

Grades 8 – 9

CAPS-approved Catalogue



Welcome



At Pearson, we believe that learner performance can be improved when both teachers and learners are equipped with quality learning resources filled with relevant and engaging content.

We are proud to present our Grades 8–9 CAPS-approved catalogue of titles from Maskew Miller Longman, Heinemann and Pearson. Explore our range of textbooks, teacher's guides and novels, designed to help your learners transition from Senior to FET Phase; providing them with the skills needed to acquire and apply knowledge in ways that are meaningful to their lives.

To support you in the classroom, we continue our strong tradition of excellence in teacher training. These teacher-training workshops are run across the country by our dedicated and passionate team of trainers whom are trained teachers. If you require more information about our workshops, please contact your local Pearson office.

Wishing you all the best for the year ahead.

Reggie Mokotsi
Executive Director: Sales
Pearson South Africa

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Key to symbols



This title is also available in eBook format.



Features one or more digital resources, e.g. CD, DVD, Online Support.



Resources with audio components.



New title available.



This title is also available in Afrikaans.



Additional information.

About Pearson

At Pearson, home of Maskew Miller Longman and Heinemann, we're here to help people make progress in their lives through learning.

Learning isn't a destination, starting and stopping at the classroom door. It's a never-ending road of discovery, challenge, inspiration, and wonder.

For many people, learning is the route to a job to support their family or the skills to help them progress in their career. For others, it's simply a passion for discovery.

Whether it's in the classroom, at home, or in the workplace, learning is the key to improving our life chances.

That's why, at Pearson, we provide trusted CAPS-approved textbooks, digital and supplementary resources, services and support, and professional development

courses, to make learning more engaging and effective.

We create content in all 11 official languages and have a footprint in all 9 provinces. Our unique insight and local expertise comes from our long history of working closely with the Department of Education, teachers, learners, researchers, authors and thought leaders.

We have a clear and simple set of values – in everything we do, we inspire to be brave, imaginative, decent and accountable. These values describe what is important to all of us, and guide us to do what is right for the world around us.

Every day all over South Africa, our products and services help learning flourish. Because wherever learning flourishes, so do people.

Learn more at za.pearson.com



Our strategic partners

Our dedication to creating positive social impact shapes everything we do, from our products and strategies to the way we engage with our millions of learners, partners, and communities around the world.

We are fortunate to have found B-BBEE partners who share our passion and commitment to education and will enable us to continue to positively impact many thousands of learners across South Africa.

Sphere Holdings is excited to be part of an enterprise whose key focus is on improving knowledge and education in South Africa. The relationship with Pearson South Africa aligns this imperative with their passion for delivering meaningful interventions for change.

Sphere Holdings (Pty) Ltd

- Itumeleng Kgaboesele
- Marang Denalane

Sphere Holdings was founded in 2003 and has a transformative business model that creates wealth that uplifts by putting real money back into the community with a focus on education. Since inception, about 14% of Sphere has been owned by four community charities with a focus on education.

Pearson Marang Education Trust

Through research, engagement and development at the coalface of education, the school and the classroom, the Pearson Marang Education Trust has focused on best practice as an approach to improving the quality of teaching, learning and school management in South Africa. The Trust brings deep knowledge of school improvement and performance into this dynamic partnership.

“

We look forward to working with Pearson to adapt their unparalleled global education expertise, content and services to meet the needs of South African learners, teachers, education departments and schools.

”

Marang Denalane, Sphere director and Pearson SA board member

Our commitment to learning

The challenge for education is not just about providing access, but also ensuring progress.

For Pearson, providing great products and services is just the beginning. It's important for us to know that they are working. Everything we do is driven by its measurable impact on learning outcomes. ***We call this efficacy.***

In 2013, we announced our commitment to report publicly on our progress and make the results transparent. We were the first education company to make this commitment.

By focusing on the efficacy of our products and services, we can see exactly how effective they are at producing successful

outcomes for learners. This involves continually measuring, assessing, and improving everything we do and putting the learner at the heart of our learning solutions. By questioning everything, we ensure that we're always delivering better results.

We work with educators and learners to continually improve our products and services, ensuring they have the most positive impact on learning. In this way, we're able to deliver better education to more people – whatever, whenever, wherever, and however they choose.

Read some of our efficacy reports to learn more about our products and their impact on [pearson.com](https://www.pearson.com) or [classroomsolutions.co.za](https://www.classroomsolutions.co.za)

For us, the future's already begun

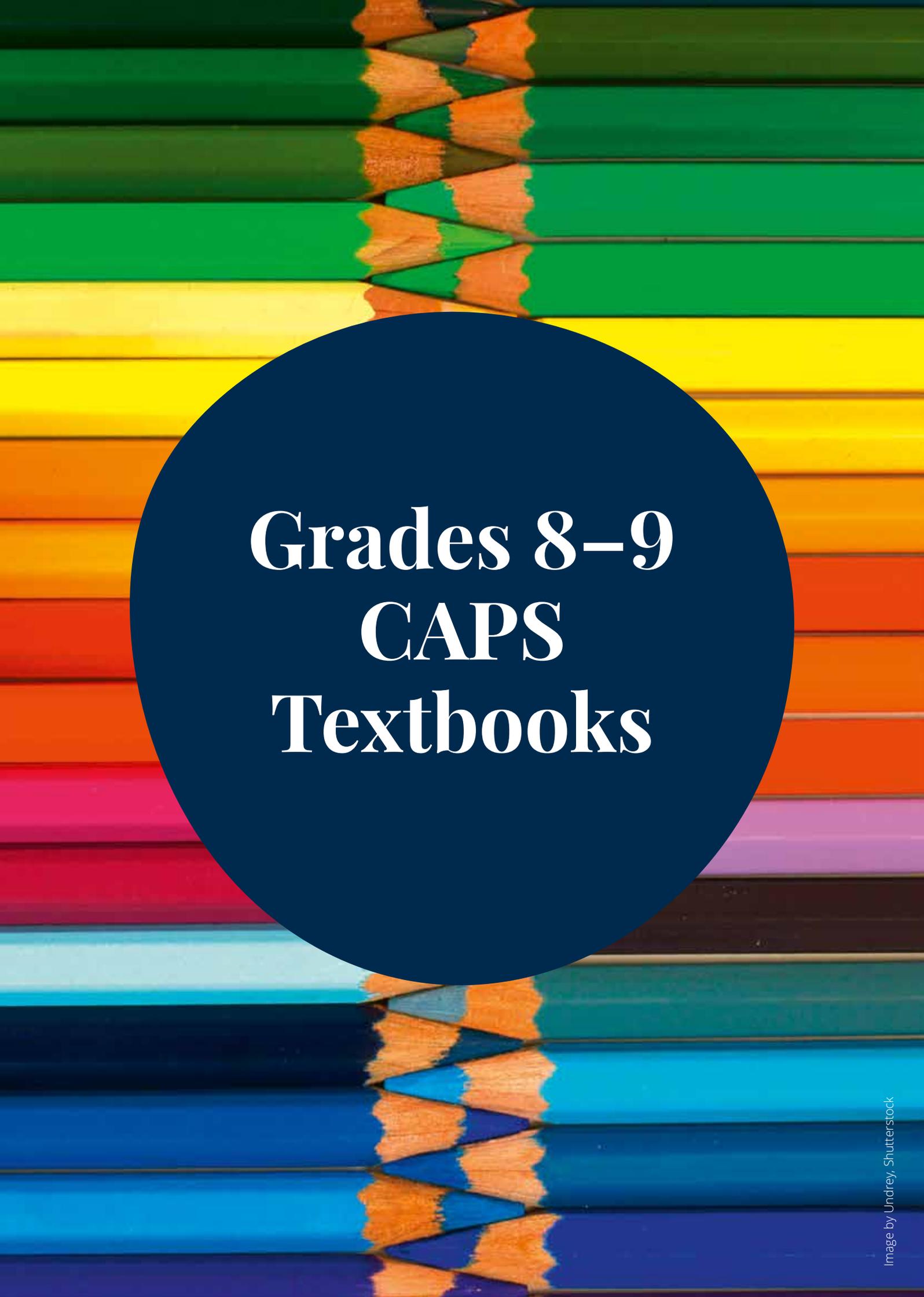
It's a future full of powerful challenges and exciting opportunities. While we're dedicated to making change happen, we're well aware that we can't do it alone.

So we collaborate with employers, teachers and educational experts, entrepreneurs, and other organisations to gain in-depth global perspectives and develop pioneering ideas that will help solve the many educational challenges facing the world.

Working with you enables us to make even bigger changes happen as we collaborate to address some of the biggest education challenges.

One of our initiatives is ***Project Literacy***, a campaign to bring the power of words to everyone so that by 2030, every child born can grow up to be a literate adult. Learn more at [projectliteracy.com](https://www.projectliteracy.com)

Our dedication to creating positive social impact shapes everything we do, from our products and strategies to the way we engage with our millions of learners, partners, and communities around the world.

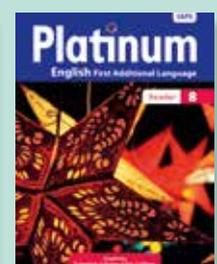
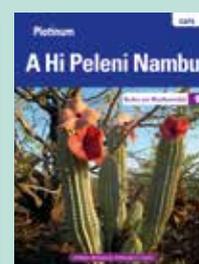
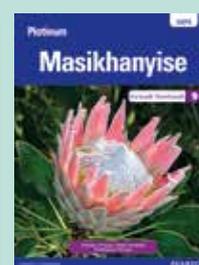
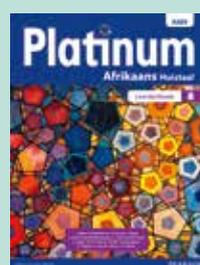
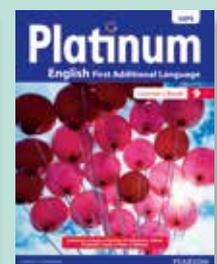
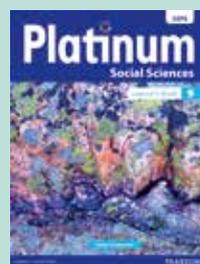
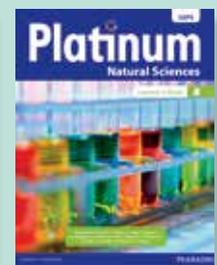
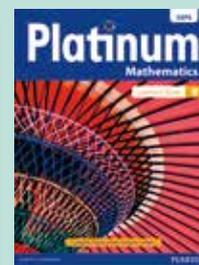
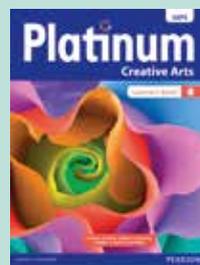
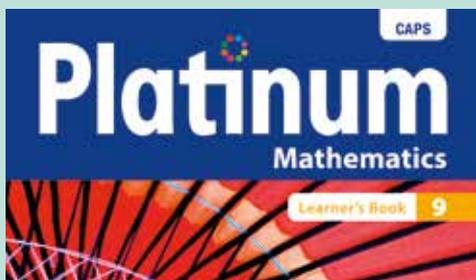


**Grades 8–9
CAPS
Textbooks**

Platinum

Simply Superior!

- **Superior** CAPS coverage – written for the Curriculum and Assessment Policy Statement by expert authors
- **Superior** illustrations and activities to improve results and motivate learners
- **Superior** teacher support to save time and make teaching easy
- **Superior** quality = **success!**

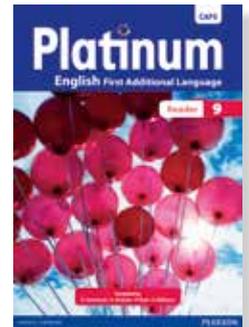
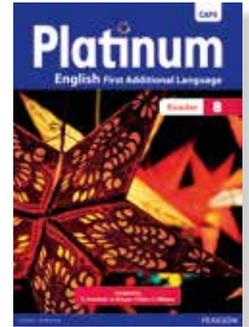


Teacher's Guides include a **FREE** Extension and Remediation Worksheet Book.

Platinum English First Additional Language



- The Learner’s Book is divided into chapters, which each contain work for a complete two-week cycle.
- Each chapter contains activities for all four language skills: Listening and Speaking, Reading and Viewing, Writing and Presenting, and Language Structures and Conventions.
- The course has unique features that help learners to read, speak and write English confidently and competently.
- *Word lists* and *glossaries* will build learners’ vocabulary. The Language toolbox is an easy reference for common grammatical and spelling patterns.



Examples of speaking and writing texts that can be modelled

Colourful visuals on every page aid understanding

Suggested words and phrases develop the learner’s writing and vocabulary

Write your own friendly letter. You can use the letter on page 38 as a model, but you must write your own words. Your letter should be between 120 and 140 words. Follow the writing process.

Planning
Look at these photographs of moments in South Africa’s history.

1. Choose the photograph that interests you.
2. Write a letter to your grandparents or to an older person you know. Ask them to tell you about the event in the photograph you chose.
3. Plan your letter. Use this:

- Paragraph 1: Give your grandparents any family news. Ask them how they are.
- Paragraph 2: Tell your grandparents that you want to find out about this event. Tell them that you are doing an English project.

Look at the Words you can use box on the right to help you.

Drafting
Write the rough draft of your letter. Lay out your letter properly. Use Chantel’s letter on page 38 as a model. Fill in your own address and your own name.

Revising, editing, proofreading and presenting

1. Revise your letter. Check that these things are correct:
 - The address.
 - The greeting.
 - Paragraph 1 is about general news.
 - Paragraph 2 asks your grandparents to explain the event.
 - The ending.
2. Edit your letter. Check that the spelling is correct. Check that all your sentences are complete.
3. Write the final letter. Check it once more before you hand it in to your teacher.

Words you can use

For paragraph 1
I hope you are well.
I am looking forward to seeing you ...
I have been doing well ...

For paragraph 2
I need to ask you for some help.
We are doing a project on ...
Please can you ...
What do you remember about ...?
Why did ...?

Write your own friendly letter. You can use the letter on page 38 as a model, but you must write your own words. Your letter should be between 120 and 140 words. Follow the writing process.

Writing and presenting

Activity 2 Write a friendly letter
Read this example of a friendly letter.

Look closely at the address and the greeting, and also the addressing.

The letter is neatly laid out and easy to read because the sender has used appropriate paragraphs. There is also a clear introduction, a main body, and a closing. The language is clear and easy to understand.

The address and the date are in the top right-hand corner.

Please remember to check the spelling of the names and dates in the letter.

This paragraph is about how Chantel has been doing in her English project. It is a friendly letter, so it is written in a simple and clear way.

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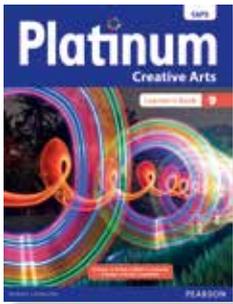
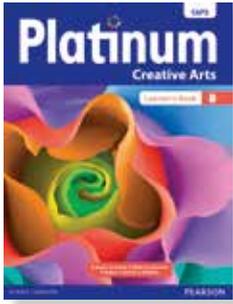
The closing is simple and clear. It is a friendly letter, so it is written in a simple and clear way.

Let’s see how Chantel’s letter is written.

38 Done 1, check 2 and 3

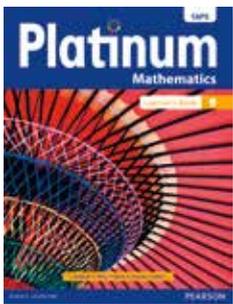
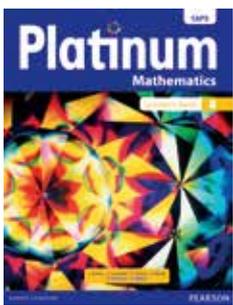
Platinum English First Additional Language Grade 8 Learner’s Book

Platinum Language components include Learner’s Books, Readers and Teacher’s Guides with a **FREE** Extension and Remediation Worksheet Book



Platinum Creative Arts

- The Learner's Book is divided into units, which cover the required content, concepts and skills for the various art forms.
- Activities and revision exercises enable learners to consolidate their knowledge and test their skills.
- The focus is on developing art form vocabulary through the repeated use of keywords and key concepts during practical activities.
- Colourful illustrations enhance learners' understanding of content.



Platinum Mathematics

- The Learner's Book is divided into topics covering each of the five Mathematics content areas.
- The *Maths ideas* feature illustrates the curriculum focus of a particular topic.
- Each topic contains helpful *Keywords* and a variety of exercises.
- Platinum Mathematics is the only CAPS Maths course that has been approved for all grades.

Examples show learners how to solve problems

Did you know? boxes with useful information

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Probability

Maths ideas

- Consider simple situations that can be described using probability and list possible outcomes.
- Determine the probability of outcomes by using the definition of probability.
- Predict frequency of outcomes based on probability.
- Compare relative frequency with probability.

Understand probability

Probability is about estimating the chance of an event happening during an activity, and studying trends and patterns. The outcome is the result of this activity. **Probability** is simply a mathematical way of describing or estimating how great the chance is of a specific event occurring.

For example, if you roll a six-sided die and ask, "What are the chances of throwing an even number?" or, "What is the probability of throwing an even number?" then "throwing an even number" is an event. We denote the event using the letter E. The event is composed of the outcomes 2, 4 and 6, because these are the possible even numbers you could roll. You can write this in set notation as $E = \{2, 4, 6\}$.

You can write probability as a formula:

Probability = the number of favourable outcomes
÷ the number of possible outcomes

Mathematically, you write the probability equation as $P(E) = \frac{n(E)}{n(S)}$, where E stands for the event and S represents the set of all possible outcomes. $n(E)$ is the number of favourable outcomes or events and $n(S)$ is the number of possible outcomes.

Calculate probabilities

If an event E will definitely happen, then it has a probability of 1, written as $P(E) = 1$.

It is certain that the sun will rise tomorrow. If you represent the event 'the sun will rise tomorrow' by S, then $P(S) = P(\text{sun will rise tomorrow}) = 1$. This is an example of a sure (or certain) event.

Let's look back at what happens when you roll a dice. When you roll the dice, one of the numbers 1, 2, 3, 4, 5, 6 will definitely appear on top. The sure (or certain) event S represents all possible outcomes. So $S = \{1, 2, 3, 4, 5, 6\}$, and $P(S) = 1$. This is because it is a sure event that one of the numbers will be rolled. The sure event S is also called the **sample space**.

An **impossible event** is one that has a probability of 0.

Key words

- probability** - the likelihood of an event happening
- event** - the set or group of outcomes of an experiment
- outcome** - the result of a single experiment
- sample space** - the set of all possible outcomes

It is impossible for cows to fly. So if you represent the event 'a cow will jump or fly over the moon' by Q, then $P(Q) = P(\text{cow will fly}) = 0$. This is an example of an impossible event.

Probability is measured on a scale from 0 to 1. If some event has a probability of 1 (or 100%), it means it is certain to happen, if the event has a probability equal to 0, it means it will not happen, or that it is impossible. When events are either not impossible or not certain, then the probability will be between 0 and 1. A probability of $\frac{1}{2}$, 0.5, 1/2 or 50% means that something is just as likely to happen as not. This is sometimes called a 50/50 chance.

You can show all probabilities on a probability number line.

impossible	unlikely	50/50 chance	likely	certain
0	10%	50%	90%	100%
0	0.10	0.50	0.90	1.00

Example

What is the probability of getting an even number when you roll a die?

Answer

There are 3 ways of getting an even number. If E is the event (getting an even number), then $E = \{2, 4, 6\}$. There are 6 possible outcomes. If S represents all the possible outcomes, then $S = \{1, 2, 3, 4, 5, 6\}$. Probability $P(E) = \frac{\text{number of favourable outcomes}}{\text{number of possible outcomes}}$. So the probability of getting an even number is $\frac{3}{6}$, which is the same as $\frac{1}{2}$ or 50%.

Did you know?

You can express probability as a percentage, ratio, decimal or a fraction. For example, you could say that there is a 25% chance of something happening. This is the same as a one in four chance, and the probability is equal to 0.25 or $\frac{1}{4}$.

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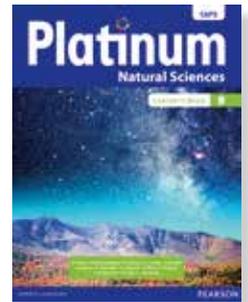
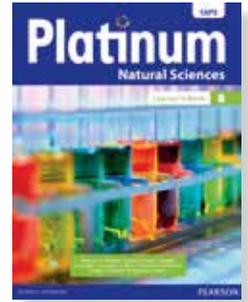
Task 10: Probability

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Platinum Natural Sciences



- The Learner’s Book is divided into topics that cover the content required by CAPS.
- Activities, practical work and revision exercises enable learners to consolidate their knowledge and practise their skills.
- Language support is provided through clear definitions of scientific terms in Keyword boxes. Safety notes are provided where relevant.
- Colourful illustrations and photographs enhance learners’ understanding of the content.



2 Contact forces

Key words:

- friction** – contact force that a surface exerts on an object
- tension** – contact force in a rope or cable when it is used to carry a load
- compression** – contact force that pushes or squashes something into a smaller space

What is a contact force?

A contact force is exerted where two objects are in contact, so they touch each other. Look at Figure 18 to find Unit 1 again and identify all the contact forces.

Friction

Friction is a contact force that a surface exerts on an object. A ball that rolls along the ground will slow down and stop after a while. This happens because of friction. The surface of the ground (rub) against the surface of the ball. The frictional force always acts parallel to the surface. It also acts in the opposite direction to the movement of the ball.

Figure 18: The person pushes against the floor with his feet. This is the contact force that allows him to move forward. Similarly, the ball also rolls.

Figure 19: The box is in compression. The frictional force exerted by the ground is larger than the force exerted by the box. The box is stationary. The frictional force is the force that prevents the box from moving.

Friction can prevent an object from moving. If you push against a heavy box that is standing on wheels, the wheels exert a frictional force against your pushing force. If your pushing force is smaller than the frictional force, the box will not move.

Case study: Friction: useful or inconvenient?

Friction can be seen as useful or inconvenient. There would be numerous activities if all objects were frictionless. For example, people would not be able to walk on the floor or sit on chairs. Friction is also essential for many activities. For example, the soles of our shoes and the treads of a car tyre.

Friction is also useful in many other ways. For example, it is essential for the brakes on a car. Friction is also used in many other ways. For example, it is essential for the soles of our shoes and the treads of a car tyre.

Activity 4: Demonstrate an understanding of frictional force

1. Draw a diagram to show the force exerted by the soles of your shoes and the frictional force.
2. Discuss how friction is reduced in ice skating.
3. Describe the usefulness or inconvenience of frictional force in the activities below:
 - a) Landing a plane
 - b) A soccer player running with soccer boots (studs) underneath.

Tension

If a car breaks down, a tow truck is used to pull it to a garage. A cable is attached to the car to pull it. **Tension** is a contact force in a rope or cable when it is used to carry a load. If you hang something on a rope from the ceiling, tension is created in the rope. If the object is too heavy, the tension in the rope will be too much and the rope will break.

Some materials stretch if the tension in them increases. If you apply enough force to an elastic band, the tension in the elastic band will make it stretch.

Figure 18: Tension force is exerted by the cable on the car which is used to tow the car.

Did you know?

Many plain spinners (spinning wheels) were discovered by indigenous African people used to make rope. It is for the spinning two sticks together.

Compression

If you squeeze a blown-up balloon a little bit between your hands, it becomes smaller. This is because you are pushing the air particles inside the balloon closer together. **Compression** is a contact force that pushes or squashes something into a smaller space.

Compression can also push something into another space. When you squeeze toothpaste from a tube, you compress the tube of toothpaste to force the toothpaste onto your toothbrush.

Figure 19: Tony forces the air particles in the balloon to push closer together.

Figure 20: Air particles in the balloon are pushed closer together.

Activity 3: Identify the type of contact force exerted

Identify which contact force is exerted in the actions stated below. Copy into whether it is friction, tension or compression. Give a reason for your answer.

1. The force exerted in the spring of a ball's worn around Anya's neck.
2. Hair presses onto the plastic tennis-racket handle to squeeze out the last bit of tennis sweat onto the hand-chips.
3. Traction onto soccer boots when playing a soccer match to prevent them from slipping and falling on the field.

Figure 17: Traction is exerted.

Key concepts

Contact forces are exerted where objects touch each other. Friction is exerted by a surface on an object. Tension exists in a rope or cable when it is used to carry a load. Compression pushes or squashes something into a smaller space or another space.

Page 130 Page 135

Did you know? boxes with useful information

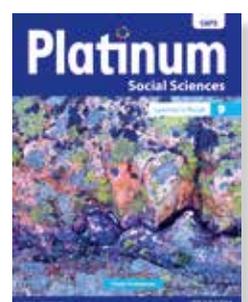
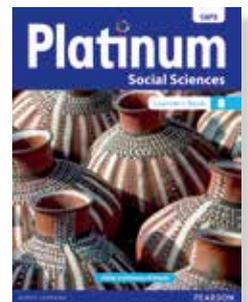
Key concept boxes summarise important scientific concepts in each unit

Platinum Natural Sciences Grade 9 Learner's Book

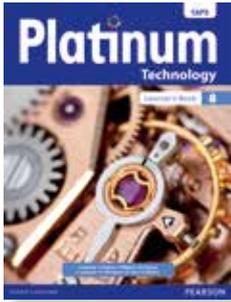
Platinum Social Sciences



- The Learner’s Book is divided into units, which cover the specific topics and required content.
- A variety of activities enable learners to consolidate their knowledge and test their skills.
- *About our world* boxes filled with useful information offer learners a broader perspective of Social Sciences.
- Colourful illustrations, maps and photographs aid learners’ understanding of the content.



Platinum components include Learner’s Books and Teacher’s Guides with a **FREE** Extension and Remediation Worksheet Book



Platinum Technology

- The Learner's Book is divided into topics and units that cover the content, concepts and skills required by CAPS.
- The *Skills focus*, *Action research* and *Practical investigation* features provide hands-on opportunities for learners to acquire skills.
- *Enabling tasks* and case studies ensure that learners engage with the concepts and skills.
- Formal assessment is provided through practice term tests, a mini-PAT (practical assessment task) at the end of each term and an end-of-year practice exam.

Technology *Keywords* are defined to build learners' vocabulary

Colourful visuals aid understanding

Did you know? boxes filled with useful information

1 Pneumatic and hydraulic systems

Key words

- master cylinder** – input pressure is applied to this cylinder
- slave cylinder** – increasing input pressure occurs at this cylinder the pressure is equal to the applied input pressure
- system** – a disc attached to a nail that fits tightly inside a cylinder and that moves up and down the cylinder
- cylinder** – a tube that can fill up with liquid or
- pneumatic system** – a mechanical system that uses compressed air to do work
- potential energy** – the energy that is stored when stationary objects move
- compressed** – when something is gas is squeezed into a small space
- hydraulic system** – a mechanical system that uses compressed fluid to do work

Some machines need to transmit a force to work on spaces or around corners. Other machines need a very large force to dig deep trenches or raise heavy loads. Pneumatic and hydraulic systems are used in these situations. Figure 1.1 shows a simple diagram of these systems. It shows a **master cylinder** linked by a tube to an equal-sized **slave cylinder**. A master cylinder is identified as the input of the system. It is the point where pressure is applied to the system. A slave cylinder is identified as the output of the system. It is the point to which the resulting effect of the applied pressure is transmitted. Pistons move inside the cylinders to transfer force applied to the system. **Pressure** moves up and down inside a **cylinder** in the direction in which pressure is applied. If a force is applied to the piston in the master cylinder, the gas or liquid moves through the system and pushes out the slave piston. This will lift a load attached to the slave cylinder.

Pneumatic systems

A **pneumatic system** controls mechanisms by using compressed gases like air or nitrogen. A gas has so much space between its particles that these particles can be forced together under compression. When the gas expands again, it releases energy, which we use to do work. This is called **potential energy**. Potential energy is the stored energy in objects, which we can use to do work. Pneumatic systems are used in single everyday tools like bicycle pumps and in industrial tools like jacks/lifters.



Figure 1.1: The resulting effect of the applied pressure is transmitted.



Figure 1.1: A pump inflates a bicycle wheel.



Figure 1.2: A person can lift a car with a hydraulic jack.

Advantages and disadvantages of pneumatic systems

Pneumatic systems are cheaper than hydraulic systems, however, since air is so easily compressed, pneumatic systems are not suitable for machines where precise, controlled movement is needed. Compressed air can be very dangerous because it is unpredictable and can backfire.

Hydraulic systems

A **hydraulic system** controls mechanisms by using oil. Oil is a lubricant. It reduces friction and does not freeze as easily as water. A hydraulic system can transfer force evenly throughout a system using fluid that is under pressure. Liquids cannot be compressed like air because there are no spaces between a liquid's molecules. Hydraulic systems can be very powerful and are used in several industries. These systems use machines with electrically-driven pumps to draw fluid into the cylinders. A hydraulic system controls mechanisms by using oil. At school, water is used in syringes to simulate hydraulics.

Advantages and disadvantages of hydraulic systems

A hydraulic system is effective since the pressure in the system is constant. Force is transferred directly and immediately. The system is efficient because oil reduces friction, but leaks are expensive and messy.



Figure 1.2: A hydraulic jack is used to lift a car.

Enabling Task 1 Compare simple pneumatic and hydraulic systems

You will need: length of syringe, empty plastic bottle that can be squeezed easily, balloons, two uncoiled springs of 5 mm and 10 mm, retort stands.

Work in pairs. Complete the following questions in your workbook.

1. Connect the balloons to the mouth of the empty plastic bottle. Express the bottle and watch what happens to the balloons. (1)
2. Fill one syringe halfway with water and use one finger to block the opening. Try pushing the plunger. What do you notice? (2)
3. Link two water-filled syringes with tubing. Make sure that there are no air bubbles in the system. Push the plunger in one of the syringes and observe what happens. (2)
4. Compare the results from questions 1–3. Present your answer to the class. (10)

(TOTAL: 10)

Did you know?

Hydraulics and pneumatics are called fluid mechanics because liquids and gases are not solid substances and they can both move in a system.



“

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”

S Mharakurwa, teacher,
Vine Christian School, Western Cape

TODAY

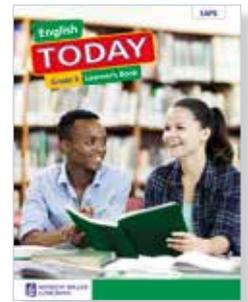
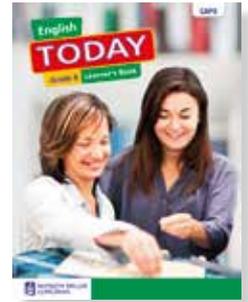
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- The Learner’s Book is easy to use, as content is presented in a step-by-step format, using clear and simple language to enhance conceptual understanding.
- Activities allow learners to test their skills and use their existing knowledge, challenging them to think critically.
- The Learner’s Book provides additional learner support through *Skills support boxes*, *Vocabulary lists* and annotated models for writing.
- The course includes literature texts from both South Africa and abroad that will encourage learners to read and think.
- Grammar and language skills are taught in context to enable learners to develop a meaningful understanding of English studies.



Skills headings follow the teaching plan

Sub-headings clearly show the steps in the process approach

Visual support stimulates learner interest

Chapter 4 Sport crosses boundaries

Introduction

Look at the picture on page 52. Discuss this question with a partner: If you were to be a wheelchair, would you try to play sport? Explain your answer.

In this chapter, we are going to look at how sport can cross boundaries. This means that all people – able-bodied and disabled, male and female, people from different cultural groups and of different ages – can enjoy and play sport together. You will learn to do a dialogue about disabled athletes and answer questions. You will make a speech, read a novel extract and a poem about sport, write a narrative essay and learn some new information about sports.

Unit 1 Listening and speaking

Listen to a dialogue and take notes

Pre-listening

A dialogue is a conversation between two people. It may be formal or informal. Turn-taking is important in a dialogue. Both people need to listen to one another and make comments that relate to the topic and to what the other person has said. The two people do not have to agree with each other but they must continue the conversation.

There are some reasons for having a dialogue:

- to defend a position (to say what it is that is important to you and why it is important)
- to negotiate (to find a way that both people can agree on something through discussion)
- to clarify (to help each other understand a topic or problem)

During listening

You are going to listen to a dialogue. You must take notes while you are listening. This is what you need to listen for and note down:

- The introduction: What is the topic being discussed? Who are the speakers?
- The tone and mood: Do the speakers have the same point of view? Is it a discussion or an argument? Can you hear like in their tone of voice?
- The conclusion: Do the speakers reach agreement or not? Does one speaker get the other to change their point of view?

Skills support **How to take notes as you listen**

Write the main points that you hear. Write key words only, not whole sentences. Write anything about the subject that you like.

Post-listening

Activity 1 Answer questions

1. What is the topic the speakers are talking about? (2)
2. Name the three disabled athletes who gave answers. (3)
3. At the beginning, what is Terri's point of view? (2)
4. What is Terri's point of view? (2)
5. How does Jane get Terri to change his mind? (2)
6. What is Terri's attitude at the end? (1)

2. How do you feel about sport for disabled people?
 a) Do they get enough support? Do people respect disabled athletes?
 b) Is it a waste of money to help disabled athletes? Is it not sport?
 TOTAL: (18)

Unit 2 Reading and viewing

Learn about novels

Pre-reading

A novel is a fiction or fact narrative (story) that is book length. It usually tells you about the characters and the action in a realistic way.

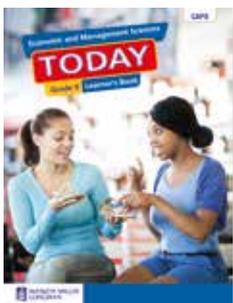
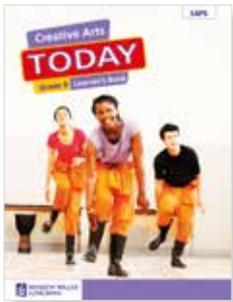
The next one you are going to read is from the opening chapter of the novel, *The Billion Dollar Soccer Ball* by Michael Williams. It comes right at the beginning and tells you about the who, where and when of the story. This novel starts in a village in Zimbabwe. Some children are playing soccer when soldiers arrive. At the end of this chapter the soldiers beat and kill many of the villagers, but two and innocent escape to South Africa. One moves to Cape Town where he sells guns and lives on the streets. He is found by a soccer coach who helps him to give up drugs. This player is the best Soccer World Cup for 2010.

Who is Michael Williams?

Michael Williams lives in Cape Town where he is the Managing Director of the Cape Town Opera. He is also a writer of plays, novels, novels and operas. He wrote this novel after meeting some of the victims of xenophobic attacks at a soup kitchen in 2008.

English First Additional Language *TODAY* Grade 9 Learner’s Book

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Creative Arts *TODAY*

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- The Learner's Book contains a number of activities that will enable learners to apply their knowledge, test their skills and challenge themselves. It provides additional learner support through *Keyword* boxes, *Did you know?* boxes, *Tip* boxes and annotated diagrams.
- Detailed and colourful illustrations help learners understand concepts.

Economic and Management Sciences *TODAY*

- The Learner's Book is easy to use, as content is presented in a step-by-step format, using clear and simple language.
- The Learner's Book provides additional support through *Keyword* boxes, worked examples, case studies and *Did you know?* boxes.

Variety of activities help learners practise skills

Visual support aids learners' understanding

Unit 1: Topic 14

Unit 1 The concept of a business plan

The success of any new business depends on how well it has been planned and how much thought has gone into the venture. In this unit you will learn more about how entrepreneurs plan a business venture. You will learn about the importance of planning and the concept of a business plan.

What is a business plan?

Before starting a new business venture, entrepreneurs usually draw up a detailed business plan. A business plan is a document that sets out all the details and arrangements for a new business venture. It is a structured guideline of what needs to be done to achieve business goals. A business plan is a description of the following:

- what you intend doing
- how you intend doing it
- when you intend doing it
- why you believe your idea is worthwhile and profitable.

A business plan prompts the entrepreneur to think about and answer the following questions:

- Where am I going, and how will I get there?
- What problems am I likely to run into along the way?
- How will I deal with these problems?

A business plan is a road map for the entrepreneur. The entrepreneur uses his or her business plan to plot a course to success.

The importance of planning

Generally people plan for two reasons:

- to identify what action needs to be taken to reach a particular objective or goal
- to anticipate potential problems and identify ways around them to make it easier to take quick action when opportunities present themselves.

Many small businesses are unsuccessful because the owner has not spent enough time planning the business thoroughly. You will learn more about the importance of planning in business from the case study below.

Case Study: Always plan ahead

"Guys what, everybody," says Tom to his friends. "I have just won R10 000 in a competition."

"Wow! That's amazing. What are you going to do with your money? Our business desperately needs to become successful."

"I have been advised to put at least half my money in a savings account. How much do you need, and what business are you running?"

Moses says, "We are going to start a business selling fresh fruit juice. Could you lend us R1 000 a month for six months until we get established? We'll pay you interest."

Topic 14 Unit 1

"Sounds good, we must draw up an agreement and decide on an interest rate," says Tom.

The business, Super Juice, used the money to buy the juicing equipment as well as stock of fresh vegetables and bottles. Tom brought into the business idea because Moses had already established that the juice is very good for people who suffer from immune deficiencies.

Six months later...

Tom asks Devakaha, "How is business coming along?"

Devakaha: "We really thought our idea was brilliant, as it would help lots of people."

"When we got your money, we must and bought all the equipment and ingredients. We are not selling enough stock. Our stock is fast for only five days and then we have to throw it away. We have no money and we do not know what we are going to do."

"How much planning have you done on this business idea?" says Tom, sounding concerned.

"Not much, we thought the idea would sell itself. There can you keep giving us R1 000 a month for a bit longer? The idea will eventually get going. It's just taking time," pleaded Moses.

"I want to investigate the problem in your business before I lend you any more money," says Tom.



Activity 14.1 Identify the importance of planning in business

1. Read the case study above and answer the following questions:

- From the case study above, name two problems that the business seems to be experiencing. (2)
- What could be done to solve these two problems? (2)
- If you were Tom, what conditions would you give to Moses and Devakaha before you lent them any more money for the business? (2)
- How could planning have prevented some of these problems? (2)

Why is a business plan important?

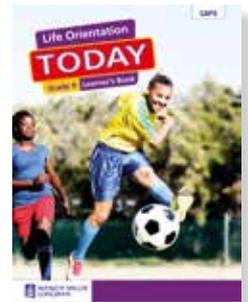
It is hard work to prepare a detailed business plan. It is, however, important to spend time in planning because putting a business plan together will:

- force you to arrange your thoughts in a logical order
- prompt you to simulate reality and anticipate pitfalls before they occur.

Life Orientation *TODAY*



- Life Orientation *TODAY* is easy to use, as content is presented in a step-by-step format, using clear and simple language.
- Activities allow learners to test their skills and use their existing knowledge, challenging them to think critically.
- The Learner's Book provides additional learner support through *Keyword* boxes, case studies, *Safety first* boxes and *Additional information* boxes.



Constitutional rights and responsibilities

Unit 5 Contributions of religion in promoting peace

Respecting other people and living in peace is at the heart of all the major religions in the world.

Christians believe in Jesus' teachings of non-violence. Blessed are the peacemakers, for they shall be called the children of God (Matthew 5:9). Jesus will fight as a soldier, but the Jewish scriptures urge them to "love from evil and do good; work peace and pursue it" (Psalm 133:6).

Muhamad Gandhi, the great Hindu who fought non-violently for the independence of India, wrote: "I object to violence because when it appears to do good, the good is only temporary; the evil it does is permanent".

Buddhism and Sikhism grew from Hinduism and all three share the idea of 'ahimsa' (non-violence).

Islam was founded by the prophet Muhammad who extended his understanding of the word of Allah (God) in the Quran. All Muslims are involved in a 'jihad' which is largely non-violent and includes a personal spiritual and moral struggle towards goodness. Part of the 'jihad', however, can be a 'holy war' against those who oppress or persecute believers, which is commanded by Allah, but must be carried out according to strict rules and only in defence.

Many people do not follow any particular religion, but believe in the 'Golden Rule': "Treat others as you would wish them to treat you". Many would regard this as a call for peace and a rejection of all war and violence.

Activity 6 Think about fighting for peace

1. In the following table are a number of attitudes that various religions take. Decide whether you think such actions promote peace.
2. Your teacher will divide you into groups of six. Discuss your answers and explain your reasons.
3. All have job your hands what they think. Try to find out why they believe certain things.
4. If possible, ask your parent or religious leader what your religion would say.

Constitutional rights and responsibilities

Action	Promotes peace?	
	Yes	No
1. Search that we must be good to other people		
2. Teach up to help the poor		
3. Get involved in politics to prevent war and wars		
4. Support the government in fighting against the enemy		
5. Encourage people to be prepared to use a gun for self		
6. Join a anti-abortion protest		
7. Establish a job creation programme for the unemployed		
8. Wear a white ribbon and participate in the 18 Days of Activism for the violence against women and children		
9. Speak out against corruption and child abuse and report it to the police		
10. Report bullying to school management		

Case study

In the late 1970s, when violence between apartheid as well as fighting it rose at its worst, the Methodist Church of South Africa decided whether or not to call itself a Peace Church or not. If it chose to be a Peace Church, then its members would reject violence as a solution to the country's problems. This meant that Methodists, black and white, would not fight any kind of war. Any man called up by the government for military service would have no option to go, and be sent to prison for six years. Any person who was against apartheid would have to choose not to support any form of violence in the liberation struggle.

Activity 7 Decide what you would do

1. As a class read the paragraphs above on the Peace Church debate.
2. Imagine that you are a white Methodist man, about to be called up for military service. How would you and your family vote in the Peace Church debate?
3. Now imagine that you are part of a black, middle-class family and that you are a young man, are encouraged by your friends to join the armed struggle against apartheid. How would you and your family vote in the Peace Church debate?
4. What do you think the Methodist Church should have chosen to do – to be a Peace Church or not?

You must

debate to discuss a subject where you are trying to make a decision or find a solution.

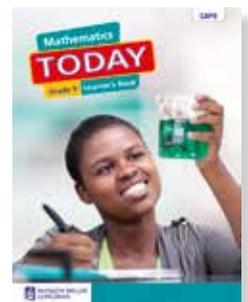
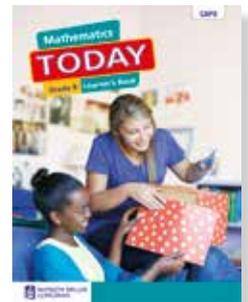
Case studies provide additional learner support

Life Orientation *TODAY* Grade 9 Learner's Book

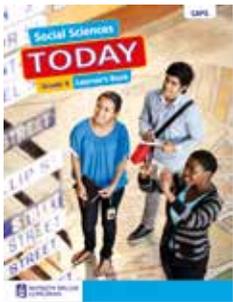
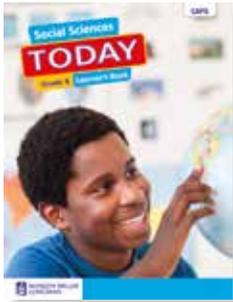
Mathematics *TODAY*



- Mathematics *TODAY* is suitable for all learning styles and abilities, with content presented in a step-by-step format, using clear and simple language.
- The Learner's Book contains a number of activities to enable learners to apply their knowledge, test their skills and challenge themselves in Mathematics.
- Worked examples, and *Remember* and *Keyword* boxes provide additional support.



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Social Sciences *TODAY*



- The Learner's Book is suitable for all learning styles and abilities, with content presented in a step-by-step format, using clear and simple language.
- It contains a number of activities that will enable learners to apply their knowledge, test their skills and challenge themselves.
- Detailed and colourful illustrations and maps, as well as photographs, help learners to understand concepts.

Keyword boxes define new and difficult words

Geofact boxes provide additional learner support

Unit 3: Mass and glides Unit 3

The Earth's revolution around the sun

Angle of axis
Planet Earth revolves in an orbit around the sun in a little more than 365,25 days. At all times Earth's axis is tilted at an angle of 66,5° to the plane of its orbit, (see Figure 1.18).

Figure 1.18 Earth's axis is tilted to the plane of Earth's orbit around the sun.

Earth's axis is always parallel to all of its previous positions. This means that at different times in the year, the northern end of the axis is tilted towards the sun, while six months later it will be tilted away from the sun. And for two seasons in the year the axis is not tilted towards or away from the sun. Study Figure 1.20.

Figure 1.19 The constant position of Earth's axis is always parallel to all of its previous positions as Earth revolves in its orbit around the sun.

The seasons are caused by two factors working together:

1. The spherical shape of Earth allows only half of the planet to be illuminated and heated at a time.
2. The rotation of Earth results in day and night.
3. The tilt of Earth's axis (at 66,5°).
4. The constant positions of Earth's axis.
5. The revolution of Earth around the sun.

Figure 1.20 The red dot marks when part of South Africa is 30° away from the sun. Summer days are longer than the nights and the midday sun shines down more directly.

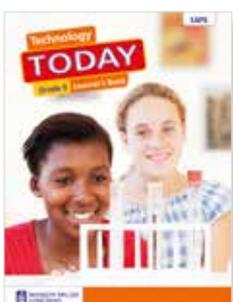
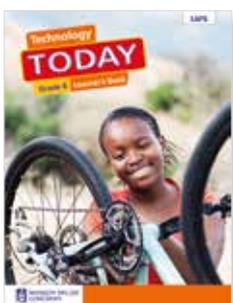
Figure 1.21 The solstices.

Figure 1.22 The equinoxes.

Keyword boxes:
 - **Revolve** to move in a circle, one example of 'revolution' is a full revolution in a circle around a point.
 - **orbit** the path through space of a heavenly body in its revolution around another heavenly body. Like planet orbits around the sun.
 - **tilt** to lean or to be slanted.
 - **oblique** slanting, at an angle other than a right angle.
 - **illuminate** to light, to light a room, to light a street.
 - **illumination** the light that falls from the sun.
 - **latitude** the number of degrees from the equator to a place on the earth.

Geofact boxes:
 - **Solstices** The two solstices occur twice a year. The summer solstice is the longest day and the shortest night. At the winter solstice the nights are the longest in the year and the days are the shortest.
 - **Equinoxes** On 21/22 June the midday sun is overhead at 23,5° N. All places in the northern hemisphere will have days that are longer than the nights. From Figure 1.21 you can see that the sun will not dip down below the horizon for all places north of the Arctic Circle (66,5° N). This day is the summer solstice in the northern hemisphere, after that days slowly become shorter.
 - **Equinoxes** 21/22 June is the winter solstice in the southern hemisphere. After the winter solstice, the days gradually become longer and the nights shorter until, on 21/22 December, the midday sun is overhead at the Tropic of Capricorn (23,5° S). On that date, the summer solstice in the southern hemisphere, all places south of the equator will have days longer than nights. The sun will not rise at all on places north of the Arctic Circle.

Social Sciences *TODAY* Grade 8 Learner's Book



Technology *TODAY*



- Technology *TODAY* is easy to use, as content is presented in a step-by-step format, using clear and simple language to enhance conceptual understanding.
- Enabling tasks provide opportunities for learners to apply their knowledge and skills.
- The Learner's Book provides language support through *Keyword* boxes, *Safety* boxes, *Did you know?* boxes and case studies stimulate interest.

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“

I found *TODAY* to be user-friendly, covering a wide range of topics which are CAPS aligned. Every concept is explained in depth, in a very simple and usable way to understand. The structure and approach used in the Learner's Book provide the learner with relevant and practical learning experiences, offering them opportunities to discover and explore. My learners are performing very well since I have started to use this series. I have seen a 20% improvement in my learners' results.

”

MJ Mochoari, teacher,
Rutanang Intermediate
School, Free State





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- The Learner's Book provides a clear and predictable structure, presenting information in simple language for complete understanding.
- It offers many activities to test learners' knowledge and give them an opportunity to apply the skills taught.
- Fun and colourful illustrations enhance learners' understanding and stimulate their interest.



Form 1 Weeks 5-6 Listening and speaking

Keywords
 business situation, setting or background to an event, stipulations specified, demanded

Notes
 Two thousand years ago the Romans already knew that you should carefully examine something before you buy it. They had a saying: 'Caveat emptor' - let the buyer beware!

Unit 4 Role play
 In real life people often sign contracts and then disagree after they've signed it. You have learnt that this disagreement is called a dispute. In this module you are going to role-play a dispute between the seller and the purchaser who signed the contract on page 28.

Activity 4.1 Role-playing a dispute over a contract
 In pairs, write a role play that reflects the dispute over the bike that was sold. Before you do this, read the scenario below.

Scenario
 Alibona paid the R400 deposit that the contract stipulated he should pay Moses. Two days later the front wheel of the bicycle came off and Alibona took a bad fall. During the fall the handlebars bent. Alibona believes Moses knew there was something wrong with the bike before he sold it to him. He thinks Moses deliberately misled him. Alibona wants Moses to tear up the contract and take the bike back, but Moses does not want to.

Below are some useful idioms and legal jargon that you can use when you role-play. Once you have written the role play, practise performing it and then act it out in front of the class.

Idiom/Jargon	Meaning
daylight robbery	obvious dishonesty and an attempt to cheat
null and void	not valid, not legally binding
false pretences	intentionally misrepresenting the facts in order to cheat
he's got a leg to stand on	he's got the right or facts to support an argument or a legal claim
on the condition that	only if
signed on the dotted line	signed the contract
scrutinised the walls	not entirely honest

Notes
 Did you know that a verbal contract is as legally binding as a written one? However, there must be witnesses who heard the verbal agreement and who are prepared to testify that they heard it.

Submit 10

Form 1 Weeks 5-6 Listening and speaking

Keywords
 heated, worked up, angry

How to handle disputes and conflict in real life
 The role plays you acted out probably became very heated and were interesting to watch. The reason is that many of the idioms you were given had an aggressive undertone. It is much better to demonstrate patience and self-control in real-life situations, though. There is sometimes a place for sharp words but only if every reasonable option has been explored.

Below are two boxes. The one box contains sentences that you should try to avoid when you are in a conflict situation. The other box contains sentences that could help ease the tension and allow both parties to agree.

How not to express disagreement
 The following sentences are unacceptable when you argue a point or participate in a debate.

How to express disagreement

Activity 4.2 Discussing ways to handle conflict effectively
 1. In groups, discuss whether the role plays your class has just witnessed were productive or not. Refer specifically to the role plays that became aggressive. (10)
 2. Suggest ways in which Alibona and Moses could have reached an agreement that would have satisfied them both. (10)
Submit 10
Total 20

Keyword boxes define unfamiliar words

Note boxes take the learner beyond the classroom

Spot On English First Additional Language Grade 9 Learner's Book

Kollig Op Afrikaans Eerste Addisionele Taal



- Sleutelwoord-raampies verduidelik moeilike woorde.
- Tydstoewysings kan help met die beplanning van klastyd en huiswerk.
- Prettige en kleurvolle kunswerk wek belangstelling.

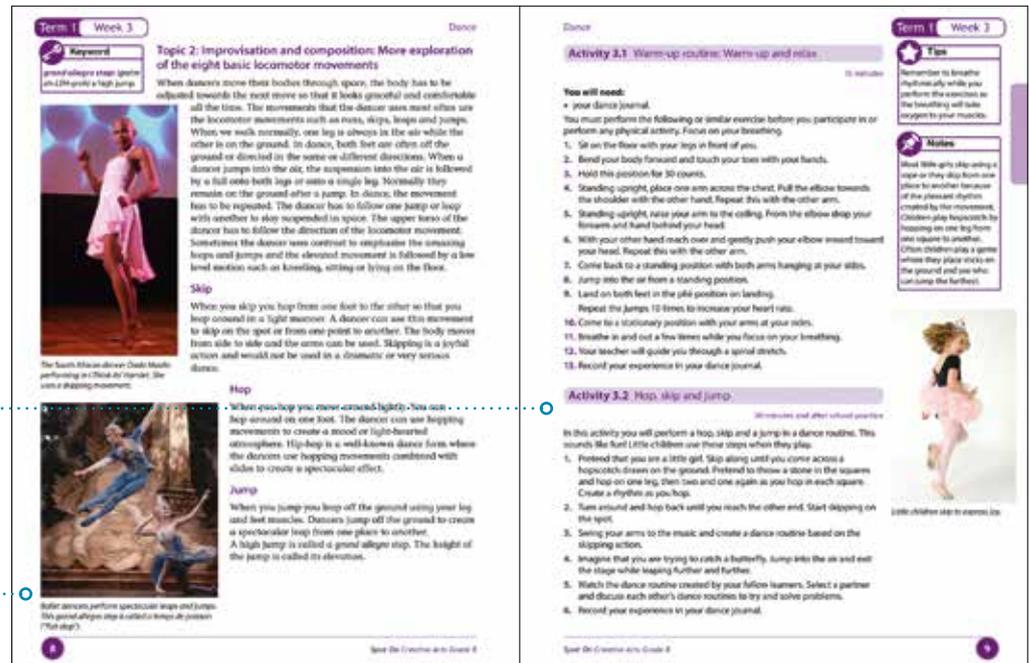


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Spot On Creative Arts

- The Learner's Book is enjoyable and easy to use, with clear, concise explanations and relevant examples.
- Features such as *Keyword* boxes, *Notes*, *Fun facts* and *Tips* enhance learning and encourage critical thinking.



Plenty of activities to test knowledge and apply skills

Fun and colourful photographs stimulate learner interest

Spot On Creative Arts Grade 8 Learner's Book



Spot On Economic and Management Sciences

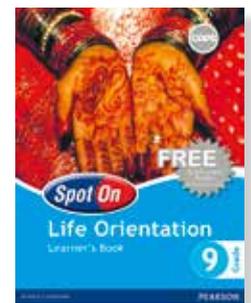
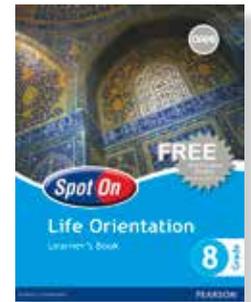
- The content is divided into a clear and predictable structure, and information is presented in simple language for complete understanding.
- The Learner's Book offers a number of activities to test learners' knowledge and give them an opportunity to apply their skills.
- Additional support, such as *Keyword*, *Extension* and *Tip* boxes, and case studies, is provided to encourage learner participation.
- Annotated illustrations and colourful illustrations enhance learners' understanding.

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Spot On Life Orientation



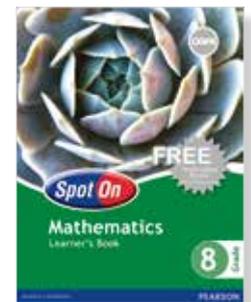
- The Learner's Book provides a clear and predictable structure, presenting information in simple language for complete understanding.
- *Keyword* boxes define unfamiliar words, and *Notes*, *Fun facts* and *Tip* boxes enhance learning and encourage critical thinking.
- Fun and colourful illustrations enhance learners' understanding and stimulate their interest.



Spot On Mathematics



- The Mathematics content is divided into a clear and predictable structure, and information is presented in simple, straightforward language for complete understanding.
- There are many activities for learners to test their knowledge and apply their mathematical skills.



Tip and Note boxes provide additional information and encourage learner participation

Examples with solutions enhance learner understanding

Term 1 Week 2 a-b

Unit 1 Counting, ordering and comparing integers

An integer is a whole number which can be negative, zero or positive. It does not include any fractions or decimals.

Examples of integers: $5, -8, 100, -287, 0, 19, -4$

Example 1

Integers have been used in a computer game involving aliens. Follow the clues given and see if you can help the soldier capture the aliens that have invaded a block of flats.

The soldier starts in room 0A.

- Move two rooms to the left. What room is the soldier in?
- Move seven rooms to the right. What room is the soldier in now?
- Move one floor up and three rooms to the left. What room is the soldier in now?
- Give the soldier instructions to catch the rest of the aliens on floor A.
- What rooms still have aliens in them?

Solution:

- $-2A$
- $5A$
- $2B$
- Move one floor down and six rooms left to room $-6B$. Move two rooms left to room $-8B$.
- $-8C, 0D, -4E$

Tip
Create your own computer game using integers.

Note
We use the same symbol to show that a number is negative as when we are subtracting.
Remember: $+4 + 2$ means that four is greater than two.
 $+4 + -2$ means that negative four is less than negative two.

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Term 1 Week 2 a-b

Activity 2.1a Counting, ordering and comparing integers 30 minutes

1. A chameleon is looking for flies for lunch.

- How should the chameleon move to find all the flies in row A?
- List all the places the chameleon found the flies in row A.
- How many moves does the chameleon make between each fly?
- How A extends to $-2A$. Where will the flies be if the pattern in row A continues?
- From $2A$ how must the chameleon move to get a fly in row B?
- Where else will the chameleon find flies?

Integers on a number line

We can represent integers on a number line:

negative two is two less than zero positive three is three more than zero

Integers to the left of zero are negative Integers to the right of zero are positive

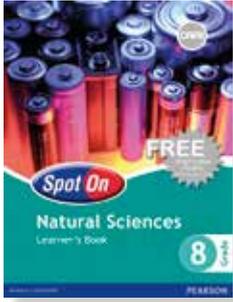
Example 1
Complete these inequalities with $>$ or $<$:
a) $6 \square -9$ b) $-8 \square -1$

Solution:
a) $>$ b) $<$

Example 2
Place these temperatures in order from coldest to warmest:
 $-8^{\circ}C, 4^{\circ}C, -14^{\circ}C, 1^{\circ}C, 6^{\circ}C, 15^{\circ}C, -6^{\circ}C$

Solution:
 $-14^{\circ}C, -8^{\circ}C, -6^{\circ}C, 1^{\circ}C, 4^{\circ}C, 6^{\circ}C, 15^{\circ}C$

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Spot On Natural Sciences



- The content is divided into units, providing a clear and predictable structure, and information is presented in simple language for complete understanding.
- The Learner's Book offers many activities to test learners' knowledge and give them an opportunity to practise their skills in Natural Sciences. Revision activities provide informal assessment opportunities.
- *Keyword, Tip, Note and Safety* boxes provide language support and additional information.

Keyword boxes define unfamiliar words

Annotated diagrams enhance learner understanding

Career focus, Extension and Fun fact boxes take the learner beyond the classroom

Term 3 Week 7 Topic: Energy and the national electricity grid

Unit 1 Electricity generation

Keyword
 turbines: a device in which kinetic energy is converted to mechanical energy
 fuel: a substance that can burn

In 1831 Michael Faraday discovered that when magnets and moving wire were placed close to each other a strange effect occurred. The mechanical energy used to move the magnet made the coil of wire vibrate and this could be changed to electrical energy that flowed inside the wire. This discovery led to the development of modern power stations.

How electricity is made in South Africa

Coal is used to heat water and convert it to steam with a temperature of 2 900 °C. The steam is used to drive a large electric turbine that causes the magnets and coils in the electrical generator to rotate. An electric current is produced. The current is then transported to houses and buildings by large power cables. So the electrical energy is coal is converted into electrical energy that is used in household appliances. In South Africa, the cheapest and most abundant source of energy is coal, which provides about 77% of our primary energy needs. Eskom uses about 10 million tonnes of coal per year.

Other fuels that can be used include oil, gas and nuclear material.

Figure 11.2 A coal power station

Extension
 Producing electricity in coal-fired power stations has many negative effects on the environment. Your teacher will give you a worksheet to complete about these effects.

Career focus
 Electrical engineers may be involved in the design and operation of power cables and the distribution network.

110 Spot On Natural Sciences Grade 9

Term 3 Week 7 Topic: Energy and the national electricity grid

Alternative sources of energy

Alternative sources of energy can be used to drive turbines and generators to produce electricity. The energy that is stored in fossil fuels is only released when they are burnt. Burning fossil fuels, however, gives off smoke and fumes that can pollute the environment. In many communities wind is the main source of energy for cooking and heating homes. However, other renewable energy sources are being increasingly harnessed in an attractive way.

Wind

Wind is a sustainable resource and it is free. However, it is erratic and the wind can only be used at certain speeds. In the future, technology may allow the energy to be stored for later use, for example, during peak periods. Wind is a clean form of energy, without toxic emissions or waste products. Some people say that the turbines spoil the scenery and can affect health.

An experimental wind farm has been built at Elphinstone on the West Coast near Cape Town. The cost of establishing the wind farm was very high, so the electricity generated here is much more expensive than electricity from a coal-fired power station. The wind farm can generate 3,2 MW of power. A single coal power station can produce between 200 and 400 MW, so it would take hundreds of wind turbines to replace a single coal power station.

Hydroelectric power

This is generated from the movement of water falling from a higher to a lower level. Water is stored behind a dam and is released through pipes. As the water moves down it turns turbines. The turbines generate electricity. The generation of this type of electricity needs dams to be built and this can threaten biodiversity due to trees being dammed, and the spaces that dams take up.

Figure 11.5 George Dam is part of a hydroelectric power station.

111 Spot On Natural Sciences Grade 9

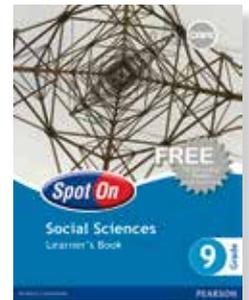
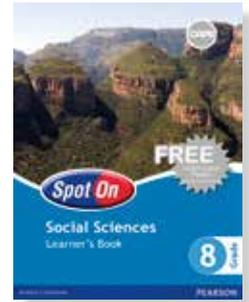
Spot On Natural Sciences Grade 9 Learner's Book

Spot On components include Learner's Books and Teacher's Guides with 16 FREE colour posters per grade

Spot On Social Sciences



- The Learner's Book provides a clear and predictable structure, presenting information in simple language for complete understanding.
- It offers a number of activities to test learners' knowledge and give them an opportunity to apply their skills.
- *Keyword* boxes define unfamiliar words, and *Note*, *Fun fact* and *Tip* boxes encourage critical thinking.
- Annotated illustrations, detailed maps and colourful photographs enhance learners' understanding.



Spot On Technology



- The content is divided into a clear and predictable structure, and information is presented in simple language for complete understanding.
- Additional support, such as *Keyword*, *Tip* and *Career focus* boxes, provides additional information and encourages learner participation.



Annotated diagrams enhance learner understanding

Many activities with time allocations to plan class time and homework

Unit 2 Investigate Ohm's Law

Ohm's Law quantitatively

If you look at an electrochemical cell, you will notice that it has a voltage measurement on it. For example 1.5 V or 9 V, indicating 1.5 volts or 9 volts. Voltage is like a force that is pushing the electrons in a circuit, causing them to move. Voltage is also known as potential difference because it is a measure of the difference in potential energy between two points. Voltage must always be measured across two different points, which is why a voltmeter must be connected in parallel.

Electric current is a measure of the strength of the electric charge or flow of electrons that is flowing through an electric circuit. Current is measured in amperes, abbreviated to amps, using an ammeter.

Resistance is a measure of how much the electric current is being resisted or slowed down. Resistance is measured in ohms, named after Georg Ohm, who discovered an important relationship.

Ohm discovered that if the voltage in a circuit is increased, then the current will also increase if the total resistance remains constant.

Testing Ohm's Law practically

To test Ohm's Law, you are going to set up a circuit consisting of a lamp, conducting wire, voltmeter, ammeter and series battery. You will start with just one cell in the battery, and then you will add a second cell, then a third cell in series. You will record your readings from the voltmeter and the ammeter as you add cells to the battery. Use a voltmeter to measure voltage in the circuit. The voltmeter must be connected in parallel, because it is measuring the potential difference across two points. Use an ammeter to measure the current strength. An ammeter must be connected in series, because it is measuring the strength of the current passing through it at a particular point of the circuit.

Quantity	Symbol	Unit of Measurement	Unit Abbreviation
Voltage (or potential difference)	V	volt	V
Current (or amperage)	I	ampere (amp)	A
Resistance	R	ohm	Ω

Practical activity 2.1 Conduct active research to test Ohm's Law

You will need:

- three cells
- battery box that can accommodate up to three cells
- conducting wire
- lamp
- ammeter
- voltmeter

Set up the circuit as in the Figure 4.1 on page 52. First use only one cell, record your readings, then add a second cell in series, record your readings, and then add the third cell in series and record your readings.

1. Fill in the table below into your workbook and record your readings (remember your units).

	Voltmeter reading (voltage)	Ammeter reading (current strength)
One cell		
Two cells		
Three cells		

2. Resistance must be kept constant during this investigation.
 - a) Explain how you kept the resistance constant in this investigation.
 - b) Explain why it is necessary to keep resistance constant.
3. Plot the readings on a line graph to show the relationship between current strength and voltage.
4. What can you conclude about the relationship between potential difference (voltage) and current strength?

Career focus

Power plant operator: these individuals are responsible for controlling and monitoring equipment in power-generating plants. Their job includes monitoring instruments to maintain voltage and regulate current flow. They keep records of the loads on generators, lines and transformers, as well as report unusual incidents or malfunctions to equipment. Mathematics, Natural Sciences, and Technology are important subjects for any plant operator. Entry-level operators can learn their skills through on-the-job training or apprenticeships. However, to advance to a senior operator, it is advisable to study a Bachelor of Science in Engineering.

“

Spot On made a great difference in my classroom. Each topic is well outlined and the learners love the helpful illustrations, notes and activities. I like that it includes planning, assessment tasks and tips for breaking barriers to learning. I now enjoy teaching my subject and my learners enjoy being taught.

”

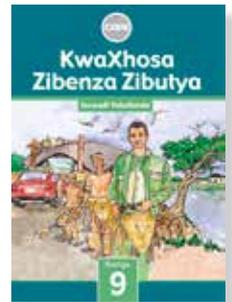
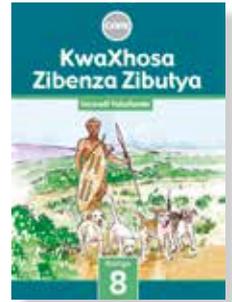
Confidence Motlakwe, teacher,
Tawana Primary School, Free State

KwaXhosa Zibenza Zibutya (isiXhosa Home Language)

- Khetha... Incwadi yolwimi egxininisa kakhulu kwigrama.
- Khetha... Incwadi yolwimi egxininisa ekwakhweni kwezakhono zolwimi.
- Khetha... Incwadi yolwimi egxininisa nasekulungiseleleni uviwo.
- Khetha... Incwadi yolwimi enezicatshulwa zokufundwayo ezongezelelweyo.
- Khetha uKwaXhosa Zibenza Zibutya, enkqenkqeza phambili yabo bonke otitshala.

Components

- Learner's Books
- Core Readers
- Teacher's Guides

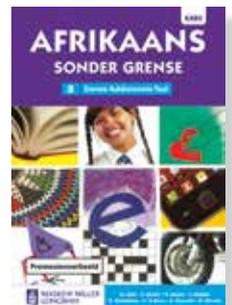


Afrikaans sonder grense (Eerste Addisionele Taal)

- Die kursus neem leerders kwartaal vir kwartaal deur die kurrikuluminhoud.
- Die lesreekse is rondom 'n verskeidenheid interessante leestekste opgebou om 'n verskeidenheid taalgebruike te illustreer.
- Die Leerderboek sluit af met 'n taalafdeling wat taalreëls, voorbeelde en oefeninge vir vaslegging, asook 'n voorbeeldvraestel, bevat.

Komponente

- Leerdersboeke
- Onderwysersgids, wat 'n GRATIS werkboek vir remediëring en verryking insluit
- Leesboeke met 'n verskeidenheid tekste



Luister en praat

Prat: Praat oor 'n prent en los 'n raaisel op

Kyk na die prent en bespreek wat julle dink hier gebeur het. Praat oor hoe julle sou gevoel het in julle in die motor was.



Luister: Luister na 'n onderhoud

Pre-luister

- Jy gaan na 'n voorlesing luister van die onderhoud wat 'n leeraarversgewer met Rico Beltrami, die bestuurder van die motor op die foto, gevoer het.
- Lees die vrae op bl. 133 aandaglig deur, want dit sal jou help om vir die regte antwoorde te luister.
- Vra jou onderwyser as jy 'n woord in 'n vraag nie verstaan nie.
- Jou onderwyser sal die teks twee keer voorlees.
- Skryf die vraagommers onder mekaar op jou antwoordblad neer.

Tydens luister

Skryf sleutelwoorde wat jy hoor, vinnig neer, maar moenie ophou luister nie, anders hoef jy nie alles nie.

Na-luister

Volg die antwoorde nadat jy die tweede keer na die voorlesing gehuister het.



134 Kwartaal 3

Luister en praat

Vrae

1. Op watter daartem en wat van die dag het die Beltrami's die onderhoud met die offtant gehad?
2. Waar of Offiant? Die offtant het albei sy voertuie op die motor gestel.
3. Wie het vir Rico Beltrami gesê hy moet die motor se enkle afhaal?
4. Ongeveer hoe lank het die offtant by die Beltrami's se motor gebly?
5. Op watter manier het die Beltrami's 'n foto van die gebeurtenis gekry?
6. Hoe weet jy dat daar vaard aan die motor was?

Reël

Denk in pare saam aan 'n oplossing vir hierdie raaisel. Hoekom is offtant só gekwikel? (100ste?)

Kyk of julle reg geantwoord het. Hier is die deurskakelingskomplekse antwoord vir die raaisel so vgl woorde:

Bed kluam (n) vlnl et krst.

(Stanglik die letters in die woorde korek om die antwoord te lees.)

Taalstrukture en -soortvorme

Taal in konteks: Direkte en indirekte rede

Lees die strok en voer die opdragte uit.



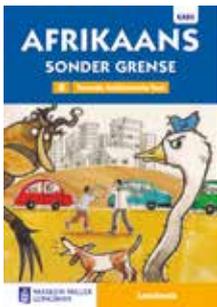
(Uit: Die Burger, 21 Augustus 2010, bl. 17)

Skryf hierdie stene oor in die indirekte rede.

1. "Die offtant staan vas aan die sleep op my stert," sê die bobbejaan.
2. Die leu vra: "Het jy lank gestaan?"
3. Die bobbejaan antwoord: "Seker 'n dag of twee."
4. Wanneer besetkens was in die direkte rede gebruik word, word nie in die indirekte rede gebruik nie?

135

Sterk klem word op luister en praat, leesvaardighede en skryfontwikkeling geplaas



Afrikaans sonder grense (Tweede Addisionele Taal)



- Dié gebruikersvriendelike reeks bied onderwysers en leerders prikkelende, leerdergerigte stof wat deurgaans vaardighede oefen.
- Om gebruik in die klaskamer te vergemaklik, is lesreekse gestruktureer om elke taalvaardigheid volgens die tydstoekenning per tweeweeksiklus in die KABV te onderrig.
- Take vir formele assessering, asook voorbeeld-eksamenvraestelle, word ingesluit.
- Leerders se taalvaardighede soos luister en praat, lees en kyk: begrip en letterkunde, skryf en aanbied, asook geïntegreerde taalstrukture en -konvensies word doeltreffend ontwikkel sodat die leerders in die multikulturele opset in die land ook in Afrikaans kan kommunikeer.

Komponente

- Leerderboeke
- Leesboeke met letterkunde-aktiwiteite wat al die voorgeskrewe genres insluit
- Onderwysersgids

Aktiwiteite stel leerders in staat om hul kennis te konsolideer en taalvaardighede te toets

Visuele elemente om die geskrewe teks te ondersteun

Lees en kyk: 'n Gedig: Die lewe is 'n liedjie

Pre-lees: Kyk na die titel van die gedig en voorspel waarom dit gaan.

Lees: Lees die gedig hardop en met gevoel.

Die lewe is 'n liedjie
 Die lewe is 'n liedjie
 elke dag leef jy 'n liedjie
 Een dag voel jy 'n liedjie
 want jy's lekker gekry,
 die volgende dag voel jy 'n liedjie
 van baie speul en lag.
 Maar soms, soms voel die lewe baie
 voel jy 'n liedjie
 Omhous, jy's jonk
 die lewe wag –
 mense is nog 'n dag.
Twee de skrywer



Post-lees: Vrae

1. Pas die **rymswoorde** in die gedig by mekaar. Skryf die paar oer.

ai	leedjie	getry
bi	ly	hartseer
ci	leer	dag
di	wag	liedjie
2. Maak 'n lys van die **emmasies** in die gedig.
3. Soek ses verskillende **emmasies** in die woordebok en skryf hulle oer.

W	I	O	F	O	E	W	O	N	D	E	I	O
D	R	L	Y	S	K	W	A	R	D	F	P	U
Y	O	N	G	E	L	U	K	K	I	O	V	A
B	A	N	G	M	H	A	R	T	S	I	E	R

Gebruik 'n letterlike woordebok. Sluit die volgende woorde na hartjie, lei speel jonk. Pas daarna die volgende Engelse woorde by die ligte Afrikaanse woord jly, spring alle, lise.

Taal in konteks

1. Lees die stappe van **vergekyking** van die volgende byvoeglike naamwoorde (woorde oor emosies).

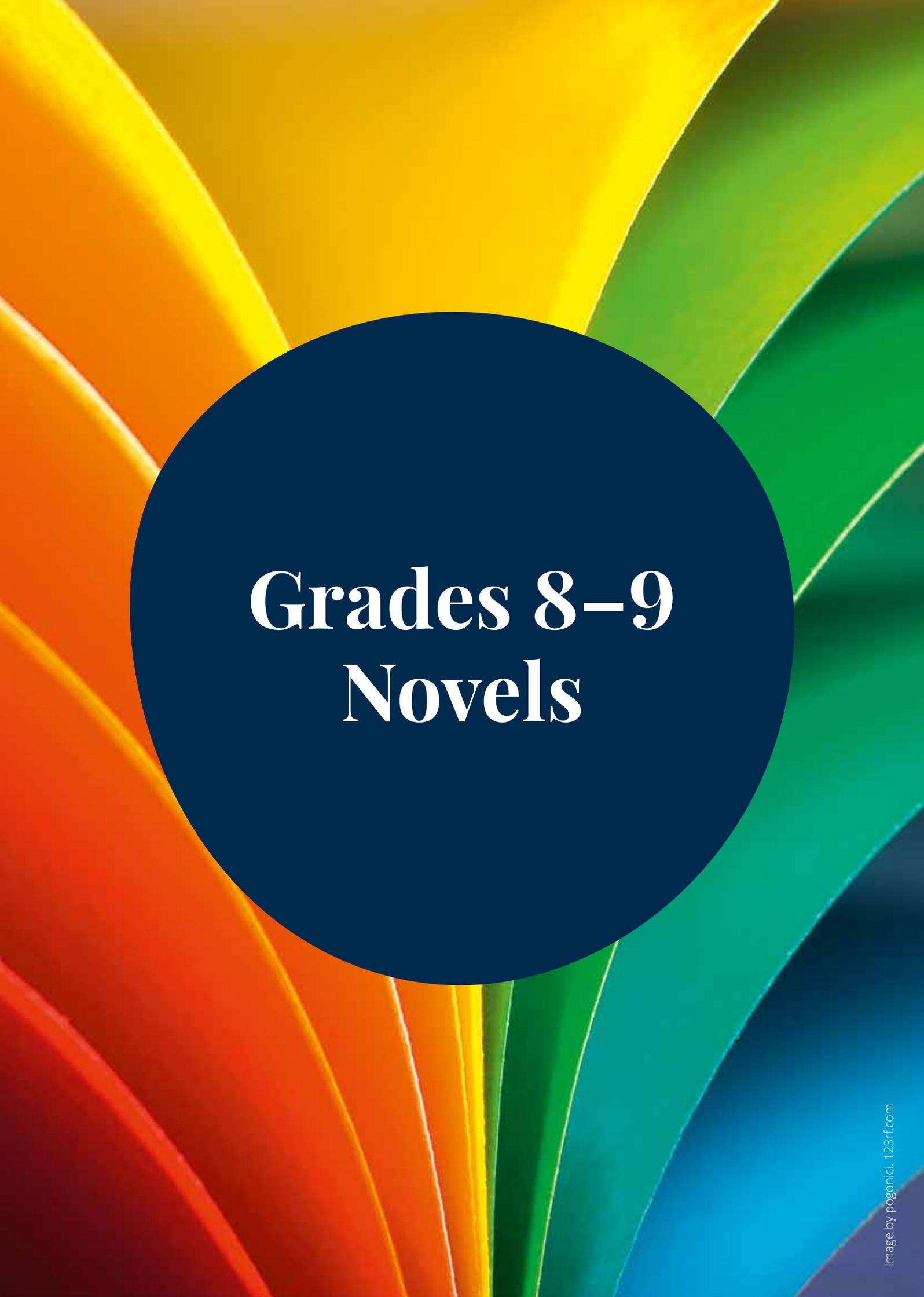
gelukkig	gelukkiger	die gelukkigste	
hang	hangter	die hangste	
kwaad	kwaarder	die kwaadste	
lei	leier	die leierste	
hartseer	hartseerder	die hartseerste	
2. Beantwoord die vrae in die **ontkenende vorm** (negatiewe).
Voorbeeld: Is jy gelukkig? Nee, ...
Antwoord: Nee, ek is nie gelukkig nie.
 a) Is jy hartseer? Nee, ...
 b) Is jy kwaad? Nee, ...
 c) Is jy bang? Nee, ...
 d) Is jy oppgewaard? Nee, ...

Nee, ... nie ... nie
3. Lees wat 'n **intertekste** oor haar **dagboek** (diary) is.

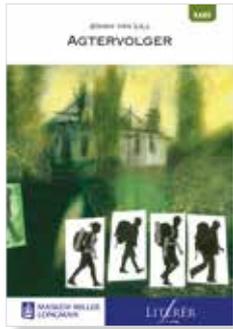
My dagboek is privaat. Ek skryf daarin as ek hartseer is en ek skryf ook daarin as ek gelukkig is. Ek vertel van my gevoelens wanneer dinge met my gebeur. Ek wil nie lê ander mense moet dit lees nie.


4. Skryf die sinne oor swaf 'n mens, Mapula, dit vertel. Verander die **voornaamwoorde**. Begin met: Mapula se **haare** dagboek is privaat. Sy skryf daarin as sy hartseer is ...
5. Skryf die sinne oor swaf 'n mens, Mandla, dit vertel. Verander die **voornaamwoorde**. Begin met: Mandla se sy dagboek is privaat. Hy skryf daarin as hy hartseer is ...

Afrikaans sonder grense (Tweede Addisionele Taal) Graad 8-leerderboek

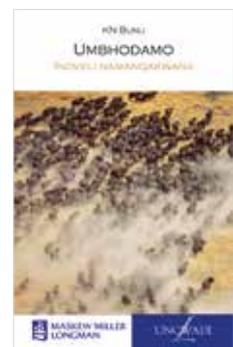
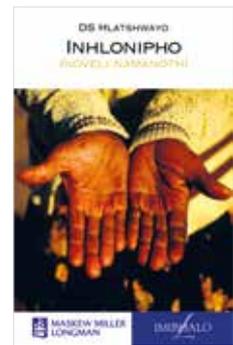
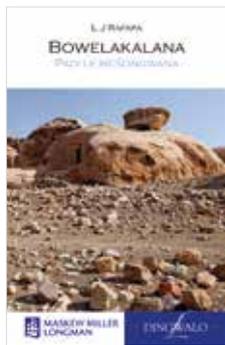
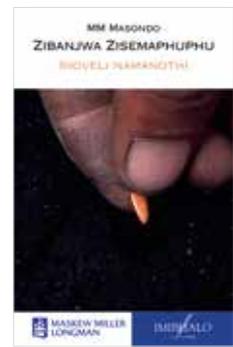
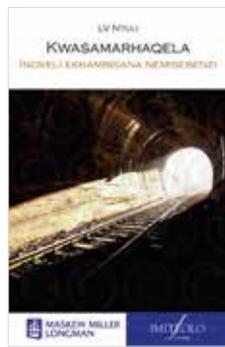


Grades 8–9 Novels



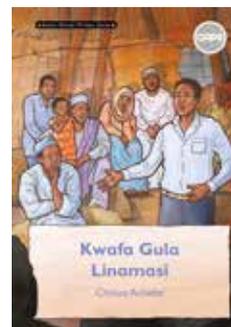
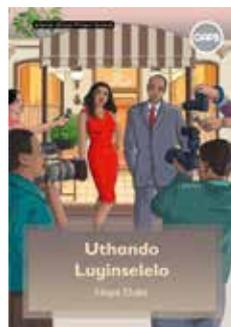
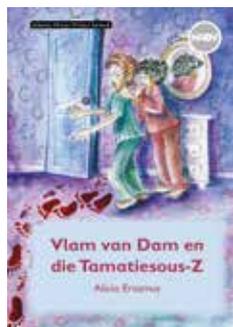
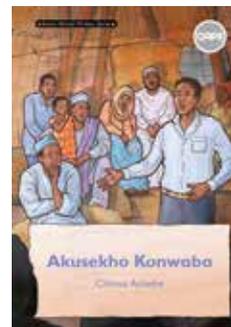
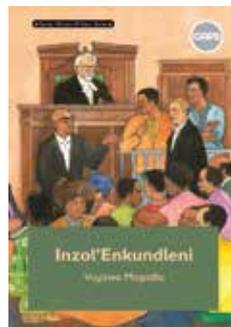
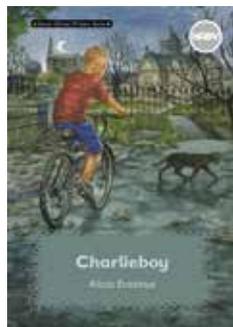
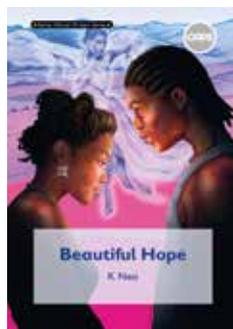
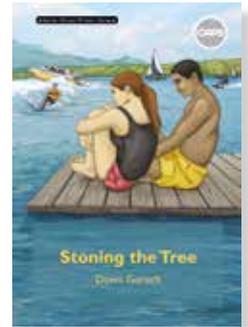
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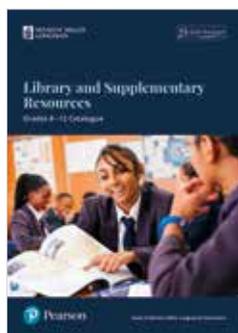
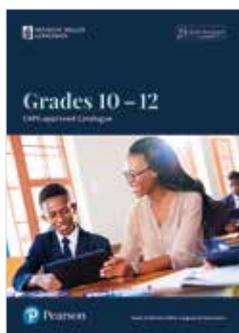
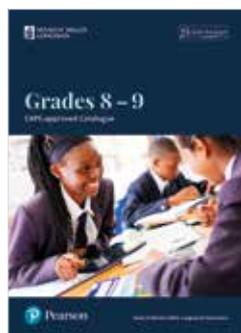
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