Science Year 8 — Practice Exam 2 — Answers & Explanations

Answers to the 15 questions in the free preview.

Science

1. C. Her working muscles need more oxygen and glucose, so the heart pumps blood faster.

Muscles release energy by respiration, which uses oxygen and glucose carried by the blood. During exercise the muscles need more of both, so the heart beats faster to deliver more blood.

2. D. Her muscles still need extra oxygen to recover after the run.

After hard exercise the body keeps taking in extra oxygen for a few minutes to recover (to break down waste such as lactic acid and restore energy stores), so the heart rate falls gradually rather than straight back to its resting rate.

3. A. They give a much larger surface area for absorbing nutrients into the blood.

Villi greatly increase the surface area of the small intestine, and each has a rich blood supply, so digested nutrients can be absorbed into the blood quickly. Muscles in the gut wall move food along, and acid is made in the stomach.

4. B. Xylem

Xylem tissue carries water and dissolved minerals from the roots up to the leaves, so the dye travels up through the xylem. Phloem carries sugars made in the leaves to other parts of the plant.

5. C. Two plants of the same type and size, given the same water, one kept in light and one in the dark, both weighed after 24 hours

In a fair test only the variable being tested (light) is changed. The type of plant, its size, the water it gets and the time must all stay the same, so any difference in water loss can be put down to the light.

6. D. Oxygen and carbon dioxide only have a very short distance to move between the air and the blood.

Gases move between the air in the alveoli and the blood by diffusion. A wall one cell thick, with blood vessels right against it, makes the distance very short, so gas exchange is fast.

7. A. Divergent

At a divergent boundary plates move apart and magma rises to form new crust. At a convergent boundary plates move together, and at a transform boundary they slide past each other.

8. B. The Indian Plate is still pushing into the Eurasian Plate, crumpling and lifting the rock.

The Himalayas lie on a convergent boundary. The Indian Plate is still moving north into the Eurasian Plate, and the collision folds and pushes the rock upwards. There is no mid-ocean ridge or volcanic activity beneath them.

9. C. Africa and South America were once joined, so Mesosaurus could live across both.

A small freshwater reptile could not cross a salty ocean thousands of kilometres wide. Its fossils on both continents are evidence that Africa and South America were once joined and have since moved apart.

10. D. New sea floor forms at the ridge and moves away from it over time.

The rock is youngest at the ridge (0 million years) and gets steadily older further away. That is what happens if new crust forms at the ridge and the plates carry it away on both sides, which is called sea-floor spreading.

11. A. 2.5 cm

The rock moves 50 km in 2 million years, which is 25 km every million years. 25 km = 2 500 000 cm, and 2 500 000 cm ÷ 1 000 000 years = 2.5 cm a year, about as fast as fingernails grow.

12. B. Australia is near the middle of a tectonic plate, while New Zealand sits on the boundary between two plates.

Most volcanoes and large earthquakes happen at plate boundaries, where plates collide, separate or slide past each other. Mainland Australia sits well inside the Indo-Australian Plate, while New Zealand lies on the boundary between the Indo-Australian and Pacific Plates.

13. C. Sedimentary

Sedimentary rock forms when layers of sediment, such as sand, are buried, compacted and cemented together. Fossils are usually found in sedimentary rock because living things are buried in the sediment.

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14. D. Granite cooled slowly deep underground, while basalt cooled quickly at or near the surface.

Crystals grow while melted rock cools. Deep underground, magma cools slowly over thousands of years, so large crystals form (granite). Lava at the surface cools in days or weeks, leaving only tiny crystals (basalt). Crystals stop growing once the rock is solid.

15. A. Marble

When rock is changed by heat and pressure without melting, a metamorphic rock forms. Limestone becomes marble. Granite and basalt are igneous rocks, and sandstone is sedimentary.

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PREVIEW

That’s the end of the preview answers

These are the answers to the 15 preview questions. The full answer key covers all 30 questions in Science Year 8 — Practice Exam 2, with the working behind every mark.

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