SAMPEL PERCUMA

Cambridge Checkpoint Stage 8 Science Practice Paper + Mark Scheme

Set penuh: Cambridge Primary

Maths & Science Checkpoint

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CAMBRIDGE LOWER SECONDARY

Checkpoint Practice Papers

Mathematics (0862) & Science (0893)
Stage 7 & Stage 8 — with full mark schemes

Updated August 2026 — Aligned to Cambridge Lower Secondary Framework

WHAT IS INSIDE

- **8 full practice papers** — Maths & Science, Stage 7 & Stage 8, Paper 1 and Paper 2 each
- Written in **English**, the language of the real Checkpoint tests
- Real Cambridge structure: **50 marks** a paper — Maths 1 hour, Science 45 minutes — with a non-calculator Maths Paper 1
- Every strand covered — Number, Algebra, Geometry & Measure, Statistics & Probability; Biology, Chemistry, Physics, Earth & Space
- **Thinking and Working Mathematically** and **Thinking and Working Scientifically** questions built in
- Cambridge command words: *work out, show that, explain, suggest, describe, predict*
- **Full mark schemes** in the real Cambridge five-column format, with part-mark ladders, accept lists and the official `oe` / `cao` / FT / `isw` abbreviations

Nightmew Studios · Original practice material written to the published Cambridge Lower Secondary curriculum frameworks for Mathematics (0862) and Science (0893).
Not endorsed by or affiliated with Cambridge Assessment International Education.

Command words — what each one is really asking

Most lost marks at Checkpoint are not lost because the child does not know the science or the maths. They are lost because the child answered a different question from the one asked. Learn these words.

Used in both Mathematics and Science

Command word	What you must actually do
Work out	Calculate from the facts given, with or without a calculator. Show the steps — the steps carry marks. This is the usual word on **Paper 1**.
Calculate	The same job, but it is the word Cambridge tends to use on **Paper 2**, where a calculator is allowed.
Find	The most common instruction of all in real Checkpoint papers. Treat it exactly like *work out*.
Write down / **State** / **Give**	A short answer only. No working needed, no explanation wanted. Do not waste time.
Show that	The answer is already printed for you. Your job is the working in between. Never just restate the answer.
Explain / **Explain why**	Give a reason, not a description. If you can put the word *because* in the middle of your sentence, you are probably explaining.
Describe	Say what happens or what you can see. No reason needed.
Suggest	There is no single printed answer. Give a sensible idea that fits the science or the situation.
Complete	Fill in the blanks in a table, diagram or sentence. Marks are per blank.
Tick (✓)	Tick exactly the number asked for. Ticking extra boxes usually loses the mark.
Estimate	Round the numbers first, then work with the rounded numbers. An exact answer can score zero here.
Draw	Use a ruler and a sharp pencil. Label what you are told to label.

3 Aerobic respiration releases energy from glucose inside cells. BIOLOGY

(a) **Complete** the word equation for aerobic respiration. **[2]**

glucose + ... → carbon dioxide + ... (+ energy)

(b) **Name** the part of the lungs where oxygen passes into the blood. **[1]**

.....

(c) During exercise a student's breathing rate increases. **Explain** why. **[2]**

.....

.....

4 Magnesium burns in oxygen to form magnesium oxide. CHEMISTRY

(a) **Complete** the word equation. **[1]**

magnesium + oxygen → .....

(b) **State** whether this is a physical change or a chemical change. **[1]**

.....

(c) 2.4 g of magnesium reacts completely with 1.6 g of oxygen. **Calculate** the mass of magnesium oxide formed, and **name** the law you used. **[3]**

.....g

.....

5 The table shows part of the Periodic Table information for four elements. CHEMISTRY

Element	Symbol	Metal or non-metal?
Copper	Cu	metal
Sulfur		
Iron		metal

(a) **Complete** the table. **[3]**

(b) **Give** two physical properties that most metals have but most non-metals do not. **[2]**

.....

.....

(c) Zinc is added to dilute hydrochloric acid. Bubbles are seen. **Name** the gas produced and **describe** the test for it. **[2]**

Gas .....

.....

7 A block of metal has a mass of 270 g and a volume of 100 cm^3. PHYSICS

(a) **Calculate** the density of the metal. **[2]**

.....g/cm^3

(b) The density of water is 1.0 g/cm^3. **Predict** whether the block will float or sink in water. **[1]**

.....

(c) A woman wearing narrow heels leaves deeper marks in soft ground than the same woman wearing flat shoes. **Explain** why, using the idea of pressure. **[2]**

.....

.....

(d) A second block of the same metal has a mass of 540 g. **Calculate** its volume. **[2]**

.....cm^3

1 Amina investigates how light intensity affects the rate of photosynthesis in pondweed. She counts the bubbles of gas released in one minute at different distances from a lamp. BIOLOGY TWSC

Distance from lamp (cm)	10	20	30	40	50
Bubbles per minute	48	31	22	41	12

(a) **Name** the gas being released by the pondweed. **[1]**

.....

(b) **Identify** the independent variable. **[1]**

.....

(c) One result does not fit the pattern. **Identify** this result and **suggest** one reason why it may have happened. **[2]**

.....

.....

(d) **Give** two variables Amina must control to make this a fair test. **[2]**

.....

.....

(e) **Describe** the pattern in the results (ignoring the odd result) and **explain** it. **[2]**

.....

.....

2 A balanced diet contains all the food groups the body needs. BIOLOGY

(a) **Complete** the table. **[3]**

Nutrient	Why the body needs it	One food that contains it
Carbohydrate		rice
Protein	growth and repair of cells	
Fibre		vegetables

(b) **Suggest** two ways in which smoking damages the gas exchange system. **[2]**

.....

.....

4 Acids react with different substances to make salts. CHEMISTRY

(a) **Complete** the word equations. **[2]**

hydrochloric acid + sodium hydroxide → sodium chloride + ...

sulfuric acid + magnesium → magnesium sulfate + ...

(b) **Name** the type of reaction between an acid and an alkali. **[1]**

.....

(c) Farmers add lime (calcium hydroxide) to soil that is too acidic. **Explain** how this helps, referring to pH. **[2]**

.....

.....

5 Thermal energy moves from hotter places to cooler places in three ways. PHYSICS

(a) **Complete** the table by naming the main method of thermal energy transfer. **[3]**

Situation	Main method of transfer
A metal spoon becomes hot when left in soup	
Warm air rises above a heater and circulates the room	
You feel warmth on your face from the Sun	

(b) **Explain** why a vacuum flask keeps a drink hot for a long time. **[2]**

.....

.....

Question	Answer	Marks	Part marks	Guidance
10(b)	Near the equator the Sun is always high in the sky and day length hardly changes, so the energy received stays about the same all year	**2**	Award 1 mark for the Sun always being high / overhead and 1 mark for day length or received energy changing very little	Accept an answer framed as "the tilt makes little difference at the equator".
10(c)	Strength: any one from — it shows the tilt clearly / it shows why light is spread out more at the poles / you can see the whole orbit at once Weakness: any one from — it is not to scale / the lamp is far too close compared with the real Sun / the globe does not really orbit	**2**	Award 1 mark for an acceptable strength and 1 mark for an acceptable weakness	Do not accept "it is only a model" as either answer. **TWSC: MODELS AND REPRESENTATIONS**

TAMAT SAMPEL

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