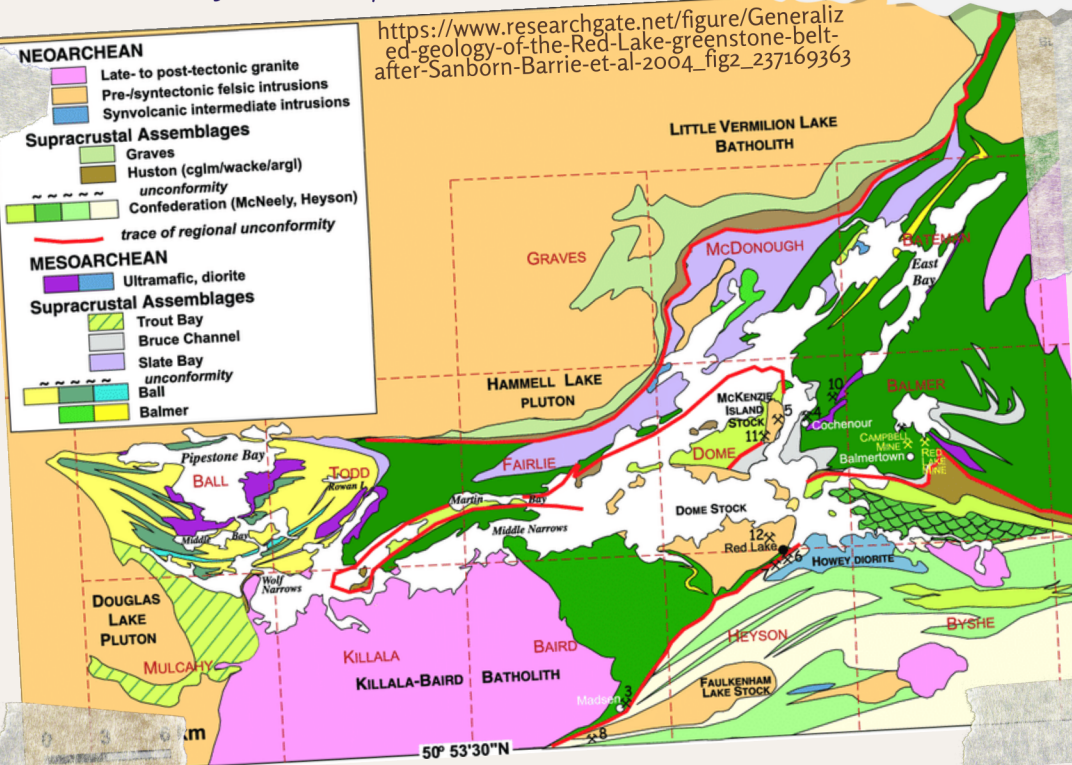




The question:

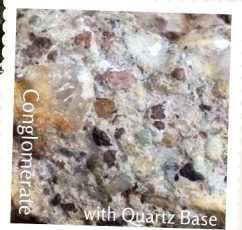
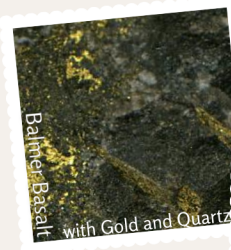
What kind of rocks are
in Red Lake?



Red Lake
is part of the
Canadian Shield,
which is the
remains of an
ancient mountain
range formed
deep underwater.

Billions of years ago, a major mountain-building event happened. Some volcanic rocks were pushed upwards, while others were pushed several kilometres down into the earth's crust. At these depths, the rocks were subjected to high heat, pressure and hot, circulating, mineral-rich water, causing them to change. As the hot water rose, it cooled and deposited trace elements (like quartz and metals like gold) through the faults and cracks in the rocks.

<https://www.redlakemuseum.com/red-lake-geology.html>



Let's try! What questions should you ask to identify a rock you've found?

What colour is the rock?



Colour may indicate the presence of certain minerals or even how a rock was made.

Where did you find the rock?



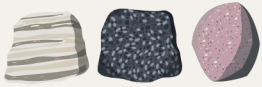
Rocks in natural areas will reflect local geology, but people often bring in rocks for gardens or building.

What other rocks are nearby?



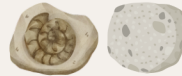
Rocks formed by similar methods are often found together. ie. obsidian and pumice are both created during volcanic eruptions

Is there a pattern or design?



Markings may be crystals or layers of materials from when the rock was created.

Does the rock have inclusions?



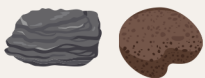
Some rocks may have pieces of other rocks or minerals, and some will have organic pieces or fossils.

Are there any unique features?



Floats in water? Magnetic? Peels like paper? Glows under a UV light?

What does it feel like?



Bumps and lumps? Powdery? Smooth? Holes? Striation (stripes you feel)? Texture is another clue to how it was made.

How shiny is it? Is it see-through?

When it comes to minerals and rocks, not only if something is shiny but the way it is shiny can give a clue. The same is true for transparency.

Once you have an idea of how to describe your rock, you can use a book or a reliable website to compare your clues to known samples.

Some sites we like are:

Rockhoundresource.com

Geology.com

Mindat.org

Is your rock actually a mineral?



Mineral properties are more strongly defined as they are only one substance where rocks are a combination of several minerals. However, if you think your rock is a mineral or has a lot of a certain mineral, some mineral tests might be able to help you decide.

Check the next page for mineral tests!

Let's try! What tests can I use to identify minerals?

Luster how reflective the specimen is (before polishing)



Hardness how difficult is it to scratch the specimen

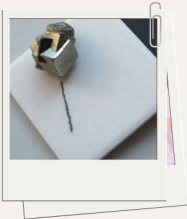


This is a Moh's Hardness Test. The hardness of minerals is found by testing them against each other. Higher numbers should be able to scratch lower numbers but not the other way around. Lower numbers (or softer) specimen may even break if trying to scratch a harder one, leaving a powder. Equally hard specimen may lightly mark each other or do nothing.

Streak the mineral's colour in powder form

If you have ever used a white garden stone to draw on the sidewalk, you have (unintentionally) done a streak test! Many minerals may look similar to other minerals, or even have multiple crystal systems that can change their appearance. However, the powder colour is always the same. That's why a streak test is important.

Use a piece that is cleaned or recently broken. Press and drag your mineral in a line along an unglazed porcelain tile. The pressure should be similar to trying to write darkly in pencil. It should leave a streak of colour that can help you in identification. No streak is a sign of a very hard mineral.



Specific Gravity the density, or how much matter is contained in the specimen

$$D^{\text{density (g/mL)}} = \frac{M^{\text{mass (in grams)}}}{V^{\text{volume (in milliliters)}}$$



Find mass by measuring the specimen on a scale.

Find volume by displacing water. Use a measuring cup marked in 10 mL (or smaller) increments. Fill to half full with water and measure. Add the specimen to the water and measure the new number. Subtract the first number from the second to get your volume.

Crystal System the lattice or shape of a crystals form

Isometric	Tetragonal	Orthorhombic	Monoclinic	Triclinic	Hexagonal	Trigonal
Fluorite	Wulfenite	Tanzanite	Azurite	Amazonite	Emerald	Rhodochrosite

GeologyIn.com

Geologists don't call crystals "cubes" or "prisms" they use special terms based on the connection sites of the molecules.

Don't worry if it seems confusing. Even just knowing it has a crystal form will help you know it's a mineral!

With the info you now have, try a book or website to find your mineral.

minerals-identify.com

Was a particularly cool search tool that we found.