

Teacher Pack

KS1 - 2

What is this workshop?

This is the GeoBox introductory rocks workshop curated by the UCL East Schools Engagement team in collaboration with the GeoBus team in the Earth Sciences Department at UCL.

We would appreciate any feedback you can give us to help us improve the workshop, you can provide feedback (and opt to submit a quote for our website) [here](#) or email us directly at east.schools@ucl.ac.uk

Teachers are also welcome to book a free GeoBus UCL online interactive workshop with a member of the Earth Sciences department over ZOOM. The online workshops offer additional curriculum support and allow students the opportunity to learn from an expert in geology. If this is of interest, please contact us at the email above.

The UCL Earth Sciences department also runs the UCL GeoBus, an outreach project that provides free live, online, and interactive workshops on a variety of Earth science topics. You can find out more about the GeoBus here: <https://www.geobus-london.org.uk>

Learning Objectives

1. State the three types of rock.
2. Understanding what a Geologist does.
3. Describe the physical properties of rock.

Contents of this pack

Section 1: Worksheets (inc. answers & video links) **pages 2-8**

Section 2: Lesson Plan and Lesson Outline **pages 9-11**

Section 3: Object Handling Guidelines & Hazard Identification List **pages 12-13**

Section 1

Workshop Presentation

Prior to your session, the PowerPoint presentation will be emailed to you by a member of the UCL East Schools Engagement team.

Worksheets

Worksheets can be found on the following pages. Please be sure to print the blank worksheets without the answers for the pupils ahead of the workshop.

GEOLOGY KIT WORDSEARCH

Become A Geologist!



Find the following words in the puzzle.
Words are hidden → ↓ and ↘ .

BOOTS
CLINOMETER
CLOTHES
COMPASS

HAMMER
HANDLENS
HARDHAT
MAP

NOTEBOOK
PENCIL

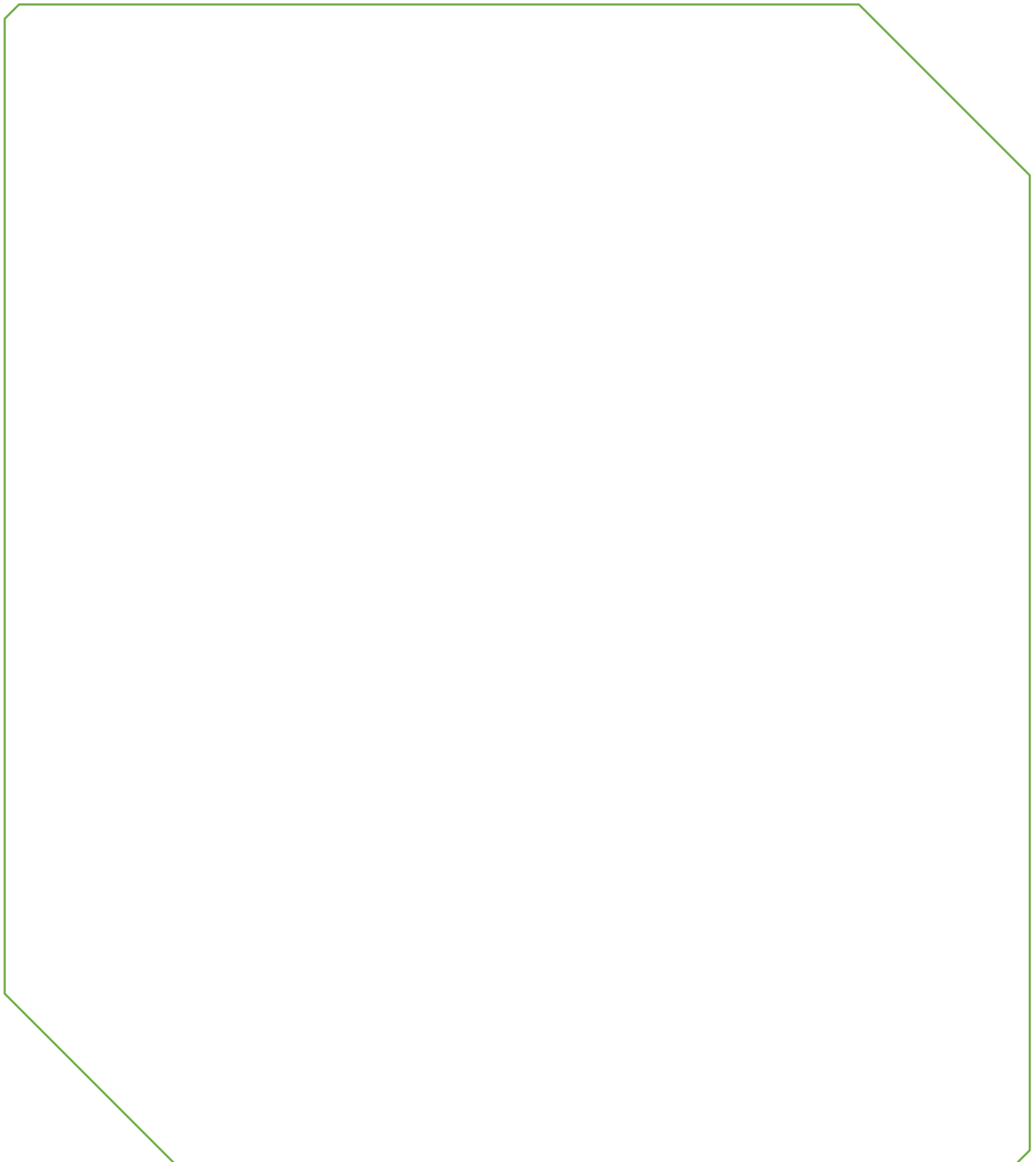
TRUE or FALSE?

Decide whether the following statements are TRUE or FALSE.

1. There are three types of rocks, metamorphic, igneous and sandy. **(True/False)**
2. Geologists are scientists who study rocks, minerals and fossils. **(True/False)**
3. Chalk is a sedimentary rock. **(True/False)**
4. Magma is lava that cools on the Earth's surface. **(True/False)**
5. Rocks can be used to make kerbstones and roof tiles. **(True/False)**

GEOLOGY DRAWING

Choose a rock you have learnt about today and draw it. Think about the shape, colour and texture.



WORKSHEET ANSWERS

Become A Geologist!

.	C
.	.	.	.	H	.	N	L
.	.	.	.	A	.	O	.	.	.	.	.	.	.	.	.	C	.	I
.	.	.	.	R	.	T	P	E	N	C	I	L	.	L	.	N	.	.	
.	.	.	.	D	.	E	.	.	.	.	.	.	.	.	O	.	O	.
.	.	.	.	H	.	B	.	.	.	.	.	.	.	.	T	.	M	.
M	A	P	.	A	.	O	.	.	.	.	.	.	.	.	H	.	E	.
.	.	.	.	T	.	O	.	.	B	O	O	T	S	E	.	T	.	.	
.	.	.	.	.	.	K	C	O	M	P	A	S	S	S	.	E	.	.
.	.	H	A	M	M	E	R	.	.	.	.	.	.	.	.	.	.	R
.	
H	A	N	D	L	E	N	S	.	.	.	.	.	.	.	.	.	.	.

Word directions and start points are formatted: (Direction, X, Y)

- | | | |
|--------------------|-------------------|-------------------|
| BOOTS (SE,6,7) | HAMMER (E,12,1) | NOTEBOOK (S,11,3) |
| CLINOMETER (S,2,2) | HANDLENS (S,3,3) | PENCIL (SE,5,3) |
| CLOTHES (S,12,3) | HARDHAT (SE,12,1) | |
| COMPASS (S,1,5) | MAP (S,14,6) | |

TRUE or FALSE?

Decide whether the following statements are TRUE or FALSE.

1. There are three types of rocks, metamorphic, igneous and sandy.

(True/False) Correct Answer: There are three types of rocks, metamorphic, igneous and sedimentary.

2. Geologists are scientists who study rocks, minerals and fossils. **(True/False)**

3. Chalk is a sedimentary rock. **(True/False)**

4. Magma is lava that cools on the Earth's surface. **(True/False)**

Correct Answer: Magma is molten rock found under the Earth's surface.

5. Rocks can be used to make kerbstones and roof tiles. **(True/False)**

One Minute Geology YouTube videos with Professor David Dobson

If your class proves to be very enthusiastic about Geology, below is a list of more Geology videos (incl. those already linked in the workshop) if they want some extra content.

What's in my rucksack (first 4 minutes is all you need)

https://www.youtube.com/watch?v=w88hR_kz52c

Chalk in Margate <https://www.youtube.com/watch?v=AtPSW8Q06HY>

Flint in Pegwell Bay <https://www.youtube.com/watch?v=m8KBJ7bJ80s>

Sandstone in Harrogate <https://www.youtube.com/watch?v=m8KBJ7bJ80s>

Basalt in Skye <https://www.youtube.com/watch?v=ZIE0hnGkFWM>

Granite in kerbstones https://www.youtube.com/watch?v=h9_r17tX0g8

Gneiss in Durness (windy audio) <https://www.youtube.com/watch?v=j04A-CrdGeA>

Schist in the Mamores in Glen Nevis

<https://www.youtube.com/watch?v=IH7krDsmpbg>

Melting of sedimentary rocks – rock cycle:

<https://youtu.be/R-ZbPYjv2Bw>

Basalt: Scottish Province connected to Iceland Volcanoes:

<https://youtu.be/8YvAcf6jB9I>

Two Billion Years of Geology in one road cutting:

https://youtu.be/7D_nWr_v4fU

Lesson Plan

The workshop is designed for one session however because it is packed with exciting Geology facts, videos, and worksheets, we understand it may be tricky to fit everything into one session. If required, the workshop can be divided into two sections:

Session One

Part One – Slides: 1-9: Introduction – What is a rock? What is a Geologist?

Worksheet: Geology kit wordsearch

Part Two - Slides 10-14: Sedimentary Rock

Session Two

Part Three – Slides 15-19: Igneous Rock

Worksheet: Geology drawing

Part Four – Slides 20-24: Metamorphic Rock

Worksheet: TRUE or FALSE?

Part Five – Slides 25 – 32: What is this rock?

Equipment Required

1. Projector and computer
2. Pencils/Pens for students
3. Printed copies of the worksheets for each child
4. Hand lenses for pupils to share (provided in GeoBox)
5. Rock specimens for pupils to observe (provided in GeoBox)

Curriculum Links

- *Comparing and grouping together different kinds of rocks on the basis of their appearance and simple physical properties.*
- *Working scientifically to observe, identify, and classify rocks according to whether they have grains or crystals, and whether they have fossils in them.*
- *Exploring different kinds of rocks and soils, including those in the local environment*

Lesson Outline

Activity	Timings
<p>Part One: Introduction (Slides 1-9)</p> <ol style="list-style-type: none"> 1. What is a rock? Slides 1-2 <ul style="list-style-type: none"> - Ask the students to name any rocks they may know of already. - Go through slides 3-6 - Re-iterate that rocks are important in our everyday lives. 2. Become a Geologist! <ul style="list-style-type: none"> - Go through slide 7 - Slide 8: Worksheet Geology Kit wordsearch - What are the different types of rock? Slide 9 <p>Part Two: Sedimentary Rock (Slides 10-14)</p> <ol style="list-style-type: none"> 1. What is sedimentary rock? <ul style="list-style-type: none"> - Go through the slides 10-12 - Slide 13: play chalk video (first 30 seconds) - Go through slide 14 - Observe the chalk and sandstone provided in the GeoBox. The pupils can take turns with hand lenses to look even closer. <p>If splitting the workshop into two sessions this is the end of session one.</p>	<p>15 mins</p> <p>15 mins</p> <p>15 mins</p> <p>Total: 45 mins</p>
<p>Part Three: Igneous Rock (Slides 15-19)</p> <ol style="list-style-type: none"> 1. What is igneous rock? <ul style="list-style-type: none"> - Go through slide 15-17 - Slide 18: play granite video - Observe the basalt and granite with hand lenses provided in the GeoBox - Slide 19: Worksheet Drawing sheet <p>Part Four: Metamorphic Rock (Slides 20-24)</p> <ol style="list-style-type: none"> 1. What is metamorphic rock? <ul style="list-style-type: none"> - Go through slides 20-21 - Slide 22: play gneiss (pronounced 'nice') video - Go through slide 23 - Observe the gneiss and schist (rhymes with 'fist') with hand lenses - Slide 24: Worksheet True or False 	<p>15 mins</p> <p>15 mins</p>

<p>Part Five: What is this rock? (Slides 25-32)</p> <ul style="list-style-type: none"> - Select a shap granite specimen but do not disclose the name of the specimen to the pupils. - Follow the slides and work through the prompts while observing the rock. - Ask the pupils to write down their guess. - Class discussion 	<p>15 mins</p>
<p>FINAL QUESTIONS / THOUGHTS</p>	<p>5 mins</p> <p>Total: 50 mins</p>

Object Handling Guidelines

1. If not using gloves, please ensure hands are clean and dry.
2. Always handle objects over a table, which has been covered with a soft cloth or a piece of foam. Don't hold objects away from the table.
3. Use two hands to hold the objects: you may want to hold the object in the palm of one hand and use two fingers to gently feel the surface.
4. Only handle one object at a time. Be sure not to hold anything else, such as a pencil, at the same time you are handling an object.
5. Always support the whole object from underneath. Never hold an object by a handle or any part that sticks out, even if it looks like you are meant to use it.
6. Don't pass objects to each other. Pick up the object from the table and return it there after looking, so the next person can pick it up from the table. Be patient, everyone will get a turn.
7. Ensure there is no water or liquids in close proximity to the objects.
8. Treat objects with respect: handle them carefully and gently.

Hazard Identification List for Teachers

NOTE: This sheet does not constitute a full risk assessment. It is the responsibility of the teacher to use this information to compile their own risk assessment about using the GeoBox within a school setting.

Feature	Hazard
<p>The Box</p> <ul style="list-style-type: none"> - Has four compartments which clip onto each other - Has four wheels - The bottom compartment contains rocks that could be heavy and awkward to handle 	<ul style="list-style-type: none"> - Getting fingers caught in the clips and or/compartments - Not clipping all the compartments correctly and they tumble over when being transported - Tripping over the wheels - Musculo-skeletal strain if not lifted carefully
<p>The Rocks</p> <ul style="list-style-type: none"> - Some minerals and fossils provided in the box are quite small - Some of the rock specimens may have sharp or jagged edges - Some of the specimens are quite fragile 	<ul style="list-style-type: none"> - Choking hazard - Easy to drop - Minor injury to hands - If dropped, they could smash into smaller pieces on the floor creating a trip hazard