossary – a summary of all keywords given at the end of each module.
- Guided activities – the guided activities are step-by step procedures on various computing tasks and should be done together with the learners. It is strongly recommended that each learner does the activities on their own computers.
- Keywords – definitions of important words or terms.
- Learning outcomes – a description of what is covered in the chapter as relevant to CAPS.
- Practical activities – provide opportunities to the learners to apply their skills.
- QR codes – it provides the learner with links to optional videos or additional reading materials. Learners must have a QR reader on their smartphones to read these codes.
- Revision activities – a self-assessment covering the most important information and skills focussed on in the chapter.
- Something to know – boxes in the margin of the book containing information not covered in the main text, but important for the learners to know.
- Theoretical activities – provide learners the opportunity to recap, review and reinforce what they have learned. These activities are mainly theoretical activities but may include group or pair projects as well as research activities.
- Videos – provides step-by step procedures - only available in the e-books.
- Vocabulary – keywords and phrases the learner needs to understand before going through the text.

BEST PRACTICES – LESSONS FOR THE CLASSROOM

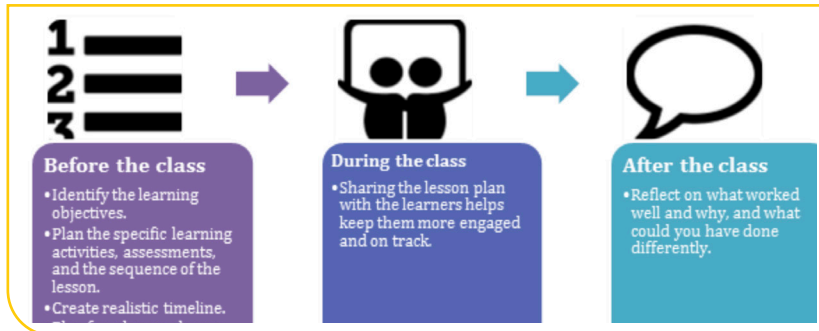
The following information was obtained from a study that was done for the DBE on Successful teaching and learning in information technology – Best practices in the classroom.

PLANNING

Although the curriculum or CAPS tells you WHAT you will be teaching, and in which SEQUENCE you should teach it, it does not explain HOW you should teach it or which TEACHING STRATEGIES you should apply. That is where proper and detailed planning of each lesson comes in, breaking up the instruction into small enough chunks of information so that the learners can link it to existing knowledge and synthesise the new knowledge into their understanding.

Planning addresses and integrates the following three key components:

- Learning objectives.
- Learning activities.
- Informal assessment to check for learner understanding.



When doing your planning, it is important that you look at the bigger picture.

The following provides guidelines for effective planning:

- Start with the end in mind – What does the learner need to know and be able to do? Learning goals and objectives.
- Identify curriculum resources – e.g. textbook – does the textbook provide everything needed to achieve the learning goals or does one have to develop/find additional content or activities? What other resources will be needed, e.g. previous papers?
- Identify declarative knowledge – Think about the concepts and ideas learners will need to know. What are developmentally appropriate given the learners’ background knowledge and prior learning?
- Identify procedural knowledge – Skills, strategies and processes. Procedural knowledge incorporates the use of declarative knowledge.
- Create, find and select learning activities and assignments – activities are the instructional strategies that allow teacher and learner to interact with content, skills and materials. The goal of classroom activities is to help learners to interact with new knowledge and skills, deepening learner understanding and raising skill levels related to the learning goal(s). Activities often require teacher coaching or guidance. When planning classroom activities, start by selecting the instructional strategies that allow learners to process critical information or vocabulary associated with the learning goals first, i.e. which subject terminology or concepts will be introduced, and when?

COMPUTATIONAL THINKING

Computational thinking is a problem-solving approach that has particular reference to the practical component of the CAT curriculum. Elements of Computational Thinking which are relevant to CAT are:

ELEMENT	DESCRIPTION	EXAMPLE
Decomposition	Breaking a problem down into smaller, more manageable parts.	Breaking a complex Excel formula down into simpler “building blocks”.
Patten recognition	Observing patterns and trends.	Using functions and techniques learned in one package, in another package, e.g. the formula to calculate someones age is very similar in both Excel and Access.

ASSESSMENTS

Assessment drives instruction and learning by providing relevant information on the learners' progress and performance. Its main purpose is to support and improve further learning by incorporating artefacts, illuminating various processes, checking in at multiple waypoints and placing value on multiple ways of knowing. Assessment should be both informal/daily assessment (assessment for learning) and formal assessment (assessment of learning).

To make sure that tests and examinations are applicable to all learners, you should use Blooms Taxonomy as described below according to the DBE's Computer Applications Technology SBA Exemplar Booklet. Teachers who are successful also analyse mistakes made by the learners in tests and examinations to inform teaching and to follow-up through improvement strategies.

The following three documents should be consulted with regard to assessment in CAT:

1. The CAPS for CAT
2. The Computer Applications Technology SBA Exemplar booklet published by the DBE
3. The Exemplar Book on Effective Questioning: Computer Applications Technology published by Umalusi.

COGNITIVE LEVELS OF LEARNERS (BLOOMS' TAXONOMY)

The cognitive demand of a question refers to the type and level of thinking learners need to successfully engage with and answer a question.

- High cognitive questions are those which demand that the learners manipulate bits of information previously learnt to create and support an answer with logically reasoned evidence. This sort of question is generally interpretive, evaluative, inquiry-based, inferential, synthesis-based and open-ended.
- Lower cognitive questions are more basic. They ask learners to recall material previously presented and learnt. These questions are generally direct, closed, recall-related and that measure knowledge only – factual and process.

Bloom's revised taxonomy illustrates the different cognitive levels.

COGNITIVE LEVEL	COMMENT	CONTEXT
C1 Knowledge Recall of factual/process knowledge in isolation, i.e. one step/set of steps/ instruction/ process at a time	Requires recalling or recognising only. Practised or learnt the isolatable bit, e.g. fact/skill/ process/steps before.	Exactly the same context as a textbook example or a classroom-based exercise. Explicitly part of the curriculum.
C2 Understanding Convert from one form of representation to another.	Requires knowledge and understanding of steps/process/ isolatable bits. Translating "words", pictures, symbols, diagrams into e.g. programming code.	Familiar context. Includes interpreting, exemplifying, classifying, summarising, inferring, comparing and explaining.
C3 Application Using known routines/steps/ processes to complete a task. All the information required is immediately available to the learner.	Requires knowledge, understanding and use of steps/ routines/ processes. Application of appropriate abstraction without having to be prompted...and without having to be shown how to use it in a familiar context.	Familiar context but with new elements / new circumstances. Learners have seen the same or very similar steps working with different data or other circumstances.

COGNITIVE LEVEL		COMMENT	CONTEXT
C4	Analysis Understand how parts relate to a whole (pinpoint the core/main aspects) or interact with each other and use appropriate methods to complete task/solve problem.	Requires reasoning/ investigation/ developing a plan or algorithm; has some complexity. Completing task could have more than one possible approach. Organising component parts to achieve an overall objective.	New context. Unseen, unfamiliar problems or tasks.
C5	Evaluation Judging or deciding according to some set of criteria, generally without real right or wrong answers	Requires weighing possibilities, deciding on most appropriate. Testing to locate errors.	
C6	Create Putting elements together to form a coherent or functional whole or re-organising elements into a new pattern or structure.	Requires familiarisation with the task by exploring different approaches and interpreting and analysing relevant approaches. Generalisation.	Novel situation. The learner has no familiarity with completed functional whole.

In CAT, the above cognitive levels are collapsed providing for lower-order, middle-order and higher-order levels.

	LOWER ORDER C1	MIDDLE ORDER C2 & C3	HIGHER ORDER C4, C5 & C6
Theoretical	Recall (Knowledge)	Understand and apply	Analyse, evaluate and create
Practical	Routine procedures (Knowledge/Remembering)	Multi-step procedures (Understanding/Applying)	Problem-solving (Analysing/Evaluating/Creating)
Weighing	30%	40%	30%

Cognitive demand describes the type of thought process that is required to answer a question and is not necessarily the same as the level of difficulty of a question, such as the difficulty of the content knowledge that is being assessed.

DIFFICULTY LEVELS

As per the same booklet, the difficulty level of a question refers to the ease with which a learner is able to answer a question. It is described as follows:

LEVEL	DESCRIPTION
1	Easy to answer
2	Moderately challenging
3	Difficult to answer
4	Very difficult (It allows high achieving learners to excel above the others)

The difficulty level of a question is influenced by one or more of the following:

- The content (subject, concept, facts, principles or procedures), e.g.
 - Content that is learnt in Grade 10 and that is repeated and practised in Grade 11 and 12 usually becomes easier by Grade 12.
 - The number of steps required, or the length of the answer could influence difficulty.
- Stimulus (item or question)
 - The language, text or scenario used could influence difficulty.
 - Re-read required or limited time could influence difficulty.

- Task (process)
 - Short questions vs paragraph or essays – answers that require extended writing are generally more difficult.
 - Steps provided or scaffolding of questions – open-ended questions are generally more difficult than structured questions, i.e. questions that lead or guide learners.
- Expected response
 - Mark scheme, memo, e.g. detail required in memo vs detail expected in question.
 - Allocation of marks.

Consult the Umalusi Exemplar Book on Effective Questioning: Computer Applications Technology for more information on difficulty levels.

PRACTICAL ASSESSMENT TASK (PAT)

PAT forms an important part of the learners' learning experience as it consolidates the content done throughout the year and helps learners to make connections and see the relevance of what they learn. The DBE is providing guidelines for PAT each year. These guidelines are usually sent out to schools by the district or provincial CAT advisor.

EXAM PREPARATION – TIPS FOR THE TEACHER

Following are some tips on what you can do to prepare your learners for their exams.

- Prepare ahead and make sure that you have an organised schedule covering all the revision work throughout the year. Do not wait till the last minute and then try to cram everything in before the exam. This will also give you the time to include a wider variety of activities to keep the learners' interest.
- Make sure that the learners know and understand what to expect in the exam. This does not only refer to the content of the exam, but also to what is expected of them with each section of the exam. This means they must know how to read and answer multiple choice questions, long questions, true/false questions, etc.
- Narrow the topics down as much as you can so that learners have a clear view of what to expect in the exam. You can even give them a list of topics that they can focus on – even if it is a list of all the topics they covered throughout the year. A list helps them to focus as they can tick items off as they go through the work.
- Make sure that the learners do the work during this period and not you. The more involved they are, the better they will learn.
- Keep your revision activities interesting and use a variety of activity types such as quizzes and other review games. It is here where you can use tools like Kahoot! or Google Quiz with great success. You can also have learners write quizzes for each other as they engage much deeper with the content when they have to write a quiz.
- Teach the learners exam techniques and the meaning of specific keywords that may be used in an exam.

CLUE WORD	WHAT YOU NEED TO DO	EXAMPLE
Analyse	Separate, examine and interpret	Analyse the correct use of word processing features in the following screenshot:
Categorise	Group concepts/ideas that are similar/have the same characteristics/functions or belong together. How should things be organised	Categorise the following computer devices: keyboard, CPU, printer, mouse, hard drive, SSD according to their main function.
Classify	Divide into groups or types so that things that are similar, are in the same group	Classify the following list of computer devices as input, output or storage devices
Comment on	Write generally about	Comment on the use of a wireless network in the following case:

THEORETICAL PAPERS ...CONTINUED

CLUE WORD	WHAT YOU NEED TO DO	EXAMPLE
Compare	Point out or show both similarities and differences between things or concepts. Note that stating the same fact in opposite form, will not earn you another mark.	Compare ROM with RAM.
Contrast/ Distinguish	Explain what the difference between certain things are.	Contrast ROM and RAM or Distinguish between a PAN and a HAN
Define	Give a clear meaning of the concept.	Define phishing.
Describe	State in words (using diagrams where appropriate) the main points of a structure or process.	Describe phishing.
Diagram	Make or draw a diagram.	Diagram a generic ICT system.
Differentiate	Use differences to qualify categories.	Differentiate between ROM and RAM.
Discuss	Give a clear, detailed description of the focus topic.	Discuss the use of a PAN in a home office.
Elaborate	Explain in detail	Elaborate on the advice given to Mr X regarding buying a laser printer.
Evaluate	Express an opinion based on your findings	Evaluate the merit of buying computer X for person Y
Examine	Give a clear, detailed description of the focus topic.	Examine the two methods
Explain	Give a clear, detailed description of the focus topic.	Explain how phishing works.
Identify	Name the essential characteristics	Identify the port used to connect the printer.
Illustrate	Give examples to demonstrate or prove something.	Illustrate the information processing cycle.
Interpret	Give the intended meaning of	Interpret the tone of the email message given below: I hate you when you do this J
Justify	Give clear, detailed reasons for taking a particular position.	Justify the use of a table instead of tab stops in the following instance:
List	Write a list of items, with no additional detail.	List the types of information sources one could use when doing research.
Motivate	Provide a reason or justification for an answer or statement	Motivate the use of line and paragraph spacing when working in Word.
Name/ Mention	Write a list of items, with no additional detail.	Name one storage device.
Outline	Give a general summary. It should contain a series of main ideas supported by secondary facts. Show the organisation of the idea.	Outline the information processing cycle.

THEORETICAL PAPERS ...CONTINUED

CLUE WORD	WHAT YOU NEED TO DO	EXAMPLE
Order	Provide a chronological or value-based answer by listing several items (terms or events in correct sequence).	Order the storage media according to their capacity
Prove	Show by using an argument or logic or fact that something is true.	Prove that the majority of people like X by looking at the following survey results:
Relate	Show the connection between things, indicating how one causes or is like another	Relate the following terms and explanations:
Review	Give a survey or summary in which you look at the important parts or major points and criticise if necessary. Comment on what is given.	Review Mr X's monthly computer maintenance tasks.
State / Give	Write down information without discussion.	State the functions of the operating system.
Suggest / Recommend	Give your opinion and back it up with facts, reason or an explanation.	Suggest a computer configuration for Mr X.
Summarise	Give a brief, condensed description of the main ideas. Like developing an abstract.	Summarise the problems experienced in the following case:
Trace	Follow the development, progress or history of something, normally from the point of origin, typically in chronological order.	Trace the error in the spreadsheet calculations.

Something to know: Note that some clue words include or refer to other clue words.

- Give the learners various ideas on how to study based on the different learning styles, i.e. visual (read and write), auditory or kinaesthetic. There is a quick quiz that learners can do on their own to determine their learning styles: <https://www.thestudygurus.com/learning-styles/>
- You can refer to the following link to get ideas on how the various types of learners should study to get the best results: https://www.gavilan.edu/tutor/documents/StudyTipsforDifferentLearningStyles_000.pdf

LEARNING STYLES.

The term learning styles refers to the understanding that every student learns differently.

- Visual learners learn best through what they see and should use graphs, diagrams, mind maps and other graphical methods to learn.
- Auditory learners learn through what they hear and remember most things that teachers said in class. They should use audio and video clips or discuss or recite the information with someone.
- Read and write learners focus mostly on interacting with the text. They learn best by reading information and writing it out in their own words. They also learn by answering quizzes in writing as well as from annotated notes.
- Kinaesthetic learners learn by experiencing things and learn best by doing, using models, playing memory games, etc. They also learn by writing things down.

EXAM PREPARATION - GENERAL TIPS FOR THE LEARNERS

The following general notes and tips on how to prepare for exams can be printed and given to the learners.

- Make yourself a schedule so that you will have enough time to study. Do not leave everything until it is too late to study properly.
- Make sure that your study area is organised. Chaos distracts the brain from what it should be focussing on.
- Have all your materials ready before you begin studying – pencils, pens, highlighters, paper, etc.
- Study smaller chunks of information at a time. You will remember them better and for a longer period of time. Trying to learn too much at one time will only result in a tired, unfocused and anxious brain.
- Use visual aids to study, for example, draw mind maps, flowcharts and diagrams to help you remember things better or explain your answers and the reasoning for giving that answer to somebody else.
- Focus on the core material as about 80% of most exams are likely to come from it. Going through old exam papers will help you determine what this is. It will not only help you to study better, it will also show you how exam questions are formulated, and which type of questions are asked.
- Revise new information within 24 hours after you learnt it. Any new information must be recapped, reviewed and reinforced within 24 hours, otherwise you will lose 80% of what you learnt.
- Organise study groups for the various subjects, but make sure that the group members are committed to their studies.
- Make sure that you take regular breaks as your brain loses focus after a while. The optimal time to study consists of periods of 2 hours, broken down into 25 minutes of studying followed by 5-minute breaks. Do not think or do anything study-related during your breaks. Take a walk outside. A change of scenery will stimulate your learning.
- Keep some healthy snacks to nibble on while you are studying. Natural, fresh and vitamin-rich food is good for improving your concentration and memory.
- Drink a lot of water while you are studying to make sure that you do not dehydrate. Staying hydrated is essential for your brain to work at its best.
- Plan the day of your exam beforehand, especially if you are studying at home. Make sure that you know how long it will take you to reach the school during that time of the day and add some extra time to make sure that you are not going to be late.
- Make sure that you sleep sufficiently (7 to 8 hours a night). Proper sleep turns what you learnt (short-term memory) into long-term memory.

STUDY SKILLS TO BOOST YOUR LEARNING

Mobile notes

Mobile notes are excellent tools for learning all the key concepts in the study guide. Mobile notes are easy to make, and you can take them with you wherever you go:

- Fold a blank piece of paper in half. Fold it in half again. Fold it again.
- Open the paper. It will now be divided into 8 parts.
- Cut or tear neatly along the folded lines.
- On one side of each of these 8 bits of paper, write the basic concept.
- On the other side, write the meaning or the explanation of the basic concept.
- Use different colours and add pictures to help you remember.
- As you learn, place the cards in 3 different piles:
 - I know this information well.
 - I am getting there.
 - I need more practice.
- The more you learn them, the better you will remember them.

Mnemonics

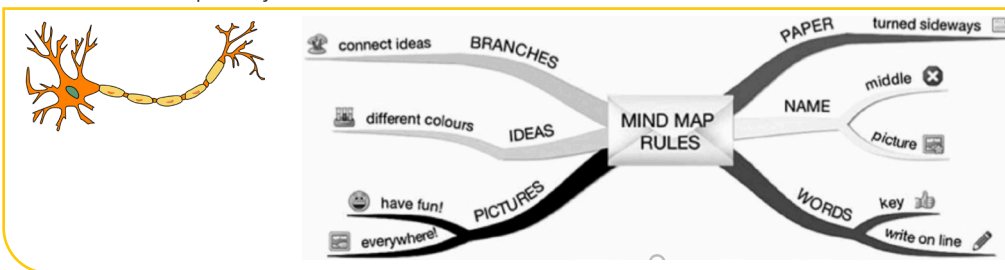
A mnemonic code is a useful technique for learning information that is difficult to remember. This is an example of a word mnemonic using the word BALANCE where each letter of the word stands for something else:

- B – Best – doing your best is more important than being the best.
- A – Attitude – always have a positive attitude.
- L – Load – spread the load so you do not leave everything to the last minute. Use a study timetable to plan.
- A – Attention – pay attention to detail. Only answer what is required.
- N – Never give up! Try, try and try again!
- C – Calm – stay calm even when the questions seem difficult.
- E – Early – sleep early the night before your exam. If you prepare well you will not need to cram the night before.

Mnemonics are code information and make it easier to remember. The more creative you are and the more you link your “codes” to familiar things, the more helpful your mnemonics will be.

Mind maps

Mind maps work because they show information that we have to learn in the same way that our brains “see” information. As you study, add pictures to each of the branches to help you remember the content. Make your own mind maps as you finish each section.



How to make your own mind maps:

- Turn your paper sideways so your brain has space to spread out in all directions.
- Decide on a name for your mind map that summarises the information you are going to put on it.
- Write the name in the middle and draw a circle, bubble or picture around it.
- Write only key words on your branches, not whole sentences. Keep it short and simple.
- Each branch should show a different idea. Use a different colour for each idea. Connect the information that belongs together. This will help build your understanding of the learning areas.
- Have fun adding pictures wherever you can. It does not matter if you cannot draw well.

ON THE DAY OF THE EXAM

This section is provided by the Department of Basic Education.

- Make sure you have all the necessary stationery for your exam, i.e. pens, pencils, eraser and calculator (with new batteries).
- Go to the toilet before entering the exam room. You do not want to waste valuable time going to the toilet during the exam.
- Use the 10 minutes reading time to read the instructions carefully. This helps to “open” the information in your brain. All questions are compulsory, unless indicated otherwise, but you do not have to answer them in order. Start with the question you think is the easiest to get the flow going.
- Break the questions down to make sure you understand what is being asked. If you do not answer the question properly, you will not get any marks for it. Look for the key words in the question to know how to answer it.
- Try all the questions. As each question has some easy marks in, make sure that you do all the questions in the exam.

- Never panic, even if the question seems difficult at first. It will be linked to something you have covered. Find the connection.
- Manage your time properly. Do not waste time on questions you are unsure of. Move on and come back if time allows.
- Check weighting – how many marks have been allocated for your answer? Do not give more or less information than is required.
- Write big, bold and clearly. You will get more marks if the marker can read your answer clearly.

STRUGGLING LEARNERS

You can support struggling learners by doing the following.

SCAFFOLD LEARNING TASKS OR ACTIVITIES

Scaffolding means that you break learning up into chunks and provide a tool or concrete structure for each. This can reduce the cognitive load of the instruction and support the struggling learner.

One of the first things you can do is to choose different activities for different groups of learners. For example, you can take a complex task and divide it into smaller subtasks. Together, these subtasks must achieve the same goal as the big task. After doing this, grade the activities or tasks, with the big task having the highest grading, and all the smaller tasks together having the same grading as the big task.

Have learners then choose whether they want to do the group of smaller activities or tasks or the one big activity or task. Advise struggling learners to do the smaller ones first and then challenge them to try the big one if they feel ready.

Getting the smaller activities or subtasks right could help the learners to feel competent. It allows them to always feel like they are working at a level of challenge that is hard but right for them and that they can accomplish. This will allow them to make much greater progress through learning environments.

Other ways to scaffold learning is to:

- Show and tell. Learners learn best by seeing rather than hearing about something.
- Tap into prior knowledge. You can do this by asking the learners to share their own experiences or ideas about something.
- Give them time to talk about what they learnt in a structured and controlled way.
- Teach them the vocabulary (subject jargon) before you teach them the content. You can do that by introducing the words with photos or in context of things they know and are interested in. You can also use analogies and metaphors to explain the words to them.
- Use visual aids like pictures, graphs, charts and diagrams or graphic organisers such as mind maps, concept maps or story maps.
- Check for understanding by discussing the content, pausing for a moment to let it sink in, and then asking a well thought out question.

BUILD IN AUTONOMY (CHOICE)

- See the principles of gameful learning below.
- Let the learner choose which activities are most relevant, challenging and interesting to them.

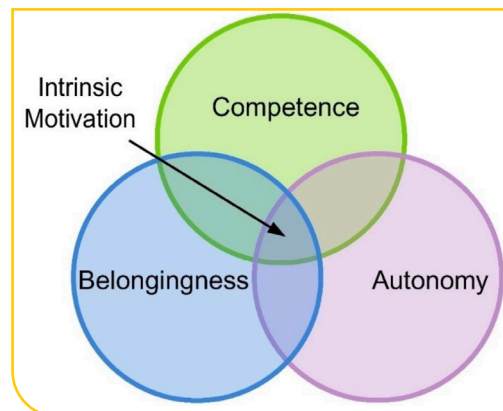
Following are the principles of gameful learning:

- Autonomy is critical, and this is the first of three principles that come from gameful learning.
- The next principle is a sense of belonging, and a really good game environment makes you feel like you are a part of something.
- The third principle is to support feelings of competence.

APPLY GAMEFUL LEARNING

Motivation plays an important role in learning and to be self-motivated, learners must:

- be able to make meaningful choices over what they are doing (autonomy)
- be challenged by a task, but still feel that they can succeed (competence)
- feel connected to those surrounding them (belongingness).



Supporting these feelings could eventually lead to self-determination and learners becoming self-directed.

Other research-based strategies for motivating learners include:

- becoming a role model for learner interest;
- getting to know learners;
- using examples freely;
- using a variety of learner-active teaching activities;
- setting realistic performance goals;
- placing appropriate positive emphasis on testing and grading;
- being free with praise and constructive criticism; and
- giving learners as much control over their own learning as possible (Bain, 2004; Nilson, 2003; DeLong & Winter, 2002). This element is also important when thinking about authenticity. If learners can learn ideas that are connected to their lives and produce representations of their knowledge in ways that matter, they are more motivated.



Gameful learning also relates to personalised learning that supports the notion that children learn best when their individual differences are taken into consideration. Personalised learning is based on the following three principles (Microsoft, 2014):

- It provides multiple means of representation.
- It provides multiple means of action and expression.
- It provides multiple means of engagement.

Another important principle of gameful learning is the freedom to fail (as seen with videogames): you can experiment, take risks and try things you have never done before, fail miserably...and do it again and again until, after much practice, you get it right. Unfortunately, this will not work in all classrooms as it requires a significant amount of grading to manage, and it can hinder the ability to keep a cohort on a specific content progression. But when you can structure learning opportunities in this way, learners' motivation to engage increases, and their learning outcomes improve.

LEARNER EXPERIENCE

Learners:

- respect and value teachers that are positive, enthusiastic about the subject, supportive and have access to a wide range of teaching aids;
- enjoy engaging, interactive and communicative teaching methods;
- value choice and classes that encourage independent learning and learner autonomy.
- want to understand what they are expected to learn – what they are learning, why they are learning it and what quality work looks like.
- enjoy things that interest them.

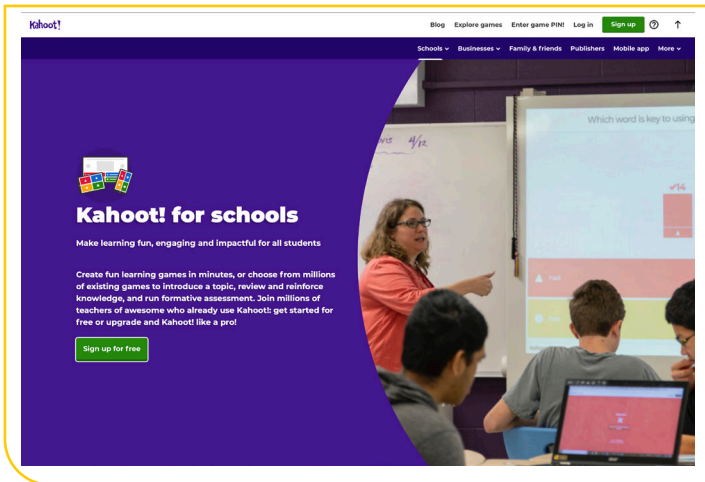
GENERAL TIPS, LINKS AND IDEAS

This section gives you various tips, ideas and links to interesting and/or informative websites.

KAHOOT!

Kahoot! is a free eLearning tool that can be used to create fun learning games, quizzes, surveys or discussion questions, called a Kahoot, in minutes. This can be used to teach, reinforce, assess or share information with learners.

Link: <https://kahoot.com/>



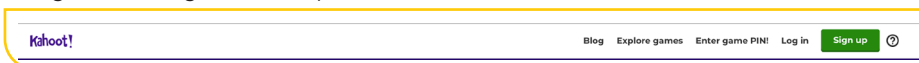
You can use Kahoot! in your classroom for the following reasons:

- As a class starter or ice breaker.
- To help learners with keywords, terminology or definitions.
- To assess learners' understanding of a subject before or after they learnt about it.
- To zero in on the needs of individual learners by getting a detailed report of which learner missed, which questions.
- To direct classroom activity by organising small groups.
- To review for a test or exam.
- To end a class with Kahoot notes, a quick quiz or formative assessment.
- By encouraging learners to create their own kahoots, the content is reinforced.
- To help learners learn information in a sequential order.

HOW TO USE KAHOOT!

It is easy to use Kahoot!

- To get started, go to the <https://kahoot.com/> website and create a free account.



- Use a public kahoots or create your own.



By watching the following video, you can learn how to use Kahoot!

Link: <https://www.youtube.com/watch?v=de7G0WioH8E>

GOOGLE QUIZ

The Google Quiz is an online assessment tool that will self-mark learners' attempts and give feedback to teachers and learners.

The quiz can be done on desktop or mobile computers and learners need to have access to the Internet. Teachers will provide learners with the link to the quiz (as a URL or QR code).

The platform allows for:

- Learners getting instant feedback to the answers.
- Teachers getting a full report on the performance of the learner.

Link: forms.google.com

To learn more on how to use google forms to create quizzes, watch the following video.

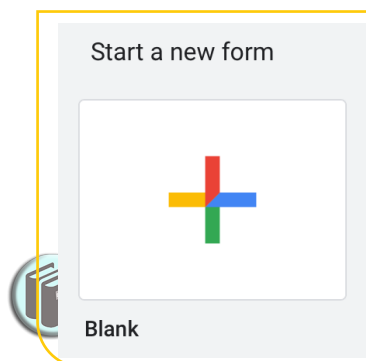
Link: <https://www.youtube.com/watch?v=Pdt8Vv7-3Xk>

For a more detailed explanation, you can use the following link.

Link: <https://www.youtube.com/watch?v=ayvhVM2BMv0>

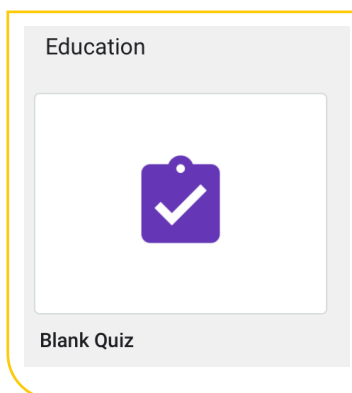
To create a new quiz:

1. Go to forms.google.com.
2. Click on **Blank** to open a new form.



To create a new quiz from Google Drive:

1. Click **New**, hover over More and click on the **Google Forms** arrow.
2. Click on **From a template**.
3. Scroll to the bottom and click **Blank Quiz**.



To follow a step-by-step tutorial on how to create a quiz, go to the G Suite Learning Centre.

Link: <https://gsuite.google.com/learning-center/products/forms/quizzes-get-started/#/>

You can also read the information on Teachers.Tech

Link: <http://teachers.tech/self-grading-quizzes-google-forms-google-classroom/>

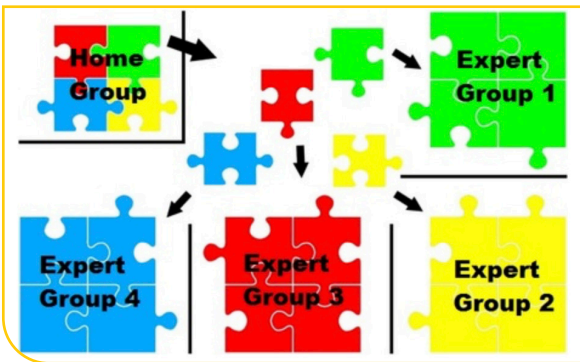
PUZZLEMAKER

You can use the following link to create crossword puzzles step-by-step.

Link: <http://puzzlemaker.discoveryeducation.com/CrissCrossSetupForm.asp>

JIGSAW ASSESSMENT TECHNIQUE

The cooperative learning strategy known as the jigsaw technique helps learners create his/her own learning.



To facilitate this, teachers arrange learners in groups. Each group is assigned to research a different topic. Group members then join with members of other groups and share the research about the information.


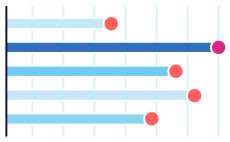



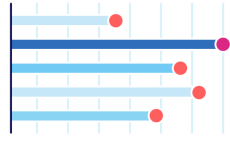

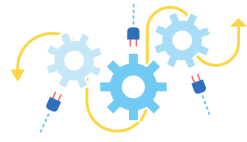
Afterwards, learners must complete a post-assessment questionnaire.

GRADECRAFT

Gameful learning is an educational tool based on the principles that work so well in games, applied to the learning environment. It is about taking elements from games and applying them to non-game settings.

To learn more about the principles upon which gameful learning is based, you can go to the following website: Gameful pedagogy – <http://www.gamefulpedagogy.com/>

Following are some of the tools you can use from Gradecraft

 <p>Badges Badges can be used to recognize student achievement on a specific assignment or their excellence more broadly in your course. Badges are flexible: you decide how they're awarded, and how they relate to student progress.</p>	 <p>Leaderboards Students can choose to participate in anonymous, team-based leaderboards if they enjoy competition, or opt-out if they don't. As the instructor, you control if leaderboards appear at all.</p>	 <p>Unlocks & Gating Games don't start with a final boss battle—the same is true for learning: we want learners to acquire foundational knowledge before they move on to more complex work. With unlocks, you can determine what work must be done before students unlock additional opportunities.</p>	 <p>Integration with Existing Platforms We know that integrating with other platforms is key, so we support Learning Tools Interoperability (LTI) 1.1 as both a Tool Provider and Consumer. Your data is your data—and should always be available to you to download and dig into.</p>
 <p>Badges Badges can be used to recognize student achievement on a specific assignment or their excellence more broadly in your course. Badges are flexible: you decide how they're awarded, and how they relate to student progress.</p>	 <p>Leaderboards Students can choose to participate in anonymous, team-based leaderboards if they enjoy competition, or opt-out if they don't. As the instructor, you control if leaderboards appear at all.</p>	 <p>Unlocks & Gating Games don't start with a final boss battle—the same is true for learning: we want learners to acquire foundational knowledge before they move on to more complex work. With unlocks, you can determine what work must be done before students unlock additional opportunities.</p>	 <p>Integration with Existing Platforms We know that integrating with other platforms is key, so we support Learning Tools Interoperability (LTI) 1.1 as both a Tool Provider and Consumer. Your data is your data—and should always be available to you to download and dig into.</p>

Link: <https://www.gradecraft.com/>

To sign up with Gradecraft, click on the pink button.

Ready to Get Started with GradeCraft?

Are you an instructor who believes learning should be gameful?
Do you want to get started with your gameful course design?

Sign up now!

Although it is not a free tool, you can try it out on a free trial basis.

PUBLIC ACCESS

We're proud to offer GradeCraft to instructors anywhere in the world! We have **free trial accounts** available for any instructor wishing to try out GradeCraft. You'll be able to fully set up a course, explore our features, and try out how things work—the only thing you can't do is add students using the LTI connection.

Sign up for a free trial

You may also purchase a license (or upgrade your free trial at any time) if you find GradeCraft is right for you and your students.

[Learn more about licensing options](#)

Go to the following YouTube video to listen to an interesting presentation on gameful learning:

Link: [https://www.youtube.com/watch?time_continue=391&v=k\)NaJpQbwA0](https://www.youtube.com/watch?time_continue=391&v=k)NaJpQbwA0)

GENERAL TIPS [H3]

The following are just some general tips that you may want to apply:

- Ensure that you have additional examples other than what the textbook provides to illustrate concepts.
- Encourage learners to compare the world they know today with 30+ years ago - communication, work, family etc. If they explain something clearly with examples, they can often get good marks - e.g. communication using ICTs is much faster than sending a letter by post.
- Teach them the vocabulary (subject jargon) before you teach them the content.
- Read and follow tech blogs (teacher and learner) to stay up to speed with new developments, etc.
- Read and follow <http://www.techteachers.co.za/>
- Read <http://www.techteachers.co.za/category/successful-teacher/> to see what makes a good teacher.
- Become part of the C.A.T and I.T. Teachers group on Facebook <https://www.facebook.com/groups/cat.it.teachers>

ADDITIONAL RESOURCE SITES

The following links refer to sites that you can use for additional information on CAT.

- <http://www.techteachers.co.za/>
- www.gcflearnfree.org/subjects/technology
- www.bbc.com/education/subjects/zqmtsbk
- www.bbc.com/education/subjects/z34k7ty
- www.lifewire.com/
- thenextweb.com/
- toplink.weforum.org/knowledge/explore# (free registration)
- support.office.com/en-us/office-training-center
- www.gcflearnfree.org/subjects/office/

ADDITIONAL ACTIVITIES AND EXAM PAPERS

Various additional activities are provided on the following links or on the DVD at the back of this guide.

- <http://www.techteachers.co.za/practical-revision-activities-grades/>
- <http://www.ecexams.co.za>

HOW THE TEXTBOOK WORKS

The guided activities are the main teaching element in the practical textbook. These activities are a step-by-step procedure of how to do a specific task and should be done in class with the learners. After making sure that the learners know what to do, there are also activities that can be either done at school or at home.

In some guided activities, especially in Chapter 2, learners have to save their work at the end of an activity with a different file name and then use the renamed file in the next guided activity.

Screenshots used in the textbook have been created with different versions of Microsoft Office. In Office 2016 the active tab is shown with a white background whereas in Office 365 the active tab is underlined in blue.

DATA FILES

All data files for the practical activities are provided on a separate disk with this Teacher's Guide.



PART A

THEORETICAL CONTENT

DOWNLOAD MORE RESOURCES LIKE THIS ON [ECOLEBOOKS.COM](https://www.ecolebooks.com)

CONCEPTS OF COMPUTING

CHAPTER 1

CHAPTER OVERVIEW

Unit 1.1	Information and communication technology
Unit 1.2	Data and information
Unit 1.3	Computers and ICT
Unit 1.4	Types of computers
Unit 1.5	Economic benefits of computers

The following learning outcomes are covered by this chapter:

- Understand ICT systems and how they are used in everyday life.
- Distinguish between data and information.
- Give examples of data and information used.
- Identify the main concepts of a computer.
- Understand the difference between hardware and software.
- Describe the information-processing cycle with reference to how it uses hardware devices in each stage.
- Describe the different types of computers and their uses.
- Explain the economic reasons for using computers.
- Understand the different social implications regarding ICT.

GRADE: 10

DATE:

TEACHING TIME: 4 hours

Resources

Each learner should have access to:

- CAT 11 Practical Book
- CAT 11 Theory Book
- QR Code Reader

Vocabulary

Learners will need to understand the following terms for this chapter:

- ICT system – It stands for Information and Communication Technology and refers to the overall set-up of hardware, software and data, and the people using it.
- Software – The set of instructions a computer uses to complete any task.
- Barcode – An optical, machine-readable representation of data.
- POS (point of sale) – The cash register in a shop, which typically consists of a computer, monitor, cash drawer, receipt printer, customer display and barcode scanner.
- Cyclic – Taking place in cycles
- Hardware – All the physical parts or components of a computer that can be installed inside or connected to the outside of a computer.
- Web – Refers to the world wide web, which is a graphical interface for the internet.
- Disk drive – A type of hardware that allows data to be read, written, deleted or stored on a computer.
- Cursor positioning device – A touchpad or trackpad is a flat surface that can detect finger contact. It is a stationary pointing device, commonly used on laptop computers.
- Ultra-portable – Very slim, lightweight and easy to carry around.
- Digital pen – A battery-operated writing instrument that allows users to digitally capture a handwritten note or drawing.
- Touchscreen – A computer display screen that is sensitive to pressure; a user interacts with the computer by touching pictures or words on the screen.
- Browse – Reading or scanning through pages on the internet or on a computer.
- GHz – This is a unit of measurement for alternating current or electromagnetic wave frequencies equal to one billion hertz.
- Petaflops – One thousand million operations per second.
- Swiftkey – A keyboard application that uses various artificial intelligence technologies that enable it to predict the next word the user intends to type.
- CamCard – An application to scan, manage, synchronise and exchange business cards.
- Cyberbullying – The use of electronic communication to bully someone.

INTRODUCTION

We use many different types of computers, or digital devices every day. This can range from smartphones and calculators, to smart watches. In the following units, the learners will learn more about the different concepts used in computing, the different types of information and communications technology systems used, as well as what the difference is between data and information. You will also teach them about the various components of a computer and the different types of computers available. Lastly, they will learn about the economic value of computers.

UNIT

1.1 Motherboard

Activity 1.1

Memorandum

1. Explain the term ICT. Do not just expand on the acronym.
Answer: ICT stands for Information and Communication Technology and relates to computers and communication networks. The system consists of hardware, software and data, and the people using it.
2. What does POS stand for?
Answer: Point of Sale system.
3. The following table shows a few activities that take place before check-out. Match these with one of the following processes associated with a POS, as seen from the customer's point of view:
 - Receives
 - Sends
 - Stores
 - Retrieves
 - Manipulates

ACTIVITY	PROCESS (ANSWERS)
Scan a barcode	<i>Receives</i>
Calculating change	<i>Manipulates</i>
Providing a receipt	<i>Sends</i>
Total cost of items purchased	<i>Retrieves</i>

4. Imagine a world without ICT systems, or ICT controlled devices. ICTs have several advantages and disadvantages. Copy and fill in the table below, and list three advantages and disadvantages of ICT systems.
Answer: Any three of each of the following.

ADVANTAGE	DISADVANTAGE
<i>More production: More tasks can be completed in a shorter period of time.</i>	<i>Social effects: Computers, and especially social media, can be addictive, make people less happy, lead to jealousy and get in the way of real-world friendships</i>
<i>More information: Large amounts of information can be analysed and processed.</i>	<i>Health effects: Research has shown that excessive use of computers can result in a number of medical problems, including back pain, eye-strain, obesity and tendonitis.</i>
<i>Transmission: Vast amounts of information can be transmitted and received at a much quicker rate.</i>	<i>Security risks: ICT systems are programmed to follow instructions, and sometimes people program these systems to act in a way that harm their users.</i>
<i>Saves money: Businesses can save money by using technology for various tasks, for example many shops track their products through the use of ICT technology instead of closing the shop for stocktaking.</i>	<i>Online abuse and cyberbullying: While computers can connect people, it also allows people to be harassed and abused.</i>



<i>Makes communication easier and faster: Instead of writing a letter and waiting for the post to deliver it, we can now for example send it via email and get a quick response.</i>	<i>Loss of privacy: Because computers are very good at gathering data and turning it into useful information, many websites today gather all the data they can about their users and then sell that information to marketers.</i>
<i>Allows for real-time communication: Meetings can be held using video-conferencing technology. This way, family and friends living in different parts of the world can talk to each other whenever they want.</i>	
<i>Virtual dating: This has become an exciting new way of meeting people.</i>	
<i>Easier for students to learn: With all the technology gadgets and mobile applications (apps), students have access to a lot of information.</i>	
<i>Buying and selling: Buying and selling of goods and services can be done in the comfort of your own home.</i>	
<i>Provides entertainment: Computers give people access to incredible amounts of music, videos, books and games.</i>	
<i>Managing of finances: Internet banking and other payment options makes working with your money easier as well as more secure.</i>	
<i>Transportation: Transport has changed and is now so much easier and faster due to a well-developed transportation system. There is a rise in electric and hybrid motors and self-driving vehicles will be possible soon.</i>	



UNIT

1.2 Data and information

Activity 1.2

Memorandum

1.

SUBJECT	AVERAGE 73
Life Orientation Physical Science	80
Mathematics	67
Computer Applications Technology	65
Geography Business Studies	73, 88, 67

1.1 What is wrong with this report?

Answer: It just looks like data and nothing is organised. Sizwe cannot understand what his term marks for each subject is.

1.2 Explain the difference between data and information.

Answer: Data is unprocessed information and can be in the form of text, numbers and random letters. Information, on the other hand, is data that is processed and formatted in such a way that we can actually use it.

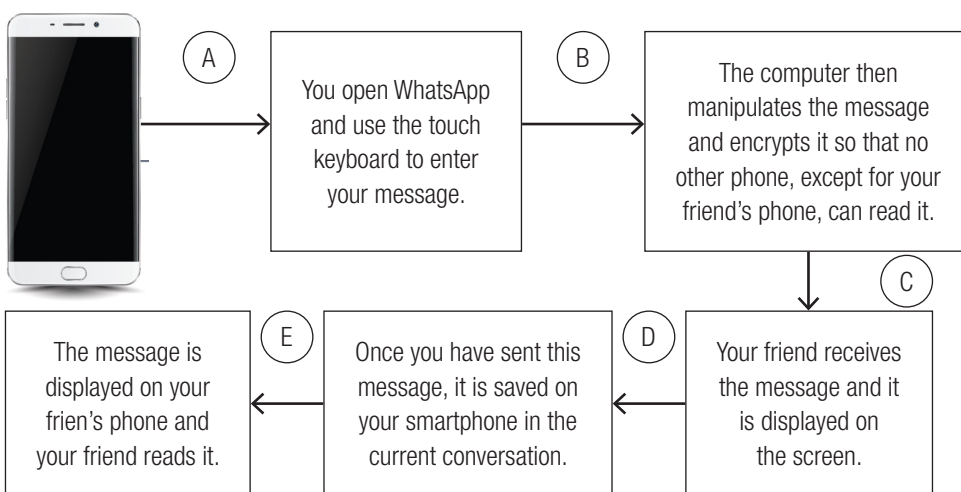
1.3 Use the data and create a report showing the correct information for Sizwe. Use the table below to guide you.

Answer:

SUBJECT	TERM MARK (%)
Life Orientation	80
Physical Science	67
Mathematics	65
Computer Applications Technology	73
Geography	88
Business Studies	67
Average	73

2. Answer the following questions based on the scenario below.

Computers are electronic devices that manipulate data and turn it into useful information. To see how this works, think about sending a WhatsApp message from your mobile phone to your friend. The diagram below shows the different stages in sending a WhatsApp message.



- 2.1** What process is shown in the diagram above?
Answer: The information processing cycle.
- 2.2** List the different stages from A to E.
Answer: A. Input; B-Processing; C. Output; D. Storage; E. Communication
- 2.3** What happens during Stage C of this cycle?
Answer: The computer processes the data and then supplies the new, manipulated information in some way.
- 2.4** Indicate whether the following is input, output or storage:
Answer: a. Input; b. Output; c. Output; d. Output; e. Storage



UNIT

1.3

Computers and ICT

Activity 1.3

Memorandum

1. What is a computer?

Answer: A computer is an electronic device that receives data, manipulates the data and turns the data into useful information.

2. Match each concept in Column A with the definition in Column B. Write only the number and the letter.

Answer: 1.B; 2.A; 3.E 4.C, 5.F, 6.D

3. Answer the questions based on the diagram below.



3.1 Give labels for the missing stages:

Answer:

a. A: Input

b. B: Output

3.2 List one example of each of the following:

a. Hardware

Answer: Mouse, monitor, keyboard, speakers, etc.

b. Software

Answer: Any suitable example such as Microsoft Word, Microsoft Excel, Windows 10, etc.

3.3 Your teacher is busy printing out the term class reports. Which stage is this in the information-processing cycle?

Answer: Output

4. Complete the following table and identify two hardware devices that your teacher will use for each of the missing stages. Motivate why she would use those specific devices.

Answer:

STAGE	HARDWARE DEVICE	REASON
A	Keyboard, mouse	Keyboard to enter the data, such as marks. Mouse to print the reports.
B	Monitor, printer	The monitor will be used to see the input data. The printer will be used to print out the reports for the students.
C	Hard disk and USB	The input data will be stored on the hard disk of the computer. A copy of all the reports will be stored on a USB.

WHAT IS GIGAHERTZ?

Refer to Table 1.3 in the textbook.

When referring to a computer processor or CPU, gigahertz (GHz) is the measurement of the clock frequency or clock cycle of the CPU per second; it is the amount of time between two pulses of an oscillator. This determines the speed of the CPU.

Generally speaking, the higher number of pulses per second, the faster the computer processor will be able to process information, for example a 4 GHz processor performs 4 000 000 000 clock cycles per second.

The first computer's CPUs operated in kilohertz, for example the Intel 4004 operated at 740 kHz. Later processors operated in megahertz, such as the Intel Pentium, which could manage speeds up to 300 MHz. Today's computers operate in the gigahertz range such as 3,8 GHz or higher.

One gigahertz is equal to 1 000 000 000 hertz or 1 000 MHz.

WHAT ARE PETAFLOPS?

Refer to Table 1.3 in the textbook.

A petaflop is the measure of a super computer's processing speed and can be expressed as a thousand trillion operations per second.



FLOPS are floating point operations per second, where a floating point refers to the method used to calculate extremely large real numbers in a way that is efficient for the computer.

The Centre for High Performance Computing (CHPC) at the Council for Scientific and Industrial Research (CSIR) in Cape Town unveiled the fastest computer on the African continent in 2016, called a petaflops machine. This is a super computer with processing speed capable of a thousand-trillion floating point operations per second.

If you are in or close to Cape Town, you can take the learners for an outing to the CHPC at the CSIR. Address: CSIR Campus, 15 Lower Hope St., Rosebank, Cape Town, South Africa. Telephone number: 021 658-2740

WHY ARE LAPTOPS SLOWER THAN DESKTOPS?

Refer to Table 1.3 in the textbook.

Faster and more powerful laptop computers are available, but they are way more expensive than comparable desktops.

Laptops are almost always slower than desktops with the same processor, RAM and storage space. The main reasons for this are:

- **Size:** Although many laptops have similar features than desktops, they are installed in a much smaller space, causing the components to perform less well as their counterparts in a desktop.
- **Heat and power:** A second major factor affecting mobile computers' performance is their ability to get rid of the heat they generate. The more power a CPU uses, the more heat it generates. As a result, any CPU running at full speed generates a lot of heat. On a desktop computer, the power is supplied to the CPU with a large power supply and the heat it generates is removed from the CPU using heat sinks and fans. And although laptops are also able to remove a lot of heat from their CPUs using a similar structure of heatsinks and fans, there is very little space inside the body of a laptop. This means there is almost no natural air flow. As a result, laptops are considerably worse at removing the temperature generated by their CPUs than desktops.
- **Energy conservation:** In computers, power is necessary for speed. The processing power of a CPU is closely linked to the amount of electricity available to it and since laptops are designed for energy conservation, it is, their power generally needs to last the whole day, they will naturally run more slowly.

Activity**Additional activity**

This is an additional activity that your learners can do in groups. Refer to the jigsaw assessment technique.

1. Arrange the learners in groups. Each group must do research on ONE of the following types of computer.
 - Super computer
 - Mainframe
 - Server
 - Workstation.

Take note: Each group must have a different research topic.

For the research, they should focus on:

- a description of the device;
 - its advantages and disadvantages; and
 - giving examples of where they have used these devices.
2. Each group must create a presentation on their research of the assigned topic.
 3. Each member must join members of other groups to present the research done for the topic they received.

WHAT TO DO WHEN YOU ARE A VICTIM OF CYBERBULLYING?

To stop being a victim:

- Limit the personal data you share on social media accounts and review your security or privacy settings regularly.
- Google yourself, make sure that friends and family are not posting things about you that you do not want others to see or know.
- Do not share too much information over phone calls, emails or texts that ask for personal information, especially your ID number or banking information.

HOW TO HELP YOURSELF IF YOU ARE A VICTIM OF CYBERBULLYING

- Make a copy of everything.
- Take screenshots and print the offensive material.
- Keep a record of what websites it happened on.
- Have your parents have a look at the posts. Report the bullying to the website and ask that they take the harassing content down.
- If necessary, take the evidence you have collected to the police to open a case.

Activity 1.4

Memorandum

Read the following scenario and answer the questions that follow.

Saving paper

The largest bank in the USA, Bank of America, greatly reduced its paper consumption by making use of electronic reports and forms, emails, double sided copying and by using lighter weight papers. As a result, it saved tons of paper with the amount of paper used between 2000 and 2004 decreasing by 32%. (This is over a billion sheets of paper).

- a. Give two examples on how computers benefit the economy by saving paper. Motivate your answer.

Possible answers:

- *People can communicate using email or instant messaging. This means that letters or memos on paper do not need to be used*
- *Magazines and books can be read electronically. Paper does not need to be used to print out hard copies.*

- b. List three ways of how computers have benefited the economy in South Africa. Motivate your answer.

Possible answers:

- *Saving paper: Companies and individuals can save paper by working on computers.*
- *Saving labour: Businesses can save money and labour (people) by using computer-controlled devices to perform the same functions that require several employees to perform.*
- *Communication speed and costs: Telephone and postage costs can be decreased drastically through the use of computers and the internet. It also allows information to be sent and received faster than in the past, for example the use of email allows instant communication with staff, clients and other individuals at any place or time.*
- *Efficiency: Instead of being swamped with paperwork or sorting out piles of paperwork, files can be stored on computers and you can always go back to look at old documents. Also, computers can do the work of more than one person in less time than employees.*
- *Accuracy: Computers produce more accurate data or results than human beings.*
- *Reliability: Computers that are maintained properly will be reliable in the long run. It is safe to say we can rely on computers to perform their tasks as they are programmed to do.*



Case Study

Thembisile and her cell phone

Read the following case study to the learners in class. Then let them discuss the questions in class, in groups or let them answer the questions individually in their workbooks.

Group discussions

- Normal pedagogical practises apply here.
- Language can be a barrier to the success of a group discussion.
- If you want to know more about group discussions, you can look at the following webpage:

Link: <https://www.education.gov.gy/web/index.php/teachers/tips-for-teaching/item/1665-how-to-make-group-discussions-interactions-work-in-the-classroom>

To understand how dependent we are becoming on smartphones, read the following case study about a day in Thembisile's life. This is an example of a smartphone user, Thembisile, and how she uses her phone throughout the day.

Every morning at 07:00, Thembisile is woken up by the alarm on her smartphone. This alarm clock application has a function that plays soft music for five minutes before she has to wake up. This actually prepares her brain to wake up. After that, the tone becomes louder, which she cannot ignore. If she hits the snooze button, her alarm is set to snooze five times for five minutes at a time.

After Thembisile has woken up, she checks her emails, WhatsApp messages, other texts and her social media updates, such as Facebook and Twitter, which were set to not send any messages to her between 21:00 and 07:00.

She then has breakfast, which she logs into her meal plan application. This indicates the number of calories she consumed. She also adds toothpaste and soap to her shopping list application.

Her calendar application shows that she is supposed to be at the gym in 30 minutes. She gets into her car and mounts her phone on the hands-free device attached to the windscreen of her car. She then switches her phone to GPS navigation, which works out the best route to her three calendar appointments, i.e. gym, work and her 13:00 meeting.

At the gym, she uses her gym application and inputs her weight, height and energy level into the application. This gives her an exercise routine she should focus on for the session.

She realises she is running a little late for work, so she sends a quick message to her manager using an instant message service (IMS), such as WhatsApp. Her normal keyboard is replaced by SwiftKey, making it much quicker for her to type.

At work, Thembisile uses a note-taking application to make notes of the things she is currently working on, as well as the scheduling application, which books and shares new appointments. She then uses CamCard to scan the new business card she just received so that the details are automatically saved in her contact list.

Before going to bed, Thembisile quickly looks at the day's important news events on her news application and plays some of the several games on her phone, such as Pokémon, Candy Crush and Angry Birds.

At 22:00, her sleep application tells her it is time to sleep.

As you can see, Thembisile, and probably her entire family, are very active smartphone users. Information is transferred, stored and conveyed in their everyday lives. This is the direction that the world of technology is moving towards. It also shows us how dependent we are becoming on computers, or computer-operated devices.



Case Study

continued...

Answers to the questions

1. Give a brief description of a smartphone.

Answer: A smartphone is a mobile phone that allows you to do more than just make phone calls and send messages. They can also be used to browse the internet, take photos, store information, play games, etc.

2. Identify four applications that Thembisile uses during the day.

Answer: Any four:

Alarm; Email; WhatsApp; Facebook; Twitter; Meal-plan app; Shopping list; Calendar app; GPS; Gym app

Note taking app; Scheduling app; Scanner; Games, e.g. Pokemon, Angry Birds

3. From the case study. Identify five things for which Thembisile uses her phone. How does this improve her day-to-day life?

Answer: Any five of the following:

- *Alarm: It helps her to wake up in time for what she needs to do that day.*
- *Social media and other message services: These help her to keep in contact with her friends and other important people, and to see if she needs to do something specific that day that was not planned for.*
- *Meal plan application: It helps her to keep track of the calories she takes in to stay healthy.*
- *Shopping list: It helps her to keep track of everything she must buy.*
- *Calendar: It shows her all her planned activities for the day.*
- *Gym app: Helps her to keep track of her health and fitness statistics.*
- *SwiftKey: Makes it easier to type.*
- *Note taking app: It helps her to keep track of everything she is working on.*
- *Scheduling app: It helps her to make and book new appointments.*
- *CamCard: It helps her to scan in business card information and save it in her contact list.*
- *News app: It helps her to keep up to date with current news events.*
- *Gaming app: It helps her to relax.*
- *Sleep app: It reminds her that it is time to go to bed so that she can get her required hours of sleep.*

4. How does Thembisile's employer benefit from her using a smartphone?

Answer:

- *Communication using apps like WhatsApp facilitate communication without requiring face-to-face meetings.*
- *Scheduling apps means she is less likely to miss appointments with clients.*
- *Client information stored on her smartphone enables her to communicate with clients outside the office.*

5. How does the SwiftKey keyboard differ from the normal keyboard on a smartphone?

Answer: With normal keyboards you need to tap each letter one at a time. With SwiftKey you can glide your finger from one letter to the other. The app will try to predict the word you are typing. You lift your finger as soon as you see the word you need. You can alternate between gliding and tapping at any time.

CONSOLIDATION

Chapter 1: Concepts of computing

Note to teacher:

The revision activities at the end of each chapter have a mark allocated for each question. This is to help prepare learners for the writing of formal tests and examinations. The answers are provided with ✓'s as a guide to the teacher. Learners should be taught the following:

- In CAT, one mark is usually awarded per fact or statement. The number of marks should be used as a guide to how much information to provide.
 - Learners should be careful not to provide one-word answers unless this is clearly asked for in the question.
 - Questions are intended to give learners experience of answering questions of differing cognitive and difficulty levels.
1. Study the picture of a computer below and answer the questions that follow:



- a. Identify and name two input devices. (2)
Answer: Mouse ✓ keyboard ✓
Also accept touch screen.
- b. Is device A an input device or an output device? (1)
Answer: Output device ✓
- c. What is the function of device B? (2)
Answer: Device B is a monitor/touch screen.
It displays video and text ✓ so that a user can interact with the computer ✓
Note: 2 marks implies that 2 points must be provided in the answer.
2. Match the user in Column A with the type of computer in Column B.
Answer: 1.B; 2.D/A; 3.D/E (3)

3. Your school has bought a new computer for the administration office.

List two economic benefits of having a computer in the office. Explain how the school would benefit in each case. (6)

Answer: This is an example of a scenario-based question. Learners must give answers that fit into the scenario (school office). All the economic benefits mentioned in the textbook might not be of relevance in this specific scenario.

The number of marks imply that for each benefit two examples should be given.

Benefits: Any two ✓✓

Examples: Two examples per benefit ✓✓✓✓

Saving paper - notices can be sent to parents using email/WhatsApp; reports can be sent electronically etc.

Increased communication speed with reduced costs - email/WhatsApp is much faster than posting letters; cheaper to use bulk SMS rather than posting letters.

Efficiency - important documents can be stored electronically; marks can be captured on a database; parent records can be stored electronically and be easily retrieved.

Accuracy - word processors have built-in spell checkers so communications with parents are free of errors; budgets and expenditure can be done using a spreadsheet rather than doing manual calculations.

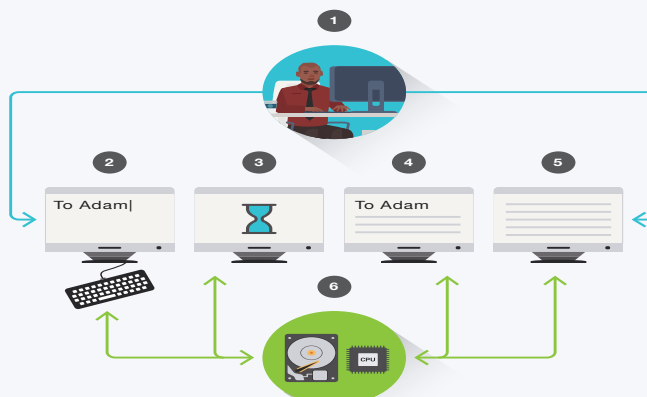
4. a. Define what is meant by an embedded device. (2)

Answer: An embedded device is a computing device/system ✓ that usually has a single purpose. ✓

- b. Give an example of an embedded device that will be found in a motor car. (1)

Answer: Any one of: Engine management; Air bag control system; ABS braking system etc.

5. Look at the diagram below and answer the questions that follow:



- a. What stage of the information- processing cycle is taking place at 3? (1)

Answer: Processing

- b. Does stage 6 represent storage or communication? Give a reason for your answer. (2)

Answer: Storage ✓ The picture shows a storage device. ✓ The arrows show that data is moving to and from the device. ✓

6. Your class teacher at school ticks off each morning who is present at school. At the end of the term, she determines how many times each learner in the class was absent. This number is included on the learner's term report. Using this scenario, explain the difference between data and information. (4)

Answer: The ticks on the class list/attendance register ✓ represent data as these are unprocessed facts. ✓ The days absent on the report represent information ✓ as this was obtained by adding up (processing) the number of days absent ✓

TOTAL: [24]

USING A COMPUTER

CHAPTER 2

CHAPTER OVERVIEW

Unit 2.1 Operating a computer

Unit 2.2 Posture and ergonomics

The following learning outcomes are covered by this chapter: 

- Switch a computer on.
- Use a mouse correctly.
- Identify and explain the different icons when using a mouse.
- Understand the different features of the desktop.
- Use your desktop.
- Explain the importance of the correct posture when working with a computer.



GRADE: 10

DATE:

TEACHING TIME: 6 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Desktop computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader

GRADE: 10

DATE:

TEACHING TIME: 6 hours

Vocabulary

Learners will need to understand the following terms for this chapter:

- **Boot:** The process where the computer loads the operating system into its main memory or RAM and checks that all the components of the computer are in good order.
- **Username:** A word, phrase, number or combination of characters that uniquely identifies a user on any computing device or related service that requires user authentication.
- **Password:** A basic security mechanism that consists of a secret phrase created using alphabetic (abc), numeric (123), alphanumeric (a14b) and symbolic (\$%*) characters, or a combination thereof.
- **Default:** A preselected option adopted by a computer program.
- **Default settings:** The pre-existing value of a user-configurable setting that is assigned to a software application, computer program or device.
- **User-interface objects:**
 - **Taskbar:** The bar at the bottom of the screen that allows you to locate and launch programs through the Start button or view any program that is currently open.
 - **Graphical User Interphase (GUI):** An interface through which a user interacts with electronic devices, such as computers, handheld devices and other appliances.
 - **GUI elements:** Elements used by GUIs to offer a consistent visual language to represent information stored in computers.
 - **Windows:** An area on the screen that displays information for a specific program.
 - **Icons:** A picture that shows a file, folder or a program.
 - **Menus:** A list of options or commands where the user can select to execute the proper application function.
 - **Shortcuts:** An alternative way to do something that is shorter than the one usually taken.
 - **Active window:** The currently selected window.
 - **Notification tray:** It contains miniature icons for easy access to system functions such as antivirus settings, printer, modem, sound volume, battery status, and more.
- **Wi-Fi:**
- **Touch typing:** Typing without looking at the keys.
- **Ergonomics:** The process of designing or arranging workplaces, products and systems so that they fit the people who use them.

INTRODUCTION

As a modern-day learner, learners have probably used, seen, or read about computers. We use computers in our everyday lives, for example, in banks, schools, shops, hospitals, and maybe the people in their homes use computers on a daily basis. Being able to use a computer is an important skill to learn; not only for school or university purposes, but also for the workplace.

In this chapter, we will introduce learners to the practical side of using computers.

WHAT IS A QWERTY KEYBOARD?

Refer to the *Keyboard* section.

The QWERTY keyboard is the most widely used modern keyboard layout, referring to the first six letters in the top left row of the letters. The original QWERTY keyboard was developed by Christopher Latham Sholes in 1867 for mechanical typewriters. These keyboards also had keys that, when pressed, moved a mechanical arm to type a character on a piece of paper. However, when the typist typed fast, these arms could become jammed. To prevent this, Shole examined the most common letter combinations in English and places the letters as far apart from each other as possible. And although that helped solve the problem of the jamming keys, it is not the most efficient keyboard layout for modern-day computers. It is, however, still used because it became the standard.

EXAMPLES OF OTHER KEYBOARDS

Currently there are many different keyboards available to choose from, for example the non-QWERTY keyboards are:

- **AZERTY keyboard:** Used in French-speaking countries.
- **QWERTZ keyboard:** Used mostly in central Europe.
- **Dvorak keyboard:** In 1936, August Dvorak came up with a simplified layout that increases typing speed and reduces errors, but which has not yet replaced the QWERTY keyboard. This layout places the most common letters in the home row where they are easy to reach. The least common letters were placed at the bottom row, where they are the hardest to reach.
- **Colemak keyboard:** It made 17 changes to the QWERTY keyboard's key layout and took the Caps Lock key away and replaced it with a second backspace key.
- **Maltron keyboard:** This keyboard has two square sets of letters, both of which flank a number pad in the middle. The left-hand square of letters has the unusual combination of ANISF as its home row, while the right-hand square's home row is set out in the DTHOR combination.
- **JCUKEN keyboard:** This is used by the Russian countries who use a Cyrillic alphabet.

Examples of other types of keyboards are:

- **Laptop-sized keyboards:** They have a short key distance and a reduced number of keys.
- **Thumb-size keyboard:** They are usually found in handheld devices such as cell phones and tablets.
- **Gaming keyboards:** They are much like a standard keyboard except they have a few additional features such as multimedia keys, an LED screen and palm rests. Their keys can also be illuminated, and they are slightly smaller and more comfortable than regular keyboards.
- **Ergonomic keyboards:** These keyboards are designed to prevent muscle strain, back pain and wrist-related injuries. The contoured slope of the keyboard changes the alignment of your whole body, pushing your elbows outward into a more comfortable position for your shoulders.
- **Virtual keyboard:** These keyboards consist of a virtual interface that allows you to input symbols and characters without hard, physical buttons. The touch screen keyboards are examples of these.

WHY DO THE SCREENSHOTS IN THE TEXTBOOK DIFFER FROM WHAT I SEE ON MY COMPUTER?

Please take note that what you may see on the desktop in your lab might differ somewhat from the screenshots in the textbook. This can be because you have a different version of Windows or because Windows 10 has been customised to minimise the opportunities for learners to make modifications to the appearance of the desktop by putting policies in place.

Guided Activity

Guided activities are intended to be done together with the teacher. Learners might not be able to carry out all the steps in the activity, depending on the arrangement of the computer room.

In some cases it might only be possible for the teacher to demonstrate the activity.

To start up your computer, you need to do the following:

1. To switch the computer on, press the Power button. On some computers, this button lights up after the computer is switched on.
2. The computer will now boot. This is when the computer loads the operating system and checks that all the components are in good order.
3. After the computer has booted, a log on screen might appear. Logging on allows registered users access to the computer. If you are the only user of the computer, it will go straight to the desktop screen once it is turned on. OR If you share the computer with other users, you might have to log in your details. You can do this by typing in your username and password, and then pressing the Enter key. After the computer accepts the login details, the desktop display will appear on the screen.

Activity 2.1

Memorandum



1. Below are the different steps that are done when starting up, using and shutting down a computer. The steps are in the incorrect order.

- 1.1 Arrange the steps in the correct order.

- a. Enter password
- b. Switch on the monitor
- c. Session begins
- d. Switch on the power button
- e. Click on Log out
- f. Enter username
- g. Computer session ends
- h. Switch off the monitor and power
- i. Shut down computer

Answer: d, b, f, a, c, e, i, g, h

2. State whether the following are True or False. If False, give the correct answer.

- 2.1 A password should always be kept a secret.

Answer: True

- 2.2 The keyboard is the most important hardware device used to control the computer.

Answer: False, a mouse is one of the most important devices used to control the computer

- 2.3 The hourglass icon shows that you must wait while the computer is doing a task.

Answer: True

Activity 2.1

Memorandum... *continued*

3. Match the terms in Column A with the correct description in Column B.
Answer: 1.A; 2.D; 3.B; 4.C; 5.F
4. Logging off and then switching off your computer when you are done using it, is actually quite important. Answer the following questions regarding this statement.
- a. Give two reasons why switching off your computer after use is important.
Answer: Save electricity, prevents the computer from overheating.
- b. Does logging off switch off the computer? Motivate your answer.
Answer: No, it does not. Logging off prevents other users from accessing your files. The computer remains on so that other users can log on without delay. In a computer room at school, computers are often only shut down at the end of the school day.
- c. Briefly explain why it takes time for a computer to start up and shut down.
Answer: Start up and shut down takes time because this is when the computer loads the operating system and checks that all the components are in good order.

Activity 2.2

Memorandum

Do the following at your computer:

1. Switch on the computer.
2. Find Word using the search box in the task bar.
3. Use your mouse to open the Word application.
4. Type two to three sentences about why CAT, as a subject, is important.
5. Save the file and then close it.
6. Open the file that you just saved in (5).
7. Print preview the document.
8. Close the application.



This activity should be monitored by the teacher. Assist those learners who are having problems. This activity could be integrated with the first chapter of the Practical textbook.

Activity 2.3

Memorandum

Use the image below to answer the questions that follow:



1. Is the person using good posture?

Answer: No

2. Motivate your answer by using the numbers in the diagram to guide you.

Answer:

1. *The person is leaning forward.*
2. *The person's forearms are not level with the mouse and keyboard. / The table is too high.*
3. *The person is not sitting up straight.*
4. *The person's feet are not flat on the floor.*

3. Explain why a good chair is important to assist you maintain good posture.

Answer: A chair should provide good support for your back. It should preferably be adjustable to ensure that your arms are level and your feet can remain flat on the floor.

CONSOLIDATION

Chapter 2: Using a computer

1. When you are working on a computer that is used by more than one person, you will often be asked to enter a username and password soon after the computer has been switched on. Give two reasons why you should never share your password with anybody else. (2)

Answer: Other people could access your files and tamper with them. ✓ Other people could use the computer to carry out illegal/undesirable activities in your name, e.g. sending a rude email. ✓

2. Match the mouse action in Column B with the desired outcome in Column A. Write down only the number from column A and the matching letter from column B. (4)

Answer: 1.D ✓; 2.A ✓; 3.B ✓; 4.C ✓

3. Answer the following questions about a GUI. (1)

3.1 What does the acronym GUI stand for? (1)
Answer: Graphical user interface ✓

3.2 What is the main screen of the Windows 10 GUI called? (1)
Answer: Desktop ✓

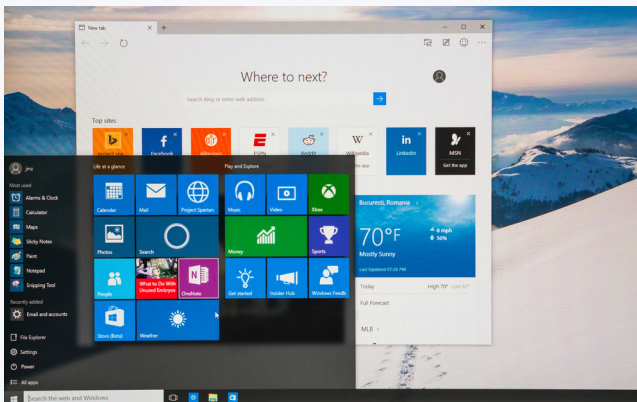
3.3 What is the function of an icon? (2)
Answer: Icons are used to access applications, folders or files ✓ without having to go through the Start Menu. ✓

4. What does the arrow in the bottom left corner of the icon below indicate? (1)



Answer: The icon is a shortcut ✓

5. Study the image of a Windows 10 desktop below.



- 5.1 Label the parts of the desktop labelled A, B, C and D.

Answer:
 A: Start button ✓
 B: Task bar ✓
 C: Notification tray ✓
 D: Start menu ✓

6. Study the icon below and answer the questions that follow:



- 6.1 What application can be accessed by double-clicking the above icon? (1)

Answer: The recycle bin. ✓

- 6.2 Explain to someone who is NOT familiar with Windows 10 how you would use the application. (3)

Answer: Items such as files or folders that have been deleted are stored temporarily ✓ in the recycle bin. If they were deleted in error, ✓ they can be restored to their original location ✓ from the recycle bin.

7. Explain the difference between saving and closing a file. (2)

Answer: When you save a file, the file is updated on the medium where it is stored, but the file remains open. ✓

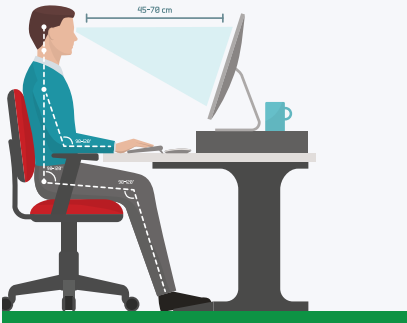
When you close a file, the file is no longer open but the application, e.g. Word, stays open. ✓

8. Give four tips to avoid eye strain when using a computer monitor. (4)

Answer:

1. Place the monitor at eye level ✓
2. Tilt the screen at an angle to avoid glare ✓
3. Take regular breaks by getting up or looking into the distance ✓
4. Don't sit with the monitor facing a window or light source ✓

9. Use the image below to give guidance to the learners in your class about good posture when using a computer. (4)



- 9.1 Mention at least four points. (4)

Answer: Any 4 ✓ ✓ ✓ ✓

Sit up straight with your back perpendicular to the ground.

Your forearms should be at the same height as your mouse and keyboard.

Your feet should be placed firmly on the ground or on a footrest.

The back of your chair, height of your chair and height of your armrests should be adjusted to support your body in this position.

The monitor should be positioned at eye level and roughly 50 cm away from you.

You may need to place something under the monitor to increase its height.

The monitor should be tilted upwards to reduce glare.

You should stand-up and take regular breaks.

TOTAL: [29]

FILE MANAGEMENT

CHAPTER 3

CHAPTER OVERVIEW

Unit 3.1 Basic concepts of file management

Unit 3.2 File types

The following learning outcomes are covered by this chapter: 

- Understand the basic concepts used in file management.
- Organise files and folders on the computer.
- Identify the different file types.

GRADE: 10

DATE:

TEACHING TIME: 6 hours 

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Desktop computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader

GRADE: 10

DATE:

TEACHING TIME: 6 hours

Vocabulary

Learners will need to understand the following terms for this chapter:

- **Hard disk drive (HDD):** Non-volatile memory hardware device that permanently stores and retrieves data from a computer.
- **Hierarchical tree structure:** A way in which data is organised into a tree-like structure.
- **Directory:** Another name for a folder. File systems use directories to organise files within a storage device.
- **Root directory:** The directory at the highest level of a hierarchy.
- **File path:** A path that defines the location of a file or folder in a computer's file system.
- **File extension:** The suffix (letters) at the end of a filename that indicates what type of file it is.
- **File naming convention:** A framework for naming your files in a way that describes what they contain and how they relate to other files.
- **Archives and compressed files:** A folder made up of one or more compressed files.
- **Text files:** Files used to store plain text.
- **Plain text:** Text that has no special formatting such as fonts, font sizes, images and so on. In Microsoft Windows.
- **Rich text format files:** File format standardised by Microsoft for creating formatted text files.
- **Microsoft WordPad:** A free rich text editor from Microsoft.
- **Document files:** Used to store documents.
- **Web pages:** A document commonly written in HTML that is accessible through the internet or other network using an internet browser.
- **Presentations files:** Stores information using slides that can be shown consecutively.
- **Spreadsheet files:** A file that stores information in a large table.
- **Database files:** Similar to spreadsheets, except that the sheets, called tables, are all connected to each other.
- **Image files:** Different file formats that are used for images created by cameras, scanning and printing.
- **Animation files:** Files that interpret moving images.
- **Video files:** Digital video data stored on a computer or other device.
- **Locked document files:** Documents with content that is difficult to change or modify once it is created.
- **Audio files:** Similar to video files and used to store only audio (such as music files).
- **Adobe Acrobat:** An application developed by Adobe Systems where you can view, create, print and manage files in a portable document format (PDF).
- **Notepad:** A popular application in Microsoft Windows used for opening and creating text files.

INTRODUCTION

In this chapter, we look at what file organisation is, how we can achieve file organisation and the different types of files you can find on a computer. Learners will also learn about the importance of file management, and how you can organise, delete, restore, move, view and sort files and folders. Furthermore, you will learn about the basic accessories that Windows comes with, as well as how to install a printer.

UNIT

3.1 Basic concepts of file management

WHAT WERE A: AND B: USED FOR ON A COMPUTER?

Refer to Unit 3.1.

A disk drive is an important component that helps you store and retrieve data from the computer. Each drive will indicate the type of storage medium, for example, whether it is a hard disk, USB drive, CD, DVD or so on.

In the older computers, the floppy disk drive was usually set as the A: drive (first floppy drive) or the B: drive (second floppy drive). As new computers no longer have floppy drives (A: or B:) they will always start with the C: drive.

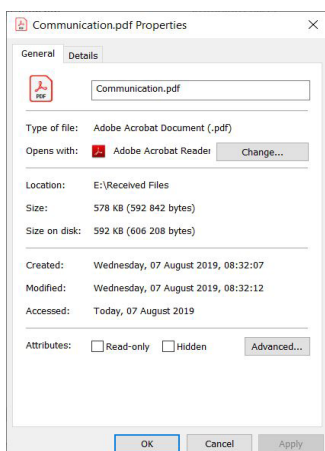
Activity 3.1

Memorandum

1. Define the following terms:
 - a. File path
Answer: A file path is a sequence of folders that ends with a file name which points to a specific location in a file system.
 - b. Disk drive
Answer: A disk drive is an important component that helps you store and retrieve data from the computer.
 - c. Folders
Answer: Folders store files in a computer.
2. Answer the questions based on the file path below.

C:\Documents\School\Maths.docx

- a. What is shown in the diagram above?
Answer: File path
- b. What does “C:\” refer to?
Answer: The drive letter
- c. A file name consists of two elements. What are they in this diagram?
Answer: File name: Maths, Extension: .docx
3. Using the figure below, provide the file path to get to the file: *Communication.pdf*.



Answer: C:\Documents\Received files\Communication.pdf

Activity 3.2

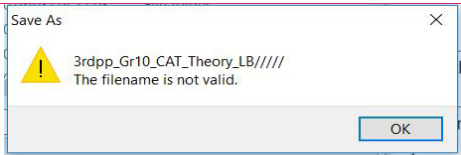
Memorandum

Answer the following questions on your own.

Note: Question 1 is more challenging than the usual matching columns exercise as some of the problems can be solved in more than one way.

- Which solution in Column B can be used to solve the problem in Column A. Note that more than one action can apply to a problem.

Answer:

COLUMN A (PROBLEM)		ANSWER
1.	Struggling to find files on the computer	<i>E</i> <i>Organise files into folders and sub-folders in a logical hierarchical (tree) structure.</i>
2.		<i>L</i> <i>Rename the file.</i>
3.	File was copied as a shortcut.	<i>D</i> <i>Wrong action is used; the user needs to use the correct hotkey.</i>
4.	File was deleted by mistake.	<i>G</i> <i>Recover the file by restoring it from the Recycle Bin to its previous version.</i>
5.	User opens file, but Windows cannot open the file.	<i>K</i> <i>Save the file as another file type.</i> <i>OR</i> <i>A</i> <i>Save file with another extension.</i>
6.	User is using CTRL+C on the keyboard to paste files in a new folder.	<i>D</i> <i>Wrong action is used; the user needs to use the correct hotkey.</i>
7.	Lots of versions of the same file on the user's computer.	<i>B</i> <i>Delete unnecessary files.</i>
8.	The wrong file name is used for document; it needs to be Maths.docx but it appears as Jenny.docx.	<i>L</i> <i>Rename the file.</i>
9.	There is a mix of Word files, video files, music files, PDFs and text documents in the <i>Downloads</i> folder.	<i>B</i> <i>Delete unnecessary files.</i> <i>OR</i> <i>E</i> <i>Organise files into folders and sub-folders in a logical hierarchical (tree) structure.</i> <i>OR</i> <i>H</i> <i>Keep file names short.</i>

Activity 3.2

Memorandum... *continued*

2. Identify the drive letter, folder, subfolder, file name and extension in the file paths below. Make a copy of the table below in your workbook and fill in your answers under the correct heading in the table:

- a. c:\Games\Solitaire\Solitaire.exe
 b. e:\Music\Pop\Jenni - Roses.mp3
 c. c:\Program Files (x86)\Calculator.exe

Answer: This can be used as a guideline.

#	DRIVE LETTER	FOLDER	SUBFOLDER	FILE NAME	EXTENSION
a.	c:\	<i>Games</i>	<i>Solitaire</i>	<i>Solitaire</i>	<i>.exe</i>
b.	e:\	<i>Music</i>	<i>Pop</i>	<i>Jenni - Roses</i>	<i>.mp3</i>
c.	c:\	<i>Program Files (x86)</i>		<i>Calculator</i>	<i>.exe</i>



Activity 3.3 Memorandum

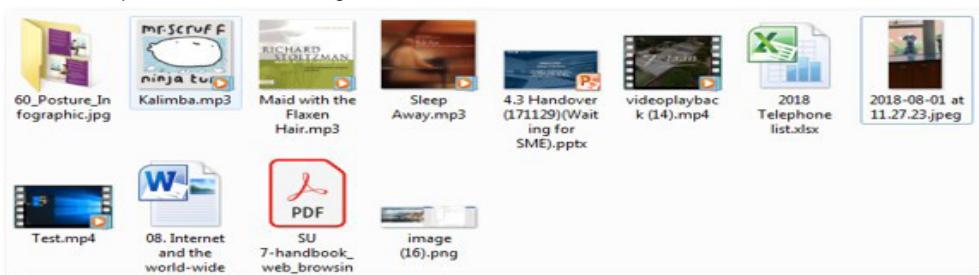
1. Complete the activity by following these steps:
 - a. Create a sub-folder in *My Documents*. Name the new sub-folder: *CAT Grade10*.
 - b. Open the Word-processing application. Copy and paste any picture from the computer into the document.
 - c. Save the file with the file name: *Practice in My Documents*.
 - d. Move the *Practice.docx* to the folder: *CAT Grade10*.
 - e. Create a PDF of the *Practice.docx* file. Save the file in the same location.
 - f. Rename the PDF file to *Practice_new*.
 - g. Delete the file *Practice.docx* in the *CAT Grade10* folder.

Note: This question is a practical activity. An assessment tool is provided so that this activity could be used for daily (informal) assessment. Scoring can be done by the teacher, learners scoring another learners work or learners scoring their own work.

Assessment tool: The following checklist can be used to check if the learner followed the correct steps.

CRITERIA	YES/NO
Did the learner create and name the sub-folder: CATGrade10?	
Did the learner create a new Word document?	
Did the learner insert a picture into the Word document?	
Did the learner save the Word document with the correct file name?	
Did the learner move the Word document to the CATGrade10 folder?	
Did the learner create a PDF of the practise document?	
Did the learner save the PDF in the CATGrade10 sub-folder?	
Did the learner rename the PDF file correctly?	
Did the learner delete the Practice.docx file from the CATGrade10 folder?	

2. Answer the questions about the diagram below.

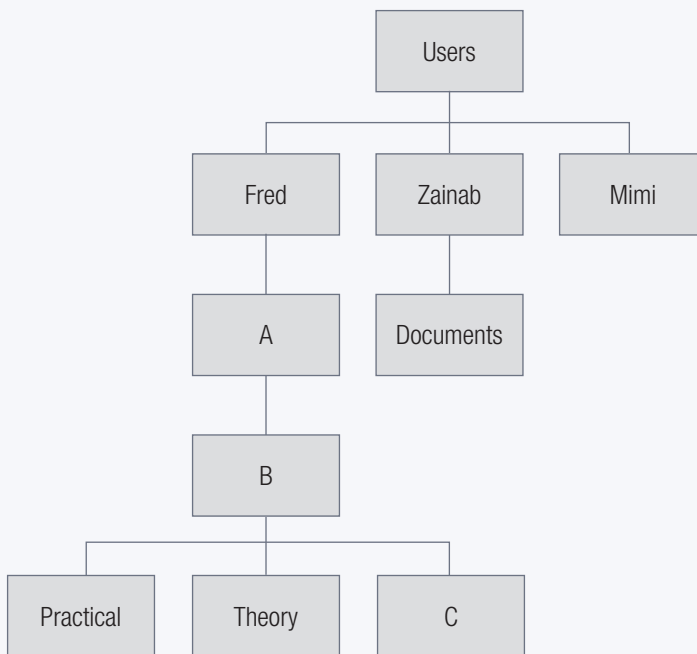


- a. How many audio files are there?
Answer: Three files (those with the mp3 extension)
- b. What type of file is *08. Internet and the world-wide*? What application can be used to open this file?
Answer: A word file. An example would be Microsoft Word.
- c. *Image (16).png* can be opened with Adobe Acrobat Reader. Is this statement true? If not, provide the correct answer.
Answer: False, it can be opened with Windows Picture viewer/Paint/Paint 3G/any other image editing program.
- d. What type of program can be used to open *4.3 Handover (171129) (Waiting for SME).pptx*?
Answer: PowerPoint.
- e. What is the name of the file that Excel can open from the diagram above?
Answer: 2018 Telephone list.xlsx

CONSOLIDATION

Chapter 3: File management

1. Each time Sipho saves a file, he saves it to the desktop of the computer. His desktop is very cluttered and he has trouble finding the files that he needs. Advise Sipho on a more effective way to organise his files. 4)
Answer: Sipho should create folders ✓ with meaningful names (that suggest what type of file is stored in them) ✓. The files on the desktop should be copied into appropriate folders ✓ and then deleted from the desktop. ✓
2. Which of the following is NOT a file extension used for graphics files? (1)
Answer: C ✓
3. Fred has created a folder called "Grade 10 PAT" on a school computer to save all his PAT files. He checks on the file properties and finds that the location of the folder is c:\users\fred\documents\Grade 10\Grade 10 PAT.
 Use the diagram to answer the questions below:



- a. Write down the folder names of folders A, B and C. (3)
Answer: A. Documents ✓; B. Grade 10 ✓; C. Grade 10 PAT ✓
- b. How many users have folders on this computer? (1)
Answer: Three ✓
4. Match the file extension in Column A with the associated file type in column B. Write down only the letter of the file type (Column B) next to the number of the file extension (Column A), e.g. 1C.
 (Note: It is possible that the application from Column B may be used more than once.)
Answer: 1. F ✓; 2. E ✓; 3. D ✓; 4. A ✓
5. Which shortcut key can you use to carry out the following actions?
 - a. Rename a file (1)
Answer: Function key F2 ✓
 - b. Copy a folder (1)
Answer: Ctrl+C ✓
 - c. Paste a document onto the desktop. (1)
Answer: Ctrl+V ✓

TOTAL: [16]

TERM 2

CHAPTER
4

FILE MANAGEMENT

CHAPTER OVERVIEW

Unit 4.1 File management skills

Unit 4.2 File compression

Unit 4.3 Print management

The following learning outcomes are covered by this chapter:

- Create shortcuts.
- Use the Snipping Tool and Print Screen to take screenshots.
- Compress and decompress files and folders
- Add new peripherals, such as a printer and mouse.
- Change the default printer.
- Explain what queue management is.
- Print files.

GRADE: 10

DATE:

TEACHING TIME: 2 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Desktop computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader
- Printer

GRADE: 10

DATE:

TEACHING TIME: 2 hours

Vocabulary

Learners will need to understand the following terms for this chapter:

- **Hotkeys:** A keyboard shortcut used to perform a menu function or other common computer functions.
- **Wizard:** A piece of software that simplifies complicated tasks.
- **Compressed files:** Reducing a size of a file.
- **Archive file:** A file made up by one or more files that are compressed.
- **Zip:** Compressing one or more items into a smaller archive.
- **Decompressing:** Restoring a compressed file back to its original form.
- **Print management:** Managing and monitoring various print tasks.
- **Peripheral:** Any external devices that provide input and output for the computer.
- **Default printer:** A preselected option adopted by a computer program.

INTEGRATION

Much of the practical part of this chapter can be integrated with the first two chapters in the Practical textbook.

INTRODUCTION

In this section, learners will learn how to create shortcuts, take screenshots, as well as how to compress and decompress files.

Print management is the managing and monitoring of various print tasks. Before learning how to print, they will learn how to add a new peripheral device, as well as how to do basic printing and apply printer queue management.

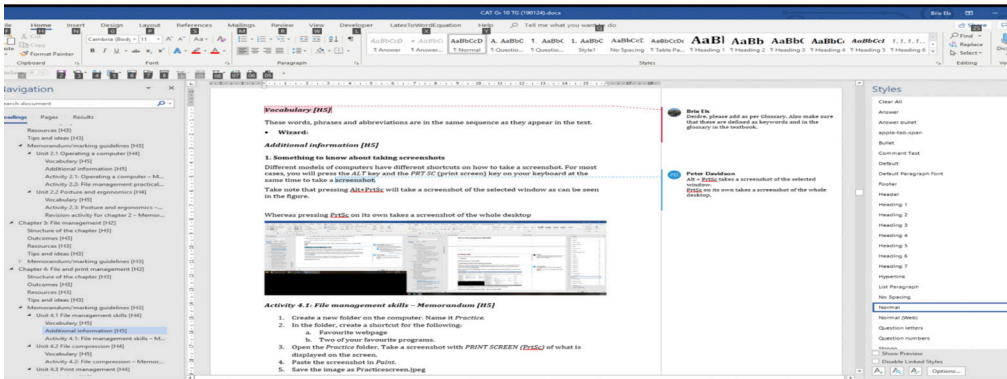
NOTE: GUIDED ACTIVITIES

There are a number of guided activities in this chapter. These should be done with the teacher demonstrating and the learners following what the teacher has shown. If network policy restrictions prevent the learners from doing the activities themselves, then the teacher should do a demonstration

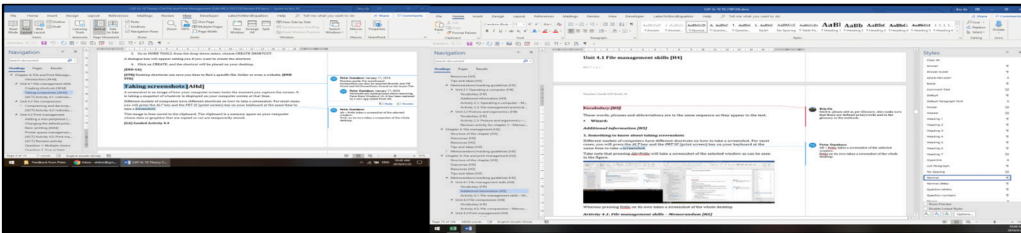
SOMETHING TO KNOW ABOUT TAKING SCREENSHOTS

Different models of computers have different shortcuts for taking a screenshot. In most cases, you will press the **ALT** key and the **PRT SC** (print screen) key on your keyboard at the same time to take a screenshot.

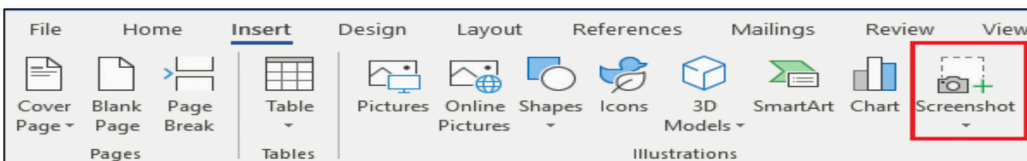
Take note that pressing **Alt+PrtSc** will take a screenshot of the selected window as can be seen in the figure.



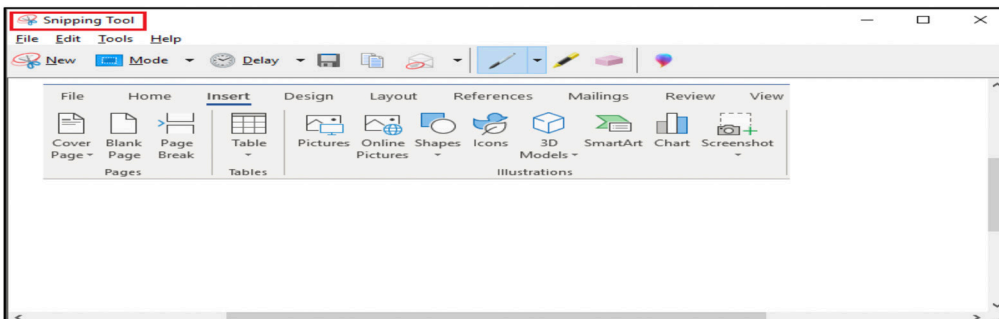
Whereas pressing **PrtSc** on its own takes a screenshot of the whole desktop.



Screenshots can also be inserted directly into MS Word and MS PowerPoint by clicking on the button on the **Insert** Tab.



Screenshots can also be made by using the snipping tool and then pasting it in Paint, and copying it over to Word. Screenshots can also be copied from the snipping tool and pasted into another application.



Activity 4.1

Memorandum

1. Create a new folder on the computer. Name it *Practice*.
2. In the folder, create a shortcut for the following:
 - a. Favourite document in *My Documents* folder
 - b. Two of your favourite programs.
3. Open the *Practice* folder. Take a screenshot with *Print Screen (PrtSc)* of what is displayed on the screen.
4. Paste the screenshot in *Paint*.
5. Save the image as *Practicescreen.jpeg*
6. Move this image to the *Practice* folder.

Assessment tool

The following checklist can be used to check if the learner followed the correct steps.

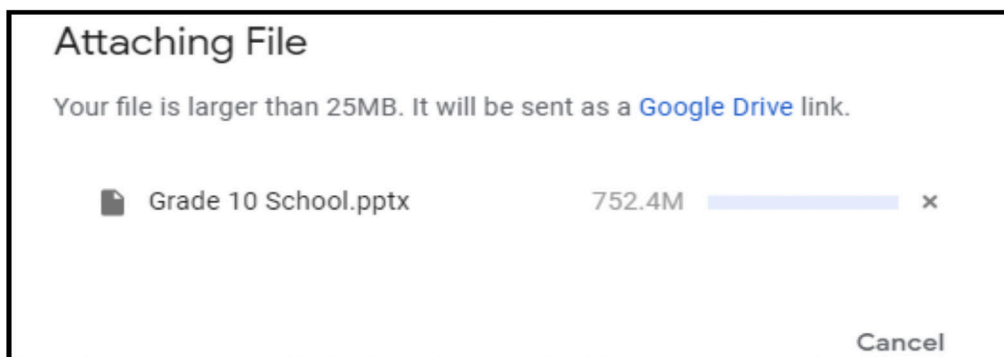
CRITERIA	YES/NO
Did the learner create a new folder with the correct folder name?	
Did the learner create the correct shortcuts?	
Did the learner take a screenshot of the open <i>Practice</i> folder?	
Did the learner paste the screenshot in <i>Paint</i> ?	
Did the learner save the image with the correct file name?	
Did the learner move the image to the <i>Practice</i> folder?	



Activity 4.2

Memorandum

- 1.1 When sending a file as an email attachment, the email program cannot attach the file to the email. The following message is shown, but you do not want to send it using Google Drive.



- a. Briefly explain how you can use email to send a file as an email attachment, even though it is such a large file.
Answer: 1.1 The file can be compressed to reduce the file size. The original file can be uploaded to the cloud, e.g. Google Drive, and the link to file shared in the email.
- 1.2 What is the file extension of the answer in (a)?
Answer: .zip
- 1.3 After sending the file to the recipient, how does the recipient have access to the file?
Answer: The recipient will receive the file like in a normal email. However, for the recipient to access the file, they need to decompress the folder. This is basically taking the zipped folder back into its original form.



Activity 4.3

Memorandum

Answer the following questions that are based on the scenario below.

Mimi has her own business and wants to buy a new printer, which she needs to connect to her desktop. She is going to use her printer to print quotations and invoices for her clients. She also needs to connect the printer to the desktop in the office.

1. Should Mimi buy a laser or ink tank printer? Motivate your answer. Consider the cost of the printer, as well as the printing cost.

Answer: Learners could motivate either printer. The following is a sample of the type of answer expected: Mimi should buy a laser printer. She will not need to print in colour for quotations and invoices. The laser printer's initial cost might be higher, but printing cost is cheaper. Many pages can be printed before replacing the toner cartridge.

2. Mimi's focus is on the quality of the print-outs rather than cost. Which printer should she buy?

Answer: The laser printer.

3. After she has bought her printer, briefly explain to Mimi how she should connect this printer to the desktop.

Answer: She should do the following:

1. Connect the printer to the desktop. Switch both the computer and the printer on.
2. Click on devices and printers in the control panel. Add a new printer.
3. Follow the instructions in the new printer wizard.

4. Explain why nothing is printing after Mimi has connected the printer to the desktop.

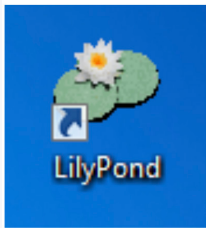
Answer:

The printer software (driver) might not be installed correctly.

The printer might not be switched on.

The cable connecting the printer to the desktop might be faulty.

1. The following icon appears on the desktop of a computer:



2. a. How can you tell that the icon is a shortcut? (1)

Answer: The arrow above the application name indicates this is a shortcut. ✓

b. What is the benefit of using a shortcut to an application?

Answer: It is a quicker way to launch an application than using the Start Menu. ✓

c. How would you launch the application using the shortcut? (1)

Answer: Double-click the icon. ✓

d. What is the name of the application to which the shortcut refers? (1)

Answer: LilyPond ✓

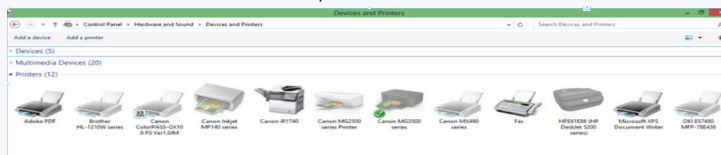
3. a. What is the name of the Windows 10 tool that can be used to create a screenshot? (1)

Answer: The Snipping tool ✓

b. What is the difference between pressing PrtSc and pressing Alt together with PrtSc (Alt + PrtSc)? (2)

Answer: PrtSc takes a screenshot of the full screen ("window") ✓ whereas Alt+PrtSc takes a screenshot of the selected (active) window only. ✓

4. The screenshot below shows the printers which are installed on Thalia's computer.



a. What is the name of the default printer? (1)

Answer: The one which has a tick next to it. ✓

b. Describe briefly how you would make it the default printer. (2)

Answer: Right-click on the icon of printer that you want as the default ✓ and choose "Set as default" from the context-sensitive menu that appears. ✓

5. The screenshot below shows a list of documents waiting to be printed.

Document Name	Status	Owner	Pages	Size	Submitted	Port
Microsoft Word - 25stories	Spooling	Reinet B...	N/A		15:14:47 2019/07...	
Microsoft Word - 2DocDoco		Reinet B...	1	585 KB	15:14:47 2019/07...	
Microsoft Word - 2forRe... Error - Pr...		Reinet B...	1	209 KB	15:14:47 2019/07...	WSD-b416c0c...

3 document(s) in queue

a. What is the name given to this list of documents? (1)

Answer: Printer queue ✓

b. You have decided that you no longer want to print the Microsoft Word document. Describe briefly how you would remove this document from the list. (2)

Answer: Right-click on the document in the list ✓ and select "Cancel" ✓. You could do the same using the "Document" menu.

c. You need special paper to print the full-page photo. You are only able to purchase the special paper the next day. Describe briefly what you would do to temporarily prevent the photo from printing. (2)

Answer: Right-click (or use the "Document" menu) ✓ and select "Pause". ✓

6. Samiya, a Grade 10 learner, has a folder called *Grade 9*, which is taking up a lot of space on her computer. How could she reduce the amount of space the folder takes up without deleting any of the files inside the folder? (2)

Answer: Compress (zip) the folder. ✓ Right-click the folder and select "Send ToCompressed (zip) folder". ✓

TOTAL: [17]

HARDWARE

CHAPTER 5

CHAPTER OVERVIEW

- Unit 5.1 What is hardware?
- Unit 5.2 Input devices
- Unit 5.3 Output devices
- Unit 5.4 Storage devices
- Unit 5.5 Green computing

The following learning outcomes are covered by this chapter:

- Define and describe what hardware is.
- List the various types of ports and connectors.
- Define input.
- Discuss the types of input.
- Discuss the common input devices used.
- Define output.
- Identify the different types of output.
- Discuss the common output devices used.
- Define storage.
- Identify the different storage devices used.
- Use different methods to connect peripherals.
- Understand the importance green computing and recycling.

GRADE: 10

DATE:

TEACHING TIME: 2 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Desktop computer with Windows 10
- Internet
- QR reader
- Computer and devices that can be shown as examples

GRADE: 10

DATE:

TEACHING TIME: 3 hours

Vocabulary

Learners will need to understand the following terms for this chapter:

- **Port:** Allows computers to connect with different types of hardware such as a keyboard, mouse or monitor.
- **Wireless technology:** A technology that uses radio waves to send and receive data.
- **Bluetooth technology:** Wireless technology that works with radio waves instead of wires or cables.
- **USB:** The most common type of computer port used in today's computers.
- **Hardware:** All the physical parts or components of a computer, such as the monitor, keyboard, computer data storage, graphics card, sound card and motherboard.
- **Software:** The instructions that can be stored and run by hardware.
- **Connector:** A simple device that physically links, couples, or connects two things together.
- **Input devices:** Any hardware devices that allow you to enter data into the computer or interact with the computer.
- **User command:** Special codes that the user enters so that the computer can perform a task.
- **Running programs:** Instructions that tell a computer how to do a task.
- **User responses:** The answers the user gives to a computer's questions, such as asking the user to name a file before saving it.
- **LCD:** Liquid crystal display is the technology used for displays in notebook and other smaller computers.
- **Cursor:** A visible and moving pointer that the user controls with a mouse, touchpad or similar input device.
- **Output devices:** Used to send information from a computer to another device or to you as the user.
- **Soft copy:** Text or graphics shown in an electronic format, for example on a computer screen (monitor).
- **Hard copy:** Text or graphics that are printed out on paper.
- **Monitor:** The main output device of a computer as it represents data in a visual form, such as text or pictures.
- **Pixel:** A tiny dot of colour on a monitor, and the more pixels there are, the more detailed the picture will look.
- **HD:** High definition.
- **Inkjet printer:** A printer that forms the characters with minute jets of ink.
- **Laser printer:** A printer that uses non-impact (keys don't strike the paper) photocopier technology.
- **3D printer:** It works by transforming a digital file into a 3D model by adding one layer of material at a time.
- **DPI:** Dots per inch is a measurement of printer resolution indicating how many ink dots the printer can place in one square inch; the higher the DPI the sharper the image.

GRADE: 10

DATE:

TEACHING TIME: 3 hours

Vocabulary...continued

Learners will need to understand the following terms for this chapter:

- **Storage media:** Anything that holds information. It refers to the digital medium that is used in the storage devices, for example magnetic disks, cards, barcodes, etc.
- **Storage device:** A device that uses the storage medium and provides a physical interface such as a CD/DVD player, an external hard drive, a USB flash drive, etc.
- **Prototype:** A first or preliminary version of a device from which other forms are developed.
- **Peripheral:** External device that is connected to a computer.
- **Mean time to failure (MTTF):** The average time it takes a hard drive to break.
- **Greenhouse gases:** A gas that absorbs infrared radiation and radiates heat in all directions.
- **Portability:** The ability to be easily carried or moved.

NOTE

The concepts learned in this chapter as well as Chapter 7 (Software) are intended as a first introduction. The background of learners will vary from school to school and the teacher should assess the prior knowledge of the learners before starting this work.

If learners have a good background knowledge this chapter can be covered quite quickly. Learners with little experience of computers should not be overwhelmed by too much detail.

If you do not have examples of the hardware discussed available in the school, make use of pictures and/or videos to illustrate to the learner. A number of resources are mentioned earlier in this Teacher Guide.

Activity 5.1

Memorandum

1. Define the concept hardware.
Answer: Hardware refers to all the physical parts or components of a computer, such as the monitor.
2. Match the port in Column A with the correct device in Column B.
Answer: 1. B; 2. A; 3. D; 4. E; 5. B



UNIT

5.2 Input devices

Activity 5.2

Memorandum

Across

1. A type of wireless technology mouses use.
Answer: radiofrequency
2. Physical component of a computer like a mouse.
Answer: Hardware

Down

1. Which type of keyboard is used to minimise muscle strain.
Answer: ergonomic
2. Used to move the pointer on a screen.
Answer: mouse
3. For entering information such as letters, words, numbers and symbols into the computer.
Answer: keyboard
4. Controls movement of the cursor.
Answer: pointer
5. The standard keyboard.
Answer: qwerty
6. This allows computers to connect with different types of hardware such as a keyboard, mouse or monitor.
Answer: port



Activity 5.3

Memorandum

Lesedi's dad got an inkjet printer for the house; however, it is not working and no printing is taking place. It seems that there is no communication between the printer and the computer.

Answer the following questions regarding the scenario.

1. Which connector do printers usually have?

Answer: USB.

2. Motivate why a printer is an output device.

Answer: A printer produces information in the form of a printed sheet. Basically, it converts input data into output (information).

3. Explain one possible reason why the printer and computer are not communicating.

Answer: Any of the following: The USB cable is not connected to the PC properly. Printer software is not installed properly. The printer might not be connected to the mains supply. The printer might not be switched on.



WHAT IS MEAN TIME TO FAILURE?

Generally speaking, a hard drive has an average lifespan of three to five years, depending on the brand, size and type of environment that it is used in as well as how well you take care of it. This is measured by the **mean time to failure (MTTF)**, which refers to the average time it takes a hard drive to break.

Activity 5.4

Memorandum

1. What is the smallest unit of storage capacity?
Answer: Bit
2. Which one of the following options describes the type of devices used to keep an electronic record of work done on a computer?
Answer: D
3. Generally speaking, a hard drive has an average lifespan of three to five years, depending on the brand, size and type of environment.
 - a. Do you agree with this statement? Motivate your answer.
Answer: This is not true. Modern hard drives have a lifespan of about 10 years provided they are handled carefully.
 - b. List two ways that indicate a hard disk is starting to fail.
Answer: Any two of the following:
 - Your computer is slowing down.
 - There is a clicking or grinding sound.
 - Your computer freezes frequently.
 - c. Briefly explain why an internal hard disk is more prone to damage compared to a portable hard disk.
Answer: An internal HDD is made up of small parts. Removing them and moving them around from one computer to another can cause it to get damaged. Portable hard disks have a protective casing to protect them from accidental knocks.

Activity 5.5

Memorandum

Do this activity on your own.

1. Explain the aim of green computing.

Answer: The goal of green computing is to reduce the ecological effect of computers by making computers more efficient and making sure the computers are built from biodegradable materials.

2. Describe three ways in which green computing can be achieved. Use ONLY examples related to hardware and software.

Answer:

- *More efficient software requires less processing and storage space, which requires less electricity.*
- *Data stored on solid state drives use considerably less electricity than data on disk drives.*
- *Improved CPU architecture allows less electricity to create more power.*



CONSOLIDATION

Chapter 5: Hardware

1. Match the ports in Column A to the connectors in Column B. (4)
Answer: 1. D ✓; 2. A ✓; 3. D ✓; 4. C ✓
2. Write down the missing numbers:
 a. 1 MB = _____ KB (1)
Answer: 1 024 KB ✓
 b. 1 TB = _____ MB (1)
Answer: 1 048 576 MB ✓
3. In some laptops internal hard disk drives are being replaced by SSDs.
 a. What do the letters SSD stand for? (1)
Answer: Solid State Drive ✓
 b. Mention one advantage of using an SSD. (1)
Answer: SSDs do not have moving internal parts and are not easily damaged ✓
 c. Mention one disadvantage of using an SSD. (1)
Answer: Any ONE ✓
They have smaller storage capacities than HDDs. /
The cost per GB of storage is currently higher than HDDs.
4. Mr Chotia has a small work-from-home business. He has a computer that he uses to do basic accounting and keeps a record of appointments with clients. He also needs to print out quotations and receipts.
 a. Mr Chotia has purchased a desktop computer. Other than a printer, list three hardware devices that are essential for Mr Chotia to be able to use the computer. (3)
Answer: Keyboard ✓, Mouse ✓, Monitor ✓
 b. Which of the devices mentioned in (a) above can be used as both an input and as an output device? (1)
Answer: Any one ✓
The monitor if it is a touch screen monitor.
The mouse may be a scanner mouse that is both a pointing device and a scanner.
 c. Mr Chotia has been advised to purchase a laser printer. Comment on this advice. (2)
Answer:
Printing out quotations and receipts does not require high quality colour printing. ✓
The running costs of a laser printer are cheaper than other types of printer. ✓
 d. Mr Chotia loads a file with a customer receipt into a word processor. He then prints out the receipt. Which of the above (file or print-out) would be referred to as a hard copy? (1)
Answer: The print-out ✓
 e. Mention two ways in which Mr Chotia could connect the printer to the computer. Which method would you recommend? (4)
Answer:
He could use a cable ✓ or he could use a wireless connection. ✓
For the recommendation a number of answers are possible:
Use the cable connection ✓ (this mark is only awarded if a valid reason follows) as the printer is going to be connected to a desktop that will not be moved around. ✓
OR
He should use wireless, ✓ since he might decide to connect the printer to another device such as a laptop or tablet. ✓
 f. Mr Chotia is an environmentally aware member of the community. Mention two ways in which he can save paper in his business (2)
Any TWO ✓✓
He should save paper by sending documents electronically.
He should print on both sides of the paper when possible.
Used paper should not be thrown away but rather recycled. (2)

TOTAL: [22]

TERM 2

CHAPTER
6

EXTENDED HARDWARE CONCEPTS

CHAPTER OVERVIEW

- Unit 6.1 More about input devices
- Unit 6.2 More about output devices
- Unit 6.3 Storage media and devices
- Unit 6.4 Processing devices
- Unit 6.5 Caring for your PC and storage devices

The following learning outcomes are covered by this chapter:

- Describe the different input devices.
- Describe the different output devices.
- Explain the different storage media and devices.
- Explain what a processing device is.
- Describe the different processing devices.

GRADE: 10

DATE:

TEACHING TIME: 3,5 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Desktop computer with Windows 10
- Internet
- QR reader
- Computer and devices that can be shown as examples

GRADE: 10

DATE:

TEACHING TIME: 3,5 hours

Vocabulary

Learners will need to understand the following terms for this chapter:

- **Cursor:** A visible and moving pointer that the user controls with a mouse, touchpad, or similar input device.
- **Memory card:** A type of storage medium.
- **RFID (Radio Frequency Identification):** A form of wireless communication that uses radio waves to automatically identify and track tags attached to objects.
- **Digitise:** To convert pictures or sound into a digital form that can be processed by a computer.
- **Skype:** A computer program that can be used to make free voice calls over the internet to anyone else who is also using Skype.
- **Surround sound:** A system of stereophony involving three or more speakers surrounding the listener so as to give a more realistic effect.
- **Artificial Intelligence (AI):** The ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings.
- **CPU:** A processor responsible for receiving and carrying out computer instructions.
- **Antivirus program:** A software program designed to protect your computer against viruses.
- **Portability:** The ability to be easily carried or moved.

INTRODUCTION

Hardware devices can also come in the form of pointing devices, scanning and reading devices, microphones and many more. In this chapter, learners will learn more about the other types of hardware devices, their features and uses.

Activity 6.1

Memorandum

1. Touchscreens enable users to use their fingers to press keys directly on the screen.
 - a. Give two examples of devices that use touch-screen technology.
Answer: Smartphones, Tablets, Laptops
 - b. What device can be used on a touch screen to draw or write on it? Also, give a brief description of this device.
Answer: A stylus. This is a small and thin pen-like device that is used to draw, write or select an object on a flat surface, such as the screen.
2. Briefly explain the function of scanning devices.
Answer: Scanning devices are commonly used in offices, schools and even homes to scan documents such as photographs and pages of text and convert it into a digital format.
3. Barcode readers are used in a variety of environments.
 - a. List any two instances where a barcode reader can be used.
Answer: Shops, warehouses, libraries
 - b. Explain briefly how a barcode reader works.
Answer: This is an electronic device that is used to decode and capture information in a barcode.
4. Video input devices measure a person's unique physical characteristic, with the most commonly used biometric being fingerprints.
 - a. Which type of reader uses the patterns found in the coloured ring of tissue that is found around the pupil to identify the user?
Answer: Iris scanner
 - b. List two places where this device is used.
Answer: It is used as a security in some banks, smartphones, airports etc.
 - c. What other scanner uses the eye as a form of identification?
Answer: Retina scanner
 - d. Biometric devices are excellent in verifying a person's identity. List two advantages and two disadvantages.
Answer: This can be used as a guideline.
Advantages:
 - Excellent security.
 - Cannot be lost or forgotten.*Disadvantages:*
 - Not always 100% accurate.
 - Other factors such as the environment can affect the measurements.
 - Illness or injury might prevent the person's identity from being verified correctly.

UNIT

6.2 Input devices

Activity 5.2

Memorandum

Match the terms in Column A with the descriptions in Column B.

Answer: 1. D; 2. C; 3. E; 4. A; 5. B



For questions 1 and 2, write down the number of the question and the letter that matches the correct answer, e.g. 9 C.

1. Which of the following devices is MOST likely to have a touch pad? (1)
Answer: C (Laptop computer) ✓
2. Which of the following is NOT a pointing device? (1)
Answer: C (Digital camera)
3. Petrus works in the office of a large company. One of his responsibilities is to scan many documents and store them in digital format on the company server. Some of the documents can be up to 20 pages long. Should the company use a stand-alone flatbed scanner, or a scanner included with a multi-function printer? Give a reason for your choice. (3)
Answer: A scanner included with a multi-function printer would be best. ✓ The printer has a document feeder which will allow all 20 pages to be scanned one after the other, ✓ whereas with a flatbed scanner the pages have to be placed on the scanner one by one. ✓
4. Many people have a small RFID chip implanted in their pets. The chip stores a unique identity number. If the pet goes astray and is found by someone else, it can be taken to a veterinary practice where the vet can use an RFID scanner to check who owns the pet.
 - a. What do the letters RFID stand for? (1)
Answer: Radio Frequency Identification ✓
 - b. Mention one other use for RFID chips. (1)
Answer: Any ONE: ✓
In clothing/music stores to prevent shoplifting.
Tracking motor cars along assembly lines.
Long distance running races (marathons), etc.
5.
 - a. What is the function of the motherboard? (2)
Answer: The motherboard is a large printed circuit board that connects all the parts of the computer, ✓ such as the CPU and RAM. ✓
 - b. Explain what the function of the CPU is. (2)
Answer: The CPU is responsible for receiving and carrying out instructions. ✓ It has millions of transistors that can either be on or off. ✓
6. List two devices that use memory cards as additional storage. (2)
Answer: Any TWO: ✓✓
Digital cameras, video cameras, smartphones, tablets
7. CDs, DVDs and Blu-Ray discs can all be used as storage media.
 - a. Which of the above storage media has the lowest capacity? (1)
Answer: CDs
 - b. Which of the above storage media would be most suitable to distribute a 3D movie? (1)
Answer: Blu-Ray
8. In a number of places in this textbook, you will find images like the one below that take you to a website or resource when scanned.
 - a. This image looks like a barcode in two dimensions. What is it called? (1)
Answer: QR code (Quick Response code) ✓
 - b. What software do you need to scan the image? (1)
Answer: QR code reader or use the Camera ✓
 - c. Use a smartphone to scan the image. Write down the URL of the website that it opens. If you do not have a smartphone, ask a friend or your teacher to help you. (1)
Answer: lead.me/pdf_code ✓



CONSOLIDATION

Chapter 6: Extended hardware concepts...continued

9. School of Technology has installed a fingerprint scanner. Staff have to use the scanner when they arrive at school and again when they leave. The scanner software is used to keep records on staff attendance.
- a. The fingerprint scanner is a biometric input device. Explain briefly what is meant by biometric input. (2)
 Answer: *Biometric input is a personal characteristic ✓ that is unique, ✓ such as a fingerprint.*
- b. Name one other type of biometric scanner (1)
 Answer: *Any ONE: ✓
 Iris scanner, retina scanner, facial recognition*
10. Faizal has bought a portable speaker from an online shopping site.



The following specifications were found on the website:

- Speaker Size: 3 inch
- Speaker output: 9W, 40hm
- Battery Capacity: 1000mAh
- Frequency response: 100-20kHz
- Bluetooth version: V2.1
- Supports up to 32 GB on a USB and SD card
- AUX-in port. Rechargeable lithium battery

- a. Faizal wants to use the speaker to play music that is stored on his smartphone. How would he connect his smartphone to the speaker? (1)
 Answer: *He would connect using Bluetooth ✓*
- b. Faizal wants to play music without connecting to his smartphone. Which two storage media could he use? (2)
 Answer: *Flash drive (USB) ✓ or SD card ✓*

TOTAL: [24]

TERM 2

CHAPTER
7

COMPUTER SOFTWARE

CHAPTER OVERVIEW

Unit 7.1 Basic software concepts

Unit 7.2 Operating system

Unit 7.3 Being more secure

The following learning outcomes are covered by this chapter:

- Describe what software is.
- Describe the types of software.
- Describe the differences, advantages and disadvantages of each type of software.
- Describe what an operating system is and give examples thereof.
- Describe what GUI is and give examples of some of the elements.
- Explain basic PC security.

GRADE: 10

DATE:

TEACHING TIME: 2 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Desktop computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader

GRADE: 10

DATE:

TEACHING TIME: 3 hours

Vocabulary

Learners will need to understand the following terms for this chapter:

- **Application software:** Allows you to perform tasks such as playing games, creating slide show presentations, creating spreadsheets and so on.
- **Applications (apps):** A type of computer software designed to perform specific tasks or a group of coordinated functions, or activities, for the benefit of the user.
- **System software:** This includes the operating system and other software that controls and manages the operation of the computer.
- **Cloud:** A service provided over a network that provides massive, distributed storage and processing power, and that can be accessed by any internet-connected device running a web browser.
- **Accessory:** A device added to a computer that performs an additional feature, but that is not required.
- **Wireless access point:** A wireless receiver that enables a user to connect wirelessly to a network or the internet.
- **Taskbar:** The bar, at the bottom of the screen, that allows you to locate and launch programs through the Start button, or view any program that is currently open.
- **Platform:** The overall standard of a computer's hardware or software.
- **Proprietary:** Relates to an owner or ownership.
- **Tiles:** A new feature consisting of icons on the Windows Start screen introduced by Microsoft.
- **Authentication process:** A process of identifying a person to make sure that they are who they say they are.
- **Portability:** The ability to be easily carried or moved.

INTRODUCTION

In Chapter 1, learners learned that software is a set of programs or instructions that tells the computer and its hardware how to perform specific tasks. Without software, most computers would be useless, for example without word processing software it will be difficult to type out assignments.

In this chapter, we will look at the basic software concepts, different software components and different types of software.

Activity 7.1

Memorandum

Complete this activity in your own words.

1. What is a platform?

Answer: A platform is the combination of hardware and software required to run an application.

2. Match the following software in Column A with the correct example in Column B.

Answer: 1. B; 2. D; 3. A; 4. C



Activity 7.2

Memorandum

Are the following statements true or false? If False, provide the correct answer.

1. The operating system is a type of hardware.
Answer: False, an operating system is software that manages the computer's memory, processes, and all of its software and hardware.
2. Modern operating systems use a graphical user interface (GUI).
Answer: True
3. An icon gives you quick access to frequently used commands.
Answer: True
4. Which one of the following systems is an open-source operating system?
Answer: a



Computer passwords are used to help identify the correct user and also prevent unauthorised use. A password consists of a string of secret characters, numbers, or words that are used to verify the identity of a user during the authentication process. It is used together with a username, and is designed to be known only to the user and allow that user to gain access to a device, application or website.

You can create a password in Windows 10 by doing the following:

1. Click on the Start button.
2. Type in Control Panel.
3. Open the Control Panel, and click on User Accounts.
4. Open User Accounts and choose Make changes to accounts.
5. Click on Add a new user in PC settings.
6. Choose Make changes to my account in PC settings.
7. Click or tap Sign-in options from the left.
8. In the Password area, click on the Add button.
9. Enter the new password correctly in both text fields, where required.
10. In the Password Hint field, enter something that will help you remember the password. Click Next.
11. Click on Finish to complete the password setup.

Activity 7.3**Memorandum**

Read the following scenario and answer the questions that follow:

The Mo-ho family used a desktop computer connected to a printer, keyboard and wireless mouse at home for some time. Mrs Mo-ho has now started her own catering business, which she runs from home and requires that she interact with foreign clients.

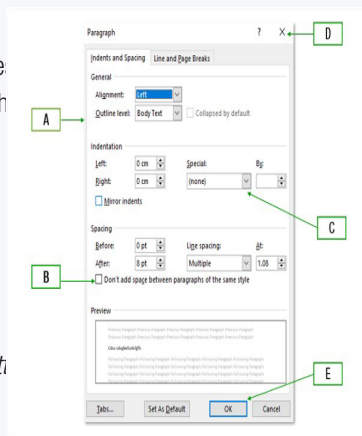
1. List one essential output device, other than a printer, that she will need to perform her duties.
Answer: Monitor
2. List one essential input device, other than a keyboard and mouse, that she will need to perform her duties.
Answer: Webcam
3. Mrs Mo-ho stores sensitive sales information on her computer. She uses a login ID, with her numeric birth date (2907) as the password to access her computer. However, she is scared that someone might crack her password and gain access to her computer.
 - a. State two ways in which she could strength her password.
Answer: Any two of the following:
 - By not using obvious personal information such as a birth date.
 - By making it longer.
 - By combining birth dates with other characters.
 - By using a mix of letters, numbers and special characters.
 - b. List one example of an authentication device, which could be used as part of her computer system to gain access to her computer, as well as give her an extra layer of security.
Answer: A biometric device such as fingerprint scanner.

CONSOLIDATION

Chapter 7: Computer software

1. Explain briefly what is meant by the term “software”. (2)
Answer: A set of programs or instructions ✓ that tells the computer and its hardware how to perform specific tasks. ✓

2. The image shows a box that you will often use when formatting paragraphs in the Microsoft Word process. Write down the letter of the label that matches each of the following components:



- a. Dialog box
Answer: A ✓
- b. Close button
Answer: D ✓
- c. Option button
Answer: E ✓ (This is also called a command button)
- d. Check box
Answer: B ✓
- e. Combo box
Answer: C ✓

3. What do the letters GUI stand for? (1)
Answer: Graphical User Interface ✓

4. What is the function of a GUI? (2)

5. Johan often uses Microsoft Paint, the Calculator application and the Snipping Tool to assist him with homework tasks. Which of the applications would he most likely use to do the following:

- a. Resize a photograph taken with his smartphone camera.
Answer: Paint ✓
- 5.2 Take a screen capture of an image found on a website for a project.
Answer: Snipping Tool ✓
- 5.3 Convert a temperature in degrees Fahrenheit to degrees Celcius.
Answer: Calculator ✓

6. Explain the difference between application software and system software. (4)
Answer: Application software allows you to perform specific tasks ✓ such as play games, create spreadsheets etc. ✓ System software is software that manages and controls the operation of the computer, ✓ such as the operating system. ✓

7. Match the number of the application software type in Column A with the letter of the example in Column B. (4)
Answer: 1. C ✓; 2. F ✓; 3. E ✓; 4. A ✓

8. Mention two functions of an operating system. (2)
Answer: The OS manages the software and hardware of the computers. ✓ The OS coordinates the access of programs to the CPU, storage and memory. ✓

9. Give the name of an operating system that is used for smartphones. (1)
Answer: Android, iOS, etc. ✓

10. Rate each of the following passwords as “weak”, “strong” or “very strong”:
 - a. N@t1onal2o19
Answer: Strong ✓
 - b. Long2Montagu#Electric)Lego
Answer: Very strong ✓
 - c. SamHolly (your dogs' names)
Answer: Weak ✓

11. Mention two types of access control systems that are found on smartphones other than a password or pin. (2)
Answer: Screen lock pattern ✓; Fingerprint (or other biometric) scanner ✓

TOTAL: [29]

TERM 2

CHAPTER
8

EXTENDED SOFTWARE CONCEPTS

CHAPTER OVERVIEW

- Unit 8.1 Types of software
- Unit 8.2 System software
- Unit 8.3 Licensing and licensing agreements

The following learning outcomes are covered by this chapter:

- Describe system software in more detail.
- Identify the different types of system software.
- Explain the advantages and disadvantages of the different types of system software.
- Describe drivers and utilities.
- Understand the importance of computer security and piracy of software..



GRADE:

10

DATE:

TEACHING TIME:

3 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Desktop computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader
- Computer and devices that can be shown as examples

Vocabulary

Learners will need to understand the following terms for this chapter:

- **Shareware:** Software that allows a user to try all or part of the program for free before buying it.
- **Malware:** Malicious software that is designed to change your settings, delete software, cause errors, watch browsing habits, or open a computer to attacks.
- **Open-source software:** Software source code that is freely distributed.
- **Configure:** Change the settings of a device or program. The user indicates how it should be used.
- **Compress:** To make something (a file or files) smaller.
- **Decompress:** Restoring a compressed file back to its original form.
- **Portability:** The ability to be easily carried or moved.

INTRODUCTION

We have already looked at the basics of software and the different types of software you can get. Remember, without the correct system software, the application software and programs will not function correctly on a computer.

In this section, we will look at software in a bit more depth.

ADDITIONAL INFORMATION: DISK CLEAN-UP PROGRAM

Disk Clean-up is a program that removes unnecessary files and temporary files. This can help speed up the performance of a computer. In order to clean up a computer space, you can do the following:

1. Click on the Start button.
2. Type in Disk Clean-up.
3. Click on Disk Clean-up. It will then show you the suggested files to delete (refer to Figure 8.2 in the learner book).
4. If you agree with the evaluation, click on Clean up system files. (Refer to Figure 8.2 in the learner book.)



Activity 8.1

Memorandum

1. Define the following types of software.

a. Freeware

Answer: Software that is available free of charge, but the user does not have access to the source code.

b. Shareware

Answer: Software that you can download and install and use free of charge for a limited time. If you decide to continue using the software, you will then need to pay a license fee.

c. Open source

Answer: Open source software is software that is free to download and use. You also have access to the source code and are able to modify the software. You can redistribute it provided you do not charge for it.

d. Proprietary software

Answer: Software that is protected by copyright. It cannot be installed without paying a license fee to the software owner. The source code is not made available.

2. Describe how one would go about using proprietary software, without having to spend much money. Motivate your answer.

Answer: (the following serves as a guide):

Look for the cheapest possible licence that provides what you need.

Students can often get a cheaper student version of the software.

Look for software created by smaller developers that is cheaper but as effective as the more expensive mainstream software.



CONSOLIDATION

Chapter 8: Extended software concepts

1. The table below is comparing freeware, shareware and proprietary software. Make a copy of the table in your workbook and fill in the headings as well as the missing information. (12)

TYPE OF SOFTWARE	SHAREWARE ✓	FREWARE ✓	PROPRIETARY ✓
Description	Known as “try before you buy” software	Free to use, but owner retains the rights to the source code ✓	Software that is protected by copyright. It cannot be installed without paying a license fee to the software owner. ✓
Example	BitTorrent, WinZip ✓	Gmail	MS Office, QuickBooks, NOD Antivirus ✓
Advantage	Exposure for developer and user has time to decide whether they really want the software ✓	Free and readily available ✓	Technical support is freely available
Disadvantage	May have some important features disabled until you pay ✓	Can sometimes hide malware ✓	Errors in the software only corrected when the developer releases an update ✓

2. Fairiza purchases a laptop computer that she can use to work on assignments for her course at university. The laptop was supplied with the Windows 10 Home operating system.
- She obtained a copy of Microsoft Office 2016 from a friend and installed it on her laptop. Explain why she should not do this. (2)
 Answer: What she is doing is illegal ✓. She has not paid for a license which entitles her to install and use MS Office ✓
 - If she wishes to continue using Office 2016, what type of licence does she need? (1)
 Answer: She needs a single-user license ✓
 - When she updates Office 2016 with a valid licence, she is asked to acknowledge that she has read the EULA. What does EULA stand for? (1)
 Answer: End User Licence Agreement ✓
 If she cannot afford to purchase a licence from Microsoft, she could install an Open Source office suite.
 - What is open source software? (2)
 Answer: Software that is free to use ✓ and often allows access to the source code ✓
 - Give an example of an Open Source office suite that she could use. (1)
 Answer: Libre Office or Open Office ✓
3. You have purchased a new printer. When you connect the printer to your computer for the first time, you have to install a printer driver that is on a CD provided with the printer.
- What is a driver? (1)
 Answer: It is a program that allows the printer to communicate with the operating system ✓
 - Write down the missing words:
 When you plugged in a new wireless mouse for the first time, the driver was installed automatically by the operating system. This is known as plug and play, or auto configuration. ✓ (2)
 - What is a hot swappable device? (2)
 Answer: A device that can be plugged into or unplugged from the computer ✓ while it is still running. ✓
4. Mention two utility programs that are part of the Windows 10 operating system. (2)
 Answer: Any TWO: ✓✓
 Backup software, compression software, disk clean-up etc.

TOTAL: [26]

TERM 2

CHAPTER
9

INTRODUCTION TO NETWORKS AND NETWORKING CONCEPTS

CHAPTER OVERVIEW

- Unit 9.1 Concepts used in networks
- Unit 9.2 Uses of networks
- Unit 9.3 Social Implications: Networks

The following learning outcomes are covered by this chapter:

- Explain the different concepts used in networks.
- Discuss the aims and objectives of a network.
- Discuss the advantages and disadvantages of networks.
- Identify the social implications that are associated with networks.



GRADE: 10

DATE:

TEACHING TIME: 2 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Desktop computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader
- Computer and devices that can be shown as examples

GRADE: 10

DATE:

TEACHING TIME: 2 hours

Vocabulary

Learners will need to understand the following terms for this chapter:

- **Nodes:** Any active, physical, electronic device attached to a network.
- **Data links:** A method used to connect one location to another in telecommunications to transmit and receive digital information.
- **Home Area Network (HAN):** A very small network that usually covers a single home or home office.
- **Personal Area Network (PAN):** It is like a HAN, but even smaller! It refers to a network built for a single person and contains all the devices connected to this network.
- **Network server:** A computer program or device used to manage network resources.
- **Network administrators:** Someone responsible for the maintenance and operation of a network or server.
- **IP address:** A unique string of numbers separated by full stops that identifies each computer using the Internet Protocol to communicate over a network.
- **Communication channels:** A medium through which a message is sent.
- **Virulent:** Hostile or harmful.
- **Site license:** A software license that allows a user to install a software package in several computers at the same time.
- **Plagiarism:** Taking someone else's work or ideas and passing them on as your own.
- **Portability:** The ability to be easily carried or moved.

INTRODUCTION

In this chapter, learners will learn about networks, the different concepts used in networks, and the advantages and disadvantages of networks. They will also learn how to use networks in an ethical and correct way.

WHAT IS AN IP ADDRESS?

It is like the street address of the place you stay or work at. When someone sends you a letter or wants to deliver a package using this address, you will receive it at that specific address. Similarly, if someone wants to send you an email, data, photos, etc., they need the internet address for your computer.

Every device connected to the internet thus receives a unique IP (short for internet protocol) address. Whenever a message is sent over the internet, it is sent to that device's IP address.

This concept is explained in more detail in Chapter 11.

Activity 9.1

Memorandum

1. Write down the correct answer to the questions below in your book:
 - a. A PAN is a _____.
Answer: B
 - b. The people who can modify and change the network settings are called the _____.
Answer: C



UNIT

9.3

Social implications: Networks



Case Study

This case study should be used to sensitise learners to plagiarism. Many of them will in all likelihood not see it as a problem.

Activity 9.2

Memorandum

This activity is another example where a scenario is used. Answers should be related to the scenario and the context.

Scenario: Miss Furry wants to network the computers and other hardware devices in her office. She shares a printer with three other people. She was told she would need a switch, router and a modem.

1. Define a computer network.

Answer: A computer network is a system of two or more computers that are linked together to share data and information.

2. Answer the following questions with reference to the scenario above:

- a. Give two advantages of creating a network for Miss Furry.

Answer: Any two of the following.

- *Makes communication easier:* People can communicate from all around the world through the network.
- *Information transfer:* Data and information can be easily transferred or copied from the one computer to the other.
- *Access to hardware devices:* In a network, access to a single printer or scanner is easily available to many people at the same time.

- b. List one type of hardware device that she can connect to the network.

Answer: Printer

- c. Is this hardware (your answer for b above) an input or output device? Motivate your answer.

Answer: It is an output device, because it prints the information from the PC for the user to see/provides hard copies of electronic documents.

- d. Briefly explain how Miss Furry can use the network to communicate to others.

Answer: Telecommunication networks can be used to connect people. This can be through emails, video calls on your computer, social networks like WhatsApp or other instant messaging services. Using computer networks makes this possible and allow people from anywhere in the world to communicate with one another.

3. Explain what the internet is.

Answer: The internet is a global area network.

4. In organisation cannot just share software over a network.

- a. Provided that the statement is true. What can an organisation do to share software?

Answer: It is true. They must purchase a network license, otherwise it is illegal.

- b. Briefly give a description of a network license.

Answer: A network license lets more than one user access the software on the server at a time.

- c. Explain what a site license is.

Answer: A legal agreement that lets users install software on a number of computers is called a site license.

1. What is a computer network? (4)
Answer: Two or more computers and other hardware devices that are linked together ✓ through communication channels ✓ to share electronic communications ✓ and resources such as printers with various users ✓

- 2.1 List two advantages to the school of installing a network. (2)
Answer: Any TWO: ✓✓
Sharing of files – access to data files for practical activities
Sharing of expensive resources, such as printers
Access to the internet for educational material
Access to cloud storage

- 2.2 List two disadvantages to the school of installing a network. (2)
Answer: Any TWO: ✓✓
Possible exposure to online crime
Viruses
Privacy and security issues
Network maintenance requires specialised knowledge

3. “The internet is an example of a computer network”. Is this statement True or False? (1)
Answer: True ✓

4. Reinet is doing research for her PAT. She finds an interesting website on the internet. When she prepares her final presentation, she copies large sections of text from the website and pastes them into her presentation.
 - a. Is Reinet allowed to copy sections of text into her presentation and pretend that she wrote it herself? Give a reason for your answer. (2)
Answer: No ✓ .She cannot take someone else’s intellectual property and pretend it is her own. ✓

 - b. Give one word for what Reinet has done. (1)
Answer: Plagiarism ✓

TOTAL: [12]

TYPES OF NETWORKS: PAN/HAN

CHAPTER 10

CHAPTER OVERVIEW

Unit 10.1 PAN/HAN

Unit 10.2 Creating a PAN/HAN

The following learning outcomes are covered by this chapter:

- Discuss the different types of networks.
- Identify the advantages and disadvantages of PAN.
- Distinguish between modem, router and switch.
- Identify the hardware and software required to connect to the internet using a PC.

GRADE: 10

DATE:

TEACHING TIME: 2 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Desktop computer with Windows 10
- Computer
- Mouse
- Internet
- QR reader
- Computer and devices that can be shown as examples

GRADE: 10

DATE:

TEACHING TIME: 2 hours

Vocabulary

Learners will need to understand the following terms for this chapter:

- **WAN (Wide Area Network):** Connects more than one LAN in different places, like cities or buildings, into one big network.
- **HAN (Home Area Network):** A very small network that usually covers a single home.
- **PAN (personal Area Network):** A network built for a single person that contains all the devices connected to this network.
- **Ethernet cables:** A standard network cable.
- **Bluetooth:** Wireless technology that enables communication between other compatible devices.
- **IP address:** A unique string of numbers separated by full stops that identifies each computer using the Internet Protocol to communicate over a network.
- **Modem:** A hardware device that connects a computer or router to a broadband network.
- **ISP:** A company that provides internet access to its subscribers.
- **Prompt:** Text or symbols used to represent the system's readiness to perform the next command.
- **Network adapter (NIC):** A piece of hardware that can be added to a computer, allowing it to connect to a network.
- **Switch:** A hardware device that filters and forwards network packets.
- **Web browser:** A software program to present and explore content on the world wide web.
- **Sim card:** A small chip that is used in cell phones and other mobile devices to store subscriber information.
- **Portability:** The ability to be easily carried or moved.

INTRODUCTION

In this chapter, we will look at PANs and HANs, and how they are created, their advantages and disadvantages, as well as the different network devices required to create a network.

ADDITIONAL INFORMATION: HOW TO SET UP A WI-FI NETWORK

Setting up a wireless router is quite simple. If you have purchased your router from an ISP, you will probably have an internet plan with them, and your router will come with all the things you need to connect to the internet, as well as a subscriber identity module (SIM) card.

UNIT

10.2 Creating a PAN/HAN

Activity 10.1

Memorandum

The Jackson family is a small family made up of four people. The two children, Tristan and Jess, stay upstairs, and the parents have a small work-from-home office. The children always have to go downstairs to print documents, or even use the internet. A friend recommended they set up a network.

1. Differentiate between a PAN and HAN

Answer: They are similar. A HAN is a small network that usually covers a single home and a PAN is a smaller HAN. It refers to a network built for a single person that contains all the devices connected to this network.

2. Briefly explain what a network adapter is.

Answer: A piece of hardware that can be added to a computer, allowing it to connect to a network

3. What type of network is best for this situation so that everyone has access to the internet?

Answer: A HAN. With this type of network, resources such as the internet router can be shared with all users.

4. What three hardware devices are required for this connection?

Answer: Computer, router, network adaptor

5. What is a router? Explain its function.

Answer: A router allocates IP addresses and provides internet connectivity to all devices on the network.

6. Answer the following questions regarding the scenario

- a. What type of network is best suited in this context? Motivate your answer.

Answer: Home Area Network will be better than a Personal Area Network. Devices connecting to the network will be in different parts of the house.

- b. Explain two advantages and disadvantages of the answer you gave in (a)

Answer:

ADVANTAGE	DISADVANTAGES
<i>Accessibility: Allows several users to be connected to the same internet connection.</i>	<i>Internet: Sometimes, if someone is downloading a big file from the internet, this can slow down the internet speed drastically for other users.</i>
<i>Resources: Resources like printers, faxes and files can be shared over the same network.</i>	<i>Costs: Buying all the equipment required, depending on the number of computing devices that must be connected to the home network, could be costly.</i>
<i>More economical: Because several users can make use of the same hardware and internet, costs are reduced.</i>	<i>Security: Sometimes, if your home network is not secure, a person that lives close by can have access to files and folders on your network, so a password is necessary.</i>

1. Explain the difference between HAN and a PAN. (4)

Answer: Personal Area Network: A network built for a single person that contains all the devices connected to this network. ✓ Devices can be connected over a Wi-Fi network, while others might connect using Bluetooth or even USB. ✓

Home Area Network: A very small network that usually covers a single home. ✓ Any device that is connected to this network will be able to share resources for example, the internet, smart appliances, printers, smart meters and even some security systems ✓

2. List one advantage and one disadvantage of a HAN. (2)

Answer: Any advantage ✓ and any disadvantage: ✓

ADVANTAGE	DISADVANTAGES
<i>Accessibility: Allows several users to be connected to the same internet connection.</i>	<i>Internet: Sometimes, if someone is downloading a big file from the internet, this can slow down the internet speed drastically for other users.</i>
<i>Resources: Resources such as printers, faxes and files can be shared over the same network.</i>	<i>Security: Sometimes, if your home network is not secure, a person that lives close by can have access to files and folders on your network, so a password is necessary.</i>
<i>More economical: Because several users can make use of the same hardware and internet, this reduces the costs of these things.</i>	<i>Buying all the equipment required: Depending on the number of computing devices that must be connected to the home network, this could be costly.</i>

3. List one advantage and one disadvantage of a PAN. (2)

Answer: Any advantage ✓ and any disadvantage: ✓

ADVANTAGE	DISADVANTAGES
<i>Space saving: PANs do not require extra wire or space. To connect two devices, for example a wireless mouse and a laptop, all you need is Bluetooth.</i>	<i>Distance: Because there is a limitation of 10 m, this makes it difficult for sharing information and data over long distances.</i>
<i>Easy to use: It is easy to use, and no complicated setup is required.</i>	<i>Costly: PAN only makes use of digital devices, and these types of devices are expensive, for example, laptops, Smartphones, Smartwatches and many more.</i>
<i>Portable: You can move these devices easily as they do not have a whole bunch of wires that come with them.</i>	<i>Slow data transfer: The use of Bluetooth to transfer files has a slow transfer rate compared to other types of networks, such as LANs.</i>
<i>Reliable: This type of network is reliable and stable for the devices within 10 m of the network.</i>	<i>Health issues: In some instances, the use of PAN makes use of microwave signals in digital devices that can have a negative effect on the human brain and body.</i>
<i>Secure: Files and information shared on this network can only be accessed by authorised people.</i>	
<i>Synchronisation: You can synchronise as many computing devices as required where you can download, upload or exchange information between the devices.</i>	

CONSOLIDATION

Chapter 10: Types of networks: PAN/HAN

4. Three common network devices are modems, switches and routers. Match the description of the device to its name. Write down only the name of the device.
- a. Used to connect computers or networks to the internet. (1)
Answer: Modem ✓
- b. Use to organise and route data on and between networks. (1)
Answer: Router ✓
- c. Used to connect many computers on the same network. (1)
Answer: Switch ✓
5. Write down the letter that matches the correct or best answer. Which of the following devices is most likely to have a built-in network adaptor? (1)
Answer: B ✓
6. What communication medium is most likely to be used in a PAN? (1)
Answer: Bluetooth (Wireless) ✓
7. Sifiso has a desktop computer with the Windows 10 operating system installed on it. He has installed on it the Google Chrome browser on his computer. He wishes to connect his computer to the internet. He already has a 24-month contract with Telkom.
- a. Does Sifiso have the correct software to connect to the internet? (1)
Answer: Yes ✓
- b. What additional hardware device, other than his computer, will Sifiso need to connect to the internet? (1)
Answer: A router (or modem) ✓

TOTAL: [15]



TERM 3

CHAPTER
11

THE INTERNET AND WORLD WIDE WEB

CHAPTER OVERVIEW

- Unit 11.1 The internet
- Unit 11.2 The Web
- Unit 11.3 Search engines
- Unit 11.4 Downloads and uploads

The following learning outcomes are covered by this chapter:

- Explain what the internet and world wide web (WWW) are.
- Understand the concepts used in the Web.
- Differentiate between a website and web page.
- Understand what a web address is and the different elements that it consists of.
- Identify the different types of websites.
- Use the web browser.
- Open, close and switch between tabs.
- Use a search engine to browse the internet.
- Understand what uploading and downloading are.

GRADE: 10

DATE:

TEACHING TIME: 2 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Desktop computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader
- Computer and devices that can be shown as examples

GRADE: 10

DATE:

TEACHING TIME: 3 hours

Vocabulary

Learners will need to understand the following terms for this chapter:

- **Communication platforms:** A medium through which a message is channelled to an audience.
- **Online:** When a user, computer or device is connected to the internet.
- **Wi-Fi hotspots:** A location that enables users to connect to a network or the internet with their wireless adapters.
- **Dynamic IP addresses:** An IP address that is not permanent. A dynamic IP is assigned to a node until it's connected to the network; therefore, the same node may have a different IP address every time it reconnects with the network.
- **Website:** A collection of webpages.
- **Interactive:** Software or hardware whose behaviour changes in response to interaction with a human.
- **Browser:** A type of software that lets you browse websites or web pages on the Web.
- **Uniform resource locator (URL):** A standard naming convention for addressing documents that are accessible over the internet.
- **Web server:** A computer or collection of computers used to deliver web pages and other content to multiple users.
- **Hypertext transfer protocol (HTTP):** A set of standards that allow users of the world wide web to exchange information found on web pages.
- **Hypertext mark-up language (HTML):** A type of coding language used on webpages to display text, images and audio visuals.
- **Encode:** To change something into a programming code.
- **Hyperlink:** An icon, graphic, or text in a document that links to another file or object.
- **URL shortener:** An online application that converts a normal URL into a much shorter format.
- **Domain name:** A group of computers and devices on a network that are administered as a unit with common rules and procedures.
- **Navigation buttons:** A set of images or icons that serve as a control point to link the user to sections on a website.
- **Search engine:** A software program used to search for keywords on the internet to find documents or the information that was searched.
- **Downloading:** When your computer or smart device receives a file or data from the internet. In computer networks, download means to receive data from a remote system, typically a server such as a web server, an FTP server, an email server, or other similar systems. This contrasts with uploading, where data is sent to a remote server.
- **Uploading:** When your computer or smart device sends a file or data somewhere on the internet.
- **Portability:** The ability to be easily carried or moved.

INTRODUCTION

The internet has become increasingly important in everyday life for people all over the world. It is the biggest network made up of billions of computers and other computing devices, such as smartphones, tablets, laptops, etc. The internet allows us to communicate with anyone across the world and access almost any type of information we need.

In this chapter, we will look at what the internet and world wide web (WWW) are, the different types of websites, as well as browsers and how to do some basic browsing.

Guided Activity

Guided activities are intended to be done together with the teacher. Learners might not be able to carry out all the steps in the activity, depending on the arrangement of the computer room.

As South Africa only has dynamic IP addresses, your IP address will change every time you connect to the internet.

NOTE

It is not important that CAT learners have a deep understanding of IP addresses. They simply need to understand that they are way of ensuring that traffic over the internet is delivered to the correct place. An analogy is a postal delivery person who uses a street address to find the correct mailbox.



UNIT

11.2 The world wide web

Activity 11.1 Memorandum

1. Briefly explain the difference between a website and a webpage.

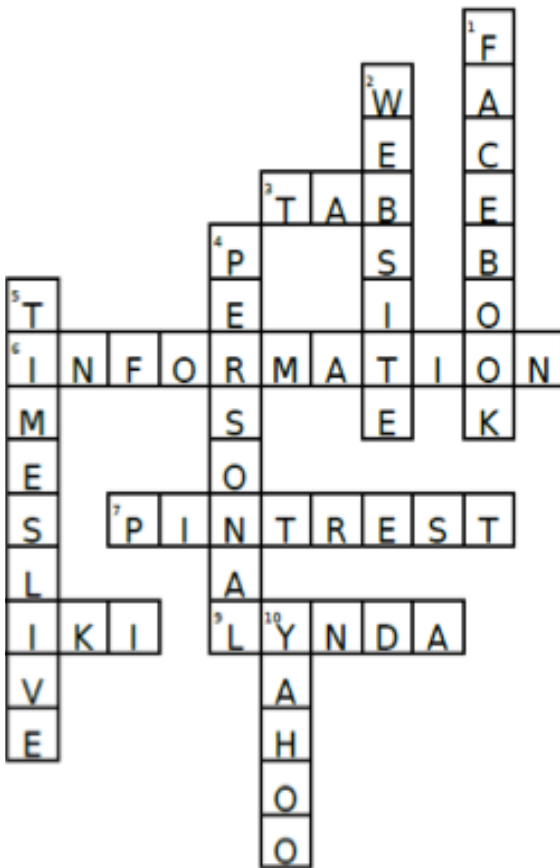
Answer: A web page refers to the text, images, or graphics displayed in a web browser. A web page is generally a single page of content on a website. You can access a web page by entering the URL in the address bar of a web browser.

A website is a collection of web pages that are usually linked by hyperlinks. For example, if you go to the Sunday Times website, it consists of many web pages. On each page, you will find various articles, columns and content that have been grouped into different categories.

2. Complete the crossword puzzle below by answering the questions that follow:

Down:	Across:
1. A social network website.	3. When you open a link, it opens in a new _____.
2. A page made up of text, pictures, audio	6. A website you can check load-shedding schedules.
4. A website about a single person.	7. A website that posts short and informal stories.
5. An example of a news website.	8. A website where collaborators can edit and modify.
10. Brings several types of websites together.	9. An example of an educational website.

Answer:



Guided Activity

Guided activities are intended to be done together with the teacher. Learners might not be able to carry out all the steps in the activity, depending on the arrangement of the computer room.

It is quite possible that learners will not be able to do this activity at their workstations as network policies prohibit them from installing software themselves. If this is the case, the teacher should demonstrate using the data projector. What is important is that learners should see the process of downloading and installing software from the internet.

If you do not wish to keep this application, this would be an opportunity to show learners how to uninstall software.

Activity 11.2**Memorandum**

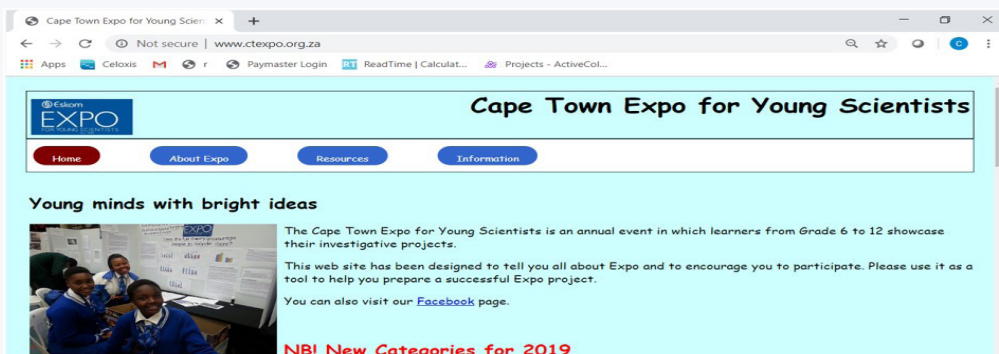
1. Which ONE of the following is not a good technique used to refine an internet/web search?
Answer: A
2. Define the following terms:
 - a. Search engine
Answer: A search engine is a program that is designed to search for information on the world wide web.
 - b. Web application
Answer: An application that runs directly from a website, for example a word processing application.
3. Complete the table below by indicating in Column B whether the action in Column A is downloading or uploading. Only write the number and the answer down.
Answer: 3.1 Uploading; 3.2 Downloading; 3.3 Downloading; 3.4 Downloading



CONSOLIDATION

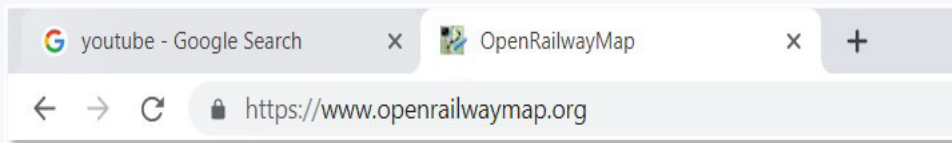
Chapter 11: The internet and world wide web

1. Write down the letter that matches the correct answer:
The letters “http” stand for (1)
Answer: B ✓
2. Which of the following web browsers is installed with Windows 10? (1)
Answer: C ✓
3. Your friend thinks that the internet and the WWW are the same thing. Explain to her what the difference is between them. (4)
*Answer: The internet is a world-wide system of computer networks that are connected to each other. ✓
These networks connect with each other using cables, telephone lines and communication satellites. ✓
When a computer is connected to the internet, it allows a person to access emails, music videos, pictures and any other relevant information. ✓
The world wide web is a collection of documents and other resources that you can browse, or access, through the internet. ✓*
4. Study the screenshot below that shows the home page of a website and use it to answer the questions that follow:



- a. What is the URL of the web page? (1)
Answer: www.ctexpo.org.za ✓
- b. What is the domain name of this web page? (1)
Answer: ctexpo ✓
- c. What is the geographical domain of this web page? Which country is this? (2)
Answer: za ✓ South Africa ✓
- d. Name two other web pages that are part of this website. (2)
*Answer: Any TWO of: ✓ ✓
About Expo, Resources, Information*
- e. Why is the word “Facebook” in blue and underlined? (1)
Answer: This indicates the presence of a hyperlink. ✓ OR It shows that if you click on the word you will be taken to Facebook.
5. For each of the scenarios below, write down the type of website. Choose your answer from blog, weblog, social network, wiki or web application.
 - a. Zanele has a website where she keeps a journal of the exotic foods she enjoys. (1)
Answer: Blog ✓
 - b. Rebogile has created a website that people can use to create a monthly budget and to track their expenses. (1)
Answer: Web application ✓
 - c. Julia, a Life Sciences teacher, has a website where her learners can go to find study tips, as well as answers to recent examination questions. (1)
Answer: Wiki ✓

6. The screenshot below shows part of the Google Chrome browser. Use it to answer the following questions that follow:



- a. The Google Chrome browser uses of tabbed browsing. Mention two advantages of using tabbed browsing. (2)
Answer: Any TWO of: ✓✓
 Allows the user to view many webpages at once.
 If the user comes across a link in the webpage they are currently viewing, they can click on the link and a new webpage will open in another tab without closing the current webpage.
 Allows the user to move between webpages without actually closing any webpages.
- b. Which tab is currently active? Explain how you arrived at your answer. (2)
Answer: OpenRailwayMap ✓
 It has a white background. / It matches the URL in the address bar. ✓
- c. What is the function of the + button after the second tab? (1)
Answer: If you click on the + a New Tab will open. ✓
- d. What is the meaning of the closed padlock in front of the URL in the address bar? (1)
Answer: The website is a secure website ✓
- e. Give the name of another browser other than Google Chrome. (1)
Answer: Any ONE of: ✓
 Firefox, Edge, Internet Explorer, Opera, Safari, etc.
 Check other answers for correctness.
7. Francois wants to take some friends that are visiting from Europe to the top of Table Mountain in Cape Town. He plans to use the cableway to travel to the top of the mountain. Francois uses the Google search engine and types in "Cape Town" in the search box. He gets about 650 000 000 results.
- a. How could Francois change his search phrase to only get results for the Table Mountain cableway? (2)
Answer: He could type Table Mountain +cableway ✓
- b. Name another search engine that Francois could use, other than Google. (1)
Answer: Any ONE of: ✓
 Bing, Yahoo, DogPile etc.
8. Explain the difference between downloading and uploading when using the internet. Give an example of each. (4)
Answer: Downloading is receiving data or a file from the internet. ✓ Any suitable example such, as downloading a music file. ✓
Uploading is transferring a file to the internet. ✓ Any suitable example, such as posting a picture on your Facebook page. ✓

TOTAL: [30]

INTERNET COMMUNICATION

CHAPTER 12

CHAPTER OVERVIEW

- Unit 12.1 Electronic communication devices
- Unit 12.2 Email as a form of e-communication
- Unit 12.3 Basic emailing

The following learning outcomes are covered by this chapter: 

- Describe what electronic communication is.
- Describe the different electronic communication devices.
- Electronically communicate using a PC.
- Discuss the different electronic communications.
- Explain the difference between ISP versus web-based email.
- List and explain the different features of email such as the "Cc" and "Bcc" fields, attachments, and address books.
- Compose email messages.
- Send, receive, forward, reply to and reply to all with email.
- Apply netiquette rules over email.
- Understand email etiquette.

GRADE: 10

DATE:

TEACHING TIME: 4 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Desktop computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader
- Computer and devices that can be shown as examples

GRADE: 10

DATE:

TEACHING TIME: 4 hours

Vocabulary

Learners will need to understand the following terms for this chapter:

- **Emojis:** An electronic pictograph (picture).
- **Chat rooms:** An area on the internet or other computer network where users can communicate, typically one dedicated to a particular topic.
- **Video conferencing:** A live, visual connection between two or more people residing in separate locations for the purpose of communication.
- **Instant messaging:** An online chat vehicle that allows you to exchange text messages, symbols, pictures and even documents in real time over the internet.
- **Netiquette:** Unwritten rules on how to use the internet.
- **GIF:** A compressed image file format.
- **Taxonomy:** The science of naming things, in this case email addresses.
- **Carbon copy (Cc):** A carbon copied message is an email that is copied to more than one recipient. Both the main recipient (whose address is in the "To:" field) and the Cc'd recipients can see all the addresses the message was sent to.
- **Blind carbon copy (Bcc):** A useful way to send the same message to many people without the main recipient or the Bcc'd recipients seeing the addresses of the other people the email was sent to.
- **Portability:** The ability to be easily carried or moved.



Activity 12.1 Memorandum

Answer the following questions in your own words.

1. Explain the term “e-communication”.
Answer: Electronic communication refers to any data, information, words, photos, emojis and symbols that are sent electronically to one or more people. This can be done through emails, social media, newsgroups, chat rooms, video conferencing, instant messaging, phone and fax.
2. Describe an e-communication device and list three examples.
Answer: An electronic communication device refers to any type of computerised device (instrument, equipment or machine) or software that can compose, read or send any electronic message using Computer, smartphones, tablets
3. What do you understand by the term “mailing list”?
Answer: A mailing list is a collection of names and addresses used by an individual or organisation to send information or materials to multiple recipients.
4. What application do you use the most to text and send pictures? How do you use text messaging?
Answer: Most likely answers are Instant Messaging e.g. WhatsApp or SMS. Description of use will differ from learner to learner. Also accept “I don't know” if the learner does not have access do a device.
5. Who normally uses blogs?
Answer: Blogging is mostly done by individuals or small groups. It can also be done by an organisation, promoting their company and products or services.
6. Vusi has no fax machine. However, his friend from Brazil must fax him a document that he urgently needs. His friend only has access to a fax machine.
 - a. What can Vusi do to make sure that he gets the document?
 - b. How do you think Vusi should go about doing it?
Answer: Vusi must get a fax to email account with a service provider and send the number to his friend, who can then fax the document to this number. Vusi will receive it in his inbox as a PDF, which he can download and save on a flash disk. He can have these printed at the closest print shop.

Activity 12.2

Memorandum

1. Which of the following e-mails are valid and which are not? Explain why it is invalid each time.

EMAIL ADDRESS	VALID OR INVALID?	WHAT MAKES IT INVALID?
@domainsample.com	Invalid	The recipient name is missing.
anonymous@domainsample.com	Valid	
-autumn-dancer@domain.com	Invalid	Starts with a non-standard character.
jane.doe43@domainsample.co.uk	Valid	
janwa kitty@domain.com	Invalid	Has space within email address.
janwa_kitty@domain.com	Valid	
joesmith.nospamplease@nospam.example.com	Valid	
john.doe@.net	Invalid	The domain name (domainsample) is missing after the @ symbol and before the top level domain (.net).
john.doe@domainsample.ne	Valid	
john.doe43@domainsample	Invalid	The top level domain (e.g .co.za) is missing.

2. What is the difference between an ISP email and a webmail?

Answer: They are both email service providers. You can choose between webmail or to turn to an Internet Service Provider (ISP) to take care of your emails.

3. Give two advantages and disadvantages of ISP and webmail.

Answer:

Any two advantages of each

Any two disadvantages of each

SERVICE PROVIDER	ADVANTAGES	DISADVANTAGES
ISP email	The main advantage of having an ISP email account is the support that you get when something goes wrong.	<p>An ISP provides a mailbox to end users as part of their paid services. When using an ISP, your emails will be on the ISP's servers. This means that you will have to connect to the ISP mail server to download your emails. If anything happens to these servers, there is no way that you can get your emails until the problem is fixed.</p> <p>Also, if you have the wrong incoming or outgoing password, you will not be able to receive or send emails.</p> <p>ISPs charge for their services.</p> <p>Should you move or change your ISP, you will most probably have to get a new email address.</p> <p>They may also have a limited amount of storage space for your emails and attachments.</p>

Activity 12.2

Memorandum...continued

SERVICE PROVIDER	ADVANTAGES	DISADVANTAGES
Webmail	<p>Does not charge for their services.</p> <p>Webmail refers to any email service that you can reach through your web browser. It also means that you can check for email messages on any computer with a web browser installed, whether you are at home, at work or on holiday.</p> <p>You can also keep the same email address, even if you change your ISP.</p>	<p>One of their main disadvantages is that they will send advertisements to your inbox to help cover their costs.</p> <p>Some services like Gmail will look for keywords in your email messages and show you advertisements that are predicted to be relevant when analysing the keywords.</p>



HOW TO CREATE AN EMAIL ACCOUNT

Although this is not a requirement of CAPS, it is included here as learners must be able to interact with emails in this chapter. It will be of advantage to learners in later grades if they have a personal email account that they can use to send electronic surveys for the PAT to.

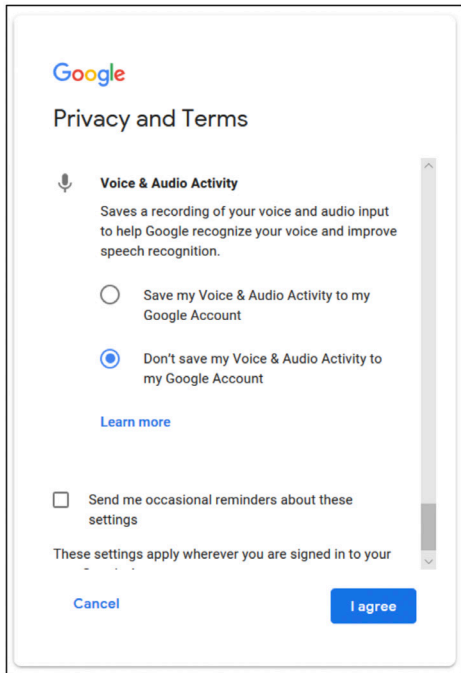
To create a new Gmail account:

1. Use your web browser to go to the Gmail website (www.gmail.com).
2. Click on the Create an Account button. A new page should now open.
3. Enter your name and surname.
4. Choose a username for your account.
5. Enter a password for your account and enter the same password in the Confirm password space.
6. Click the Next button.

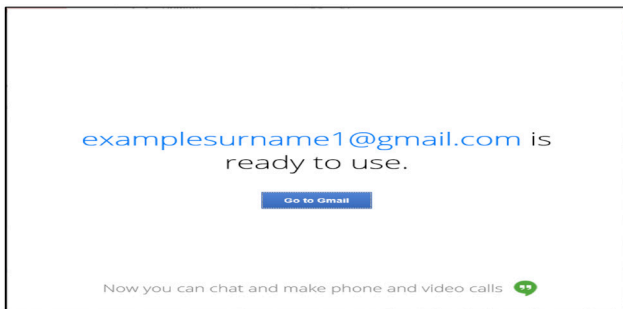
oleBooks

7. Pay careful attention to the items on the sign-up form that are optional. You can skip these items if you want to. For Google, submitting a phone number or recovery email address allows Google to help you recover your password if you forget it.
8. Fill in your birthday and gender before clicking next.

7. Pay careful attention to the items on the sign-up form that are optional. You can skip these items if you want to. For Google, submitting a phone number or recovery email address allows Google to help you recover your password if you forget it.
8. Fill in your birthday and gender before clicking next.
9. Read through Google's Privacy and Terms agreement.
10. Read through the custom options and select what information Google is allowed to record about you.
11. Once you have selected options that you are comfortable with, click "I agree".



12. The moment you click "I agree", Google will create your new email account for you.



TIPS FOR SIGNING UP

While you do not have to give your real name and surname when signing up for an online account, it is better to do so if you want to use the account to communicate with people.

Your username will be the first thing people see when they receive an email from you. Try to choose a username that is easy to remember and that you will be comfortable using 10 years from now.

When it comes to a password, try to choose a password that is long but easy to remember. One way to do this is by using words and numbers in your password, such as: Great1SuperSecretEmail or Great1SuperSecretSocial. These passwords are more than 20 characters long, which makes it almost impossible for computers to break. However, it should be really easy for you to remember.

With regards to Google's Privacy Options, it is important that you read through the different options and make a choice based on the information you are comfortable with sharing. Google uses this information to provide you with more useful information, but they may also use it to target you with advertisements that they think are most likely to be effective.

The final and most important tip for signing-up for a new account is to carefully read what you are signing up for. Read each question properly and read through the privacy terms and conditions. Also read the text for each checkbox. Most companies include at least one checkbox (which is already ticked) allowing them to send you advertisements or "weekly updates on their newest products". You generally want to untick these options.



Case Study

Answer the following questions in class.

1. What is the first problem with this email?

Answer: Learner's own answer, these are some points to consider:

- Using a work email for personal use.
- The way the email was written.
- The use of many exclamation marks.
- The use of slang.

2. Discuss two email etiquette rules that are broken by Julie.

Answer: Any TWO of the following:

- Subject line is not clear.
- The use of exclamation marks.
- The use of capital letters.
- Using a work email to gossip about a colleague.

3. Explain what Julie can do to save her reputation.

Answer: Julie can send another email to everyone apologising for the previous email as well as apologising for the content of the email, acknowledging that what she said was wrong. She should apologise to Suzy for what she said.

Activity 12.3 Memorandum

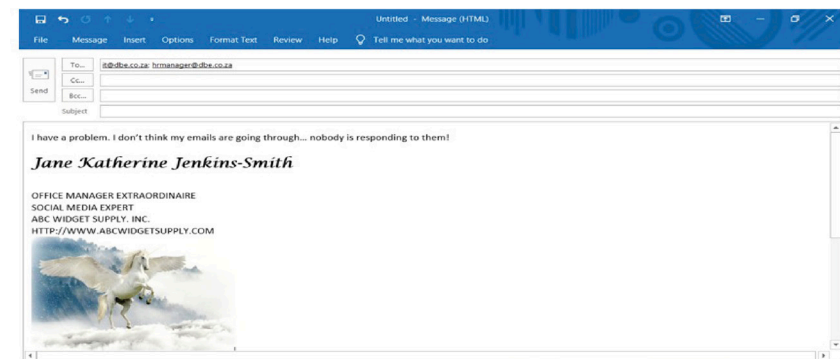
Answer the following questions based on this chapter.

- When sending a file as an attachment via an email, the email bounces back and displays the following message:

This is the mail delivery agent at messagelabs.com.
 I was unable to deliver your message to the following addresses:
Sales@telkomsa.net
Reason: 552 Message size exceeds maximum permitted

- Why did the error message occur?
Answer: The error message occurred because the attachment was too big to send through email.
- Briefly describe how the error can be fixed.
Answer: The files can be compressed so that it is a smaller size. Then it can be sent.

- Study the following e-mail:



- Compare the **Cc...** and the **Bcc...** section in the e-mail.
Answer:
 - Cc – contains additional recipients that will be visible to all recipients of the email.*
 - Bcc – contains additional recipients that will not be visible to other recipients of the email.*
- Consider the context of the email message on page 196 (of the learner book) and list two email etiquette (netiquette) rules that have been violated.
Answer: Any two of the following:
 - No subject line*
 - No salutation*
 - Background not appropriate for formal business email.*

- Read the following scenario and answer the questions that follow:

The Motaung family’s Internet service provider is Polkadot. As part of their contract, the Motaung family receives one free email address. Should they need more email addresses, they need to pay an additional fee per month for each additional email address. Mrs. Motaung’s business’s name is Haybo! Catering.

- Suggest a suitable e-mail address for Mrs Motaung’s business. Motivate why you suggested this email address.
Answer: HayboCatering@polkadot.co.za
Email addresses are always written in a standard format that consists of two parts, a local part or username and a domain part separated by an @. The local part (HayboCatering) is used by the receiving mail server to determine where the email must go and what must be done with it after it arrived at its destination. The second part refers to the domain name of the service provider, which is Polkadot, located in South Africa.
- Suggest how Mr Motuang could get his own email address at no cost.
Answer: Register for a free web-based email address such as Gmail.

1. Explain what is meant by “e-communication”. (3)
Answer: Electronic communication refers to any data, information, words, photos, emojis and symbols ✓ that are sent electronically ✓ to one or more people. ✓ This can be done through emails, social media, newsgroups, chat rooms, video conferencing, instant messaging, phone and fax. ✓
2. Write a short paragraph to explain the difference between email and instant messaging. (4)
Answer: Email is a form of e-communication that allows users to send messages and files over the internet. ✓ One of the best things about email is that you do not have to wait for weeks to receive it. ✓ This type of mail arrives moments after it has been sent. Instant Messaging is mainly used when both or all the people are online ✓ so that everyone can read your message instantly, hence instant messaging ✓
3. Study the screenshot below and use it to answer the following questions:

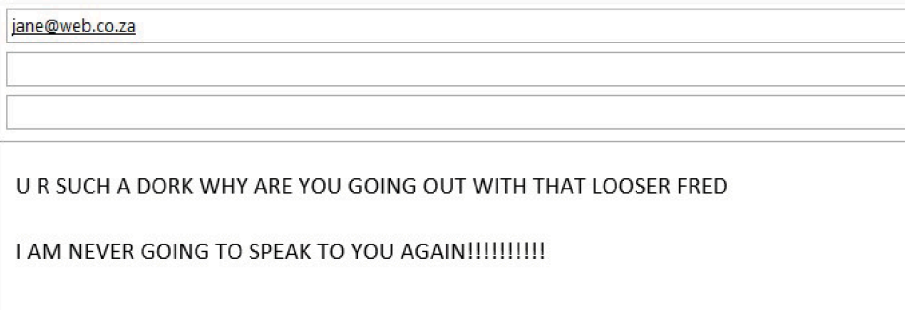


- a. What is the username of the email address in the Bcc field? (1)
Answer: manager ✓
- b. What is the domain name of the group to whom the email is being sent? (1)
Answer: weborg ✓
- c. The email address designnteam@weborg.co.za is being sent to a mailing list. Explain what is meant by a mailing list. (2)
Answer: A mailing list is a collection of names and addresses ✓ used by an individual or organisation to send information or materials to multiple recipients. ✓
- d. Will the members of the design team know that the email has been sent to their manager? Explain your answer. (3)
Answer: No ✓. Email addresses that are in the Bcc field ✓ are not visible to other recipients of the email. ✓
4. Innocent has two email accounts. The email addresses are innocent25@gmail.com and inno.mhlebi@mweb.co.za.
 - a. Which email address is that a web-based email account? (1)
Answer: innocent25@gmail.com ✓
 - b. List one advantage and one disadvantage of having a web-based email account. (2)
*Answer: Any ONE advantage: ✓
 Does not charge for their services.
 Webmail refers to any email service that you can reach through a web browser. It also means that you can check for email messages on any computer with a web browser installed, whether you are at home, at work or on holiday.
 You can also keep the same email address, even if you change your ISP.
 Any ONE disadvantage: ✓
 May send advertisements to your inbox to help cover their costs.
 Some services such as Gmail will look for keywords in your email messages and show you relevant advertisements.*
 - c. What is the domain name of Innocent's ISP? (1)
Answer: mweb ✓

CONSOLIDATION

Chapter 12: Internet communication...continued

5. Amahle is a long-distance runner who participates often in marathons.
- a. Amahle would like to keep an online journal of her experiences. What e-communication application should she use? (1)
Answer: A blog ✓
 - b. Mention two things that she could write about each day. (2)
Answer: Any TWO: ✓✓
Training done that day
Diet
Level of motivation, etc.
6. Study the screenshot of an email below and use it to answer the questions that follow:



- The e-mail does not follow good netiquette.
- a. What is meant by “netiquette”? (2)
Answer: Netiquette is using good manners ✓ when communicating electronically or when using the internet ✓
 - b. Mention three ways in which the writer has not followed good netiquette. (3)
Answer: Any THREE: ✓✓✓
No subject line
Shouting (all in capitals)
Spelling errors
Tone of message is insulting
Sender does not identify him/herself
Too many exclamation marks

TOTAL: [26]

TERM 3

CHAPTER
13

SOCIAL IMPLICATIONS: EMAIL AND INTERNET

CHAPTER OVERVIEW

Unit 13.1 What is hardware?

The following learning outcomes are covered by this chapter:

- Identify email threats, issues and prevention methods.
- Use email and the internet safely.

GRADE: 10

DATE:

TEACHING TIME: 2 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- QR reader

Vocabulary

Learners will need to understand the following terms for this chapter:

- **Virus:** Any program that infects a user's computer and acts in a way that will harm the user without their knowledge.
- **Trojan:** Type of virus that pretends to be a useful piece of software. However, once you install it, the Trojan horse infects your computer and can damage it in many ways.
- **Keylogger:** A software program that is used to monitor and log each key a user types on a computer keyboard.
- **Worm:** A type of virus that can travel from one computer to another computer without any human interaction.
- **Hoax:** A warning used by people as scare alerts.
- **Phishing:** A term used to describe a malicious individual or group of individuals who scam users by sending emails or creating web pages that are designed to collect the individual's online banking, credit card, or other login information.
- **Spoofing:** A technique used to gain unauthorised access to computers using someone trustworthy's IP address.
- **Pharming:** Pharming attacks create an official-looking website that requests sensitive information.
- **Spam:** Computers with viruses are used to send billions of unwanted advertisements or phishing attacks every day.
- **Ransomware:** A particularly malicious virus that locks all a user's files.
- **Portability:** The ability to be easily carried or moved.

INTRODUCTION

The email and internet are not always safe and secure. You might receive emails from scammers and cybercriminals who are looking to get information from you, such as your banking information and passwords. You should, therefore, avoid storing any sensitive information, such as credit card numbers and passwords on your computer, or sending details to anyone asking for them. In this section, we will look at email threats and what you can do to ensure safe email and internet use.



Activity 13.1 Memorandum

Mrs Abrahams loves shopping online. She surfs the internet and every week, she purchases something new. One day she realised that there were purchases made that she did not make herself.

1. Explain how ICTs have benefited Mrs Abrahams in this context.
Answer: She does not have to go to the shops every time she needs to purchase something new. She can purchase everything in the convenience of her home.
2. List one disadvantage of ICTs used in this context.
Answer: She might waste lots of time just looking for things to buy as well as waste money unnecessarily.
3. Briefly explain what Mrs. Abrahams could possibly be the victim of.
Answer: She is probably a victim of cybercrime.
4. Suggest what she do can to remedy the situation. Motivate your answer.
Answer: She should phone the bank to report fraud. The bank will then block her bank cards. She should change her passwords and ensure that she uses a different password for each site.

Activity 13.2 Memorandum

1. Define the following email terms:
 - a. Hoax
Answer: Misleading, false email message that is sent to you as the truth.
 - b. Spam
Answer: Unwanted email.
2. Study the following phishing example.

Send	From ▾	FNB (lr@gmail.com)
	To	
	Cc	
Subject		Payment confirmation

Dear client,

A payment has been made to your account. To review the details of the payment, please [login](#) to review details. If you have any questions or would like more information, please contact our support centre.

- a. Describe two features in the email that confirms the email to be a phishing attempt.
Answer: Any two of the following:
 - Bank's email address in FROM: line is a Gmail address.
 - No recipients in the TO: field.
 - Providing a link to log in.
 - Asking for confidential information such as PIN.
- b. Explain the main difference between phishing and pharming.
Answer:
 - Phishing requires an action from the user's side, i.e. clicking on a link (sent via email) that leads to a false website.
 - Pharming automatically re-directs the user to a false website, even when user entered the correct web address (URL).

Activity 13.2 Memorandum...continued

3. Study the following extract from a case and answer the questions that follow:

Mike was the head of a new division at End Corp., a small company with about 45 PCs. Mike was hired to reduce expenses for the company and so he would only authorise the purchase of one copy of each software program the company uses. His rationale was, "we bought it, and we can do what we want to do with it."

Adapted from: http://www.siaa.net/index.php?option=com_content&view=article&id=338&Itemid=351

- a. Identify the term that describes this extract.
Answer: Copyright infringement (also accept software piracy)
- b. State one possible consequence for the developers of the software programs.
Answer: The developers lose revenue.
- c. State why the URL was provided in this extract.
Answer: The URL is provided to acknowledge the source of the extract.




1. Write down only the letter matching the correct or best answer. A worm is a type of virus that does which of the following? (1)
Answer: B ✓

2. Bandile is a Standard Bank client. He received this message from them:

24 February 2014
 Good day
 Welcome to our digital NEX, and the old online banking site has been discontinued. Upgrade to Continue banking with a two-step sign in feature.
 Click here to sign in and upgrade, you will be required to first enter your email address and then Password on the next screen.
 Note: Registered phone numbers or email address we have on our records must be confirmed and we will verify by sending One-Time-PIN to validate your details.

Gmail placed the message in a Spam folder and inserted the following message at the top of the email:

 **Be careful with this message**
 Gmail could not verify that it actually came from standardbank.co.za. Avoid clicking links, downloading attachments, or replying with personal information.

- a. What is this type of email called? (1)
Answer: Phishing (or pharming) ✓
- b. Gmail disabled all the hyperlinks in the message. Why was this done? (2)
Answer: The hyperlinks could redirect you to a site that will attempt to capture your personal details. ✓
- c. Mention one way that Bandile could recognise that this email was not legitimate. (1)
Answer: Any ONE of: ✓
The message did not use his name – he would expect his bank to know his name.
There are quite a few grammar errors.
- d. What are spam emails? (1)
Answer: Junk emails often advertising a product or service sent without your permission ✓
3. Explain what a hoax email is. Does this type of email normally pose a threat? (2)
Answer: It is an email spreading a story or news that is false. ✓ Hoax emails do not pose a threat unless it ask you to donate money. ✓
4. Explain the difference between data theft and identity theft. (4)
Answer: Data theft entails some person (a hacker) gaining access to files/data that is private or confidential. Identity theft is when your personal details such as identity number is stolen so that somebody can impersonate you online. They might make expensive purchases that you will be held responsible for. ✓
5. You have been asked to create a short presentation for you class on how to stay safe when using the internet and email. Write down five points that you would include in your presentation. (5)
Answer: Any FIVE of the following: ✓✓✓✓✓
- Use a secure password.
 - Pay careful attention to the websites and links you open.
 - Do not share sensitive information unnecessarily.
 - Do not open suspicious emails.
 - Do not download suspicious programs or attachments.
 - Keep antivirus applications up to date.
 - Keep other software up to date.
 - Use two-factor authentication whenever possible.

TOTAL: [27]

INFORMATION MANAGEMENT

CHAPTER 14

CHAPTER OVERVIEW

- Unit 14.1 Concepts used in information management
- Unit 14.2 Practical Assessment Task (PAT) overview
- Unit 14.3 Sifting data
- Unit 14.4 Processing data
- Unit 14.5 Presenting data

The following learning outcomes are covered by this chapter: 

- Understand data vs information.
- Describe the problem-solving steps.
- Explain how to gather data and information from different sources.
- Understand the difference between information and knowledge.
- Understand the importance of questionnaires and surveys.
- Sift out data.
- Process data.
- Present the data in the form of graphs or a report.

GRADE: 10

DATE:

TEACHING TIME: 12 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Desktop computer with Windows 10
- Internet
- QR reader
- Computer and devices that can be shown as examples

GRADE: 10

DATE:

TEACHING TIME: 12 hours

Vocabulary

Learners will need to understand the following terms for this chapter:

- **Information management (IM):** The process of gathering, selecting, processing, and then presenting information.
- **PAT:** Practical assessment task is an assessment of the learner's individual interactions with information and the way in which he or she presents that information.
- **Portability:** The ability to be easily carried or moved.

INTRODUCTION

In this chapter, we will look at data versus information, and how to understand a problem or task, as well as the importance of questionnaires.

Lastly, we will look at different information sources and data-gathering tools.

ADDITIONAL INFORMATION

The work covered in this chapter is dealt with over three terms. It forms an essential part of the learner's preparation to tackle the PAT in Grades 10 to 12. Teaching of the content should be integrated with the completion of the PAT.

Which resources can I use to explain PAT to the learners?

- <http://www.techteachers.co.za/?s=PAT>
- <http://learn.mindset.co.za/resources/computer-applications-technology/grade-10/information-management>
- <https://www.education.gov.za/Curriculum/PATS2018.aspx>

Note: Make sure that you study the PAT guidelines given by the DBE carefully.

UNIT

14.1 Concepts used in information management

TERM: 2

TEACHING TIME: 1 HOUR

We are bombarded with a large amount of information on a daily basis. This information comes in many different forms. In order to gain knowledge and understanding, you need to know how to manage this information.

Information management (IM) is the process of gathering, selecting, processing and then presenting the information to people.



TERM: 2

TEACHING TIME: 1 HOUR

Activity 14.1

Memorandum

If the PAT topic for the year is known, then it would be a good idea to integrate this activity with the actual learner PAT. In Grade 10 the teacher has the option of setting their own PAT or using the one provided by the DBE. An earlier topic from Grade 12 could also be adapted.

Answers to this activity will vary widely from one learner to another.

This activity will be broken down into three sections.

SECTION A

1. Use the instructions in the PAT and create a folder structure. Use what you have learned so far to create a folder structure.
2. Open Word.
3. Create a word-processing document.
4. Name this document: PATPhase1
5. Use the heading: Task definition
6. Using the topic given below, create a task definition in the PATPhase1 document.

Conservation is everyone's responsibility. Even if you don't spend a lot of time in nature or appreciate her beauty, everyone needs access to food, clothing, medicine, clean air and water, and a variety of other resources you depend upon every day. It is in everyone's best interest to try to conserve natural systems.

Your school wants to inform learners about conservation issues, the importance of conservation and wants to create awareness to address these issues. The school management team wants you to investigate a conservation issue that may interest you. They also want a formal report on the investigation which they can use in their awareness campaign. The investigation should address a conservation issue/problem, the impact thereof, possible solutions and the role learners could play or any other interesting facts and statistics that will inform learners about this issue.

(Extract from question paper DBE/PAT 2014)

Refer to the template of a task description in Unit 14.2 in the textbook.

7. Create a sub-folder called Task definition in the Phase 1 folder.
Study the instructions for the PAT carefully. The most recent PATs do not require separate sub-folders for each part of the phase.
8. Save the Word document in the sub-folder.
9. Close the Word document.

SECTION B

1. In pairs, brainstorm headings that you could use for the topic. Write down a list of questions that can be applied to each heading.
2. Open the PATPhase1 document. Choose the headings that you think will help you complete this project. Transfer these headings and questions into the PATPhase1 document.
3. Save the document.

Activity 14.1

Memorandum...*continued*

SECTION C

1. Open another Word document.
2. Create a table. It should look similar to this:

	QUESTION	SOURCE OF INFORMATION	REASON
1.			
2.			
3.			

3. Transfer the questions that you developed in the previous section to this table.
4. Indicate the information source to answer each question.
5. Briefly explain why you think this is the best-suited information source for that specific question.
6. Save the document with the name: Phase1Information.
7. Save it in the correct sub-folder.



TERM: 3

TEACHING TIME: 6 HOURS

Activity 14.2 Memorandum

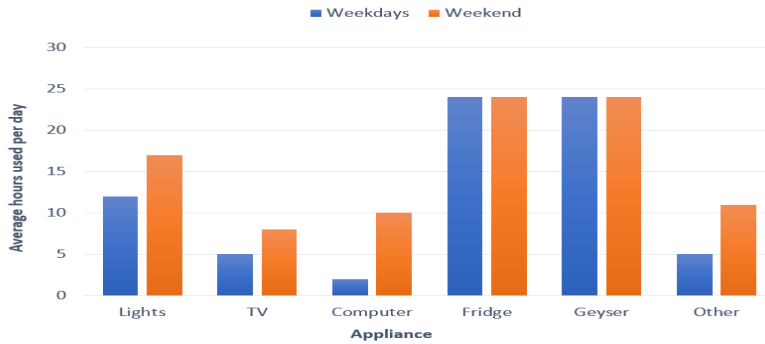
Answer the following questions.

1. Briefly explain the difference between information and knowledge.
Answer: Information is data that is gathered and then processed, whereas knowledge is the information that a person has collected in order to make an analysis.
2. Do you think questionnaires are important in the PAT?
Answer: Yes, they are important. PAT usually requires you to make use of questionnaires and surveys to get input data for your topic.
3. Differentiate between a questionnaire and survey.
Answer: A questionnaire is a set of questions that can be in writing or asked verbally. A survey is a way of collecting information from many people and can use a questionnaire. Surveys can also be conducted using interviews. However, it is also the process of collecting and analysing responses from the questions.



Activity 14.3 Memorandum

1. List TWO different types of information sources.
Answer: Any two of the following:
 - Internet
 - Printed media
 - Electronic media
 - People (surveys, interviews)
2. Illustrate the difference between wisdom and knowledge by using an example.
Answer: Any suitable example that shows the difference between wisdom and knowledge.
3. Study the following information presented in the graph that follows:



- a. Describe what the graph measures.
Answer: The number of hours that appliances in a household are used per day.
- b. Name the appliance with the least total usage.
Answer: Computer
- c. After the refrigerator and the geyser, name the appliance that is used most on weekdays?
Answer: Lights
- d. State why most appliances are used more during weekends than during the week.
Answer: People are at work/school during the biggest part of weekdays and use most of the appliances (except fridge and geyser) in the evenings only.
- e. What advice will you give to households if they want to save electricity? Motivate your answer.
Answer: Switch off the geyser during the day over the weekdays as it is only needed in the evenings.
- f. List three different types of actions that you could perform on data to extract information, in other words, help to interpret it, or make sense of it.
Answer: Any three of the following:
 - Calculations
 - Sifting
 - Sorting
 - Counting
 - Order
 - Compare

1. In the 2018 PAT, Grade 12 learners were required to investigate the topic of fake news.
Source: <http://ecdoe.co.za/documents/learners/self-study-guides/pat-cat-english>.

TOPIC 2 – FAKE NEWS

Fake news is a type of news that consists of deliberate misinformation or hoaxes spread via print and broadcast news media or online social media.

There is a huge amount of interesting discussion happening about the spread of fake news on the Internet, including how to determine if news is fake or not, and what we as individuals and companies like Facebook, Google and Twitter, among others, can possibly do to minimise the effects of it.

Your task is to:

- Investigate the current situation in **South Africa** at a national, provincial or local level
- Gather and analyse data relevant to the investigation
- Identify possible problems and solutions to any of the problems related to the topic you choose
- Identify a suitable audience (such as a school, your local community forums or business leaders) and present your research and findings in a report that would be suitable for use by the specific audience

Investigate how this topic affects the community in terms of:

- The existing problems and challenges we face in terms of this topic
- The impact in the local community, province or country
- (Partial) solutions for individuals, publishing companies, social media, et cetera

2. Use the information above and the following outline below to write a task description for the PAT.

I am doing this investigation to report to <insert target audience> about <insert PAT topic>.
I will find information on <insert PAT topic>.
I will use the following <source> <information-gathering tools> and create questionnaires to conduct interviews.
I will also use the internet to help me find more information.
After I have received all the data, I will use spreadsheets to process and analyse the data so that it converts to meaningful information.
Using this information, I will then create a report. I will also use the questionnaire answers to create a report using a word processor.
Lastly, I will translate the information into a slide presentation to show my <insert target audience>.

Replace all the phrases between angle brackets <...> with suitable words that will match the topic of fake news. (6)

Answer:
Target audience = school OR local community forum OR business leaders ✓
PAT topic = fake news in South Africa ✓
Source = internet AND/OR books AND/OR news articles ✓
Information gathering tools = survey ✓
Target audience = same as above ✓

3. Thandolwethu is doing research into healthy eating habits amongst the learners in her class. She conducted a survey by asking each learner to pick their favourite vegetable from a list that she gave them. The number of votes that each vegetable received were tallied up. She then drew a graph to illustrate the votes for each vegetable.

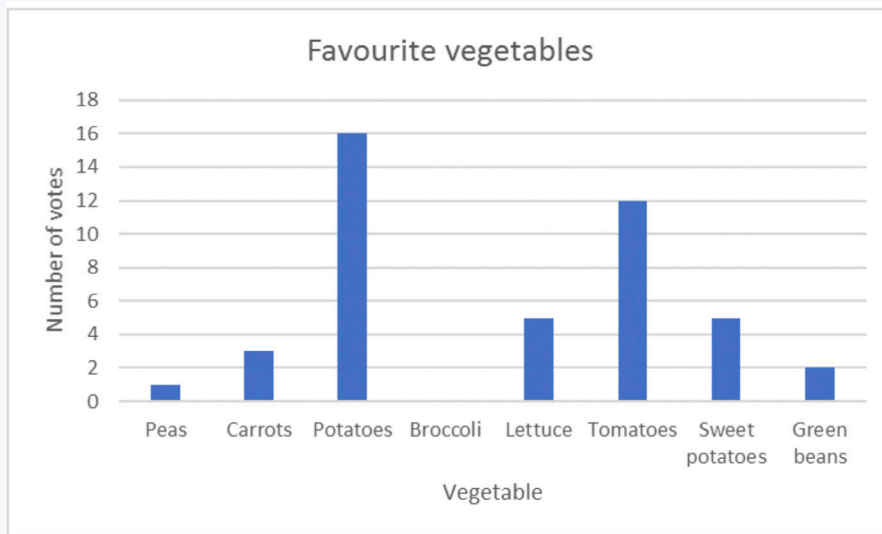
The following table shows the results that she obtained:

Vegetable	Number of votes
Peas	1
Carrots	3
Potatoes	16
Broccoli	0
Lettuce	5
Tomatoes	12
Sweet potatoes	5
Green beans	2
TOTAL	44

CONSOLIDATION

Chapter 14: Information management...continued

- a. Use the scenario above to explain the difference between data and information. (4)
Answer: Data is raw unprocessed facts; ✓ the number of learners who chose each vegetable. ✓ Information is processed data; ✓ which vegetables were most/least popular ✓
- b. Thandolwethu conducted a survey to obtain her results. Explain the difference between a survey and a questionnaire. (4)
*Answer: A questionnaire is a set of questions ✓ that can be administered in various ways (written, online, verbally). ✓
 A survey is conducted using tools like questionnaires or interviews ✓ to gather information from a number of people. ✓*
- c. What sort of graph (chart) would be best to illustrate the above results? (1)
Answer: A bar graph or pie graph ✓
- d. Use Microsoft Excel to draw a graph (chart) of Thandolwethu's results. Make sure the graph is easy to understand. You should not include the TOTAL on your graph. (4)
Answer: A possible graph is given below:



*Graph has a heading. ✓
 Graph has axis titles. ✓✓
 Data is represented correctly. ✓*

- e. List two pieces of information that Thandolwethu obtained from her results. (2)
*Answer: Potatoes are the most popular vegetable. ✓
 Nobody likes broccoli. ✓ etc.*
- 4. Chloe used a questionnaire as part of her PAT. Some of the questions had “Strongly Agree”, “Agree”, “Disagree”, “Strongly Disagree” as options for her respondents to select. She captured the responses from each person in a spreadsheet. Which spreadsheet function should she use to determine the following:
 - a. The number of respondents who answered each question. (1)
Answer: COUNT or COUNTA ✓
 - b. The most popular response for each question based on the number of responses. (1)
Answer: MODE ✓
 - c. The number of respondents who answered “Strongly Agree” for each question (1)
Answer: COUNTIF ✓

5. List the four main sections of a report and state briefly what should be included in each section. (4)
- Answer: Summary of text below is expected as the answer. ✓ for each section.*
- Introduction: The introduction is used to state the purpose of the report and provide background on the issue. It is important that you make use of your knowledge on the subject to provide a clear description of the problem that has occurred and the solution that was implemented.*
- Body: The body is used to describe the effect of the solution that was implemented. This can include a database containing all the data regarding the solution to the problem. However, simply supplying the data is not sufficient. You also need to process and analyse the data into useful information. The information should then be presented clearly and to the point. This can be done by extracting the core meaning of the data and writing it in your own words. You can make use of graphs and tables to help simplify the information.*
- Conclusion: This section is used to indicate whether the solution was a success and if any other solutions might be needed. If the solution was not successful you need to include what steps you are planning to follow to make sure that the problem is resolved.*
- Bibliography/References: It is important to always reference the information you use in your report. It shows the evidence of where you got the information from, how recent it is, the number of sources you used and if plagiarism was committed. You need to use a fixed method to correctly cite your references.*
6. Ntombikayise has copied and pasted three paragraphs of text taken from an online publication, into her report.
- a. She did not acknowledge the original writer of the text in her report. What is this known as? (1)
- Answer: Plagiarism ✓*
- b. How could she use the information without making the mistake mentioned in (a)? (2)
- Answer: She should rephrase the information using her own words. ✓*
- An in-text reference (citation) should be added as well as a bibliographic reference. ✓*
- (Note: Citations and bibliographies are actually taught in Grade 11 and 12 word processing.)*

TOTAL: [31]

PART B

PRACTICAL CONTENT

TERM 1

CHAPTER
1

INTRODUCTION TO WORD PROCESSING

CHAPTER OVERVIEW

Unit 1.1 Introduction to word processing

Unit 1.2 File management in word processing

The following learning outcomes are covered by this chapter:

- Understand what a word-processing application (app) is used for.
- Describe the basic look and feel of a word-processing application.
- Use file management in a word-processing application.

GRADE:

10

DATE:

TEACHING TIME:

6 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader

COMPUTER MANAGEMENT

The work covered in Chapters 2 of the Theory Book (Introduction to using Computers) and 3 (File Management) should be integrated with the work covered in this book. Practical work provides an opportunity to reinforce theoretical concepts in a meaningful way.

It is also important to remember that Theory examinations also include a question on Solution Develop. Questions such as “Explain the difference between Save and Save As” are often asked in Theory examinations.

UNIT

1.1 Introduction to Word Processing

Teaching practical work is not easy. Depending on their background learners might find the work extremely challenging or rather boring. The approach followed and the tempo at which the work is introduced must be adjusted accordingly.

When new practical content is introduced, learners need to experience three types of activity:

- Guided activities (of which there are a number in this book) where the teacher demonstrates a skill and the learners simply copy what the teacher has done.
- Activities where learners work independently with guidance when needed. These activities often have step-by-step instructions.
- Activities which have a higher cognitive demand where skills learned are applied in a new context. Learners might be given a screenshot and then asked to work out for themselves what skills are needed to produce the desired output.

Learners need to have as much hands-on experience on the computer as possible. They should become confident users of the three applications (word processing, spreadsheets and presentations) and be able to carry out routine tasks quickly and efficiently.

The time allocated for the content that must be taught does not allow every aspect of the three applications to be taught. Learners need to become confident enough to explore other options for themselves.

Always work out the answers to practical exercises yourself before assigning them to the class. You will then be better prepared to assist learners while they are working in class.

Guided activity 1.1**Memorandum****EcoleBooks**

Guided Activities are intended to be done under the guidance of the teacher. The activity can be demonstrated in its entirety followed by the learners doing it or step-by-step with the learners completing each step immediately after it has been demonstrated. It is important that each learner works through the activity at their own computer.

While demonstrating new skills it is important that learners give their full attention to what is being demonstrated by the teacher.

KEYBOARD SHORTCUTS

Keyboard shortcuts are useful when you wish to work with an application without removing your hands from the keyboard.

The following keyboard shortcuts are useful:

- <Ctrl><N> Open a new document
- <Ctrl><O> Open an existing document
- <Ctrl><S> Save the document you are working on



REVISION ACTIVITY

Chapter 1: Introduction to Word processing

1. Word-processing applications can have several uses. List any two uses of a word processor. (2)
Answer: Any TWO - Word processors can be used to create, edit, format and print documents.
2. Look at the screenshot and write down the labels for the following: A, E, H, J, I and K. (6)
Answer: A. Save; E. Ruler; H. Scroll bar; I. Page and word count; J. Document views; K. Zoom control
3. Briefly explain when you would use the **Save As** option, compared to when you would use the **Save** option. (3)
Answer: The Save As option is used when:
 - Saving in a different location (folder or drive)
 - Adding a password
 - Saving as a different type of file
4. Fill in the missing information (A-D) in the table below. (4)
Answer: A. Restores; B. The title bar is found at the top of the window and the name of the open file can be seen on the title bar.; C. Maximise; D. You use shortcuts to find folders, files or programs quickly.

Practical question.

- 5.1 Open the RA_1 word-processing document.
 - a. Auto hide the ribbon. (1)
 - b. Change the title to "Proteas National Cricket team". (1)
 - c. Delete the picture at the bottom of the page. (1)
 - d. Type the document word count in the space provided. (2)
- 5.2 Make a copy of this document.
 - d. Use the Save As option to save a new copy. Name the file: Proteas. (2)
 - e. Preview the document. (1)

The marking guidelines used in this teacher guide follow those used in the Grade 12 NSC examinations. The bullet points under the heading "Criteria" should describe the expected outcome and not simply repeat the question.

No.	Criteria	Maximum Mark	
a.	<ul style="list-style-type: none"> • Ribbon has been hidden ✓ This would not normally be asked in a practical test or examination as it cannot be marked once the learner has logged off the computer	1	1
b.	<ul style="list-style-type: none"> • Title changed to "Proteas National Cricket Team" ✓ Including the full text in the marking guideline makes the question much easier to mark. The expectation in the NSC examination is that learners should answer the question exactly as asked. Any change to the heading would not score any marks.	1	1
c.	<ul style="list-style-type: none"> • Picture deleted from bottom of page. ✓ 	1	1

REVISION ACTIVITY

Chapter 1: Introduction to Word processing... *continued*

No.	Criteria	Maximum Mark	
d.	<ul style="list-style-type: none"> Word count 196 ✓ Entered in space provided. ✓ <p>The word count can be read from the status bar. The answer might be different if b. was answered incorrectly.</p>	1 1	2
c.	<ul style="list-style-type: none"> File Proteas created ✓ Original file still in folder ✓ 	1 1	2
d.	<ul style="list-style-type: none"> Document viewed in Print Preview ✓ <p>This would not normally be asked in a practical test or examination as it cannot be marked once the learner has logged off the computer.</p>	1	1
e.	<ul style="list-style-type: none"> Document closed ✓ <p>This would not normally be asked in a practical test or examination as it cannot be marked once the learner has logged off the computer.</p>	1	



TEXT BASICS IN WORD PROCESSING

CHAPTER 2

CHAPTER OVERVIEW

Unit 2.1 Text in word processing

Unit 2.2 Typing

Unit 2.3 Formatting in word processing

The following learning outcomes are covered by this chapter:

- Enter, edit and delete text.
- Insert symbols.
- Understand the importance of using spaces after basic punctuation.
- Use the keyboard.
- Select text using a keyboard or mouse.
- Use of different formatting features.
- Cut, copy and paste text.
- Use the *Find and Replace* tool.
- Use the *Spelling & Grammar* tool.
- Use basic word typography and *Autocorrect*.



GRADE: 10

DATE:

TEACHING TIME: 6 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader

NOTES

If you wish to give your learners additional activities to practise editing text you can easily create documents with filler text as follows:

- Open a blank document. Type =lorem() and press Enter. Word will add a few sentences of filler text.
- If you type, for example, =lorem(10, 10) and press Enter, you will get 10 paragraphs with 10 sentences each.

Highlighting is used to emphasise text in your document. It is important that learners are aware of the difference between “highlighting” text and “selecting” text. It is important to use the correct language when demonstrating practical skills to the class.



The time allocated for the content that must be taught does not allow every aspect of the three applications to be taught. Learners need to become confident enough to explore other options for themselves. Always work out the answers to practical exercises yourself before assigning them to the class. You will then be better prepared to assist learners while they are working in class.

Activity 2.1

Memorandum

1. Open practise document *Act 2_1*.
Some of the questions asked have not been explicitly covered in the textbook. The teacher will need to guide the learners. The following article from Microsoft Support could be used:
<https://support.office.com/en-gb/article/keyboard-shortcuts-for-microsoft-word-on-windows-95ef89dd-7142-4b50-afb2-f762f663ceb2>
2. Select the first sentence.
3. Below the paragraph, type the keyboard shortcut that you used to select the first sentence. Type your answer next to the letter (A).
Answer: Click anywhere in the sentence then hold the Ctrl key down and click again. <Click> then <Ctrl><Click>
4. Select the whole paragraph.
5. Below the paragraph, type the mouse shortcut that you used to select the whole paragraph. Type your answer next to the letter (B).
Answer: Triple-click anywhere in the paragraph. OR Place your cursor in the left margin (cursor points to the right) and double-click.
6. Type a suitable heading for the paragraph.
Answer: The heading should have something to do with choosing a vehicle.
7. Insert the copyright sign just after the heading.
Answer: The meaning of "just after" might not be clear to learners. It means at the end of the heading in the same line and not a new line. © is in the default list of symbols
8. Save and close the document.

ADDITIONAL INFORMATION

If you have time to spare you might want to install a typing tutor. You could also provide learners who have computers at home with the information so that they can practise at home.

There are many free typing tutors on the internet. When connected to the internet, just type in Free typing tutor in the search bar. You will find many options - look until you find one that you like.

WHICH TYPING TUTORS CAN I USE?

The following is a brief review of freeware typing tutors:

- **KeyBlaze** will help you to learn typing easily and fast. Its lessons are offered in an interactive and fun way and the learner can choose their starting point depending on their existing skill level. It is appropriate for beginners as well as professionals and can be used by schools and businesses.
- **Klavaro** is one of the best typing tutors to learn touch typing.
- **Typing Trainer** starts off by giving you short lesson on typing during which it analyses your typing speed and accuracy. Thereafter it suggests various lessons for learning and practising typing.
- **Rapid Typing Tutor** provides various sessions and games to improve your ability to type and to increase your typing speed with accuracy.
- **Utrakey 6** is one of the best typing tutors for people who have no or very little existing knowledge and skills in touch typing. It walks you through every step until you can type with speed and accuracy.

There are many more tutors available on the internet.

Keyboarding is not the most exiting skill to learn, but it is one of the most important skills. The following are 5 typing games that are available on the internet for free.

- **Desert Typing Racer** is a fun game if you like racing games. In this game you must type the letters above the cars before you crash into them. There are 40 levels that can be customised for beginner, intermediate and advanced users.
- **KeyBricks** is a game that can be played by a beginner as well as by someone who has some typing skills. In this game you have to find certain letters on your keyboard to eliminate groups of coloured blocks.
- **Spacebar Invaders** is a game where you must type the characters appearing underneath the aliens before they reach the bottom of the screen. This game has many lessons on three levels of difficulty.
- **Typing Olympics** is a great game for intermediate and advanced players as you must type the sentences you see at the bottom of the screen, and the quicker you type, the faster you run.
- **Tux Typing** consists of 43 interactive lessons to build greater typing speed and accuracy. It is a fun and effective way to learn proper keyboarding skills.

Please note that there are many more games than these five.

ADDITIONAL ACTIVITY: PRACTICAL TYPING ACTIVITY

Now that the learners have practised touch typing, it is time to test their new skills.

Let them take an online speed test to test their accuracy and speed. Make sure they do not look at their keyboard.

Use the following link to access this test: <https://www.speedtypingonline.com/typing-test>

Activity 2.2

Memorandum

1. Open the document *Act 2_2*.
 - a. Copy the first paragraph after the heading and paste it at the end of the document.
Answer: "Copy" means the original paragraph should still be there. This is an opportunity to practise selecting skills. Learners must be clear about what is meant by "the end of the document".
 - b. Delete the first line of the paragraph at the end of the document.
Answer: More practise using selecting skills.
Select the show/hide (¶) symbol. Learners need to understand that the Show/Hide button is a toggle. Each click of the button either turns hidden symbols on or off. Learners need to be able to recognise the hidden symbol for the end of a paragraph and for a normal space. Other hidden symbols, such as a Tab or non-breaking space, should be introduced when taught.
CAT learners should get used to typing in Word with the hidden symbols turned on. You might find they are very reluctant to do this.
2.
 - a. Type the following sentences after the first paragraph of the document:
"We formalise the task of loadshedding in data-stream systems as an optimisation problem. The solution has two parts: First choose target-sampling rates, then place loadsheddors to realise the targets."
 - b. Remember to make use of the keyboard techniques that you have learnt while typing these sentences.
Answer: Practising correct keyboard technique is important. Learners need to become confident enough to not have to waste a lot of time searching for keys on the keyboard.
3. Save and close the document.



The time allocated for the content that must be taught does not allow every aspect of the three applications to be taught. Learners need to become confident enough to explore other options for themselves. Always work out the answers to practical exercises yourself before assigning them to the class. You will then be better prepared to assist learners while they are working in class.

Activity 2.3

Memorandum

1. Open the document *Act 2_3*.
2. Change the font size of the heading “Ten young artists of South Africa” to 28.
Answer: Remind learners that there are two ways to change the font size – using the drop-down control or using the “Increase font size” button on the ribbon.
3. Find the first paragraph after the heading. Make the following changes:
 - a. Change the font colour of the first paragraph to Blue Accent, 5.
Answer: The colour must be the correct one. Learners can hover their mouse above the colour block until the tool tip appears to find which is the correct choice.
 - b. Change the font type to Arial Black.
Answer: “Arial Black” font type is NOT the same as “Arial” or “Arial Narrow” or the bold version of these fonts. Learners must follow the instructions.
4. Save then close the file.

Activity 2.4

Memorandum

1. Continue working in the document that you used for Activity 2.3, *Act 2_3*.
2. Change the font of the names of the ten artists to Comic Sans and 14 pt.
Answer: The reason for having learners repeat this process ten times is to reinforce the skills. After they have done it ten times it might be a good time to introduce them to the ‘Format Painter’. They will have a better appreciation for what it offers.
3. Find the heading “Jody Paulsen” on page 3. Change the heading to italics and bold.
4. Apply a yellow text highlight to that paragraph.
Answer: The paragraph referred to is under the heading “Jody Paulsen”. Learners should apply a yellow text highlight to all the text. This is not the same as a yellow paragraph shading.
5. Underline the heading of “Moha Modisakeng” on page 4.
6. Save and close this document.

Activity 2.5

Memorandum

1. Open the *Act 2_5* document.
2. Select the first two sentences of the document.
3. Open the *Character Spacing* dialogue box.
Answer: This is found by clicking the “Advanced” tab in the “Font” dialogue box. This is a skill that learners might not use much, but the NSC examiners are quite fond of asking it in the Grade 12 NSC examinations.
4. Choose *Expanded*. Use the following values:
 - a. Spacing: 0.7 pt
 - b. Position: Raised by 6 pt.
Answer: The position of the text can only be changed if “Raised” or “Lowered” is first selected. Accept either as correct.
5. Save and close the file.

Activity 2.6

Memorandum

1. Open the document *Act 2.6*.
2. Select the title of the document and change the font type to Verdana.
Answer: In each activity skills that were taught in earlier units are reinforced.
3. Increase the font size of the title to 26 and bold.
4. Change the paragraph spacing of the paragraph that starts with "Do you love food? ... some fresh fibre first" to 12 pt before the paragraph.
Answer: This question requires learners to make use of the "Paragraph" dialogue box. They need to know how to find it without wasting a lot of time.
5. Change the line spacing of the text after heading three, "Eat some fat!" to 1.5.
Answer: This can be done either using the "Line and Paragraph Spacing" button on the ribbon or by using the "Paragraph" dialogue box. All the text after this heading should be changed, not just the first paragraph.
6. Save and close this document.

Activity 2.7

Memorandum

1. Use the document: *Act 2.7*.
2. Align the first paragraph of text to *Align Text Center*.
3. Align the second paragraph of text to *Align Text Right*.
4. Align the third paragraph of text to *Justify*.
5. Save and close the document.
This is a straightforward activity which should not pose too many problems for learners.

Activity 2.8

Memorandum

1. Open the document *Act 2_8*.
2. Add a 3 pt triple line shadow paragraph border to the second and third paragraphs in the document.
3. Insert an orange border around the first paragraph (just below the "One of the most controversial topics in today's age is global warming" heading). It should have the following properties:
 - a. 3D border
 - b. Width should be 3 pt
4. Apply a light blue shading to the second paragraph and underline it.
Learners must be clear that in this activity they are applying paragraph shading and NOT text highlighting.
5. Apply a green shading to the last paragraph and change the font to italics.
Learners must be clear that in this activity they are applying paragraph shading and NOT text highlighting.
6. Save and close this document.

Activity 2.9

Memorandum

1. Open the *Act 2_9* document.
2. Select the text of the first paragraph and change the font size to 28 pt.
3. At the same time, while the text is selected, change the font to *Bookman Old Style*.
4. Change the colour of all the text to red.
Learners should be reminded of the <Ctrl><A> shortcut to select all the text.
5. Highlight your first sentence in yellow.
6. Select all your text and *Center Align*.
7. Create a border of your choice around your paragraph.
8. Apply the *Heading 1* style to the text *Fynbos* on page 1.
9. Save and close the file.

Activity 2.10

Memorandum

1. Open Microsoft Word.
2. Create a new blank document.
3. Open the document *Act 2_10* and copy the first three paragraphs.
4. Paste the paragraphs into the blank document, choose the *Keep Text Only* paste option.
5. Find the word “rhinoceros”, replace each instance with “rhino”. When you have finished, you will receive a prompt indicating that Word has made nine replacements.
6. Save the document as *2Rhino.docx* and close the document.
This is a good opportunity to ensure that learners know the difference between ‘Save’ and ‘Save As’.

Activity 2.11

Memorandum

1. Open Microsoft Word.
2. Create a blank document.
3. Open the *Act2_11* document.
4. Copy the text from this document and paste it into the blank document.
Answer: Remind learners of the <Ctrl><A> shortcut to select all the text. Learners could use <Ctrl><C> to copy and <Ctrl><V> to paste.
5. Run a *Spelling & Grammar* check.
Answer: A spelling and grammar check can also be started by pressing function key F7.
6. Ignore the spelling of names.
7. Add the words that are spelled correctly and are not recognised by Word, to the dictionary.
8. Correct all other spelling and grammar errors.
9. Save the file as *Act2_11* and then close the file.



REVISION ACTIVITY

Chapter 2: Text basics in word processing

Open the document *RA_2*.

(The marking grid is at the end of the questions.)

1. Format the heading “Ten young artists of South Africa” as follows: (6)
 - a. Centre the heading.
 - b. Change the font of the heading to *Forte*.
 - c. Expand the character spacing 2 pt.
 - d. Change the font size of the heading to 22 pt.
2. Change the names of the ten artists to display in the *Book Title* style. (2)

This is another opportunity to make use of the “Format Painter”.

Learners can also click the first artist by placing the cursor in the left margin.

If they hold down the <Ctrl> key, they can then select the other headings and change the style of all ten headings in one go.
3. Add a paragraph border to the text of the second artist, Daniella Mooney. (2)
 - a. Use the wavy single line style.
 - b. The width of the border should be 1.5 pt.
4. Use a word-processing feature to display *ALL* occurrences of the word “culture” in small caps. (2)
5. Replace all occurrences of the text “fashion” with the text “high fashion” in bold and font colour green. (3)
6. Correct the four spelling errors found in the document. (4)
7. Change the line spacing of the whole document to 1.5 pt. (2)
8. Edit the last sentence of the first paragraph to appear as follows: (5)

We discover more about the ten best young artists (Webb, 2017) in South Africa ☺

- a. Use a double line text border.
- b. Change the text font to italics.
- c. Insert a symbol at the end of the paragraph. (Windings, character code 74)
- d. Shade the text with a light green colour.
- e. Save and close the document.

TOTAL: [26]

MARKING GUIDELINE

No.	Criteria	Maximum Mark	
1.	<ul style="list-style-type: none"> Heading centered ✓ Font type changed to Forte ✓ Character spacing expanded ✓ to 2 pt ✓ Font size changed to 22 pt ✓ 	1 1 2 1	5
2.	<ul style="list-style-type: none"> All ten artist names changed ✓ to Book Title style ✓ 	2	2
3.	<ul style="list-style-type: none"> Wavy single line border added ✓ with size 1.5 pt ✓ 	2	2
4.	<ul style="list-style-type: none"> All five occurrences of word "culture" ✓ changed to small caps ✓ 	2	2
5.	<ul style="list-style-type: none"> All five occurrences of "fashion" changed to "high fashion" ✓ Changed to green font colour ✓ Changed bold ✓ <p><i>If only the text has been changed award only the first mark.</i></p>	1 1 1	3
6.	<p>Spelling</p> <ul style="list-style-type: none"> colourful ✓ sculpture ✓ distinctive ✓ immersive ✓ 	1 1 1 1	4
7.	<ul style="list-style-type: none"> Line spacing of whole document changed ✓ to 1.5 pt ✓ 	2	2
8.	<ul style="list-style-type: none"> Double line border ✓ applied to the correct text ✓ Text changed to italics ✓ Symbol (☺) added to end of text ✓ Light green shading applied ✓ 	2 1 1 1	5
	TOTAL		26

PAGE LAYOUT AND VIEW OPTIONS IN WORD PROCESSING

CHAPTER 3

CHAPTER OVERVIEW

Unit 3.1 Page and document layout

Unit 3.2 View options

The following learning outcomes are covered by this chapter: 

- Understand the different page and document layout views.
- Use *Print Preview*.

GRADE: 10

DATE:

TEACHING TIME: 6 hours 

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader

INTRODUCTION

A word-processing application offers different layout and formatting options, and this can affect the amount of information that appears on the page. You can change the page orientation, page size, page margins, page sizes and page borders.

Activity 3.1

Memorandum

1. Open the document *Act 3_1*.
2. Change the page orientation to portrait and all the page margins to 2 cm.
The default page margins in Word are a rather strange number, 2.54 cm. This is actually 1 inch, which is the unit of measurement used in the USA where the software is written.
3. Add the current date in the page footer. The date should automatically update every time the document is opened.
Answer: Any date format is acceptable.
4. Insert the file path in the header of the document.
5. Add a page border of your choice to this document.
6. Save the document as *Act 3.3*.
7. Close this document.

Activity 3.2

Memorandum

1. Open the document *3Harvest.docx*.
2. Insert a page number at the bottom of the page. The number should be displayed on the right-hand side of the page. (Remember that you should not type the number on the keyboard).
*If you wish to check whether a learner has inserted a page number correctly do the following: Press <Alt><F9> to turn on field codes. The number will change to something like {PAGE * MERGEFORMAT}. If you want to know more about field codes look on the Microsoft Support website.*
3. Apply a *Shadow* page border, with a width of 4.5 pt. Use Red, *Accent 2* as the colour for the page border.
4. Select the *Show/Hide* button under the *Home* tab so that you can see hidden symbols. Add a page break to move the paragraph with the heading "General Overview" to the next page.
When working with page breaks (and later on in Grade 11, section and column breaks) it is very important that the learners turn on the "Show/Hide hidden symbols". Learners should be able to use the ribbon ("Breaks" on the "Layout" tab as well as <Ctrl><Enter>) to insert a page break.
5. Change the font size of the heading "HARVEST FOOD FESTIVAL" on page 1 to 54 pts.
6. Save and close the document.

REVISION ACTIVITY

Chapter 3: Page layout and view options in word processing

Open the *Chapter 3_Revision Activity* word processing document.

1. Change the page size of the document to A4. (2)
2. Set the top margin to of the page to 2 cm. (2)
Only the top margin should be changed. The other margins remain 2.2 cm.
3. Insert your name and surname right aligned in the header of the document. (4)
4. Insert today's date left aligned in the header of the document. (2)
This question is challenging as learners have to use the pre-set tabs to do the alignment correctly. They can only use the "Align Left" button if the date is on a separate line to the name and surname.
5. Insert automatic page numbering at the bottom of the page (footer) as follows:
 - a. Use "Accent Bar 1" as the page numbering type. (2)
 - b. Centre the page numbering at the bottom of the page. (2)
There is already a reference in the footer. Learners should press Enter after the reference to create a new line that will be centred.
6. Apply a page border; it should be a shadow border, which is 3 pt. (4)
 Also, change the border colour to blue.
Learners should be aware of the following: Paragraph and text borders are in the "Paragraph" group on the "Home" tab. Page borders are found in the "Page Background" group on the "Design" tab. The Design tab does not appear in versions of MS Office before Office 2013. If you are marking this question turn on "Reveal Formatting" by pressing <Shift><F1>. Scroll down and open "Section" and move to the "BORDERS" section. You will easily be able to check if the question has been answered correctly.
7. View the document in *Web Layout*. (2)
Learners should remember to set the document view back to "Print Layout". Save and close the document.

MARKING GUIDELINE

No.	Criteria	Maximum Mark	
1.	<ul style="list-style-type: none"> • Page size changed to A4 ✓ 	1	1
2.	<ul style="list-style-type: none"> • Top margin ✓ set to 2 cm ✓ 	2	2
3.	<ul style="list-style-type: none"> • Name ✓ and surname ✓ inserted in header ✓ • Text is right-aligned ✓ <p><i>In examinations one mark would usually be allocated for both the name and surname.</i></p>	3 1	4

No.	Criteria	Maximum Mark	
4.	<ul style="list-style-type: none"> • Current date ✓ inserted in header • Date is left-aligned ✓ <p><i>It is not clear from the question whether the date should update automatically or not. Accept either answer.</i></p>	1 1	2
5.	<ul style="list-style-type: none"> • Automatic page numbering ✓ in footer ✓ • "Accent Bar 1" style used ✓ • Page numbers are centred ✓ 	2 1 1	4
6.	<ul style="list-style-type: none"> • Shadow ✓ page border applied ✓ • Border width set to 3 pt ✓ • Border colour set to "Blue" ✓ 	2 1 1	4
7.	<ul style="list-style-type: none"> • Document layout changed ✓ to "Web Layout". ✓ <p><i>Learners must save the document with "Web Layout" set otherwise they will lose these marks.</i></p>	2	2
Total			19

- Word has two page orientations. Briefly explain the two types. (4)
Answer:
 - Landscape: ✓ Page is oriented horizontally. ✓ (height > width)
 - Portrait: ✓ Page is oriented vertically. ✓ (width > height)
- What is a page margin? (2)
Answer: The margin is the space between the text ✓ and the edge of the document. ✓
- Define what a header in a document means. (2)
Answer: Text that is separated from the body text ✓ and that appears at the top of the page ✓.
- List two types of information a header can have. (2)
Answer: Any TWO of the following:
 Text ✓ and various fields/elements ✓
- Name three elements that can be added to a header or footer. (3)
Answer: page numbers ✓; date and/or time, ✓; file names ✓
- What are page breaks used for? (2)
Answer: Page breaks ensure that a new section starts on a new page, ✓ without having to press successive Enters to get to the new page. ✓

TOTAL: [35]

GRAPHICS, SHAPES AND DIAGRAMS IN WORD PROCESSING

CHAPTER 4

CHAPTER OVERVIEW

Unit 4.1 Graphics, shapes and diagrams

The following learning outcomes are covered by this chapter:

- Insert text boxes.
- Insert pictures, online pictures, *WordArt* and shapes.
- Insert charts and *SmartArt*.

GRADE: 10

DATE:

TEACHING TIME: 6 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader

INTRODUCTION

Adding pictures is a good way to give some character to a document. This chapter deals with several tools that allow users to insert them.

Activity 4.1

Memorandum

1. Open the *Act 4_1* document.
2. Insert a textbox below the heading.
Answer: The textbox will hide the text in the paragraph below the heading. You might want to show learners how to use text wrapping to change this.
3. In the textbox, type the word, *Storytelling*. The font type should be *Calibri*, and the font size should be 38 pt.
Answer: The font size 38 pt is not available in the "Font Size" drop-down control. It has to be typed in.
4. Adjust the size of the text box so that the text fits nicely in the middle of the textbox.
5. Save the document.

Activity 4.2

Memorandum

1. Open the same document that you used for activity 4.1, *Act 4_1*.
2. Type the words "Printed Copy" at the bottom of the document.
3. Apply any *WordArt* Style of your choice to the text. Change the text fill colour to any Green shade.
4. Insert image 4.2 in the document and the picture should be in the centre beneath the text.
At this stage in the activity the image fills the page between the margins and looks like it is centred. The position should still be set to centred so that it remains in the correct position after doing #6.
5. Set the text wrapping to Square.
6. Resize the picture by adjusting the height to 3.5 cm.
7. Rename the document to *Act 4_2*.
8. Save then close the document.

Activity 4.3

Memorandum

1. Open a blank Word document.
2. Insert a pentagon from the *Basic shapes* section.
3. Remove the fill.
4. Insert the text "CAT" in the centre of the shape.
5. Add a shadow effect to the shape and give the shape a purple fill.
6. Save the file as *Act 4_3*.

REVISION ACTIVITY

Chapter 4: Graphics, shapes and diagrams in word processing

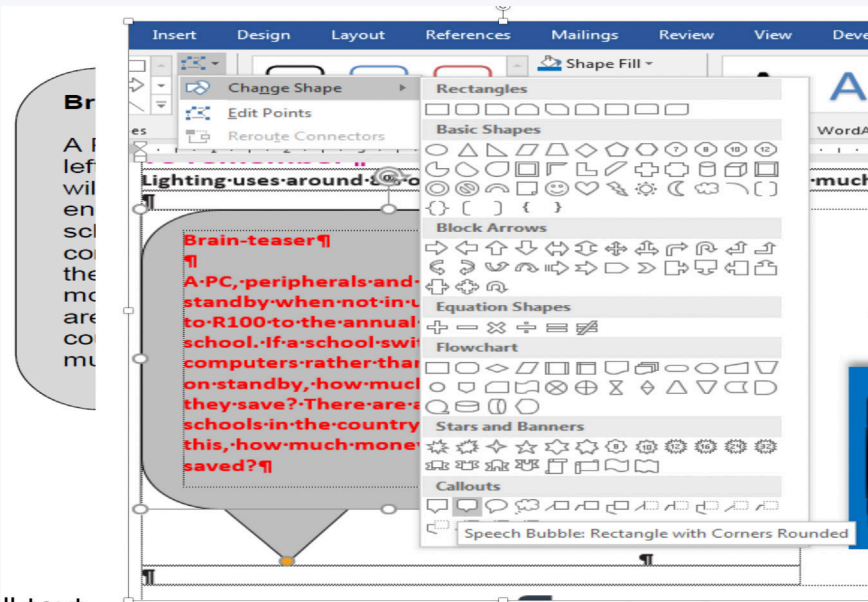
Open the *RA_4* word-processing document.

1. Make the following changes to the heading “Climate Change and energy use” at the top of the first page. (5)
 - a. Change the heading to any *WordArt*.
 - b. Fill the text with any green colour.
 - c. Change the font size to 48 pt.
 - d. Change the shape outline to yellow and 3 pt.

The shape outline refers to the textbox that holds the WordArt and not the text outline of the WordArt itself.
2. The following pictures appear at the bottom of page 1. Make the following changes: (6)



- a. Group the two pictures to move as one object.
 - b. Use a blue fill colour for the grouped picture and apply any shadow effect.
 - c. Change the size of the grouped picture to: width 5cm and height 4.45cm.
3. Edit the text box on page 1 so that it appears similar to the one shown below. (6)



- c. Change the fill colour to grey.
 - d. The font colour of the text in the shape must be bold and red.
- Answer: Changing the shape is done by going to the “Drawing Tools Format” tab, clicking the “Edit Shape” button in the “Insert Shapes” group and then selecting the shape needed from the “Change Shape dropdown.*
4. Insert a 1.5 pt. paragraph border on page 2 for the survey form. (3)

Note that a paragraph border is required here and NOT a page border.

5. The Grade 10s decided to create a logo to use on advertisements. The logo must appear at the bottom of the last page. (11)
- Insert the picture *Madagascar_Penguins.jpg* provided.
 - The border of the picture must be the same as they appear on the next page, with a yellow outline.
 - Create a callout which will appear as shown below:
 - Shape must be outlined with a red-dashed line
 - The names of the penguins must be clearly visible; Skipper, Kowalski, Rico and Private.
 - Apply **WordArt** to the words “Movie Festival”, as well as “Madagascar” as in the example below, and use a blue fill colour for both words.



Save and then close the document.

This is a good example of a question with a high cognitive demand and a high difficulty level.

No.	Criteria	Maximum Mark	
1.	<ul style="list-style-type: none"> Heading changed to WordArt ✓ Text filled with a green colour ✓ Font size of text changed to 48 pt ✓ Colour of shape outline changed to yellow ✓ Size of shape outline changed to 3 pt ✓ 	1 1 1 1 1	5
2.	<ul style="list-style-type: none"> Pictures grouped ✓ Grouped picture has blue fill colour ✓ Grouped picture has a shadow effect applied ✓ Picture height 5 cm ✓ and width 4.45 cm ✓ <p><i>The measurements must be exactly correct.</i></p>	1 1 1 2	5
3.	<ul style="list-style-type: none"> Textbox shape changed to callout ✓ Font size set to 10 pt ✓ All text is visible ✓ Fill colour of shape set to any grey colour ✓ Font colour of text set to Red ✓ Text is bold ✓ 	1 1 1 1 1 1	6
4.	<ul style="list-style-type: none"> Paragraph border ✓ applied to text on page 2 ✓ Size of border set to 1.5 pt ✓ 	2 1	3
5.	<ul style="list-style-type: none"> Picture <i>Madagascar_Penguins.jpg</i> inserted ✓ Oval border ✓ with a yellow colour ✓ applied to picture Callout added ✓ with a red ✓ dashed border ✓ Correct penguin names inserted in callout ✓ All names are visible ✓ WordArt added for both words ✓ Blue text fill applied to both words ✓ Arch shape applied to “Movie Festival” ✓ 	1 2 3 1 1 1 1 1	11
Total			30

TOTAL: [30]

PARAGRAPHS IN WORD PROCESSING

CHAPTER 5

CHAPTER OVERVIEW

Unit 5.1 Paragraphs

Unit 5.2 Document layout and view options

The following learning outcomes are covered by this chapter:

- Use bullets, numbering, indents and tabs in paragraphs.
- Customise margins.
- Insert headers and footers.
- Work with multiple documents or windows.
- Use the zoom feature.
- Use the draft and full-screen reading views.



GRADE: 10

DATE:

TEACHING TIME: 6 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader

COMPUTER MANAGEMENT

The work covered in Chapters 2 of the Theory Book (Introduction to using Computers) and 3 (File Management) should be integrated with the work covered in this book. Practical work provides an opportunity to reinforce theoretical concepts in a meaningful way.

It is also important to remember that Theory examinations also include a question on Solution Develop. Questions such as “Explain the difference between Save and Save As” are often asked in Theory examinations.

Activity 5.1

Memorandum

1. Open the document *Act 5_1*.
2. Change the list to a bulleted list of your choice.
3. Save the document.

This activity is very straightforward and learners should not find it difficult. Encourage your learners to experiment with different types of bullets.

Activity 5.2

Memorandum

1. Use the document that you saved in Activity 5.1, *Act 5_1*.
2. Change the indent of the text so that it is 2.54 cm.
3. Save the document.

As the list is a bulleted list, learners might be confused about which indent to change. Accept either the bullet being indented by 2.54 cm or the hanging indent being changed to 2.54 cm (which looks rather strange).

Activity 5.3

Memorandum

Tab stops were first used on typewriters. They were a mechanical stops that could be set to stop the movement of the carriage. Their purpose was to allow typists to align columns of text in the same place.

1. Open the practise document *GA5_3*.
2. Create a numbered list of the highlighted items that follow the words "... some popular keyboard shortcuts".
This question first requires the learners to place each shortcut in a new paragraph (by pressing Enter at the end of each one). They must then delete the unnecessary commas. Finally, they will create the number list.
This is a good example of a question with a level 3 cognitive demand.
3. For the second paragraph, add a hanging indent of 2 cm to the right.
4. Set the tab for the beginning of the first paragraph to 1.5 cm using tab stops on the ruler.
5. Use the Tabs dialogue box to set the tab stop for the third paragraph (after the number list created in Question 2) to start at 2 cm and the right tab stop at 15 cm.
6. Save the document.

UNIT
5.2

Document layout and view options

Activity 5.4

Memorandum

1. Open the document *Act 5_4*.
2. Apply the Full Screen Viewing.
This is called "Read Mode". It can be accessed either by using the "Read Mode" button in the "Views" group on the "View" tab or by clicking the "Read Mode" button on the Status Bar.
3. Save the document.
If the document is saved in Read Mode, it will open in Read Mode when opened again.



Open the *RA_5* word-processing document.

1. Change the page size to *Letter*. (2)
2. Set the top margin to 2 cm and the gutter position to the left. (2)
3. Insert automatic page numbering at the top of the page (header).
Use *Vertical Line* Style. (2)
4. In the footer, insert the text “ENERGY”. Make sure that the text is left aligned. (2)
5. Locate the heading “Sustainable and non-sustainable resource use” on page 2.
Format the text below the heading using the correct tab stops, as shown in example. (4)

Type	Sustainable resource use	Non-sustainable resource use
People	Ecotourism	Large-scale tourism
People	Re-use, recycle and reduce	Continued use of fossils
Socio-economic	Controlled urban growth	Rapid urbanization

A good example of a higher order question. The tab settings are expected to be exactly at 6 cm and 15 cm.

6. Locate the bulleted list under the heading “What can we do?” on page 3.
Change the format of the bullets to the picture *1Bullet_Kolpunt* found in the practice document folder. (3)
7. Locate the heading “Measuring” on page 4 of the document and remove the tab with the leader tab lines. (3)
8. On the last page of the document is a form. Apply the leader tabs at the bottom of the form so that it displays as follows: (4)

.....

.....

NAME **SIGNATURE**

Save and close the document.

REVISION ACTIVITY

Chapter 5: Paragraphs in word processing... *continued*

MARKING GUIDELINE

No.	Criteria	Maximum Mark	
1.	<ul style="list-style-type: none"> Page size changed to Letter ✓ 	1	1
2.	<ul style="list-style-type: none"> Top margin set to 2 cm ✓ Gutter position set to left ✓ <p><i>Other margin settings should not be changed</i></p>	1 1	2
3.	<ul style="list-style-type: none"> Automatic page numbering ✓ inserted in header ✓ Correct style applied ✓ 	2 1	3
4.	<ul style="list-style-type: none"> Text "ENERGY" in footer ✓ Text is left-aligned ✓ 	1 1	2
5.	<ul style="list-style-type: none"> Centre tab ✓ set at 6 cm ✓ Right tab ✓ set at 15 cm ✓ Tab settings applied to all four lines ✓ <p><i>The measurements should be set to the correct value and not just close by.</i></p>	2 2 1	5
6.	<ul style="list-style-type: none"> All bullets changed ✓ to image 1Bullet_Kolpunt ✓ 	2	2
7.	<ul style="list-style-type: none"> Tab with leader lines removed ✓ from all five lines ✓ 	2	2
8.	<ul style="list-style-type: none"> Right tabs ✓ set at 5 cm and 15 cm ✓ Dotted leader line set ✓ Tabs applied correctly ✓ 	2 1 1	4
Total			22

TABLES IN WORD
PROCESSING

CHAPTER OVERVIEW

Unit 6.1 Tables

The following learning outcomes are covered by this chapter:

- Insert a table in Word.
- Use the *Design* and *Layout* tabs when using tables.
- Apply gridlines in a borderless table.
- Change the size of cells.
- Merge and split cells in a table.
- Use text alignment and direction in a table.
- Use *Autofit*.
- Work with data in tables, converting to text and working with formulae (SUM and AVERAGE).

GRADE: 10

DATE:

TEACHING TIME: 6 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader

INTRODUCTION

This section covers inserting tables, as well as applying the different design and layout options. This includes creating table borders, changing the size of cells, etc.

UNIT

6.1 Tables

Activity 6.1

Memorandum

1. Open a blank Word document.
2. Insert a table, six columns by five rows.
3. Create your own study timetable.
4. From the second to the fourth row, in the first column, type in the following:
 - a. Monday
 - b. Wednesday
 - c. Friday
 - d. Saturday
5. In the first row, enter the study times, as well as when you will be taking a study break.
6. For each time-frame, enter the subject you will be studying.
7. Save the document as *Act 6_1* and then close the document.

This activity is an opportunity for learners to create a study timetable for the upcoming mid-year examinations. Do not, however, let them spend too much time pondering over what to fill in. If they are uncertain, they can simply copy what is in the example below and fill in their own subjects.

Timetable

	18h-18h45	Break 18h45-19h	19h-19h45	Break 19h45-20h	20h-21h
Monday	Maths		LO		Maths
Wednesday	Science		Maths		English
Friday	LO		English		Science
Saturday	English		Science		LO

Activity 6.2

Memorandum

1. Open the document with the file name *Act 6_2*.
2. Change the height and width of all the cells to 2 cm and 4 cm, respectively.
3. Save and close this document.

The width of the cells can be set by going to the "Cell" tab of the "Table Properties" dialogue box. The height of the cell, however, can only be set by adjusting the row height. Learners will need to make a decision as to whether to choose the "Exactly" or "At least" option for row heights. If you wish to mark the learners' work, you can make use of "Reveal Formatting" (<Shift><F1>) to check their answers.

Activity 6.3

Memorandum

1. Open the document *Act 6_3*.
2. Use a table feature to display all the data in Column 1 in one line.

The question does not make this clear, but each row should be displayed in one line. This requires learners to select the column and then Autofit the contents of Column 1.
3. Make sure that the width of the two columns are the same.

Learners should select the whole table and distribute columns. Remind learners of the four-headed arrow used to select the table.
4. Save and close the document.

Activity 6.4

Memorandum

1. Open the *Act 6_4*.
2. Merge the cells A, B and 1, 2.
3. Split the table from the letter C.
4. Save and close this document.

Activity 6.5

Memorandum

1. Open the *Act 6_5* document.
2. Change the text direction of the first row to *Align Bottom Left*.
It might look like nothing has happened. Get the learners to increase the height of row 1 to check the position of the text in the cell.
3. Apply a blue shading to the first row.
Any blue shading will be fine. It should still be possible to easily read the text.
4. Save the document.

Activity 6.6

Memorandum

1. Open and work in the same document that you used for Activity 6.5, *Act 6_5*.
2. Sort the names in alphabetical order, in ascending order.
Alphabetical order means from A to Z, i.e. in ascending order. Learners are expected to know that. Learners must select the whole table before sorting to ensure the data does not become muddled up.
3. Save the document.

Activity 6.7

Memorandum

1. Open the document *Act 6_7*.
2. Convert the text into a table.
This is a challenging activity. The data for Computer A should first be converted into a single column table. Then the process is repeated for Computer B. Computer B's data then has to be cut and pasted into a new column to the right of Computer A.
HINT: *The table should show Computer A being compared to Computer B.*
3. Save the document.



Activity 6.8

Memorandum

1. Open the *Act 6_8* document.
2. Convert the text to table. Use the tabs separator.
3. Apply the *Table* style: *Light List: Accent 5*.
4. Resize the rows and columns according to the following values:
 - Row height: 1.0
 - Column width: 2.5
5. Change the text alignment of the header row to *Align Center*.
6. Sort the second column according to surname in alphabetical order.
7. Add a row and in the bottom right cell, use the AVERAGE formula and calculate the average of column six.
8. Save and close the document.



Open the *RA_6* word-processing document. The document contains information about street parties of the Rio Carnival.

1. Make the following changes to the document:
 - a. Insert the file path as a field in the footer of the document. (1)
 - b. Complete the automatic numbering of the headings on page 2 and 3. (2)
 - c. Change the bullet list on page 3 to a numbered list. (1)
 - d. Locate the “Table 1: Pre-Carnival” table and do the following:
 - i. Change the table style to any other table style of your choice. (2)
 - ii. Ensure the table headings will repeat at the top of each page if the table should flow over to the next page. (2)
 - iii. Adjust the width of all the cells to fit the contents. (2)
 - iv. Merge the first five cells in the last row. (2)
 - v. Change the font of only the headings in the first row to small caps. (2)
 - vi. Enter a formula in the last cell in the table (bottom right) to determine the SUM of the estimated public attending block parties. (2)
 - e. Locate the “Table 2: Post Carnival” table and convert this table to text in the document. Separate the text with a hash (#) sign. (2)
- Save and close the document.

MARKING GUIDELINE

No.	Criteria	Maximum Mark	
1. a.	<ul style="list-style-type: none"> • File path field added to the footer ✓ 	1	1
b.	<ul style="list-style-type: none"> • Automatic numbering applied ✓ to all five headings ✓ <p>Award only the first mark if all the headings are not numbered.</p> <p>Check the learners used automatic numbering. Click on the ‘1’ and all the numbers should be selected.</p>	2	2
c.	<ul style="list-style-type: none"> • Bullet list (page 3) changed to numbered list ✓ 	1	1
d. i.	<ul style="list-style-type: none"> • Table style changed ✓ to any style ✓ <p>Use Reveal Formatting to check. The heading “TABLE STYLE” should appear under Table. The original table had no style.</p>	2	2
ii.	<ul style="list-style-type: none"> • Repeat header row ✓ applied to the table ✓ <p>Click in the first row and the “Repeat Header Row” button should be highlighted. The header row should appear at the top of the table on page 3 and again on page 4 and 5.</p>	2	2
iii.	<ul style="list-style-type: none"> • Autofit to Contents ✓ applied to the table ✓ <p>Select the table and click “Autofit to Contents” to check. Nothing should change.</p>	2	2
iv.	<ul style="list-style-type: none"> • First five cells ✓ of last row merged ✓ 	2	2
v.	<ul style="list-style-type: none"> • Font style of first row headings ✓ changed to all caps ✓ <p>If 1.d.ii answered correctly the change will appear each time the heading row appears. This is correct and should not be penalised.</p>	2	2

REVISION ACTIVITY

Chapter 6: Tables in word processing... *continued*

No.	Criteria	Maximum Mark	
vi.	<ul style="list-style-type: none"> Formula added to last cell in table ✓ Formula: =SUM(ABOVE) ✓ Press <Alt><F9> to show formula	1	2
e.	<ul style="list-style-type: none"> Table 2 converted to text ✓ # character used as separator ✓ 	1	2
Total			18



REVIEWING AND LAYOUT IN
WORD PROCESSINGCHAPTER OVERVIEW 

Unit 7.1 Reviewing

Unit 7.2 Page setup

The following learning outcomes are covered by this chapter: 

- Insert comments in a Word document.
- Use the different options to protect your document.
- Understand why columns are used in Word.
- Use hyphenation in a document.
- Insert watermarks.
- Change the page colour of a document.
- Use hyperlinks.



GRADE: 10

DATE:

TEACHING TIME: 6 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader

INTRODUCTION

In this chapter, we will look at how to use the Comments feature, as well as how to protect documents. Learners will also learn about document and page layout. Lastly, the chapter will explore hyperlinks in Word documents.

Activity 7.1

Memorandum

1. Open the practice document *Act 7_1*.
2. Read through the document and add comments where there are spelling errors, as well as poor sentence structure.
3. Save and close the document.

This is not intended to be a grammar exercise. Learners should be able to recognise that words with a wavy red underline are spelling errors and that a wavy blue line indicates a grammatical error. When looking for errors it is always a good idea to turn on "Show/Hide hidden symbols".



Activity 7.2

Memorandum

1. Open the document *Act 7_2*.
2. Convert the text into three columns.
3. Adjust the first column's width to 12.2 cm and adjust the spacing to 1.5 cm.
Learners must uncheck "Equal column widths".
4. Save and close the document.
This activity might be a bit disappointing as there is not enough text to fill the first column. Add some extra text using, e.g. =lorem(10,10)

Activity 7.3

Memorandum

1. Open the document that you saved in Activity 7.2, *Act 7_2*.
2. Insert the following *watermark_Watermark.jpeg*. Make sure the *Washout* checkbox is ticked.
3. Save and close the document.

Activity 7.4

Memorandum

1. Open the practice document *Act 7_4*.
2. Select all the text and format it to three columns.
You should advise the learners whether or not to include the heading "License design and rationale".
3. Insert the picture *Computer.png* as a watermark for the document.
4. Use the page colour function and choose a light orange shade from the drop-down menu.
5. Change the page orientation to *Landscape*.
Inserting the columns might have added a section break. The change of orientation might only happen on the first page.
6. Save the document.

Activity 7.5

Memorandum

1. Open and use the document that you worked on in Activity 7.1, *Act 7_1*.
2. In each instance where the word "elephant" is used, create a hyperlink.
Use the following information to create the hyperlink:
 - a. Text to display: *Elephant*
 - b. Link to the document called "Wikipediaorg.docx" in your practice documents folder.
3. Save and close your document.
Learners should only add hyperlinks to the text "elephant" (3 occurrences) and NOT to the many occurrences of the word "elephants"!

REVISION ACTIVITY

Chapter 7: Reviewing and layout in word processing

Open the *RA_7* word-processing document.

1. Justify and automatically hyphenate the whole document. (2)
2. Remove the comment on the first page of the document. (2)
3. Make the following changes to the first page as follows: (8)
 - a. Apply the *Car Front* style to the heading “GUIDELINES TO BUYING A CAR”.
 - b. Insert the image *2Cars.jpg* as a watermark WITHOUT any washout effect.
 - c. Place a page border around the first page of the document.
The border style must be a 10 pt *Art-Style* border.
 - d. Change the page colour of the whole document to light blue.
4. On page 2, locate the first two paragraphs of the numbered list (1. Decide what type ... and 2. New or used?) (4)
 - a. Place these two paragraphs into two columns.
 - b. The columns must have a line between.
 - c. The spacing between the columns must be 1.5 cm.
5. Add a comment with the word “dangerous” to the word “CO2 emissions” that appears on page 3, under the heading “Fuel consumption to the fore”. (2)
6. Add a hyperlink to the heading “Pick a brand” on page 3, to link to the picture *2Cars.jpg* in the practice documents folder. (3)
Save and close the document.

TOTAL: [21]

MARKING GUIDELINE

No.	Criteria	Maximum Mark	
1.	<ul style="list-style-type: none"> ● Whole document justified ✓ ● Automatic hyphenations applied to whole document ✓ 	1	2
2.	<ul style="list-style-type: none"> ● Comment deleted ✓ from first page ✓ 	2	2
3.	<ul style="list-style-type: none"> ● Car Front style applied to page 1 heading ✓ ● 2Cars image added as watermark ✓ ● Washout unchecked ✓ ● Art border ✓ applied to first page only ✓ ● Border width set to 10 pt ✓ ● Page colour of whole document ✓ changed to blue ✓ 	1 1 1 2 1 2	8
4.	<ul style="list-style-type: none"> ● Correct text ✓ placed in two columns ✓ ● Line displayed between columns ✓ ● Spacing set to 1.5 cm ✓ 	2 1 1	4
5.	<ul style="list-style-type: none"> ● Comment added to text “CO2 emissions” ✓ ● Comment text ‘Dangerous’ added ✓ 	1 1	2
6.	<ul style="list-style-type: none"> ● Hyperlink added ✓ to text “Pick a brand” ✓ ● Links to file 2Cars.jpg ✓ 	2 1	3
	Total		21

TEMPLATES AND HELP IN WORD PROCESSING

CHAPTER OVERVIEW

Unit 8.1 Templates and help in Word

Unit 8.2 Integration techniques

The following learning outcomes are covered by this chapter:

- Create a letter, fax and report using the templates in Word.
- Use built-in templates.
- Access online and offline help.
- Understand what frequently asked questions (FAQs) are.
- Use integration techniques.
- Solve problems using a word processor.
- Solve problems using a word-processing application.

GRADE: 10

DATE:

TEACHING TIME: 4 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader

INTRODUCTION

In this chapter, we will be working extensively with templates in Word and how to use the Help feature, both online and offline. We will also learn more about integration techniques and how to solve problems using a word-processing application.

UNIT

8.1 Templates and Help in Word

Activity 8.1

Memorandum

1. Now that you have learnt more about creating a letter template, help Joey out with creating his own letter template.
2. Open a blank Word document.
3. Use the following information to create a letter:
 - a. Date: *Today*
 - b. Sender company name: *Joey brands*
 - c. Sender company address: *PO Box 345, Middelburg 1050.*
 - d. Recipient name: *Nozi Nhlapo*
 - e. Recipient address: *PO Box 2351, Kimberly 8300*
 - f. Salutation: *Dear Ms Nhlapo*
 - g. Main body of the letter: *Please see all the documentation attached for the application.*
 - h. Closing: *Best regards.*
 - i. Your name will already be inserted after the closing.
 - j. Sender title: *Brand ambassador*
4. Save this document as a template, filename: *Letter for Application.*
5. Close the template.
6. Open the template that you have saved in Question 4, use the same information; however this time it must be addressed to *Mr John.*
7. Save this document as Letter to Mr John.
8. Open the template that you saved in Question 4.
9. Change the information in the template to be addressed to yourself.
10. Save this file with a different file name such as *Letter to me.*

This activity shows you that the same template can be used over and over again to create different documents.

The major focus of this activity is the process of creating a template and then using it. Learners should not spend a lot of time agonising about the layout of a formal letter. It might be of assistance to learners to download one of the available templates and set about reproducing something similar. You might want to consult a colleague who is a language teacher about the layout of formal letters.

This is an important but often neglected skill. The latest versions of MS Word all require an internet connection in order to make use of the help.

Activity 8.2

Memorandum

1. Open the following documents for this activity:
 - a. *Act 8_2a* Word document
 - b. *Act 8_2b* Excel document
2. Arrange the two windows side by side.
3. The column *Hours* is missing in the spreadsheet.
4. Copy this column from the Word document into the spreadsheet file.
5. The data in the *Total* column is missing.
6. Copy the data from the Word document into the spreadsheet file.
7. Make sure you have copied all the data from the column correctly into the cells.

In order for the data in the word-processing document to work correctly in the spreadsheet, it will need to be edited. The 'R' will need to be removed and the decimal comma changed to a decimal point (depending on the Excel settings). If the data is copied as is, Excel will treat the values as text and you will get an error when trying to calculate the VAT.

8. Save and close both these documents.
9. Remember the same is done the other way around, when you need to copy data from a spreadsheet to a Word document.



REVISION ACTIVITY

Chapter 8: Templates and Help in word processing

Part of Question 1.c.iii and Question 2.b are actually taught in Grade 11. These questions can be omitted or alternatively given to the learners as a research task to see if they can find solutions on their own.

1. Open the *RA_8* word-processing document.
 - a. Merge and centre the first five cells of the bottom row of the table on page 1 and type in the word "AVERAGE". (2)
 - b. Add a formula to the table in the bottom right-hand cell to calculate the average of the amounts in the column. (3)
 - c. Place the three paragraphs below the heading "HOW TO CHOOSE A GOOD MOVIE TO WATCH" in three columns: (4)
 - i. There must be a line between the columns.
 - ii. The distance between the columns should be 1 cm.
 - iii. Each sub-paragraph must begin in its own column.
 - d. Paste the file *Comedies.docx* as a linked object below the columns. The file must be displayed as an icon. (3)
2. Locate the form at the bottom of page 2.
 - a. Copy all the data inside the text box border on the last page, starting with "Attendance Form" and paste it into a blank Word document. (2)
 - b. Type in the information that must be in the form. (4)
 - i. **Age:** Choose the correct type for the data that must be inserted
 - ii. **Preference:** Insert two choices, i.e. "Fundraising" and "Marketing"
 - iii. **Attendance:** Indicate if you will attend the meeting or not
 - c. Make sure the font is Arial 14 pt. (1)
 - d. Add a border of your choice to all the text. (2)
 - e. Save the document as a template. Save as *Chapter 8_Template* under the *My Templates* folder. (2)

Save and close the file.

TOTAL: [25]

MARKING GUIDELINE

No.	Criteria	Maximum Mark	
1.a.	<ul style="list-style-type: none"> • First five cells in last row merged ✓ • Text "AVERAGE" typed in merged cells ✓ 	1	2
b.	<ul style="list-style-type: none"> • Formula added to correct cell ✓ • Formula =AVERAGE ✓ (ABOVE) ✓ 	1	3
c.	<ul style="list-style-type: none"> • Correct text in three columns ✓ • Line between columns ✓ • Column spacing set to 1 cm ✓ • Column breaks used align sub-paragraphs ✓ <p>Number iii. is actually Grade 11 work. Do not worry if your learners are unable to answer this question.</p>	1	4
d.	<ul style="list-style-type: none"> • File comedies.docx pasted ✓ as a linked object ✓ • Displays as an icon ✓ <p>Press <Alt><F9> to check if linked or double-click the icon and see if the correct document opens.</p>	2	3

MARKING GUIDELINE

No.	Criteria	Maximum Mark	
2.a.	<ul style="list-style-type: none"> Attendance form text copied ✓ Pasted into a new blank document ✓ <p>The text should still be in the source document.</p>	1	2
c.	<ul style="list-style-type: none"> Font size of form changed to 14 pt ✓ 	1	1
d.	<ul style="list-style-type: none"> Any border applied ✓ to copied text ✓ <p>A paragraph border and not a page border is required.</p>	2	2
e.	<ul style="list-style-type: none"> File saved as a template ✓ File name Chapter 8_template ✓ 	2	2
Total			25



INTRODUCTION TO SPREADSHEETS

CHAPTER 9

CHAPTER OVERVIEW

- Unit 9.1 Basic concepts of spreadsheets
- Unit 9.2 Basic calculations with spreadsheets

The following learning outcomes are covered by this chapter:

- Understand the basic skills and core concepts of spreadsheets.
- Describe the basics of spreadsheets; including rows, columns, cells, sheets and workbooks.
- Use cell references and cell ranges.
- Use basic calculations in Excel.
- Explain what cell contents and cell values are.

GRADE: 10

DATE:

TEACHING TIME: 3 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader

INTRODUCTION

We will not be going into too much detail in this chapter, however, learners will learn about the basics of spreadsheets. Spreadsheets can be used to show different types of data like graphs, information, numbers and graphics. However, it is mainly used to perform calculations on large sets of data.

Activity 9.1

Memorandum

1. Open a blank workbook and save it as *Act 9_1*.
2. You must work on Sheet 1. Right click on the tab and change the name to *Cells*.
If the learners are at a level where they can cope with the additional information, you might want to show them how to delete the extra sheet tabs and rename the one they are working on. Do not, however, overwhelm learners with less experience of spreadsheets with too much information at one time.
3. Select the following cells and apply different shading to each selection:
 - a. A5
 - b. E1:E8
 - c. C11:C25
 - d. G2:J10
4. Type the text *Grade 10* in cell A5 and change the text colour to red.
5. In cells E1:E8, type in some of your friends' names. Select column E and centre the text.
4. Save the file as *Act 9_1* and then close the file.
A straightforward activity. It is important that learners use the correct terminology.

Activity 9.2

Memorandum

Match Column B to Column A.

Answers: 1. B; 2. D; 3. A; 4. C; 5. G; 6. I; 7. F; 8. J; 9. K; 10. H



UNIT

9.2 Basic calculations with spreadsheets

Avoid the temptation to teach learners the SUM() function for the activities in this chapter. They are expected to do ALL the calculations using cell references. Functions are introduced in Chapter 11.

This approach is in line with the Annual Teaching Plan in the CAPS for CAT. Many learners who first learn the SUM() function continue into Grade 12 putting every calculation they ever do into a SUM() function. This should be strongly discouraged.

Activity 9.3

Memorandum

Do this activity on your own.

1. Open a blank worksheet.
2. Create the following spreadsheet. Type the data as shown below:

	A	B	C	D	E	F
1	Day	No. of cooldrinks sold	Cost price per can	Sales price per can	Profit per can	Total profit per day
2	Monday					
3	Tuesday					
4	Wednesday					
5	Thursday					
6	Friday					
7	Total profit for the week					

The purpose of this activity is for the learners to type the information into the cells and enter formulae. Formatting is not important at this stage. That will be covered in Chapter 10. You will, however, need to show learners how to widen the columns or alternatively give them the outline of the spreadsheet shown above to work. They can then focus on typing in the formulae.

Learners might be surprised that they are expected to have some understanding of Mathematics in CAT.

- a. In cell B2, type in 12.
- b. In cell C2, use 3.50 as the price per can.
- c. In cell D2, type in the number 5 as the sales price per can.
- d. In cell E2, use a formula to work out what the profit is per can. *Remember that profit is sales price minus cost price.*
- e. In cell F2, use a formula to calculate the total profit per day. You can calculate this by multiplying the number of drinks sold by the profit per can.
- f. Repeat the process above so that all the days of the week are completed.
- g. In cell F7, calculate the total profit for the week.
- h. Save the file as *Act 9_3*.

Activity 9.4**Memorandum**

1. Open the Workbook with the name *Act 9_4*.
2. Calculate the Total in Column D for each product.
3. Calculate the Subtotal in cell D18.
4. Calculate the tax in cell D19. To do this we will assume tax is 15% which is written as 15/100, or 0.15 to calculate the cost of tax. Tax is calculated as 15% of the subtotal.
5. Calculate the total in cell D20, remember that tax should be added to the calculated total.
6. Save the workbook.

Activity 9.5**Memorandum**

1. Open the *Act 9_5* workbook and study the data on Sheet1. Write the answers to questions 2-6 in your notebooks.
2. What would the formula be to calculate the total fare in E24. Write it down.
Answer: $=E2 + E3 + \dots + E24$
3. To easily copy the information in Column H over to Column E, what would be the formula entered into Column H.
Answer:
In cell E3: $=H3$
In cell E4: $=H4$ etc.
4. Why is the data in Column B aligned to the left and the data in Column C aligned to the right?
Answer: Column B contains numbers which are right-aligned. Column C contains text which is left-aligned.
5. The data in Column D contains numbers. Why is it not aligned to the right?
Answer: The data contains a mixture of characters and numbers. Excel treats data like this as text.
6. In column G, write out the formula to calculate the tax on the prices of the Fare in column E. Tax is 15%. Do the remaining questions in the *Act 9_5* workbook.
Answer: In cell G2: $=E2 * 15/100$ OR $=E2 * 0.15$ OR $=E2 * 15%$ (any one will work)
7. You can see the "Fare" column E has missing information. Use the information in Column H to complete Column E.
8. Calculate the Total in E24.
Message to learners: Persevere! The value displayed should be 454.5917
9. Save the file.

REVISION ACTIVITY

Chapter 9: Introduction to spreadsheets

1. True or False
 - a. A spreadsheet is an application made for the manipulation of figures.
Answer: True
 - b. =A3 * 15% is a formula that can be used to calculate VAT.
Answer: True
 - c. By clicking the mouse on the row letter, a whole column can be selected.
Answer: False
 - d. The contents of an inactive cell is always visible in the formula bar.
Answer: False
 - e. You can save paper by first using the Print Preview option before printing to see if you have created a suitable layout for your document. (5)
Answer: True

2. a. Cells A2, A3 and A4 contain the Life Sciences test marks of three learners. Their teacher calculates the average mark by typing the following formula into cell A5: =A2 + A3 + A5/3:
 - i. Explain why this formula will give an incorrect answer. (2)
Answer: Calculations in spreadsheets follow BODMAS ✓. The value in cell A5 will first be divided by 3 and then A2 and A3 added on. ✓
 - ii. Write down the correct formula that the teacher should have used. (2)
Answer: =(A2 + A3 + A4) for brackets / 3 for completing formula.
- b. Give two reasons why spreadsheets are very useful for people who own or run small businesses. (2)
Answer: Spreadsheets can be used for business tasks like tracking sales or stock, invoices, budgets etc. ✓ Data can be displayed graphically, and trends can be analysed. ✓

3. Which function or formula in column B matches the description in column A? (4)
Answer: 1. C; 2. A; 3D; 4B

PRACTICAL ACTIVITY

Create a new spreadsheet by entering the data as indicated.

1. Enter the following information into a new sheet correctly. (4)

	A	B	C	D
1	Treehouse budget			
2				
3	Resources	Quantity	Cost	Total Cost
4	Hardwood planks	30	R 10.00	
5	Nails (Pkts)	15	R 5.00	
6	Drill	1	R 500.00	
7	Hammer	1	R 40.00	
8	Saw	1	R 20.00	
9	Varnish (tins)	5	R 15.00	
10	Wood dye (tins)	6	R 20.00	
11	Subtotal			
12	Tax			
13	Total			
14	Answer 1			
15	Answer 2			
16	Answer 3			

REVISION ACTIVITY

Chapter 9: Introduction to spreadsheets...continued

- a. Calculate the Total Cost for each resource in Column D. (7)
- b. Calculate the subtotal in cell D11. (3)
- c. Calculate the tax (at 15%) in cell D12. (3)
- d. Calculate the Total in cell D13. (3)

Save this file as **RA_9**.

TOTAL: [35]

MARKING GUIDELINE

No.	Criteria	Maximum Mark	
1.	<ul style="list-style-type: none"> • Correct text entered ✓✓ • Correct numbers entered ✓✓ Penalise one mark for each error. No marks are awarded for formatting. This will be taught in Chapter 10.	2 2	4
a.	Cell D4: = ✓ B4 ✓ * ✓ C4 ✓ This number of marks would not normally be awarded in an examination. <ul style="list-style-type: none"> • Formula typed correctly in cells D5 to D10 ✓✓✓ Penalise 1 mark per error	4 3	7
b.	Cell D11: = D4 + D5 + D6 + D7 + D8 + D9 + D10 <ul style="list-style-type: none"> • Correct cells used ✓✓ Penalise 1 mark per error <ul style="list-style-type: none"> • + operator used ✓ 	2 1	3
c.	Cell D12: =D11 * 15 / 100 OR =D11 * 0.15 OR =D11 * 15% <ul style="list-style-type: none"> • Subtotal (cell D11) ✓ • * operator ✓ • Correct value for VAT ✓ 	1 1 1	3
d.	Cell D13: =D11 + D12 <ul style="list-style-type: none"> • Subtotal (cell D11) ✓ • Added to ✓ • VAT (cell D12) ✓ 	1 1 1	3
Total			35

FORMATTING, EDITING AND FILE OPTIONS IN SPREADSHEETS

CHAPTER 10

CHAPTER OVERVIEW

Unit 10.1 Formatting cells

Unit 10.2 Common skills with spreadsheets

The following learning outcomes are covered by this chapter:

- Apply borders and shading to cells.
- Change the alignment of cell contents.
- Change the text direction of cell contents.
- Format rows and columns.
- Merge and split cells.
- Use Autofill.
- Use text wrapping.
- Understand the different data types.
- Understand the different page layout options in a spreadsheet application.
- Insert illustrations in a spreadsheet application.
- Print a workbook.



GRADE: 10

DATE:

TEACHING TIME: 2 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader

COMPUTER MANAGEMENT

The work covered in Chapters 2 and 3 of the Theory Book should be integrated with the work covered in this book. Practical work provides an opportunity to reinforce theoretical concepts in a meaningful way. It is also important to remember that Theory examinations also include a question on Solution Develop. Questions such as “Explain the difference between Save and Save As” are often asked in Theory examinations.

Activity 10.1

Memorandum

The details of the schools and their bullying policies are stored in a workbook called *Act 10_1*. Open the *Chapter 10_Schools* workbook.

1. Work in the *Policy* worksheet.
2. Format the worksheet as follows:
 - a. Apply a red-coloured fill to the merged cells A1:H1.
 - b. Cells A2:G2 have been merged. Change this merged cell so that cell H2 is also included in the merged cell.
 - c. Change the font colour of the text in the merged cells A2:H2 to white.
 - d. Apply the pattern style: Diagonal Crosshatch to cells A2:H2.
 - e. Place a double-line outside border around cells A1:H2.
3. Save and close the file.
This is not a particularly challenging activity. It is, however, important for learners to follow the instructions carefully.

Activity 10.2

Memorandum

Open the *Act 10_2a* workbook.

1. Resize row 1 to display the content in A1:G1 correctly.
Double-clicking on the border between row 1 and row 2 will not work in this example. The row height can be resized either by dragging to increase the row height or by entering a number value (which will require some trial-and-error).
2. Format cells A2:B2, as follows:
 - i. Change the alignment of these two cells to Vertical: Centre, Horizontal: Right.
 - ii. Add a patterned fill effect of your choice to these two cells.
The fill effect chosen should not obscure the text in the cells.

Save and close the workbook.
3. Open the *Act 10_2b* workbook. Enter any missing information from the table below into the workbook.

	A	B	C	D
1	Public transport	Holiday transport	Private transport	
2	3%	6%	10%	
3	3%	7%	10%	
4	3%	7%	6%	
5	3%	7%	4%	
6	3%	7%	2%	
7	3%	7%	2%	
8	3%	6%	2%	
9	2%	6%	2%	
10				

4. Change the alignment of the cells A1:C1 to Vertical: Bottom, Horizontal: Right.
5. Change the fill colour of A1:A9 to blue.
6. Apply the font colour white to cells A1:A9
7. Change the alignment of the cells C3:C9 to Vertical: Bottom and Horizontal: Left.
8. Save the workbook.

Activity 10.3

Memorandum

PART 1: PRACTICAL QUESTIONS

There is a good chance that learners will waste quite a bit of time setting up this worksheet. It is recommended that you create the outline yourself (only the text) and let the learners focus on formatting, which is the primary purpose of this activity.

1. Open a worksheet.
2. Design a five-day study and extra-mural timetable. You only have to set up the framework; you don't need to add details for each day.
 - a. Type the heading (Timetable) in A1 and merge to F1.
 - b. Type the five days in B2 up to F2 and bold the text.
3. Add your own study plans and extra-mural activities for Monday only.
4. Do not increase the width of the cells; use wrapping to ensure that all data is visible.
The columns do need to be made wide enough to ensure that the longest word does not split over two lines.
5. Change the colour of all the text to *Blue Accent 1*.
6. Change the cell alignment of row 2 (the days) to be rotated upwards at 90°.
7. Save the file as *Act10_3*.

PART 2: THEORY QUESTIONS

1. To create a column between D and E, which column should be selected?
Answer: Column E
2. Give one example where text wrapping can be used.
Answer: Where the text typed into the cell is quite long, which would mean having a large column width.
3. To combine cells, such as A1 up to B5; what is this called?
Answer: Merging
4. You want to change the direction of the cell contents in row A1. Briefly explain what this is called and how will you change the way the cell contents appear.
Answer: This is known as cell alignment. You would select the "Alignment" tab on the "Format Cells" dialogue box and choose a suitable setting from there.

Activity 10.4

Memorandum

Do this activity on your own. Use the study timetable that you created in the previous activity.

Open *Act 10_3*, which you have saved previously.

1. Use *AutoFit Column Width* for the entire timetable.
2. Change the row height for title row to 27 pt.
3. Make sure the text in the title row is still clearly visible.
4. Create a column in between Monday and Tuesday.
5. Save the workbook.
6. Open a blank workbook and type in the headings.
Learners will probably need a lot of guidance with this activity. Some of the questions are challenging.

Use *AutoFill* to fill in the days, months, dates and times.

- Days: Tuesday to Sunday
Learners should enter Tuesday and Wednesday and then use AutoFill up until Sunday. This process should be repeated as needed.
- Months: February to October
A similar process to the previous bullet should be followed.
- Dates: 5.12.2015 to 13.12.2015
Dates should be entered in the correct format, viz. 2015/12/05 etc so that Excel will recognise them as dates. Enter the first two dates (2015/12/05 and 2015/12/06) and then use AutoFill for the rest.
- Times: 05:45 to 13:45

Activity 10.5

Memorandum

1. Open the *Act 10_5* workbook.
 - a. Format the values in Column E to display in a percentage format with one decimal place.
2. Change the format of all the data in Column G to appear as dates in the format 1998-03-26.
The date setting is one of the default options. More advanced learners might be interested to see how to create a custom date format (not required for examinations).
3. Save the workbook.



UNIT
10.2

Common skills with spreadsheets

Activity 10.6

Memorandum

Use the study timetable that you created in *Act 10_4*.

1. Open this workbook.
2. Delete the column that you created in the previous activity.
3. Insert the image *Garden*.
Learners should ensure that the image does not obscure the text.
4. Change the page orientation to *Landscape*.
5. Change the page margins to *Wide*.
6. Preview Sheet 1.
This can be done in one of two ways:
Go to the Backstage view and choose Print. Learners should only preview and NOT print.
Go to the View tab and choose Page Layout View.
7. Save the workbook as *Act 10_6*.



1. Open the *RA_10a* worksheet and work in the *Stats* worksheet.
 - a. Format the worksheet as follows to improve readability: (12)
 - i. Merge and centre the text in cells A1:E1.
 - ii. Set the row height of row one to 80 pt.
 - iii. Increase the font size of the heading to 20 pt.
 - iv. Use the font type Verdana.
 - b. Make sure all the headings in row 2 are similarly aligned with the text clearly visible and readable by adjusting the text direction.
 - c. Column widths and the row height might also need to be adjusted.
 - c. Apply any pattern style of your choice to row 2.
Make sure the text is still readable
 - d. Save the worksheet.
2. Work in the *Extreme* worksheet. (6)
 - a. Format the worksheet as follows:
 - i. Merge cells A1:J1, but do not centre the text.
 - ii. Change the background colour of the merged cells to light green.
 - iii. Rotate the headings in row two by 90 degrees.
 - iv. Change the colour of ONLY the bottom border of cells A2:J2, to red.
 - b. Save the worksheet.
3. Work in the *Music* worksheet. (8)
 - a. Adjust the width of Column B so that all the data in this column is displayed and visible.
 - b. Change the headings in cells A1:H1 as follows:
 - i. Display the headings in bold.
 - ii. Shade the background in yellow.
 - iii. Use a cell-formatting feature to display the headings over two lines.
 - c. Hide column F.
 - d. Change the picture size and reposition to fit in the merged cell J1.
 - e. Save the worksheet.
4. Work in the *Artist* worksheet. (4)
 - a. Use *AutoFill* to fill in the missing data in the TOTAL cost column.
 - b. Unhide Column I and use *AutoFill* to fill in the missing dates.
Save and close the worksheet.

TOTAL: [30]

REVISION ACTIVITY

Chapter 10: Formatting, editing and file options in spreadsheets ... *continued*

MARKING GUIDELINE

No.	Criteria	Maximum Mark	
1.a.i.	<ul style="list-style-type: none"> Text in row 1 merged and centred ✓ across columns A to E ✓ 	2	2
ii.	<ul style="list-style-type: none"> Row height of row 1 ✓ set to 80 pt ✓ 	2	2
iii.	<ul style="list-style-type: none"> Font size of heading set to 20 pt ✓ 	1	1
iv.	<ul style="list-style-type: none"> Font type of heading set to Verdana ✓ 	1	1
b.	<ul style="list-style-type: none"> Alignment of row 2 headings ✓ changed ✓ <p>Accept any alignment that is different from the original.</p> <ul style="list-style-type: none"> All headings are visible ✓ <p>Some adjustment of column width and row height might have happened.</p>	2	3
c.	<ul style="list-style-type: none"> Any pattern fill ✓ applied to row 2 ✓ Text is still readable ✓ 	2	3
		1	
2.a.i.	<ul style="list-style-type: none"> Cells A1:J1 merged ✓ but not centred ✓ 	2	2
ii.	<ul style="list-style-type: none"> Background colour of merged cells ✓ set to light green ✓ <p>Do not award the first mark if the background colour of the whole row has been changed.</p>	2	2
iii.	<ul style="list-style-type: none"> Row 2 headings ✓ rotated by 90 degrees ✓ <p>Orientation either up or down.</p>	2	2
3.a.	<ul style="list-style-type: none"> Text in column B is visible ✓ 	1	1
b.i.	<ul style="list-style-type: none"> Headings in cells A1:H1 ✓ display in bold ✓ 	2	2
ii.	<ul style="list-style-type: none"> Background fill colour set to yellow ✓ 	1	1
iii.	<ul style="list-style-type: none"> Text wrapping applied ✓ 	1	1
c.	<ul style="list-style-type: none"> Column F is hidden ✓ 	1	1
d.	<ul style="list-style-type: none"> Picture resized ✓ to fit merged cell J1 ✓ 	2	2
4.a.	<ul style="list-style-type: none"> Formula appears in cells H2:H22 ✓ <p>It is not possible to mark whether AutoFill was used but learners who don't use it might not have enough time to complete a test or examination.</p>	2	2
b.	<ul style="list-style-type: none"> Column I is visible ✓ Dates appear in cells I2:I22 <p>Excel might not recognise the data in cell I2 as a date depending on Regional Settings.</p>	2	2
	Total		30

TERM 3

CHAPTER
11

INTRODUCTION TO FUNCTIONS IN SPREADSHEETS

CHAPTER OVERVIEW

Unit 11.1 Functions in spreadsheets

The following learning outcomes are covered by this chapter:

- Understand the difference between a function and a formula.
- Use basic functions.
- Identify the common error indicators.
- Fix the common error indicators.

GRADE:



DATE:



TEACHING TIME:

3 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader

INTRODUCTION

In this chapter, we will shift our focus to the various functions in spreadsheets. We will start off by explaining the difference between a function and a formula. Learners will then learn how to use the basic functions and lastly, how to identify common error indicators, as well as how to fix them.

UNIT

11.1 Functions and spreadsheets

Activity 11.1

Memorandum

1. Open the *Act 11_1a* spreadsheet, which includes a summary of the gallery's sales.
 - a. Insert a function in J3 to calculate the average amount spent (Column G) by the participants.
Answer: =AVERAGE(G3:G30) displays R3 472.65
 When selecting a range of cells used for a function argument, you can use the keyboard to select the range as follows:
 Click on the first cell in the range.
 Press <Ctrl><Shift><Down> and the whole range will be selected.
 This is particularly useful if there are a large number of cells in the range.
 - b. Add a function in J4 to calculate the total number of days it took to sell the participants' art pieces (Column F).
 Answer: =SUM(F3:F30) displays 3354
 - c. Insert a function in cell J5 to determine the average commission that the participants received (Column E).
Answer: =AVERAGE(E3:E30) displays 23%
 Save and close the workbook.
 2. Open the *Act 11_1b* spreadsheet.
 - a. Calculate the average distance jumped by the first five participants in the long jump event.
Answer: Note that the questions asks for the first five participants. Learners need to study the data in the spreadsheet and identify the correct column to use (E).
 Function: =AVERAGE(E6:E10) displays 1.478
 - b. Which one of the participants in the whole set of data jumped the longest distance? Calculate the answer in B47 using the MAX function and type your answer in cell B47.
Answer: The question asks for the participant and not the distance jumped. The longest distance jumped was 1.22 m (Function used: =MAX(E6:E42)). This distance was jumped by Mpho Biela. The name can be found either by inspection or by sorting the data in ascending or descending order of Distance (Column E).
 - c. Which one of the participants performed worst in this data set. Use the MIN function to calculate this. Type your answer in cell D46.
Answer: The worst distance jumped (shortest) was 2.22 m (Function used: =MIN(E6:E42)). This distance was jumped by Hlahane Biko.
- Save and close the spreadsheet.

Activity 11.2

Memorandum

1. Refer learners to page 187 of the Practical Book. Ask them to study the screenshot, then answer the questions that follow:
 - a. What formatting technique was used to ensure that the supplier's name appears across Columns A to E?
Answer: Merge
 - b. Give ONE reason why the # sign is displayed in cell D19 and explain how this can be resolved.
Answer: The column is not wide enough to display the number in the cell. Widen column D.
 - c. What term is used to refer to a series of cells?
Answer: A range
 - d. Write down the formula that was used to calculate the total cost found in cell E11.
*Answer: =B11 * C11 - D11 (Unit Price * Quantity - Discount)*
 - e. Explain why the contact number in cell E5 was formatted as text.
Answer: This is done to ensure that the leading '0' is displayed correctly.

Learners must be made aware at an early stage that tests and examination questions in Excel are marked on the formula or function used and NOT on what is displayed.

Simply typing in the answers that they worked out on a calculator will earn no marks.

Open the *RA_11* spreadsheet that contains statistical data about the VMA Awards.

1. Work in the *Rewards* worksheet.
 - a. Merge and centre the text in cells A1:F1. (2)
 - b. Set the row height to 60 pt and increase the font size of the heading to 26 pt. (2)
 - c. Shade the background of row 1 to light green. (2)
2. Use a function in the following cells to determine the total awards received by: (8)
 - a. Cell G10 – Adele
 - b. Cell G20 – Beyoncé
 - c. Cell G27 – Drake
 - d. Cell G30 – Justin Bieber
3. By using a function in cell D32, determine which artist received the most nominations and in cell F32, which artist received the most awards. (2)
Save the worksheet.
4. Open the *Films* worksheet. (8)
 - a. Ensure that all the data is visible in Column B.
 - b. Use *AutoFill* to complete the numbering in Column A.
 - c. Add a function in cell D26 to determine the average cost per film, using the data in Column D.
 - d. Use a function in cell E27 to add the total the total cost of renting all the films, as displayed in Column E.
 - e. Insert a function in cell E28 to determine the film that costs the least to rent.Save and close the file.
Open the *RA_11 Errors* spreadsheet.
5.
 - a. In Sheet1, correct the function in Column C so that it shows the average of each student's marks. (2)
 - b. Use the correct function in cell F14 so that it calculates the minimum value of the column. (2)
 - c. On Sheet 2, change the spreadsheet so that ##### does not appear anywhere in the sheet. (2)
 - d. Fix the #VALUE! error in the worksheet. (2)
 - e. Correct the function in cell E14 so that it calculates the total of Column E. (2)Save and close the file.

TOTAL: [34]

REVISION ACTIVITY

Chapter 11: Introduction to functions in spreadsheets ... *continued*

MARKING GUIDELINE

No.	Criteria	Maximum Mark	
1.a.	<ul style="list-style-type: none"> Cells A1:F1 ✓ merged and centred ✓ 	2	2
b.	<ul style="list-style-type: none"> Height of row 1 set to 60 pt ✓ Font size set to 26 pt ✓ 	1 1	2
c.	<ul style="list-style-type: none"> Row 1 ✓ background colour set to light green ✓ Do not award first mark unless whole row has a background colour. 	2	2
2.a.-d.	Cell G10: =SUM(F3:F10) <ul style="list-style-type: none"> SUM() function ✓ Correct range (F3:F10) ✓ Cell G20: =SUM(F11:F20) <ul style="list-style-type: none"> SUM() function ✓ Correct range (F11:F20) ✓ Cell G27: =SUM(F21:F27) <ul style="list-style-type: none"> SUM() function ✓ Correct range (F21:F27) ✓ Cell G39: =SUM(F28:F30) <ul style="list-style-type: none"> SUM() function ✓ Correct range (F28:F30) ✓ 	1 1 1 1 1 1 1 1	8
3.	Cell D32: =MAX(D3:D30) <ul style="list-style-type: none"> Correct function and range ✓ Cell F32: =MAX(F3:F30) <ul style="list-style-type: none"> Correct function and range ✓ 	1 1	2
4.a.	<ul style="list-style-type: none"> All data in column B is visible ✓ 	1	1
b.	<ul style="list-style-type: none"> Numbers from 3 to 20 in cells A7 to A24 ✓ 	1	1
c.	Cell D26: =AVERAGE(D5:D24) <ul style="list-style-type: none"> AVERAGE() function ✓ Correct range (D5:D24) ✓ 	1 1	2
d.	Cell E27: =SUM(E5:E24) <ul style="list-style-type: none"> SUM() function ✓ Correct range (E5:E24) ✓ 	1 1	2
e.	Cell E28: =MIN(E5:E24) <ul style="list-style-type: none"> MIN() function ✓ Correct range (E5:E24) ✓ 	1 1	2

MARKING GUIDELINE

No.	Criteria	Maximum Mark	
5.a.	Cell D15: =AVERAGE(C4:C14) <ul style="list-style-type: none"> Correct function (AVERAGE) ✓ Correct range (C4:C14) ✓ 	1 1	2
b.	Cell F14: =MIN(F4:F13) <ul style="list-style-type: none"> Correct function (MIN) ✓ Correct range (F4:F13) ✓ 	1 1	2
c.	<ul style="list-style-type: none"> Column B widened so that data is visible ✓ Column D widened so that data is visible ✓ 	1 1	1
d.	<ul style="list-style-type: none"> Function =B3;C3;D3 in cell E3 changed ✓ Replaced with =B3+C3+D3 ✓ 	1 1	2
e.	Cell E14: =SUM(E3:E12) <ul style="list-style-type: none"> AVERAGE() function changed to SUM() function ✓ Same range (E3:E12) used ✓ 	1 1	2
Total			30

ADVANCED FUNCTIONS IN SPREADSHEETS

CHAPTER 12

CHAPTER OVERVIEW

Unit 12.1 More functions

Unit 12.2 Sorting

The following learning outcomes are covered by this chapter: 

- Use new basic functions.
- Use relational operators.
- Use the COUNTIF, COUNTA, COUNTBLANK functions.
- Round numbers.
- Use the Sort function.



GRADE: 10

DATE:

TEACHING TIME: 3 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader

INTRODUCTION

In this chapter, learners will learn more about the different functions in spreadsheets. They will also learn about using rounding numbers, as well as the different types of sorting methods.

Activity 12.1

Memorandum

Open the *Act 12_1* spreadsheet. Work in the *Policy_Beleid* worksheet.

1. Insert a function in cell K4 to determine the number of schools that have policies against cyber-bullying. *Inspection of the data will show that all schools have a policy (see column C) so the COUNTA() function can be used.*
Function: =COUNTA(C3:C47) display 45
2. Insert a function in cell K6 to determine all the schools from the Western Cape. *This question requires the use of the COUNTIF function as not all the schools are from the Western Cape. The province is in column B.*
Function: =COUNTIF(B3:B47,"Western Cape") displays 7.
3. Select the worksheet, *Marks* in the file *GA12.1*
4. In cell B20, generate a random number between 80 and 100.
5. In cell B21, show the mark in the middle from the marks cell range.
6. In cell B22, show the mark most repeated in the cell range.
7. In cell B23, show the number of learners with marks.
8. In cell B24, show the number of learners with no marks.
9. In cell B25, show the number of learners with distinctions (marks equal and above 80)

Activity 12.2

Memorandum

1. Open the *Act 12_2* spreadsheet. A bakery sells a number of different cakes. The number of each cake sold is shown in the *Bakery* worksheet.
2. Use the functions that you have learned and determine the following:
For all of the questions in this activity learn to use the correct range that they choose the correct range to use as arguments. The months and cake types can be found by inspecting the data or by using the Find function.
 - a. In cell B18 insert a function to find the biggest number of carrot cakes sold in one month. Enter the month in which this happened in cell C18.
Answer: =MAX(B4:J4) displays 29. The happened in May.
 - b. In cell B19 insert a function to find the biggest number of cakes sold between January and May. Write the month in which this happened in cell C19 and the type of cake in cell D19.
Answer: =MAX(B3:F12) displays 65. This was in May for Red Velvet cakes.
 - c. In cell B20 insert a function to find the monthly sales figure which occurred most often in 2017. HINT: Use the MODE() function.
Answer: =MODE(B3:J12) displays 19. Do not include the totals for each cake in the range.
3. Use the COUNTIF function to answer the following questions:
 - a. In cell B14, type in a function to calculate during which month or months 18 or more vanilla cakes were ordered.
Answer: =COUNTIF(B3:J12,">=18") displays 38.
 - b. In cell B15 insert a function to count how many times 15 or less cakes were ordered between January and May.
Answer: =COUNTIF(B3:F12,"<=15") displays 22.
 - c. In cell B16 insert a function to determine how many times in 2017 the answer to 2(c) occurred. The answer to this question must update automatically if the answer to 2(c) changes.
Answer: =COUNTIF(B3:J12,B20) displays 11. Note the use of the cell reference that has the answer to 2(c). This will ensure that any changes to that cell will affect the answer to 2(c).

Activity 12.3

Memorandum

1. Open the practice document *Act 12_3*.
2. Insert a function in cell B14 to calculate the average of the cell range (B3:B12).
Answer: =AVERAGE(B3:B12) displays 5.5
3. Save the spreadsheet.



Activity 12.4

Memorandum

1. Open the practice document *Act 12_4*.
2. Sort the data according to the date the product was first ordered. Display the newest orders first. Tip: Use column C.
Learners must select all the data to ensure that the records remain together.
3. Then sort the worksheet alphabetically according to surname as well as by name.
Check the learners' work and correct anyone who has done made an error in sorting by guiding them step by step.
4. Save the spreadsheet.



REVISION ACTIVITY

Chapter 12: Advanced functions in spreadsheets

1. Open the *RA_12* spreadsheet. Work in the *Filter* worksheet.
 - a. Filter the data in the worksheet to display the countries with “Good” air quality description. (1)
 - b. Sort from largest to smallest by “Urban population coverage (%)”. (1)
2. Work in the *Mass_Massa* worksheet. The data shows the results of an inter-class recycling project
 - a. In cell B3 insert a function to display the current date. (1)
 - b. Insert a function in cell A25 to display the number of classes who participated in the project. (2)
 - c. Add a function to cell B25 to display the average mass of paper collected. Do the same in cells C25 to E25 to display the average mass of plastic, cans and glass collected. (4)
 - d. Insert a function in cell F25 to display the total mass of recycling (column F) collected. (2)
 - e. Each class received either a backpack or a T-shirt. Insert a function in cell H25 to determine how many classes received a T-shirt. Do the same in cell H27 to show how many classes received a backpack. (6)
Column J contains the cost for one backpack or one T-shirt. Format the data to display the amounts as Currency (R) and as whole numbers, i.e. with no decimal points. (2)
 - f. Use formulas to calculate the costs of the rewards given to the learners:
 - i. In cell K7 add a formula to calculate the Subtotal. Copy the formula down the rest of the column. (2)
 - ii. In cell L7 add a formula to calculate the VAT at 15%. Copy the formula down the rest of the column. (2)
 - iii. In cell M7 add a formula to calculate the total cost. Copy the formula down the rest of the column. (3)
 - g. Format all amounts in Columns K, L & M to display in South African Rands correct to two decimal places. (1)
3. Work in the *Countries_Lande* worksheet.
 - a. Insert a function in cell G3 to determine the value for the most frequently occurring population coverage (%) in Column D. (2)
 - b. Insert a function in cell G4 to determine the value that will appear in the middle of the numbers given in Column B. (2)
 - c. Insert a function in cell G5 to display a random number between 0 and 20. (3)
 - d. Insert a column to the left of Column A. Use *AutoFill* in Column A to number all the countries from 1 to 90. (2)
 - e. Sort the data in Column B so that the countries are displayed in alphabetical order. The numbers in column A should not be sorted. (2)

Save and close the file

TOTAL: [38]

MARKING GUIDELINE

No.	Criteria	Maximum Mark	
1.a.	<ul style="list-style-type: none"> Filtering applied (17 countries displayed) ✓ 	1	1
b.	<ul style="list-style-type: none"> Sorted in descending order by Urban population coverage (%) ✓ 	1	1
2.a.	Cell B3: =TODAY() <ul style="list-style-type: none"> TODAY() function added ✓ 	1	1
b.	Cell A25: =COUNTA(A7:A23) <ul style="list-style-type: none"> COUNTA() function used ✓ Correct range (A7:A23) ✓ Can also use the COUNT() function using the data in any of columns B to F.	1 1	2
c.	Cell A25: =AVERAGE(B7:B23) <ul style="list-style-type: none"> AVERAGE() function used ✓ Correct range (B7:B23) ✓ Cells C25, D25 and E25 <ul style="list-style-type: none"> Function copied from cell A25 ✓ Pasted into cells B25, D25 and E25 ✓ AutoFill can also be used.	1 1 1 1	4
d.	Cell F25: =SUM(F7:F23) <ul style="list-style-type: none"> SUM() function used ✓ Correct range (F7:F23) ✓ 	1 1	2
e.	Cell H26: =COUNTIF(H7:H23,"T-shirt") <ul style="list-style-type: none"> COUNTIF() function used ✓ Correct range (H7:H23) ✓ Correct criterion "T-shirt" ✓ Cell H27: =COUNTIF(H7:H23,"Backpack") <ul style="list-style-type: none"> COUNTIF() function used ✓ Correct range (H7:H23) ✓ Correct criterion: "Backpack" ✓ 	1 1 1 1 1 1	6
f.	Column J <ul style="list-style-type: none"> Formatted as Currency ✓ Formatted to display whole numbers ✓ 	1 1	2
g.i.	Cell K7: =I7 * J7 <ul style="list-style-type: none"> Correct cells (I7 and J7) ✓ Multiplication operator (*) ✓ 	1 1	2
ii.	Cell L7: =K7 * 15 / 100 OR =K7 * 0.15 OR =K7 * 15% <ul style="list-style-type: none"> Subtotal (cell K7) ✓ Multiplied by 15 ✓ Divided by 100 ✓ 	1 1 1	3

REVISION ACTIVITY

Chapter 12: Advanced functions in spreadsheets ... *continued*

MARKING GUIDELINE

No.	Criteria	Maximum Mark	
iii.	Cell M7: = K7 + M7 OR =SUM(K7:M7) <ul style="list-style-type: none"> Subtotal (K7) and VAT (M7) ✓ Added together ✓ 	1 1	2
h.	Columns K, L and M <ul style="list-style-type: none"> Display as South African Rands correct to 2 decimal places ✓ 	1	1
3.a.	Cell G3: =MODE(D3:D92) <ul style="list-style-type: none"> MODE() function used ✓ Correct range (D3:D92) ✓ 	1 1	2
b.	Cell G4: =MEDIAN(B3:B92) <ul style="list-style-type: none"> MEDIAN() function used ✓ Correct range (B3:B92) ✓ 	1 1	2
c.	Cell G5: =RANDBETWEEN(0,20) <ul style="list-style-type: none"> RANDBETWEEN() function used ✓ Bottom value set to 0 ✓ Top value set to 20 ✓ 	1 1 1	3
d.	<ul style="list-style-type: none"> Cells A3 to A90 ✓ Filled with values from 1 to 90 ✓ 	1 1	2
e.	<ul style="list-style-type: none"> Countries sorted in alphabetical (A to Z) order ✓ Date in other columns also sorted ✓ 	1 1	2
Total			38

TERM 3

CHAPTER
13

WORKBOOKS AND WORKSHEETS

CHAPTER OVERVIEW

Unit 13.1 Working with sheets

The following learning outcomes are covered by this chapter:

- Rename worksheets.
- Give a worksheet a tab colour.
- Hide/unhide worksheets.
- Headers and Footers
- Print a worksheet.

GRADE:

10

DATE:

TEACHING TIME:

3 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader

INTRODUCTION

Workbooks, by default, usually have three sheets, named automatically: Sheet 1, Sheet 2 and Sheet 3.

It is easy to get confused with sheet names. Renaming these sheets will help solve this problem.

UNIT

13.1 Working with sheets

Activity 13.1

Memorandum

1. Open the *Act 13_1* spreadsheet that contains statistical data about the VMA Awards.
 - a. Rename the worksheet to *Awards*.
 - b. Change the tab colour of the worksheet in (a) to light green.
 - c. Hide the *Graph* sheet.
 - d. In Column G display the total number of Awards in Column G for each artist. Use a function.

Answer:

Adele: =SUM(F3:F10) displays 8

Beyoncé: =SUM(F11:F20) displays 7

Drake: =SUM(F21:F227) displays 3

Justin Bieber: =SUM(F28:F30) displays 2

- e. Save this workbook.

Activity 13.2

Memorandum

1. Open the spreadsheet *Act 13_2*.
 - a. Rename *Sheet1* to Grade 10.
 - b. Add page numbers to appear on the left in the footer.
 - c. Change the page orientation to *Landscape*.
 - d. Highlight the data in Column E by shading it in yellow to emphasis the *Total: 50*.
 - e. Save the file.



REVISION ACTIVITY
Chapter 13: Workbooks and worksheets

Open the *Chapter 13_Revision Activity* spreadsheet.

1. Do the following:
 - a. Delete Sheet1 since it is no longer needed. (1)
 - b. Create a new sheet and name it Population. (2)
 - c. Unhide the *Foreign* worksheet. (1)
 - d. Rename the *Foreign* worksheet to Worksheet 1. (1)
2. Change the tab colour of the *Summary_Opsom* sheet to light blue. (1)
 - a. Add the worksheet name as a field in the left section of the header. (3)
 - b. In the middle section of the footer, add page numbers. (2)
3. Rename the *Visit_Besoek* worksheet to *Visitors*. (1)
 - a. Set the print area to print the range: A1:H3. (2)
 - b. Ensure that the gridlines will print. (1)
 - c. Use a spreadsheet feature to ensure that all the data will fit on one sheet. (2)

Do NOT print the spreadsheet.

Save and close the spreadsheet.

TOTAL: [17]

MARKING GUIDELINE

No.	Criteria	Maximum Mark	
1.a.	<ul style="list-style-type: none"> ● Sheet1 deleted ✓ 	1	1
b.	<ul style="list-style-type: none"> ● New worksheet added ✓ ● Renamed to Population ✓ 	1 1	2
c.	<ul style="list-style-type: none"> ● Foreign worksheet not hidden ✓ Check that there are no hidden worksheets before awarding this mark.	1	1
d.	<ul style="list-style-type: none"> ● Foreign worksheet renamed to Worksheet1 ✓ 	1	1
2.	<ul style="list-style-type: none"> ● Tab colour of Summary_Opsom changed to light blue ✓ 	1	1
2.a..	<ul style="list-style-type: none"> ● Worksheet name added ✓ as a field ✓ in the left of the header ✓ Change to Page Layout View. Look for &[Tab] in the header before awarding the second mark	3	3
b.	<ul style="list-style-type: none"> ● Pages numbers added to middle section of footer ✓ Check for field [&Pages]	2	2
3.	<ul style="list-style-type: none"> ● Visit_Besoek renamed to Visitors ✓ 	1	1
a.	<ul style="list-style-type: none"> ● Print area set ✓ to range A1:H3 ✓ Check by going to Print Preview to check which cells are going to be printed. OR Press F5 while worksheet is active, click on Print_Area, click OK and see which cells are highlighted.	2	2
b.	<ul style="list-style-type: none"> ● Gridlines set to print ✓ 	1	1
c.	<ul style="list-style-type: none"> ● Page setup changed ✓ so that printout will fit on one page ✓ 	2	2
	Total		17

GRAPHS IN SPREADSHEETS

CHAPTER 14

CHAPTER OVERVIEW

Unit 14.1 Types of graphs

Unit 14.2 Inserting a graph

Unit 14.3 Basic integration in graphs

Unit 14.4 Troubleshooting

The following learning outcomes are covered by this chapter:

- Describe what pie, line, column and bar graphs are.
- Understand the purpose of each of these graphs and where they are best used.
- Create and format a graph in a spreadsheet application.
- Interpret information from a graph.
- Use basic integration techniques.
- Troubleshoot spreadsheet problems.



GRADE: 10

DATE:

TEACHING TIME: 6 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader

INTRODUCTION

Graphs or charts are the visual representation of the data in a worksheet. When dealing with worksheets, it might be difficult to interpret large amounts of data by just looking at it. By creating a graph, the data is interpreted graphically and made easier for you to understand trends and comparisons. Understanding how to use the different types of graphs can help learners when analysing data for their PATs.

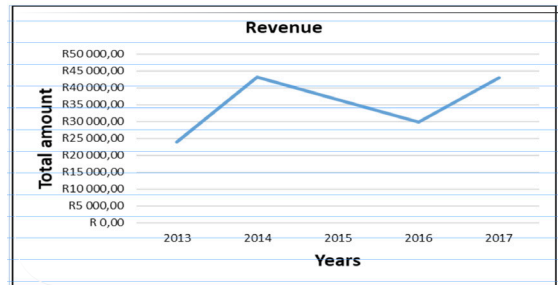
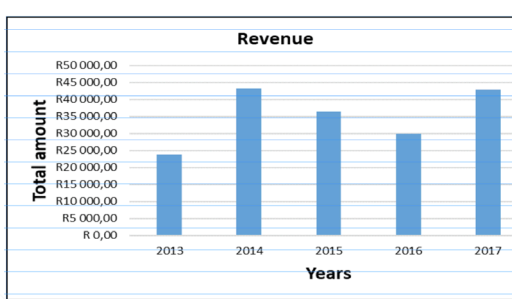
Activity 14.1

Memorandum

1. Insert the data below into a new workbook. Use the following data to create the following graphs:
 - Bar graph
 - Line graph

	A	B
1	Revenue	
2	2013	R 23 877,00
3	2014	R 43 266,00
4	2015	R 36 455,00
5	2016	R 29 888,00
6	2017	R 42 988,00

2. The graphs should look like the examples below. Add titles to the axis and give each graph a title.



3. Use the following data set to create a pie graph. Use *Sheet 2* of the workbook to enter the data. Indicate percentages data labels of the different genres in the graph.

	A	B
1	Genre	2015
2	Action	R 76 899,00
3	Chick flick	R 45 322,00
4	Comedy	R 36 455,00
5	Animation	R 39 877,00
6	Sci Fi	R 29 877,00

4. Rename *Sheet 1* and *Sheet 2*, respectively:
 - Revenue
 - Pie graph
5. Save the file as *Act 14_1* and close the file.

REVISION ACTIVITY

Chapter 14: Graphs in spreadsheets

ACTIVITY A

1. Open the *RA_14A* spreadsheet. The spreadsheet contains data with statistical information that you need to process.
Work in the *Stats* worksheet.
 - a. The heading of the worksheet is partially obscured by an image. Centre the heading of the worksheet vertically and horizontally. (2)
 - b. Adjust the width of Column C so that all the data in this column is visible. (1)
 - c. Adjust the row height of rows 6 to 16 to 20 pt. (2)
 - d. The cell range M6:N9 displays the amount of money rewarded for each medal. Insert a formula in cell K7 to calculate the total amount of money that Brazil received. Round the amount off to the whole number. (4)
 - e. Insert a column chart or graph to display only the countries and the total number of medals won for only the six lowest total number of medals. Your chart should look like the example below:
 - i. Add the title Medals at the top of the chart.
 - ii. Add data labels to the chart.
 - iii. Change the colour of the bar of the country with the most medals to any other colour of choice.
 - iv. Hide all gridlines.
 - v. Note the labels on both the axes. (6)



Save the worksheet.

2. Open the *RA_14A* spreadsheet.
 - a. What type of graph or chart is this? Type your answer in cell B26. (1)
 - b. Which country had the greatest number of medals per athlete? How many medals per athlete? Type your answer in cell B27 and B28. (2)
 - c. Which countries had the least number of medals per athlete? Type your answer in cell B29. (2)
 - d. Create a pie chart using the same information on how to create a graph. (HINT: Create a new sheet and enter the information from the graph into this new sheet.) (8)
 - e. Rename the new sheet to Medals Pie Chart. (1)
 - f. Apply a light green tab colour to the sheet. (1)
- Save and close the spreadsheet.

TOTAL: [30]

MARKING GUIDELINE

No.	Criteria	Maximum Mark	
1.a	<ul style="list-style-type: none"> Heading centred vertically ✓ Heading centred horizontally ✓ 	1	2
b.	<ul style="list-style-type: none"> All data in column C is visible ✓ Check row 16: "Independent Olympic Participants"	1	1
c.	<ul style="list-style-type: none"> Rows 6 to 16 ✓ row height set to 20 pt ✓ 	2	2
d.	Cell K7: =G7 * N7 + H7 * N8 + J7 * N9 <ul style="list-style-type: none"> Gold medal contribution (G7 * N7) ✓ Silver medal contribution (H7 * N8) ✓ Bronze medal contribution (J7 * N9) ✓ Displays correct to nearest whole number ✓ R35 002 683 displayed	1 1 1 1	4
e.	<ul style="list-style-type: none"> Bar chart created ✓ Data range Stats!\$C\$6:\$C\$16, Stats!\$J\$6:\$J\$16 ✓ Only six lowest countries displayed ✓ Chart title "Medals" ✓ Horizontal axis title "Countries" ✓ Vertical axis title "Number of medals" ✓ 	1 1 1 1 1 1	6
2.a	<ul style="list-style-type: none"> Column graph ✓ Excel distinguishes between "column" graphs with vertical bars and "bar" graphs with horizontal bars.	1	1
b.	<ul style="list-style-type: none"> Country: Jamaica ✓ Medals per athlete: 0.5 ✓ 	1 1	2
c.	<ul style="list-style-type: none"> Russia ✓ and Croatia ✓ 	2	2
d.	<ul style="list-style-type: none"> New sheet added ✓ Data from sheet Medals per Athlete transferred to Medal Pie Chart sheet ✓ All countries correctly copied ✓ All medal data correctly copied ✓ Pie chart created ✓ based on correct data ✓ Chart title 'Medals' added' ✓ Data labels added ✓ 	1 1 1 2 1 1	8
e.	<ul style="list-style-type: none"> New sheet named Medals Pie Chart ✓ 	1	1
f.	<ul style="list-style-type: none"> Tab colour changed to light green ✓ 	1	1
Total			30

REVISION ACTIVITY

Chapter 14: Graphs in spreadsheets...continued

ACTIVITY B

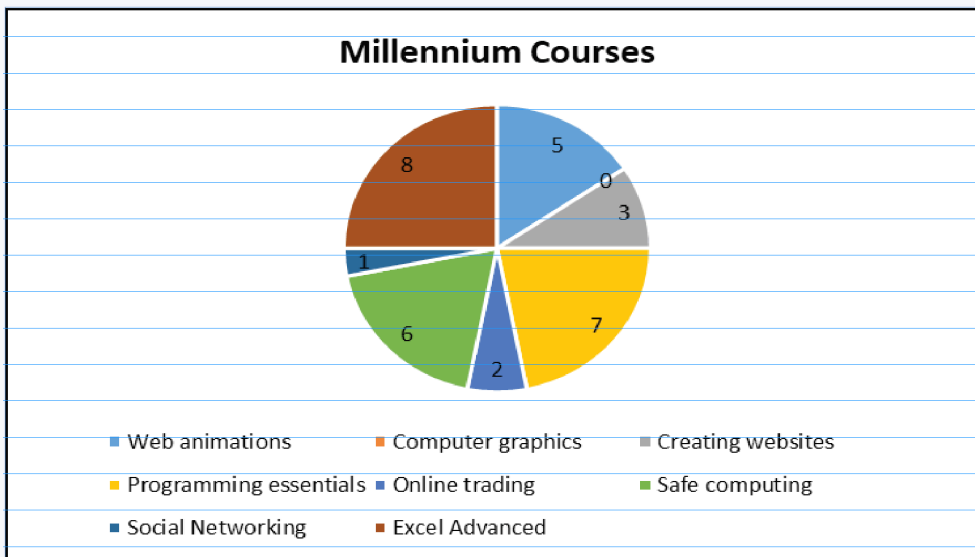
Open the *RA_14B* spreadsheet.

Work in the *Data* worksheet.

1. Change the heading in row 1 as follows:
 - a. Merge the cells and centre the heading to spread over columns A-F. (2)
 - b. Change the font to Arial Black 16 pt. (2)
 - c. Change the font colour to dark blue. (1)

Adjust the column and row widths so that all data is visible. (1)
2. Perform the following calculations:
 - a. Use a formula in Column D to calculate the total cost per course if all the course places are taken. (2)
 - b. Use a function to find the average cost of the courses. Type your answer in cell B12. (2)
 - c. Use a function to find the lowest cost of the courses. Type your answer in cell B13. (2)
 - d. Use a function to find the most expensive course. Type your answer in cell B14. (2)
 - e. Determine in cell F12 how many times the community group participate in the various computer courses. (3)
3. Create a pie chart showing the available places for the different computer courses. (2)
 Format your graph as follows:
 - a. Insert a graph title, Millennium Courses. (1)
 - b. Show data labels so that they appear on the inside of the chart. (2)
 - c. The legend should appear at the bottom of the chart. (1)
 - d. Move the chart to a new sheet and label the sheet as Chart. (2)

Save and close the spreadsheet.



TOTAL: [25]

MARKING GUIDELINE

No.	Criteria	Maximum Mark	
1.a.	<ul style="list-style-type: none"> Cells A1 to F1 ✓ merged and centred ✓ 	2	2
b.	<ul style="list-style-type: none"> Font of row 1 heading changed to Arial Black ✓ Font size changed to 16 pt ✓ 	1 1	2
c.	<ul style="list-style-type: none"> Font colour of row 1 heading changed to dark blue ✓ 	1	1
2.	<ul style="list-style-type: none"> All data is visible ✓ Check headings in row 2.	1	1
a.	Cell D3: =B3 * C3 <ul style="list-style-type: none"> Cost multiplied by course places ✓ Copied to all cells ✓ 	1 1	2
b.	Cell B12: =AVERAGE(B3:B10) <ul style="list-style-type: none"> AVERAGE() function used ✓ Correct range (B3:B10) ✓ 	1 1	2
c.	Cell B13: =MIN(B3:B10) <ul style="list-style-type: none"> MIN() function used ✓ Correct range (B3:B10) ✓ 	1 1	2
d.	Cell B14: =MAX(B3:B10) <ul style="list-style-type: none"> MAX() function used ✓ Correct ranged ✓ 	1 1	2
e.	Cell F12: =COUNTIF(F3:F10,"Community") <ul style="list-style-type: none"> COUNTIF() function ✓ Correct range (B3:B10) ✓ Criterion: "Community" ✓ 	1 1 1	3
3.	<ul style="list-style-type: none"> Pie chart created ✓ Based on data =Data!\$A\$3:\$A\$10,Data!\$C\$3:\$C\$10 ✓ 	1 1	2
a.	<ul style="list-style-type: none"> Chart title "Millennium Courses" ✓ 	1	1
b.	<ul style="list-style-type: none"> Data labels visible ✓ Data label location "Inside End" ✓ 	1 1	2
c.	<ul style="list-style-type: none"> Legend appears a bottom of chart ✓ 	1	1
d.	<ul style="list-style-type: none"> Chart moved to a new sheet ✓ called "Chart" ✓ 	2	2
	Total		25

PRESENTATIONS

CHAPTER 15

CHAPTER OVERVIEW

Unit 15.1 Introduction to presentations

Unit 15.2 File management and formatting in presentations

Unit 15.3 Illustrations and animations

Unit 15.4 Basic integration techniques: Charts and tables

Unit 15.5 Reviewing in presentations

The following learning outcomes are covered by this chapter: 

- Understand what presentations are used for.
- Use the different layouts in a presentation.
- Insert and delete slides.
- Insert slide numbers, as well as headers and footers.
- Insert illustrations and customise animations in a presentation.
- Understand the orientation and size of slides in a presentation.
- Explore the different view options in a presentation.
- Use basic integration techniques like Insert charts and tables.
- Use the Spelling tool to review the review.
- Start a slideshow.



GRADE: 10

DATE:

TEACHING TIME: 8 hours

Resources

Each learner should have access to:

- CAT 10 textbook
- Workbook
- Computer with Windows 10
- Mouse
- Keyboard
- Internet
- QR reader

INTRODUCTION

A presentation application contains slides. A slide is a page in a presentation that allows you to do the following:

- Insert text
- Format text
- Insert and manipulate graphics
- Add animations

Presentations are used in a variety of environments, for example the workplace, in class, and to showcase ideas to colleagues and team members. Knowing how to use the different features in a presentation application will be beneficial to learners when they do their PATs and when they need to present other assignments in school, as well as adults.

Presentations are used for various reasons; the main one being to communicate important information to an audience. Presentations can be done as a slide show using your computer screen or using a video projector for a bigger audience.



UNIT

15.2 File management and formatting in presentations

Activity 15.1

Memorandum

1. Open PowerPoint. Create a blank presentation.
2. On the title slide, type in your name and surname.
3. In the *Tell me* bar, type in *Explosion star*.
 - a. The shape menu will appear, and you can select the style of star that you want.
 - b. Double-click anywhere on your slide. The shape should be inserted into the slide.
4. Insert a second slide and apply the *Title* and *Content* layout. Change the page layout as follows:
 - a. Change the slide orientation to *Portrait*.
 - b. Change the slide size to *Ledger Paper* (11 x 17 inches).
 - c. Change the slide width and height: 22 and 30.

When learners do 4c the slide size changes from Ledger Paper to Custom. This is not an error.
5. Save the file as *Act 15_1*.

Activity 15.2

Memorandum

1. Create a slide show that has seven slides. Your topic will be: The internet.
The following are guidelines for how your presentation should look:
 - a. Slide 1: Cover slide with the topic name and your name and surname.
 - b. Slide 2: A brief history of the internet.
 - c. Slide 3: How did the internet become so popular.
 - d. Slide 4: The main uses of the internet.
 - e. Slide 5: Advantages and disadvantages of the internet.
 - f. Slide 6: Conclusion.
 - g. Slide 7: A list of all the places you got your information from, including the website addresses.
2. Use a different layout for each slide.
3. Use the theme: *Austin*.
This theme may not be available in the version of Office that you are currently using. It can be downloaded from the internet. Save the theme somewhere where your learners can find it.
4. Make sure the cover slide could be distinguished from the rest of the slides. Use a different variant than the one used in the theme.
5. Add slide numbers to your presentation.
6. Insert a footer: Mini Presentation.
7. Save the presentation as *Act 15_2*.

Activity 15.3

Memorandum

1. Open the practice presentation *Act 15_3*.
2. There is an error in the presentation; the word *Europa* is used. Replace all these instances with *Europe*.
Select "Match whole word" when doing this search. Nine replacements should be made.
3. Use the *Find* feature and indicate how many soil sites were threatened by erosion in Europe. Type your answer on a new slide, which you can insert after the last slide.
One instance was found.
4. Apply the *Executive* theme to this presentation.
You might have to download this theme for your learners.
5. Align all the text on your slides to *Align Text Left*.
6. Move Slide 2 to go after Slide 4.
7. Do a spell check on the presentation.
Make sure the language is set to English (South Africa), otherwise a number of words will be incorrectly flagged as errors.
8. Save the presentation.



UNIT

15.3 Illustrations and animations

Activity 15.4

Memorandum

Learners should be made aware of the similarities across different applications.

1. Open the practise presentation *Act 15_4*.
2. Open the title slide.
3. Use the *Pictures* command and insert the image *fruits.jpeg*.
4. Make sure your picture is placed on the left side of the slide and does not cover the title.
5. The image on Slide 4 needs to be resized. It should be:
 - a. Height: 6.2 cm
 - b. Width: 8.5 cm
6. Save and close the presentation.

This is a straightforward activity that should not pose too many problems.

Activity 15.5

Memorandum

Do this activity on your own.

1. Open a blank presentation, change the layout of the first slide to *Title and Content*.
2. Type the title: *Gas Exchange*
3. Select the *SmartArt* command and insert a *Block Cycle* graphic from the *Cycle* category.
4. Enter the following text in an anti-clockwise order:
 - a. Oxygen
 - b. Red blood cells
 - c. Organs
 - d. Carbon dioxide
 - e. Lungs
5. Change the colours of the *SmartArt* to any selection from the *Colorful Range*.
 - a. Apply the *Powder* style to the graphic.
6. Save the presentation as *Activity 15.5*.

This activity should not cause any problems for learners.

Activity 15.6

Memorandum

Learners must be clear that transitions are a type of animation applied to a complete slide, either when the slide appears for the first time or when moving from one slide to another. Animations, however, are applied to objects on the slide.

1. Open a blank presentation and do the following:
 - a. Change the layout of the first slide to 'Blank'. Insert the shape of a five-point star into the first slide.
 - b. Make sure it is as big as follows:
 - i. Height: 15 cm
 - ii. Width: 15.5 cm
 - c. Apply the shape transition to the first slide.
 - d. Insert a new blank slide.
 - e. Insert a shape of your choice.
 - f. Apply the *Float In* animation to the shape.
 - g. Delay the animation in the second slide by five seconds.
 - h. Insert a new blank slide.
 - i. Insert any image.
 - j. Apply both the *Wheel* animation to the image you added in (i) and the *Shape* transition to the slide.
 - k. Save presentation and close the file.

Activity 15.7

Memorandum

This activity will require some creativity on the part of the learners.

Your school has an interschool athletics event. You need to show your teacher how the different age groups performed.

Open the presentation *Act 15_7*. As you can see, the data in the presentation is not sorted at all. The first slide just shows the names of the different teams and age groups, and the slides after shows the points of the different teams.

1. Create a cover slide with the title being *Interschool Athletics*.
2. Insert the image *Interschool.jpeg* from the practice documents folder into the cover slide. Place this image in the right side of the slide.
3. Insert a new blank slide.
4. Create a new table in this slide. The table should show the AA team, age groups, as well as the points. See example below.
5. Take note of the following:
 - a. Font: Heading row 20 pt, Arial and bold.
 - b. Rest of Table: 18 pt *Arial*.

Team	Age groups	Points
AA	19	43
	18	27
	17	26
	16	20
	15	22

6. Create another new blank slide.
7. Using the table that you created, insert a column chart using the *Chart* command.
8. The chart title should be Team AA. Add titles to each axis. Apply any theme style of your choice. *Create a chart from the templates provided. Delete the data in the spreadsheet and copy the data from the table in the previous slide. Learners might need some guidance with this step.*
9. Insert another new Title and Content slide. Give the slide a suitable heading. Answer the following questions on that slide. Type the following questions as well as the answers:
 - a. Which team performed the best in the interschool athletics?
 - b. Which team performed the worst in the interschool athletics?
 - c. Which age group in the BB team performed the best?

Allocate a team to different groups in the class and get them to add the results up.
10. Save this file.

Activity 15.8

Memorandum

Do this activity on your own.

1. Open the practice document *Act 15_8*.
2. Run the spell check.
3. Make sure to check every slide, i.e. the title and content.
3. Correct the eight mistakes found in the presentation. (Europa is not one of them.)
4. Save the file.

The learners have run this spell check in an earlier activity. Treat this as revision.

REVISION ACTIVITY

Chapter 15: Presentations

QUESTION 1

Open the *RA_15A* presentation and do the following:

- 1.1 Change the orientation of the presentation to *Landscape*. (12)
- 1.2 Change the screen size to *Widescreen*. (1)
- 1.3 Insert a new title slide as the first slide of the presentation: (1)
 - a. Insert the text *iHeart* as the title and the text Radio Awards as the subtitle of this slide. (2)
- 1.4 Apply the *Austin* design theme to all the slides (2)
- 1.5 Remove the strikethrough from the words that have it. KEEP the words; only remove the strikethrough. (3)
- 1.6 Change the layout of the third slide so that the text is logically displayed in two columns (3)
- 1.7 Locate the text *iHeartRadio* on the third slide and change the text as follows: (4)
 - a. Apply *WordArt* with a light blue outline, white fill and glow effect to the text. See below:



- 1.8 Add footer with the name of your school at the bottom of each slide. Add page numbers as headers to each slide. (3)
 - 1.9 Use the correct feature to replace all instances of the word platform with the word stage. (2)
 - 1.10. Locate the text box containing the text 'The Edge and Bono' on slide 5 and make the following changes:
 - a. Fill the text with colour: light green (1)
 - b. Change the text outline to 1 pt (1)
 - c. Change the font size to 24 pt. (1)
 - 1.11 Insert the *RA_15Graph* on the last slide. (2)
 - 1.12 Ensure that this graph is inserted as a link and updates automatically. (2)
 - 1.13 Fix any spelling mistakes in the document. (3)
- Save and close the *RA_15Graph* presentation. [32]

QUESTION 2

Open the presentation *RA_15B*.

- 2.1 Apply a transition so that the second slide appears with a clock transition. (2)
 - 2.2 Apply animation as follows to the Slide 3:
 - a. The text in the first bullet should wipe immediately when the slide shows. (2)
 - b. The text in the next bullet should appear one second after the first bullet. (2)
 - 2.3 Insert a new blank slide at the end of the presentation. Create a new graphic on this slide (Slide 5) so that it looks similar to the example below: (5)
- Save and close *RA_15B*. [11]

TOTAL: [43]

MARKING GUIDELINE

No.	Criteria	Maximum Mark	
1.1	<ul style="list-style-type: none"> Orientation changed to landscape ✓ 	1	1
1.2	<ul style="list-style-type: none"> Screen size set to Widescreen ✓ 	1	1
1.3	<ul style="list-style-type: none"> New Title slide added as first slide ✓ 	1	1
1.3.1	<ul style="list-style-type: none"> Title text "iHeart" added ✓ 	1	2
	<ul style="list-style-type: none"> Subtitle text "Radio Awards" added ✓ 	1	
1.4	<ul style="list-style-type: none"> Austin theme applied ✓ to all slides ✓ 	2	2
1.5	<ul style="list-style-type: none"> Strikethrough removed ✓ from both instances ✓ 	2	3
	<ul style="list-style-type: none"> Original text still on slide ✓ 	1	
	Slide 2: "amazing performance" Slide 4: "performing"		
1.6	<ul style="list-style-type: none"> Slide layout of slide 3 changed to "Two Content" ✓ 	1	3
	<ul style="list-style-type: none"> Second bullet moved ✓ to right-hand column ✓ 	2	
	Could also use the comparison layout and delete the headings.		
1.7	<ul style="list-style-type: none"> WordArt created with "iHeartRadio" ✓ 	1	4
	<ul style="list-style-type: none"> Text outline: Solid light green ✓ 	1	
	<ul style="list-style-type: none"> Text fill: Solid white ✓ 	1	
	<ul style="list-style-type: none"> Any Glow effect applied ✓ 	1	
1.8	<ul style="list-style-type: none"> Footer enabled ✓ with school name ✓ on all slides 	2	3
	<ul style="list-style-type: none"> Page numbers appear on all slides ✓ 	1	
1.9	<ul style="list-style-type: none"> All four instances of "platform" replaced with "stage" ✓ 	2	2
1.10.1	<ul style="list-style-type: none"> Text fill colour changed to "light green" ✓ 	1	1
1.10.2	<ul style="list-style-type: none"> Text outline size set to 1 pt ✓ 	1	1
1.10.3	<ul style="list-style-type: none"> Font size changed to 24 pt ✓ 	1	1
1.11	<ul style="list-style-type: none"> Pie graph from spreadsheet ✓ appears on correct slide ✓ 	2	2
1.12	<ul style="list-style-type: none"> Graph pasted as a link ✓ and updates automatically ✓ 	2	2
1.13	<ul style="list-style-type: none"> All three errors ✓ on slide 4 ✓ corrected ✓ 	3	3
2.1	<ul style="list-style-type: none"> Clock transition ✓ applied to slide 2 ✓ 	2	2
2.2.1	<ul style="list-style-type: none"> Wipe animation applied to text after first bullet ✓ 	2	2
	<ul style="list-style-type: none"> Animation starts "After previous" ✓ 		
2.2.2	<ul style="list-style-type: none"> Appear animation applied to text after second bullet ✓ 	2	2
	<ul style="list-style-type: none"> Animation starts 1 second after previous ✓ 		
2.4	<ul style="list-style-type: none"> New blank slide created at end of presentation ✓ 	1	5
	<ul style="list-style-type: none"> Radial Cycle SmartArt created on slide ✓ 	1	
	<ul style="list-style-type: none"> Correct text added ✓ in correct order ✓ 	2	
	<ul style="list-style-type: none"> Colours similar to example ✓ 	1	
Total			43