

Explore and Discover...



Rocks and soils

Dig the geologist challenge



Make comparisons and use appropriate vocabulary to describe rocks, minerals and gems.

Explore how and why different materials are used for different purposes.

Gallery visited (please see accompanying map)	 Earth's Treasury
Suitable for	 Key Stage 2 (ages seven to 11)
Curriculum links	QCA Science Unit 3C: Characteristics of Materials QCA Science Unit 3D: Rocks and Soils NC Science: Materials and their Properties 1d
Example page	www.nhm.ac.uk/rocks-soils-ks2
Pre-visit preparation	• vocabulary: rock, mineral, gem, crystal







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Activities within the guide

The children will be asked to complete six challenges:

	Challenge	Description
	1. Discovering rocks challenge	Choose a rock and describe it – can a partner find your choice?
	2. Rock hard challenge	Learn about minerals and their properties
	3. Precious gems challenge	Complete a tally chart noting the range of gem colours
	4. Gold rush challenge	Explore gold and clay and discover more about them
	5. Building a home challenge	Investigate the materials used in home building
	6. Marvellous metals challenge	Discover more about metals and their uses

These can be done in any order within the gallery. Depending on how many challenges the children complete, they can reach these levels:

- researcher (two challenges completed)
- scientist (four challenges completed)
- professor (six challenges completed)

Certificates

On return to school, certificates (available at the end of this document) can be printed out and awarded, depending on the number of challenges completed.

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Techniques

There are a range of techniques used within the guide. To complete the challenge, children will be required to:

- make choices based on observation
- write short answers
- choose appropriate descriptive vocabulary
- make decisions about the use of a material based on its properties
- make sketches
- discuss answers with a partner
- extract information from exhibits and their information boards
- complete a table of information

Follow-up activities

- **Award ceremony**

Print out certificates and have an award ceremony.

- **Literacy: Speaking & Listening**

Discuss the experiences had at the Museum and the challenges that were undertaken.

- **Science/Literacy**

Make your own Earth's treasury display with items brought in from home. Sort them into exhibits and write the labels to go with them.

Suggested answers for challenges



Discovering rocks challenge

Question 2: The children can choose from the following: slate, gneiss, garnet, conglomerate, sandstone, mudrock, granite, basalt and pumice.

Question 3: Answers will vary as children will treasure different objects for different reasons.



Rock hard challenge

Question 2: The hardest mineral is diamond. The softest mineral is talc.

Question 3: Students should ring round hardness, magnetism, density and colour of streak.

Question 4: Transparent – topaz, translucent – hemimorphite or quartz, opaque – sphalerite.



Precious gems challenge

Question 2: Additional colours may include orange, clear or white and purple. Because there are so many gems in the case, the totals for the different colours will vary, depending on where students start and stop counting.

Question 3: Crystals can vary considerably so you may see a wide range of drawings.
[Note: the Regular crystals display is before the Gemstones display in the gallery.]

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Gold rush challenge

- Question 3:** Various answers are possible and may include that gold comes from the earth, underground, rivers, mines or rocks.
- Question 4:** Gold's special qualities include it does not tarnish, it is malleable and it is ductile. Answers about how humans have used gold will vary, but may include jewellery and artwork.
- Question 5:** Answers will vary but may include pestle and mortar, flowerpots, pipe, terracotta, brick and cat litter.



Building a home challenge

- Question 2:** The roof is made from slate. The walls may be made from sandstone, granite or bricks (made from clay). The pathway may be gravel, slate or limestone. The wall may be flint. The fountain may be marble.

Question 3:

Part of house	Material used	Reason why
Roof	Slate	Waterproof, lightweight
Walls	Granite	Strong (tightly packed crystals)
Window	Glass	Transparent

- Question 4:** All the materials are made from rocks. Glass is made from sand and iron ore. Although iron is a metal, it comes from rocks.



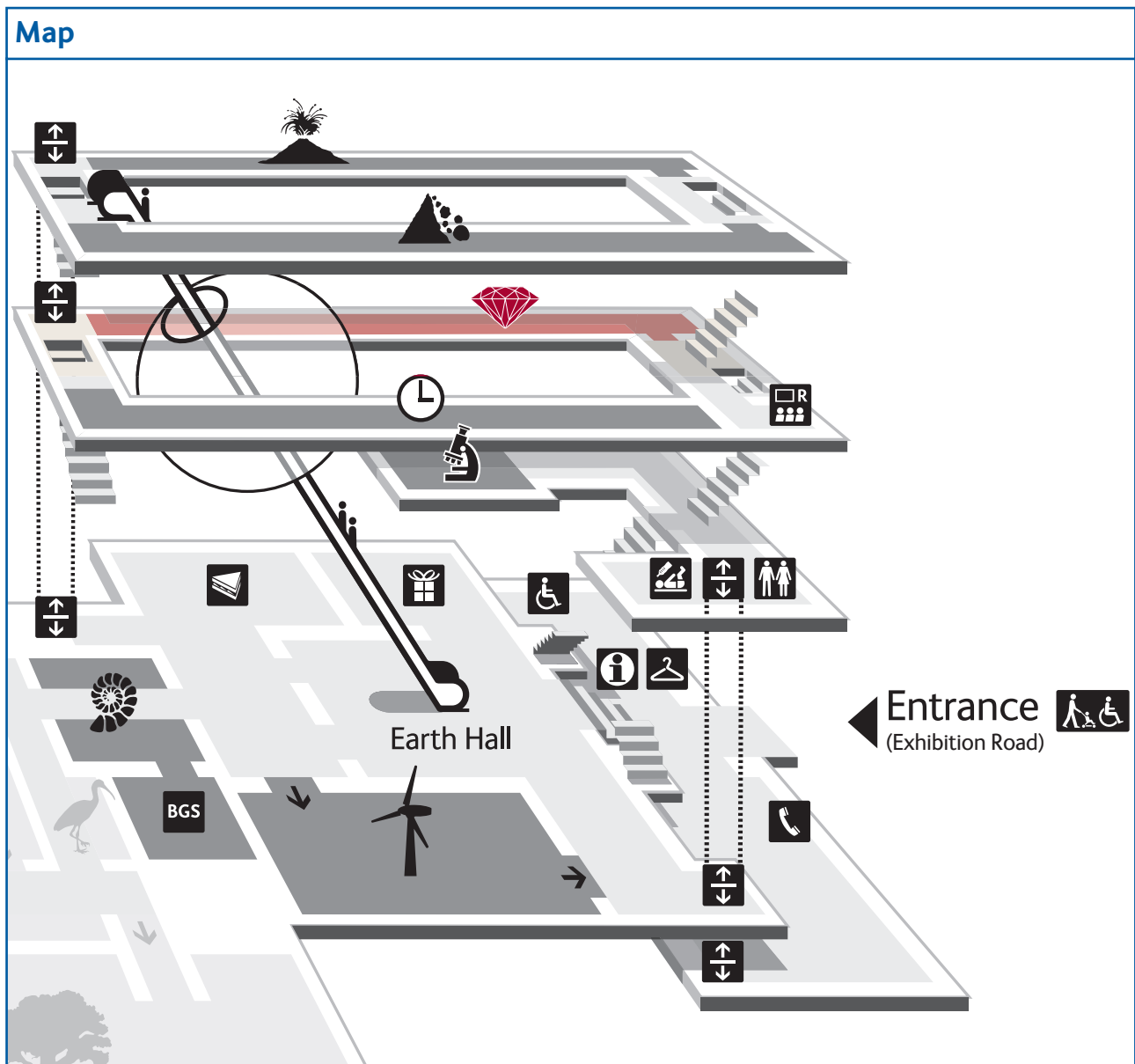
Marvellous metals challenge

- Question 1:** All four boxes should be ticked.
- Question 2:** The frying pan, grater and necklace should be ticked. The light bulb is part of the adjacent Mineral wealth display so may be ticked. This is acceptable as the filament is made from metal.
- Question 3:** Answers may vary, but pupils may note that necklaces are not always made from metal. Frying pans always are and graters are usually made from metal. Children may also note that metals are good at their job because they are malleable (they can be shaped) but they are also strong so they can stand repeated use and heat (frying pan). They can also be made into sharp objects such as knives and graters.

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A larger, full-colour version of this map showing the whole Museum is available at reception when you arrive.

Certificate

This is to certify that

became a

researcher

in the Explore and Discover... Rocks and soils challenge

Teacher's name

Date



Certificate

This is to certify that

became a

scientist

in the Explore and Discover... Rocks and soils challenge

Teacher's name

Date



Certificate

This is to certify that

became a

professor

in the Explore and Discover... Rocks and soils challenge

Teacher's name

Date

