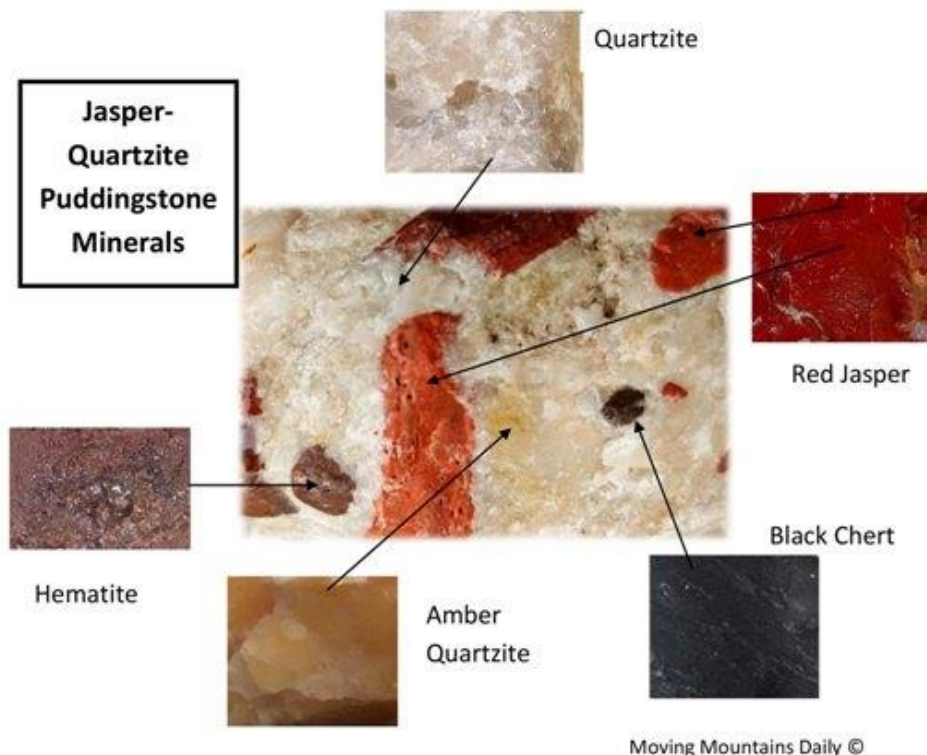


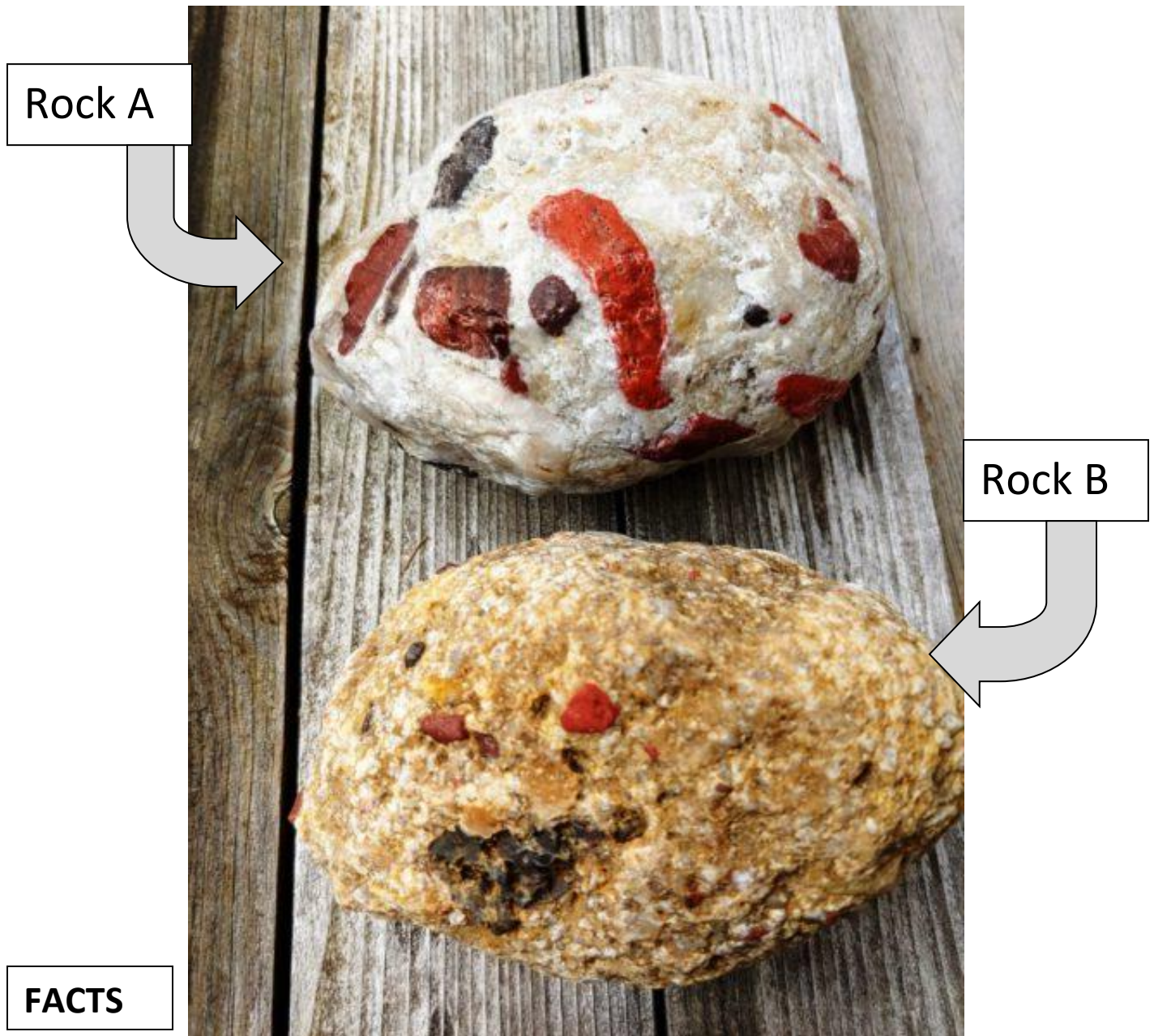
THE PUDDINGSTONE MYSTERY



The Jasper-Quartzite Pebble Puddingstone is native to the northern area of the Canadian province of Ontario. It is considered a conglomerate because of the large size clasts that formed within this sedimentary rock. It would have begun life in a riverbed and contains large pebbles of red jasper, black chert, white quartzite, hematite, and semi-transparent quartz. When the water evaporated, the clasts were cemented together by a large grain quartzite.



Here are two different Jasper-Quartzite Puddingstones. Both stones have very different stories. Your job is to look at the facts and determine its travel story and how the stone was affected.



Rock A

Rock B

FACTS

One of these Puddingstones was found in Southeast Indiana, in a river.
The other was found in Lake Huron, Michigan.
Both were found in two feet of water.
There are no saltwater sources in Indiana or Michigan, so that would not be a factor!
Both water sources would have had some sort of water movement.
Both rocks were transported and deposited by glaciers.

More of the story: The Ice Sheet

When the Laurentide continental ice sheet from Canada flowed southward, it stripped Canada of its topsoil, polished the bedrock that was left behind, then it scraped and gouged out the Great Lakes. Lateral moraines were left around the rim of Michigan's five lakes. The topsoil from Canada and all the soil removed to form the Great Lakes was deposited to form the fertile farmlands in the midwest. The glacier traversed as far south as Ohio and Kentucky. Glacial till was deposited during the advances and retreats of the glacier. The travels of each rock began in Ontario, Canada. They both took a wild ride on a glacier AND each was deposited in different places.



Using scientific deduction, your job is to decide which rock was deposited in Michigan and which came to rest in Southeast Indiana – and maybe a little bit about what happened in between.

Knowing the facts, and seeing the rocks, and map, what are your thoughts?

You might consider rock texture, size, and appearance. You might consider the two types of water sources. You might consider where the rock started and ended.

I can tell that Rock #1 was deposited in _____ because _____

I can tell that Rock #2 was deposited in _____ because _____

Need some extra help?

What can we deduct using our scientific reasoning?

We know that:

- Both rocks started their life cycle in a river, in Northern Ontario.
- The Glaciers are the reason that both Canadian Puddingstones were found in the USA.
- Glaciers are not very gentle on rocks or landscape.
- The SE Indiana Puddingstone was transported a longer distance by the glacier.
- One rock was in a Michigan Great Lake.
- The Indiana Rock was in a river.
- Moving water is a cause for erosion and weathering.
- The ability to cause erosion is affected by the velocity, or speed of water.
- The river rock would have had continual, downhill water movement.
- The river rock would have collided with other rocks.
- The river rock was covered in silt.
- The lake rock would have had to endure being rolled around in waves.
- The lake rock might have had coastal freezing and thawing due to its northern location.
- The lake rock was subjected to abrasive sanding, by sand. (This would be like rubbing a rock with sandpaper)