

## How to use Unfolding Knowledge

The unfolding knowledge minibook may be reproduced freely within your school. But please note: the pictures are copyright, and may not be reused in any other way.

For the minibook:

(1) pass it through your printer using DUPLEX setting with print to fit and page scaling switched OFF (so that you don't get white margins).

(2) fold once across the middle and cut along fold.

(3) staple or hot glue the spine to make a conventional book.

As you make more minibooks, keep the set in a box, and make class sets. Give them out as non-fiction reading units.

Make English comprehensions and summaries about them.

Help children to learn about how to help the planet by using examples like this.

## Let's get outside to learn!

This is all about getting outside enjoying learning while you are out there. Every subject you study can be done outside, even if you might have to come inside to write things down. Geographers call it field trips, historians might call it local studies, scientists might call it experimental work.

But whatever it is, being outside is all about observation. You look, you think about what you have seen, and then you develop what you have seen, fitting it into your curriculum, so it will enrich your studies. This interactive map is all about showing you how to do that. Science, English, Maths, History and Geography are all around you. Enjoy them, keep fit and active, stay healthy and learn for your curriculum while you are doing it.

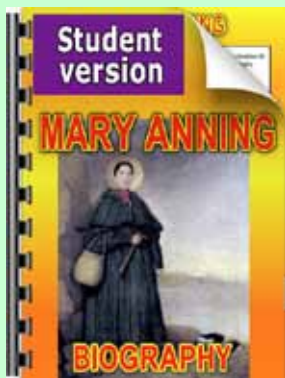
This topic covers

Geography: rocks and landscape, weathering  
Properties of materials

10. Now you know just what is below your feet.

English/History

11. Find out about the life and times of Mary Anning. Search Anning in Curriculum Visions. Do the English comprehension as well as finding out about her life.



12. Here are some other famous geologists to find out about: James Hutton (who found out about the order rocks were laid down in), Roderick Murchison (who found out about the oldest rocks), Charles Darwin (who looked into the origin of species), Archibald Geike (who wrote famous geology books). And all that from just below your feet! Enjoy.

*Finished with me? Pass me to a friend or recycle me.*

# Rocks & Stones



*Many old houses are made of stones, but not quite as dramatically as this one!*

We all see stones in gardens and parks on holiday by the seaside. But do we ever look at them, and what might they tell us? It's often an exciting story about the world beneath your feet. So let's explore together...

Our world is built on rock. But we don't often see it unless we go to mountains on holiday or look at cliffs by the sea. But soil and stones 1



*How layers of rocks and fossils formed in the land below your feet.*



Sandstone



Flint



Limestone

are made from rock, so let's start with the soil.

1. Get a handful or two of stony soil from somewhere local to you (garden, park, school, field (with permission) etc). Now spread it out onto a piece of newspaper and let it dry. Now pick out the stones. Those are what we want. If your local soils are very stony just pick out the stones and don't bother with the soil. Then wash the stones so they are clean. You can usually see much more from wet stones than dry ones.

2. Now what have we got? Stones are weathered pieces of rock. Many are from rocks below where we find them. But if you live on lowlands north of Bristol to London, your stones might not be local. You may be handling part of stones carried hundreds of miles by the Ice Age!



Shale

2

have come from just below the soil.

8. Now for the tricky bit. What are your stones made from? Grey stones are usually shale or slate. Speckled stones are usually granite. Black stones are usually basalt lava. Yellow, grey or red-coloured gritty stones are sandstone. White or light grey stones are limestone. Slightly transparent light brown stones are usually flint which came from chalk rock. See the examples here. Curriculum Visions has videos of them all.

9. Now from the geology map find out the age of your bedrock (ignore the surface rock for this). Use a reference book (Curriculum Visions has some, including Fossils and Rocks as part of Earth Science series). Find out typical fossils from your rock's age. Draw a fossil, or find one from Curriculum Visions books, or on line.



Trilobite

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4. Change the key (left) to bedrock. That is solid rock. Click on your home and an info box will pop up. Find out what your rock is.

5. Superficial means surface layer. See what it says. Fluvio glacial means you live on what was once a melting ice sheet edge. If it says till or boulder clay, you were once right under the ice sheet and covered with hundreds of metres of ice. If there is no superficial material you are on land where no glaciers left materials.

6. Look at your stones. If you found you were on superficial materials your stones will have been brought to your home from somewhere else – maybe hundreds of miles away. If you are on bedrock, your stones will be local. Both are exciting.

7. Look at the shape of your stones. Are they rounded? If so they will have been worn that way by an ancient river or glacier. If they are sharp-sided they will

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3. To find out if you have local or glacier rocks, go to this website run by the Geological Society.

[mapapps.bgs.ac.uk/geologyofbritain3d/](http://mapapps.bgs.ac.uk/geologyofbritain3d/)  
That will give you an amazing 3D map where you can find out about the rocks below your feet. Zoom in on the map to near where you live. (If you zoom in too far you will lose the geology, so be careful) Open the menu (top left) and set the geology transparency slider to 0% to help you find where you live. Now slide it to 100%. That is what is under your feet! Move it to about 50% to see both your home and the geology.



Granite



Basalt

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