



Rocks, Soils and Minerals! Year 3 Science at Home

You can help! Your child is exploring the rocks, soils and minerals that make up the Earth. There are amazing examples of these all around you in the landscape!

Why are we learning this? The land beneath our feet

The rocks and soils of the Top End and remote northern Australia tell an ancient story. First Nations peoples have deep knowledge of the different rock types — knowing which stones are best for tools, which soils hold water, and which ground is safe to dig. Ochre from rocks has been used for ceremonies and art for thousands of years. Understanding rocks and soils helps your child connect science to the country that surrounds them, and to the knowledge that has sustained people on this land for generations.

My child will learn to:

✓ Describe rocks

Observe and describe the colour, texture, grain size and hardness of different rocks.

✓ Know about minerals

Understand that minerals are the building blocks of rocks — and that some minerals are very useful.

✓ Describe soils

Know that soil is made of tiny bits of rock plus living and non-living things.

✓ Understand why they matter

Describe why rocks and soils are important resources for living things and people.

Big ideas to know:

Rocks

Rocks are made of one or more minerals. Different rocks have different colours, textures, hardness and grain sizes — sandstone, granite and limestone all look and feel different.

Soils

Soil is not just dirt — it contains tiny rock particles, water, air, decaying plant and animal material, and millions of tiny living things. Different soils suit different plants.

Minerals

Minerals are natural substances that rocks are made of. Table salt, graphite (in your pencil), gemstones and the ochre used in dot paintings are all minerals.

Rocks



Rocks are made of minerals. Different rocks have different textures, colours and hardness.



Pebble

Examples:
Pebble
Sandstone
Chalk



Chalk

Soils



Soil is made of tiny bits of rock, plus water, air and living things.



Worm

Soil is used by:
Worms
Gardens
Farms



Water drop

Minerals



Minerals are the building blocks of rocks.



Table salt

Examples:
Salt
Diamond
Quartz



Diamond ring



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Rocks, soils and minerals compared

Type	What it is	Examples you might find
Rock	A solid natural material made of one or more minerals — can be smooth, rough, big or tiny	Sandstone, granite, limestone, quartz, ironstone
Soil	A mix of tiny rock particles, water, air, decaying material and living things	Sandy soil (near beaches), clay soil (holds water), loamy soil (great for plants)
Mineral	A natural substance with a specific structure — the building block of rocks	Quartz (clear/white), ochre (red/yellow), table salt, graphite
Gemstone	A precious or semi-precious mineral used in jewellery	Opal (Australia!), diamond, sapphire, ruby

Think Like a Scientist — Rock Investigator

Collect 5 different rocks from outside. Examine each one carefully. Describe its colour, texture (rough or smooth?), and how hard it is. Try scratching each one with your fingernail.

Ask: "Do you think this rock is hard or soft? How can we test it? Where do you think it came from?" There is no wrong answer — the observing is the science!

You will need: (Materials)

- 5-10 rocks from outside
- Magnifying glass
- Fingernail or coin (for scratch test)
- Bowl of water
- Paper and pencil for recording

What to look for:

1. Colour — what colours can you see?
2. Texture — rough, smooth, glittery, grainy?
3. Weight — heavy or light for its size?
4. Layers — can you see stripes or layers?
5. Grains — are there tiny bits inside you can see?

Questions to ask your child

1. What colour is that rock? Can you see more than one colour in it?
2. Is it rough or smooth? Why do you think it feels that way?
3. Do you think it is hard or soft? How could we test that?
4. Where do you think this rock came from?
5. What does the soil feel like — sandy, sticky or crumbly?
6. Can you find different coloured soils? What makes them different?
7. What do First Nations people use certain rocks and soils for in this area?

You do not need to go far — the rocks and soils around your home, yard or local area are perfect for exploring. A magnifying glass makes it even better!

Key words to know:

Rock	A solid natural material made of minerals — found in the ground and landscape
Soil	A mix of tiny rock particles, water, air and decaying matter that plants grow in
Mineral	A natural substance that makes up rocks — table salt and quartz are minerals
Texture	How a surface feels — rough, smooth, grainy, bumpy
Hardness	How resistant a material is to being scratched or dented
Resource	A material from nature that people use
Observe	To look very carefully and notice details

Key words to look up

Rock · Soil · Mineral · Texture · Hardness · Resource · Observe

What school will check

Your child needs to compare the observable properties of soils, rocks and minerals and describe why they are important Earth resources.

Try it at home!

Collect a small cup of soil from your yard. Put it in a clear jar of water and shake it. Leave it to settle overnight. What layers do you see? Each layer is a different component of the soil!

