



## curriculum links

### Grade 4:

- Science and Technology  
*Understanding Earth and Space Systems: Rocks and Minerals*
- Social Sciences  
*Canada and World Connections:  
Canada's Provinces, Territories, and Regions*



## overview

This activity helps teach children about rocks, minerals, and water and how they all interact. Children will study the classification of rocks, how they are formed, and how rocks, minerals and sediment influence our water resources.

## grade 4 expectations

### Understanding Earth and Space Systems Rocks and Minerals

#### Overall Expectations

- ◆ Assess the social and environmental impacts of human uses of rocks and minerals;
- ◆ Investigate, test and compare the physical properties of rocks and minerals;
- ◆ Demonstrate an understanding of the physical properties of rocks and minerals.

#### Specific Expectations

##### *Developing Investigation and Communication Skills*

- ◆ Use a variety of criteria to classify common rocks and minerals according to their characteristics.

##### *Understanding Basic Concepts*

- ◆ Describe the difference between rocks and minerals and explain how these differences determine how they are used.
- ◆ Describe how igneous, sedimentary, and metamorphic rocks are formed.
- ◆ Describe the characteristics of the three classes of rocks and explain how their



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# Rock On!



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characteristics are related to their origin.

## Canada and World Connections Canada's Provinces, Territories, and Regions

### Overall Expectations

- Use a variety of resources and tools to determine the influence of physical factors on the economies and cultures of Ontario and the other provinces and territories.

### Specific Expectations

#### *Knowledge and Understanding*

- Identify the physical regions of Ontario and describe their characteristics (i.e. the escarpment)

#### *Inquiry/Research and Communication Skills*

- Use appropriate vocabulary to describe their inquiries and observations.

#### *Application*

- Identify and describe a cause-and-effect relationship between the environment and the economy in a province or territory (e.g., mining certain minerals can allow the mixing with groundwater, potentially causing health issues).

## Key Terms

**Recharge Area:** an area of high elevation such as on a hill where water enters the ground.

**Water Table:** The water table lies between the soil that is filled with water and the soil that is filled with air. The water table is higher at a recharge point and slopes down toward the discharge point in the direction of groundwater flow.

**Igneous Rock:** are formed by magma as it cools near the surface of the earth. They form within fractures in the earth's crust and cool slowly, tending to have larger mineral crystals.

**Sedimentary Rock:** form when layers of sediment are compressed together. These layers can be made of rock fragments, the remains or products of animals, such as shells or plants, and often have fossils.

**Metamorphic Rock:** igneous or sedimentary rocks that have been exposed to high temperatures and/or pressures and are transformed.

