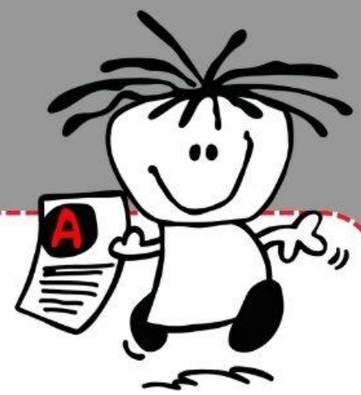
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ATP & LESSON PLANNER

CONTENT, TRACKER & RESOURCES

GRADE 8

Natural Sciences



A **one-stop-teaching-tool** created by combining:

- the official DBE ATP
- **T**he **A**nswer **S**eries Natural Sciences Class Text & Study Guide
- **TAS** resources
- curated online resources
- shared resources from our **TAS** WhatsApp Teacher Community

2027

2027 TERM 1 NATURAL SCIENCES ATP & LESSON PLANNER THE ANSWER SERIES

GR 8

Suggested change to ATP to include the Scientific Method

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ACADEMIC WEEKS	CAPS TOPIC	CORE CONTENT & PAGE NUMBERS (Based on The Answer Series Gr 8 Natural Sciences 3-in-1 Class Text & Study Guide)		SUGGESTED EXERCISES	POSSIBLE PRACTICAL TASKS / CONSOLIDATION	DATE CONTENT WAS COMPLETED
WEEK 1 *13 – 15 Jan*	**Scientific Method** *3 school days*	Scientific Investigation	p. *iii – vii*	- Work through the 'Worked Example of a Scientific Investigation Question' with learners on p. *vi – vii*		
		Representing data: Tables and graphs	p. *viii – xi*	- Use these resources from our webinar to teach scientific investigations (**Watch the webinar** here)		
WEEK 2 & 3 *18 – 29 Jan* Lesson plan Lesplan	**Photosynthesis and Respiration** *10 school days* 22% of term test on all topics* Watch on YouTube	Photosynthesis and Respiration Introduction	p. 2		Watch **The Answer Series Videos** on this topic on YouTube: **English** playlist here | **Afrikaans** playlist here | Eng & Afr Worksheets here	
		Photosynthesis – Living organisms and the sun	p. 3			
		Photosynthesis – The process	p. 4 – 5	p. 53: Q2	Observe Photosynthesis with this easy activity	
		Storage and use of glucose	p. 5 – 6	p. 54: Q4	Do an iodine starch test of ripe vs unripe bananas here (Prac)	
		The site of photosynthesis	p. 6		- Do a virtual test for starch here	
		The importance of photosynthesis	p. 6	p. 54: Q5	- Prac investigation: ENG & ENG MEMO | AFR & AFR MEMO	
		Testing for the presence of starch	p. 7	p. 54: Q3	- Virtual Photosynthesis Practical here	
		Respiration – Energy from Food	p. 8		Fun way to teach Respiration – Activity Idea	
		Respiration – The process	p. 8 – 9		- Simulation to compare these processes in plants/animals	
		The importance of respiration	p. 9	p. 55/56: Q6 – Q8	- Here is a useful printout summary for learners: ENG | AFR	
		Testing for the presence of carbon dioxide	p. 9	p. 56: Q9	- Here is a useful revision exercise for learners: ENG | AFR	
		Comparison between Photosynthesis and Respiration	p. 10	p. 53: Q1	- Complete this self-marking quiz	
WEEK 4 – 8 *1 Feb – 5 Mar* Lesson plan 1 Lesplan 1 Lesson plan 2 Lesplan 2	**Interactions and Interdependence within the Environment** *22 school days* 56% of term test on all topics* Watch on YouTube	Introduction to Ecology	p. 11		Watch **The Answer Series Videos** on this topic on YouTube: **English** playlist here NEW	
		Levels of Ecology	p. 12 – 13	p. 58: Q2 & Q3		
		Ecosystem components – Biotic and abiotic	p. 14 – 16	p. 59: Q4; p. 60: Q6		
		Environmental interactions	p. 17	p. 60: Q7 & Q8	- Possible Ecosystems **Project**: ENG | AFR	
		Feeding relationships – Producers	p. 18		- How to study an ecosystem (possible project) on p. 16	
		Feeding relationships – Consumers	p. 18 – 19		Sort the types of consumers in this interactive game here	
		Feeding relationships – Decomposers	p. 19 – 20		- Virtual ecosystem simulation – interactions between biotic factors	
		Energy flow: Food chains	p. 21 – 23	p. 61: Q9	- Producer, consumer and decomposer game here	
		Energy flow: Energy pyramids	p. 23 – 24		Complete food chains and see them come alive here	
		Energy flow: Food webs	p. 25 – 26	p. 62/63: Q10 – Q13		
		Balance in the Ecosystem – Natural factors	p. 26 – 27		Predict what will happen in food chains when the balance is disrupted	
		Balance in the Ecosystem – Human factors	p. 27 – 29	p. 63: Q14; p. 66: Q20		
		Adaptations – Structural, functional, behavioural	p. 29 – 32	p. 65: Q18		
		Adaptations – Examples in plants and animals	p. 33 – 36	p. 59: Q5; p. 64: Q15 – Q17; p.66: Q19		
		Conservation of the ecosystem	p. 37 – 38	p. 57: Q1; p. 66: Q21	Complete this self-marking quiz	
WEEK 9 & 10 *8 – 19 Mar* Lesson plan Lesplan	**Microorganisms** *8 school days* 22% of term test on all topics*	Types of microorganisms – Introduction	p. 39 – 40		Watch these useful videos for introduction: video 1 and video 2	
		Types of microorganisms – Bacteria	p. 41		Video on bacterial communities | Video on how to grow bacteria	
		Types of microorganisms – Protists	p. 41		Watch an amoeba eat here | Watch protists move about here	
		Types of microorganisms – Fungi	p. 42		- Read-up on some interesting things fungi can do: here and here	
		Types of microorganisms – Viruses	p. 43		- Watch this interesting video about the zombie fungus *cordyceps*	
		Summary of the microorganisms	p. 44	p. 67: Q2	**Download** this slide show exercise and try to identify the microbes	
		Calculating size (not in ATP)	p. 45	p. 68: Q3	Interactive size scale here	
		Harmful microorganisms	p. 46 – 47		Fun activity to teach learners about germs on p. 46	
		Diseases caused by microorganisms – TB	p. 47		Watch this useful video on the history of handwashing	
		Diseases caused by microorganisms – AIDS	p. 47 – 48	p. 69: Q6		
		Diseases caused by microorganisms – Malaria	p. 48			
		Diseases caused by microorganisms – Waterborne	p. 49	p. 68/69: Q4 & Q5	Watch this useful video on how cholera spreads	
		Useful microorganisms	p. 50 – 51			
		Investigate the growth of yeast	p. 51 – 52	p. 67: Q1; p. 70: Q7	Investigate the growth of yeast p. 51 – 52 (Prac)	
	Optional consolidation and revision – TERM 1 REVISION ENG | AFR				**Formal assessments: TASK 1 – Practical (min 20)** **TASK 2 – Test (min 30)**	

NOTE: *Questions are suggested according to when learners will be able to do them.*

NOTE: *Not all shared resources are TAS creations – some are shared contributions from our Teacher WhatsApp group.*

*Calculated based on teaching time in weeks divided by total teaching time for all topics, e.g. Microorganisms = 2/9 x 100 = 22% ; not factoring in Scientific Method in week 1

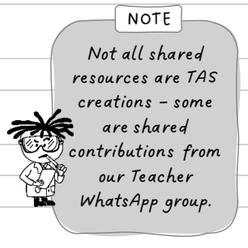
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ACADEMIC WEEKS	CAPS TOPIC	CORE CONTENT & PAGE NUMBERS *Based on The Answer Series Gr 8 Natural Sciences 3-in-1 Class Text & Study Guide*		SUGGESTED EXERCISES	POSSIBLE PRACTICAL TASKS / CONSOLIDATION	DATE CONTENT WAS COMPLETED
WEEK 1 *6 – 9 Apr* Lesson plan Lesplan	**Introduction to Periodic Table of Elements** *4 school days*	Revise the Periodic Table of Elements: arrangement of elements on the PT; some properties of metals, semi-metals & non-metals	p. 73 – 74	p. 123: Q2 & Q3	- Download and/or study the Periodic Table of elements in various forms AND interactive game here - Periodic Table (high res) download with pictures and/or words here	
WEEK 2 & 3 *12 – 23 Apr* Lesson plan Lesplan	**Atoms** *10 school days* 33% of term test on all topics* Watch on YouTube	The building blocks of matter	p. 72		- Free worksheets with memos on the atomic structure and periodic table here	
		Atoms & Elements	p. 72		Watch **The Answer Series Videos** on this topic on YouTube: **English** playlist **here** | **Afrikaans** playlist **here** | English & Afrikaans Worksheets **here**	
		Subatomic particles – structure of an atom	p. 75	p. 124: Q4 & 5		
		Subatomic particles – atoms are neutral	p. 76	NOTE: Questions are suggested according to when learners will be able to do them.	- Make a model of an atom p. 76 (Activity) - Build an atom interactive activity here - Take an interactive walk through an atom's structure here	
		Pure substances – molecules	p. 77		- Build a molecule interactive activity here - Simple idea for an activity to build molecules here	
		Pure substances – elements	p. 77 – 78			
		Pure substances – compounds	p. 79 – 80	p. 124: Q6	Make models of molecules p. 80 (Activity)	
		Separating pure substances	p. 81			
		Separating pure substances – electrolysis	p. 82	p. 127: Q11	Investigate decomposition through electrolysis p. 82 (Prac) – worksheets: ENG | MEMO	
		Separating pure substances – heat	p. 83	p. 125: Q7	Investigate decomposition through heat p. 83 (Prac)	
		Mixtures of elements & compounds	p. 83 – 84	p. 126: Q8 & 9	Watch this video on mixtures	
		Comparison of elements, compounds and mixtures	p. 84	p. 126: Q10		
		Topic summary	p. 85	p. 123: Q1		
WEEK 4 – 8 *28 Apr – 28 May* Lesson plan 1 Lesplan 1 Lesson plan 2 Lesplan 2 Lesson plan 3 Lesplan 3 Lesson plan 4 Lesplan 4 Lesson plan 5 Lesplan 5 Lesson plan 6 Lesplan 6	**Particle Model of Matter** *23 school days* 56% of term test on all topics*	The concept of the particle model of matter	p. 86	p. 128: Q2		
		States of matter – solids, liquids & gases	p. 87 – 88		- Interactive states of matter activities here and here - Watch this useful video about the 3 phases of matter	
		Diffusion as a property of matter	p. 88 – 90	p. 130: Q9	- Investigate diffusion in gases p. 89 (Prac) - Investigate diffusion in liquids p. 90 (Prac)	
		Summary of the properties of the states of matter	p. 91	p. 128: Q3	Recap the nature of matter with this interactive walk-through	
		Change of state	p. 92 – 95	p. 128/129: Q4 – Q8	- Investigate change of state p. 95 (Prac) – worksheets: ENG & MEMO | AFR & MEMO - Interactive change of state activity here and here - Watch this useful video on changes of state	
		Mass	p. 96			
		Volume	p. 96 – 97		- Investigate mass, volume & density PART 1 p. 98 (Prac) - Perform a virtual practical using this lab	
		The relationship between mass & volume	p. 98 – 99		- Listen to the mass, volume, density song here	
		Density	p. 99 – 104	p. 130/131: Q10 & Q11	- Investigate mass, volume & density PART 2 p. 103 (Prac) - Perform a virtual practical using this lab	
		Density of the states of matter	p. 104 – 105		Interactive density & states of matter activity here	
		Density of different materials	p. 105 – 106	p. 131/132: Q12 & Q13	- Watch this video on density	
		Floating & sinking	p. 106 – 107	p. 132/133: Q14 – Q17	- Investigate floating & sinking p. 107 (Prac) - Densities of different materials p. 108 (Activity & Prac) - Floating egg density experiment here and here	
		Expansion & contraction of materials	p. 109 – 111	p. 133: Q18; p. 135: Q21	Investigate expansion & contraction p. 111 (Prac)	
		Pressure	p. 112 – 113	p. 135/136: Q22 & Q23	The effects of pressure p. 113 (Activity) Investigate the relationship between gas pressure & temperature here	
		Topic summary	p. 114	p. 127: Q1; p. 134: Q19 & Q20		



WEEK 9 *31 May – 4 Jun* Lesson plan Lesplan	**Chemical Reactions** *5 school days* 11% of term test on all topics*	Physical changes to matter	p. 115		Play this interactive game to test your understanding of the differences between physical and chemical changes to matter	
		Chemical changes to matter	p. 116	p. 136: Q2		
		Reactants & products	p. 117 – 121	p. 137/138: Q3 – Q7	- Investigate a chemical reaction PART 1 p. 120, PART 2 p. 121 (Prac) - Interactive reactants, products and leftover simulation here - Download MANY free worksheets with memos on writing word equations here	
		Useful chemical reactions	p. 122	p. 136: Q1; p. 138: Q8	Watch this video on six chemical reactions that changed history	
WEEK 10 – 12 *7 – 25 June* Lesson plan Lesplan	**Time for consolidation and revision – TERM 2 REVISION** ENG & MEMO | AFR & MEMO				**Formal assessments: TASK 3 – Practical (min 20)** **TASK 4 – Test (min 30)**	

*Calculated based on teaching time in weeks divided by total teaching time for all topics, e.g. Chemical reactions = 1/9 x 100 = 11% ; Introduction of the Periodic Table of Elements in week 1 forms part of the mark weighting for the topic ATOMS

See a wide variety of chemistry posters (and others) to download here



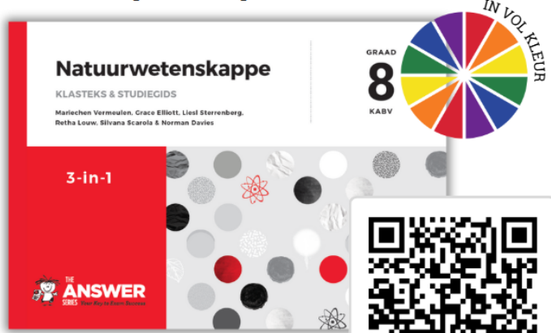
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ACADEMIC WEEKS	CAPS TOPIC	CORE CONTENT & PAGE NUMBERS *Based on The Answer Series Gr 8 Natural Sciences 3-in-1 Class Text & Study Guide*		SUGGESTED EXERCISES	POSSIBLE PRACTICAL TASKS / CONSOLIDATION	DATE CONTENT WAS COMPLETED
WEEK 1 *20 – 23 Jul* Lesson plan Lesplan	**Static Electricity** *4 school days* 12% of term test on all topics* Watch on YouTube	Friction and static electricity introduction	p. 140		Watch **The Answer Series Videos** on this topic on YouTube: **English** playlist here | **Afrikaans** playlist here English & Afrikaans Worksheets here	
		Subatomic particles cause electric charge	p. 140			
		Friction transfers electrons	p. 141 – 142	p. 199: Q2		
		Static electricity	p. 142 – 143	p. 201: Q8	Simulate static discharge here	
		Charged objects influence each other	p. 144 –145		Interactive simulation on balloons and static electricity here	
		Attraction of a neutral object	p. 145 – 146	p. 199/200: Q3 – Q5		
		Summary of static electricity	p. 146	p. 198: Q1; p. 200/201: Q6 & Q7		
WEEK 2 – (½) WEEK 4 *26 Jul – 11 Aug* Lesson plan 1 Lesplan 1 Lesson plan 2 Lesplan 2	**Energy Transfer in Electrical Systems** *12 school days* 29% of term test on all topics*	Circuits and current electricity – a simple circuit	p. 147 – 148			
		Components of a circuit – cells and batteries	p. 148 – 150			
		Components of a circuit – conducting wires	p. 150			
		Components of a circuit – resistors	p. 150 – 151			
		Components of a circuit – light bulbs	p. 151 – 152			
		Summary of the symbols used in circuit diagrams	p. 152	p. 202: Q2		
		How to draw a circuit diagram – worked example	p. 153	p. 202/203: Q3 – Q5	Construct circuits using this interactive simulation	
		Effects of an electric circuit – heating	p. 154 – 157	p. 203/204: Q6 – Q8	- Investigate the heating effect of a circuit (Prac) p. 154 - Investigate short circuits and fuses (Prac) p. 156	
		Effects of an electric circuit – magnetic	p. 158 – 161	p. 204: Q9	- Investigate the magnetic effect of a current (Prac) p. 159 - Activity: create an electromagnet (Prac) p. 160	
		Effects of an electric circuit – chemical	p. 161 – 162	p. 205: Q10 & Q11		
		Summary of basic concepts	p. 163	p. 201: Q1		
(½) WEEK 4 – (½) WEEK 6 *12 – 27 Aug* Lesson plan Lesplan	**Series and Parallel Circuits** *12 school days* 24% of term test on all topics*	Series circuits	p. 164		Construct circuits using this interactive simulation	
		Adding cells in series	p. 164		Investigate cells in series (Prac) p. 165	
		Adding resistors in series	p. 165 – 169		Investigate resistors in series (Prac) p. 168	
		Parallel circuits	p. 169			
		Adding resistors in parallel	p. 170 – 173	p. 209: Q10	Investigate resistors in parallel (Prac) p. 172	
		Compare series and parallel circuits	p. 174	p. 206/207: Q2 – Q5; p. 208: Q8 & Q9		
		Metals in circuits	p. 174 – 175	p. 207: Q6; p. 209: Q11	Investigate how different metals conduct electricity (Prac) p. 175	
		Other output devices	p. 176	p. 205: Q1; p. 208: Q7; p. 210: Q12		
		The history of electricity in South Africa (not in ATP)	p. 177			
		Careers in electricity (not in ATP)	p. 178		Interactive game – test learner knowledge on circuit connections here	
WEEK 7 – 9 *30 Aug – 17 Sept* Lesson plan 1 Lesplan 1 Lesson plan 2 Lesplan 2 Lesson plan 3 Lesplan 3	**Visible Light** *15 school days* 35% of term test on all topics*	Radiation of light	p. 178 – 179			
		Light travels in straight lines	p. 179 – 180	p. 213: Q5	Activity: construct a pinhole camera (Prac) p. 179	
		Wavelength and frequency	p. 181	p. 213: Q6		
		Spectrum of visible light	p. 181 – 184		Investigate the dispersion of white light with a prism (Prac) p. 183	
		Opaque and transparent substances	p. 184 – 187	p. 214: Q8	Investigate the formation of shadows (Prac) p. 186	
		Absorption of light	p. 187 – 189	p. 214/215: Q9 – Q11; p. 216: Q15	Investigate how we see the colours of light with this interactive simulation	
		Reflection of light	p. 189 – 192	p. 212: Q3 & Q4; p. 213: Q7 p. 215/216: Q12 & Q13	Investigate the reflection of light (Prac) p. 191	
		Seeing light	p. 192 – 193		Simulate how the eye sees here	
		Refraction of light	p. 193 – 197	p. 211: Q1 & Q2; p. 216: Q14; p. 217: Q16 – Q18	Investigate light refraction using this interactive simulation	
		Careers in optics (not in ATP)	p. 198			
WEEK 10 *20 – 22 Sept*	**Time for consolidation and revision – TERM 3 REVISION** ENG & MEMO | AFR & MEMO				**Formal assessments: TASK 5 – Project (any content from Term 1 to 4 @ min 30 marks)** **TASK 6 – Test (Term 3 content only @ min 30 marks)**	

NOTE
Questions are suggested according to when learners will be able to do them.



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*Calculated based on teaching time in weeks divided by total teaching time for all topics, e.g. Static electricity = 1/8.5 x 100 = 12%

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Suggested change to DBE ATP: reduced time to teach each topic to allow enough time for end-of-year examinations. There should be enough time to teach the content either way.

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ACADEMIC WEEKS	CAPS TOPIC	CORE CONTENT & PAGE NUMBERS (Based on The Answer Series Gr 8 Natural Sciences 3-in-1 Class Text & Study Guide)		SUGGESTED EXERCISES	POSSIBLE PRACTICAL TASKS / CONSOLIDATION	DATE CONTENT WAS COMPLETED
WEEK 1 & 2 *5 – 15 Oct* Lesson plan Lesplan	**The Solar system** *10 school days* Watch on YouTube	The sun – organising the universe	p. 219 – 220	p. 242: Q2	Watch **The Answer Series Videos** on this topic on YouTube: **English** playlist here | **Afrikaans** playlist here | English & Afrikaans Worksheets here	
		Objects around the sun – planets; dwarf planets; moons; asteroids; meteors and meteorites; comets	p. 220 – 227	p. 242/244: Q3 – Q6	- Interactively explore our solar system and its planets here - **ENRICHMENT**: Watch how earth is protected from asteroids here - Look at some impact craters on Earth's surface here	
		Earth's position in the solar system	p. 227	p. 242: Q1; p. 244: Q7	**ENRICHMENT**: explore the conditions of other Earth-like planets here	
WEEK 3 *18 – 22 Oct*	**Beyond the solar system** *5 school days*	The Milky Way Galaxy	p. 228 – 229	p. 245: Q2	Take a tour through the Milky Way Galaxy here	
		Our nearest star	p. 230	p. 245: Q3		
		Light years, hours and minutes	p. 231 – 232	p. 246: Q4 – Q6	- Download and play this slideshow to see the universe organised from the biggest to the smallest distance - Watch this video on light years, hours and minutes	
		Beyond the Milky Way Galaxy	p. 233	p. 245: Q1		
WEEK 4 *25 – 29 Oct*	**Looking into Space** *5 school days*	Early viewing of space – stars in the night sky	p. 233 – 234			
		Constellations	p. 234 – 237	p. 247/248: Q2 & Q3	- How do we study stars? Watch here - Study more star maps from Iziko Museum here	
		Telescopes – the basics	p. 237 – 238		**ENRICHMENT**: download awesome posters of the space telescopes here	
		Optical telescopes	p. 238 – 240	p. 249/250: Q4 & Q5	- How Hubble changed astronomy – watch here - How Hubble images are made – watch here - The SALT – watch here	
		Radio telescopes	p. 241	p. 247: Q1; p. 250: Q6	What is the purpose of the SKA? – watch here	
WEEK 5 *1 – 5 Nov*	**Time for consolidation & revision** *5 school days*				Practice Exam: ENG & MEMO | AFR & MEMO	
WEEK 6 – 10 *8 Nov – 8 Dec*	**Final Exams**	**Formal assessments: TASK 7 – Exam (60% Term 3 content and 40% Term 4 content @ min 50 marks)**				



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NOTE

- The final exam must cover TERM 3 and 4 content.
- The content of TERM 3 must be equivalent to 60% of the paper.
- The content of TERM 4 must be equivalent to 40% of the paper.
- Also, remember to calculate the % weighting for each topic, based on the amount of teaching time to ensure that the content is not over/under assessed.
- The accompanying table shows an **example** for the mark allocation per topic if the exam were out of **90 marks**.

	TOPIC	% of paper	ATP teaching time	Mark allocation $\frac{teaching\ weeks}{total\ weeks}\ x\ number\ of\ marks$
TERM 3	Static electricity	60% of the paper *i.e. 54 marks*	1 week	± 6 marks
	Energy Transfer in Electrical Systems		2.5 weeks	± 16 marks
	Serial and Parallel Circuits		2 weeks	± 13 marks
	Visible Light		3 weeks	± 19 marks
		TOTAL:	**8.5 weeks**	
TERM 4	The Solar System	40% of the paper *i.e. 36 marks*	2 weeks	± 18 marks
	Beyond the Solar System		1 week	± 9 marks
	Looking into Space		1 week	± 9 marks
		TOTAL:	**4 weeks**	

$\frac{1}{8.5}\ x\ 54$