



Image source: NASA

Searching for Space Rocks

What is a meteorite? It's a rock from space! Just like Earth rocks, meteorites can come in a variety of shapes and sizes, and can be made of many different materials—but that doesn't mean they're the same as the "ordinary" rocks found on our planet. Because they form far away in space, meteorites have unique qualities that make them unlike anything else on Earth. So, how do you tell the difference between an Earth rock and a meteorite? Let's find out!

Materials

Streak plate (or unglazed porcelain tile)
Magnet
4 rock samples
Results sheet (page 4)
Pencil

Directions

1. **Collect** samples of rocks to study.
 - a. **Ask yourself** what you think a meteorite could look like.
 - b. **Collect** at least *two rocks* that you think look like meteorites, and at least *two rocks* that you think look like Earth rocks. Your samples should be small enough to pick up and handle easily, and shouldn't include any sharp edges or other hazards.
 - c. **Assign** each of your samples a number to help you keep track of which one is which.



2. **Study** your samples by putting them through the following series of tests. Use the "Results" sheet on page 4 to record your observations.
 - a. Appearance: Look at the rock closely. What color is it? What shape? Is it rough or smooth? Does it contain any crystals, layers, veins, holes, or smaller rocks?
 - b. Weight: How heavy does your rock feel? Compare it to another rock the same size. Does it feel heavier or lighter?
 - c. Streak: Drag your rock across your streak plate like you're trying to draw a line. Does the rock leave a streak behind? If so, what color is the streak?
 - d. Magnet Test: Hold a magnet against the rock. Does the magnet stick?
3. **Evaluate** your results to see what they say about where each sample came from.
 - a. Appearance: Most meteorites are dark brown or black, sometimes with rusty red patches. Some meteors have unique shapes called regmaglypts, which look like smooth thumbprint-sized indentations. Meteorites are not likely to have crystals, layers, veins, or holes. They are also not likely to be colors like white, tan, or gray.
 - b. Weight: Meteorites are made of dense materials like metal, making them heavier than most Earth rocks.
 - c. Streak: Meteorites will not usually leave a streak, but some Earth rocks will.
 - d. Magnet Test: Meteorites almost always contain the metals iron and nickel, which will cause a magnet to stick to them. Some Earth rocks also contain these metals, while others do not.

Conclusion

Did any of your samples pass the test? If so, does that mean you've found a meteor?

It's possible! But keep in mind that some Earth rocks have a lot in common with meteors, enough to pass the same tests. Because meteorites are so rare, it's more common to find look-alikes from Earth (sometimes jokingly called meteor-wrongs) than it is to find real meteorites.

While this activity can't tell you for sure if you've found a meteorite, it can help you learn about the rocks you've collected.

By now you've probably identified several rocks among your samples that can't be meteorites, but plenty of Earth rocks have their own interesting features and stories. Do you think you can identify which kinds of Earth rocks you've collected? If you want to investigate further, you can learn a lot from books and online references, and you can learn even more by continuing to explore the world around you.

Results

Appearance

Specimen #	Observations

Weight

Specimen #	Observations

Streak

Specimen #	Observations

Magnet Test

Specimen #	Observations