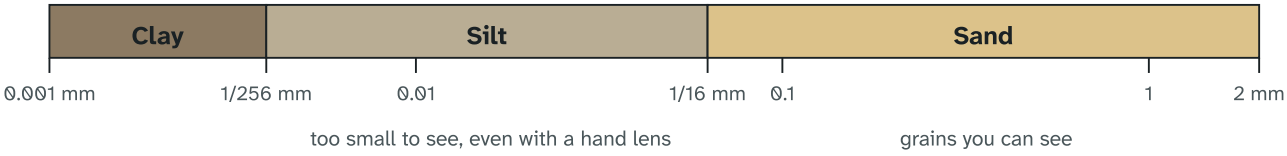
Siltstone, mudstone or shale? Practice sheet.

Name: _____ Class: _____ Date: _____

Use this sheet with the lesson, or with a tray of real specimens and minerals. The specimens and minerals come in a mixed order, as they do in the lesson's rounds.

SCREEN 2 Sand, silt and clay

Sandstone is made of sand, siltstone mostly of silt, and mudstone and shale of silt and clay together.



SCREENS 2 TO 5 Which test tells them apart?

For each pair of look-alikes, write the test that tells them apart and what you would see in each rock.

PAIR OF LOOK-ALIKES	THE TEST THAT TELLS THEM APART	WHAT YOU SEE IN THE FIRST	WHAT YOU SEE IN THE SECOND
Sandstone and siltstone			
Siltstone and mudstone			
Mudstone and shale			
Mudstone and limestone			

SCREEN 5 Colour

A specimen is grey. Which of the five rocks could it be, and why can't colour tell you its name?

_____

_____

_____

SCREENS 1 TO 9

Name the specimens

Each picture shows one of the lesson's 3D specimens, with the results of its tests. Name each one, and write the test that settled it.

Specimen 1



Hand lens: No grains you can pick out, even with the lens. The surface looks fine and even.
Fingernail: Gritty. Your nail catches on tiny grains and leaves no scratch.
Hammer: It breaks into blocks or thick slabs with rough faces.
Acid: No fizz.

Rock: _____ **Test that settled it:** _____

Specimen 2



Hand lens: No grains, but the edges show many thin layers stacked like pages.
Fingernail: Smooth. Your nail slides over it and leaves a pale scratch.
Hammer: It splits into thin flat chips along its layers.
Acid: No fizz.

Rock: _____ **Test that settled it:** _____

Specimen 3



Hand lens: Separate rounded grains, most of them glassy quartz, with darker cement between them.
Fingernail: Gritty, like sandpaper. Your nail rasps over the grains and leaves no scratch, and a few grains rub off.
Hammer: It breaks into rough blocks, and loose grains fall from the broken edges.
Acid: No fizz.

Rock: _____ **Test that settled it:** _____

Specimen 4



Hand lens: No grains you can pick out. The surface is smooth and dull.
Fingernail: Smooth. Your nail slides over it and leaves a pale scratch.
Hammer: It breaks into blocky lumps, not thin plates.
Acid: No fizz.

Rock: _____ **Test that settled it:** _____

Specimen 5



Hand lens: No grains you can pick out, apart from a few tiny pieces of shell.
Fingernail: Smooth. Your nail doesn't scratch it.
Hammer: It breaks into blocks with sharp edges.
Acid: It fizzes: bubbles of carbon dioxide rise from the drop.

Rock: _____ **Test that settled it:** _____

Specimen 6



Hand lens: No grains you can pick out, even with the lens. The surface looks fine and even.
Fingernail: Gritty. Your nail catches on tiny grains and leaves no scratch.
Hammer: It breaks into blocks or thick slabs with rough faces.
Acid: No fizz.

Rock: _____ **Test that settled it:** _____

Specimen 7



Hand lens: No grains you can pick out. The surface is smooth and dull.
Fingernail: Smooth. Your nail slides over it and leaves a pale scratch.
Hammer: It breaks into blocky lumps, not thin plates.
Acid: No fizz.

Rock: _____ **Test that settled it:** _____

Specimen 8



Hand lens: No grains, but the edges show many thin layers stacked like pages.
Fingernail: Smooth. Your nail slides over it and leaves a pale scratch.
Hammer: It splits into thin flat chips along its layers.
Acid: No fizz.

Rock: _____ **Test that settled it:** _____

SCREEN 7

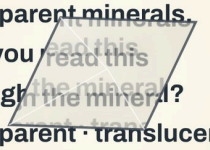
How much light gets through?

Each mineral is drawn on printed words on the lesson's light box. Tick how much light gets through it.



1. Orthoclase feldspar

- ☐ Transparent
- ☐ Translucent
- ☐ Opaque



2. Calcite (Iceland spar)

- ☐ Transparent
- ☐ Translucent
- ☐ Opaque



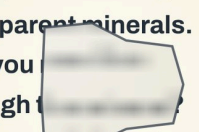
3. Magnetite

- ☐ Transparent
- ☐ Translucent
- ☐ Opaque



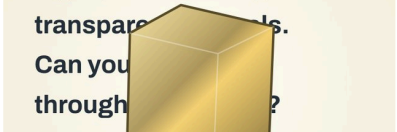
4. Halite (rock salt)

- ☐ Transparent
- ☐ Translucent
- ☐ Opaque



5. Milky quartz

- ☐ Transparent
- ☐ Translucent
- ☐ Opaque



6. Pyrite

- ☐ Transparent
- ☐ Translucent
- ☐ Opaque

SCREEN 7

Lustre

Which minerals on this page are opaque, and what kind of lustre do they have?

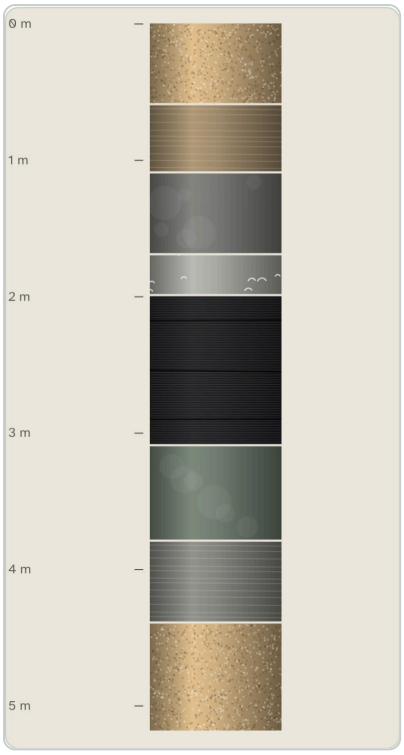
SCREEN 8

Thin sections

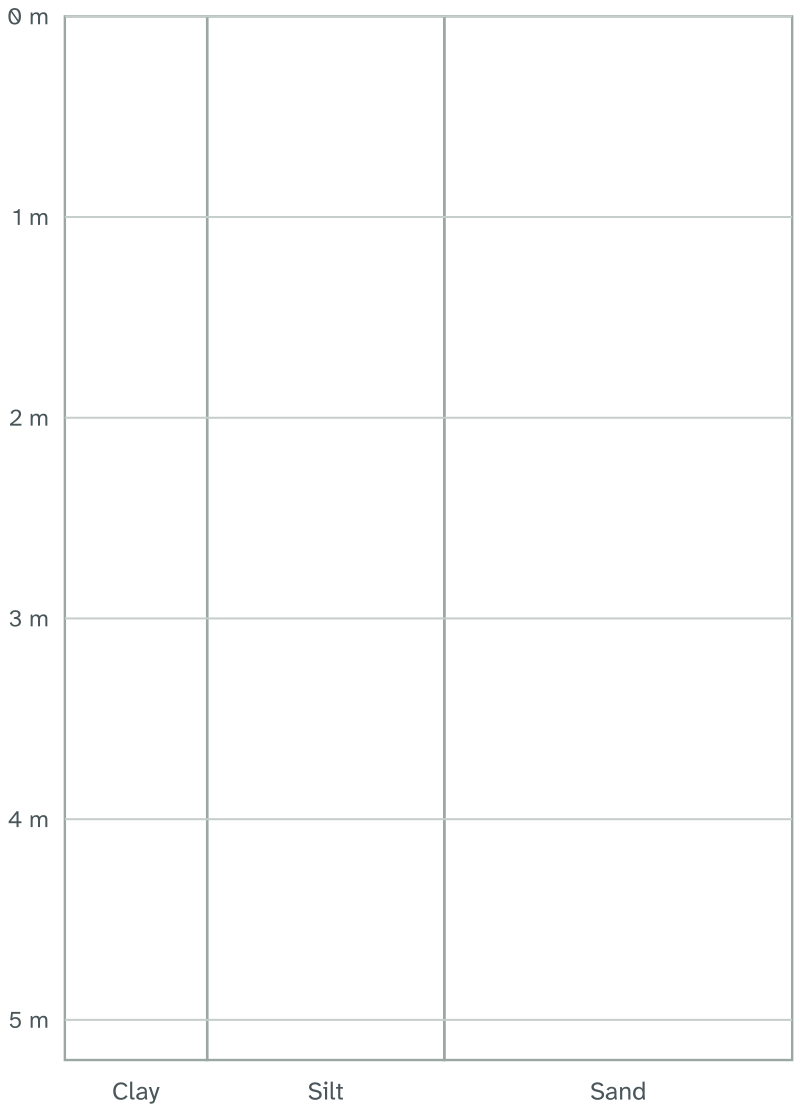
A slab of mudrock 3 mm thick lets almost no light through, but a thin section 0.03 mm thick does. Why? Which minerals still look black in the thin section?

SCREEN 10 Log a drill core

The core is drawn with its bottom, the oldest rock, at the bottom. Name each piece, then draw your log in the grid: a bar for each piece, wider for coarser grains.



The core from screen 10, drawn by the lesson. It is made up.



Write a paragraph that reads the core from the bottom to the top: what each change in rock tells you about how the place changed.

LOOKING BACK

Which test was most useful to you, and which pair of rocks still gives you trouble? What would you practise next?