



CLASS 7 SOCIAL SCIENCE · 2026-27

Inside the earth, and the atmosphere

Geography

30

QUESTIONS

25

MINUTES

3

EXERCISES

This belongs to _____ Date _____

WHAT YOU'LL GET GOOD AT

- Names the layers of the earth and states what each is made of
- Distinguishes igneous, sedimentary and metamorphic rocks by how they form
- Names the layers of the atmosphere and what happens in each
- Explains an everyday observation using the composition of the air

Take your time, and have a go at every one. If you get stuck, look at the orange box — Ollie has already done one for you.

Inside the earth, and the atmosphere

Geography · 30 questions · tick each box as you finish

Exercise 1 of 3 · 11 questions Name it, then say one thing that is true only of that layer. ☐

WRITE THE ANSWER

HERE'S ONE DONE FOR YOU

The crust, and the thing that is true only of it: it is the thinnest layer, about 35 km under continents and 5 km under oceans. Any child can name three layers. The mark in Class 7 is for the detail that could not have been guessed - a thickness, a material, a thing that happens there.

1) The outermost layer of the earth

2) The layer that extends to about 2,900 km below the crust

3) The innermost layer of the earth

4) The layer of the atmosphere where all weather happens

5) The layer of the atmosphere that contains the ozone layer

6) The layer of the atmosphere where meteors burn up

7) The outermost layer of the atmosphere

8) The layer of the earth made mainly of iron and nickel

9) The thin solid layer we live on, thinnest under the oceans

10) The layer of the atmosphere closest to the ground

11) The sphere that includes all water on the earth

Exercise 2 of 3 · 11 questions Which type of rock, and how was it formed?

WRITE THE ANSWER

HERE'S ONE DONE FOR YOU

Granite is igneous, and specifically intrusive: the magma cooled slowly deep underground, which is why you can see individual grains in it. Basalt is igneous too, but extrusive - lava cooled fast on the surface, so its grains are tiny. Same family, different story, and the grain size is the visible evidence of which one. Questions that ask you to tell them apart are asking for that story, not for the name.

1) Granite

2) Basalt

3) Sandstone

4) Marble

5) Slate

6) Limestone

7) Gneiss

8) Pumice

9) Shale

10) Quartzite

11) Coal

Exercise 3 of 3 · 8 questions Answer in two or three sentences.

WRITE THE ANSWER

HERE'S ONE DONE FOR YOU

The meteors: they enter the mesosphere at very high speed, friction with the air heats them, and they burn up before reaching the ground. Notice that the answer names the layer, gives the mechanism, and says what the result is for us. Almost every 'why' question in Class 7 Geography wants those three, and counting them off before writing is the habit worth building.

1) Why is nitrogen the largest part of the air even though we need oxygen to breathe?

2) Why do meteors burn up before they reach the ground?

3) Why is the ozone layer important, and where is it?

4) How is a metamorphic rock different from the rock it came from?

5) Why does the crust vary in thickness under continents and oceans?

6) Explain the rock cycle in your own words.

7) Why does air pressure fall as you climb a mountain?

8) Why is the troposphere the most important layer for living things?

**All done? How did that feel?**

Colour in a star. Three stars means you could teach it to someone else.



Tricky · Getting there · Easy now



Answer key

For grown-ups

Inside the earth, and the atmosphere · keep this page back until your child has finished.

1. Name it, then say one thing that is true only of that layer.

- 1) The crust. It is by far the thinnest layer - about 35 km under the continents and only around 5 km under the oceans.
- 2) The mantle. It lies immediately below the crust and is the thickest of the three layers.
- 3) The core. It is made mainly of nickel and iron, which is why it is sometimes called the nife layer, and it is the hottest part of the earth.
- 4) The troposphere. It is the layer we live in, and it holds almost all of the atmosphere's water vapour and dust, which is why clouds and rain occur here.
- 5) The stratosphere. The ozone layer here absorbs harmful ultraviolet rays from the Sun, and the layer is almost free of cloud, which is why aircraft prefer to fly in it.
- 6) The mesosphere. Meteors burn up here, which is what makes it the layer that shields the surface from them.
- 7) The exosphere. It has almost no air at all and merges gradually into outer space.
- 8) The core. It is the densest layer, and its movement is what gives the earth its magnetic field.
- 9) The crust. It is the only layer we can reach directly, and it is far thinner under the oceans than under the continents.
- 10) The troposphere. All weather happens here, and it is the layer whose temperature falls as you go up.
- 11) The hydrosphere. It includes oceans, rivers, lakes and groundwater, and most of it is salt water.

2. Which type of rock, and how was it formed?

- 1) Igneous, and intrusive - molten magma cooled slowly deep inside the earth, which is why its grains are large enough to see.
- 2) Igneous, and extrusive - lava cooled quickly on the earth's surface, so the grains are very fine.
- 3) Sedimentary - grains of sand were carried by wind or water, deposited in layers, and compressed over a long time.
- 4) Metamorphic - limestone was changed by great heat and pressure inside the earth.
- 5) Metamorphic - shale was changed by heat and pressure.
- 6) Sedimentary - formed from the compressed remains of shells and marine life.
- 7) Metamorphic - granite changed by great heat and pressure deep in the crust.
- 8) Igneous - formed from frothy lava that cooled quickly, trapping gas bubbles.
- 9) Sedimentary - formed from fine mud and clay settling and being compressed.
- 10) Metamorphic - sandstone changed by heat and pressure.
- 11) Sedimentary - formed from plant remains buried and compressed over millions of years.

3. Answer in two or three sentences.

- 1) Nitrogen makes up about 78 per cent of the air and oxygen about 21 per cent. Plants need nitrogen to grow, though most of them cannot take it directly from the air, so bacteria in the soil convert it into a usable form for them.
- 2) Because they enter the mesosphere at very high speed and the friction with the air there heats them until they burn up. That layer acts as a shield for the earth's surface.
- 3) It lies in the stratosphere and absorbs most of the harmful ultraviolet radiation from the Sun. Without it, far more of that radiation would reach the earth's surface and harm living things.
- 4) It is the same material rearranged by great heat and pressure deep inside the earth. Limestone becomes marble and shale becomes slate - the substance is related, but the structure, hardness and appearance have changed.
- 5) Because continental crust is made of lighter rock that stands thicker and higher, while oceanic crust is denser, thinner and lies lower. That difference is why oceans sit in basins.
- 6) Igneous rock breaks down into sediment, which settles and hardens into sedimentary rock. Heat and pressure turn either kind into metamorphic rock, and if any of them melts and cools it becomes igneous again - so no rock type is permanent.
- 7) Because air pressure is the weight of the air above you. The higher you climb, the less air there is above, so the pressure falls.
- 8) Because it holds almost all the air we breathe and all the water vapour, so it is where weather, rain and clouds occur. Life depends on it directly.

WHILE YOUR CHILD WORKS

- Ask 'what is true only of that one?' after every name. Three layers named is a mark; three layers described is the answer.
- For rocks, the story is the answer - how it formed, not what it is called. Grain size is visible evidence and children remember it.
- Diagrams are marked on labels. A cross-section of the earth with three labels scores less than a rough one with six.

**Spotted a gap while marking?**

A free assessment is one live class with a matched teacher - no card, nothing to cancel. Afterwards you get an honest note on what they noticed.

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