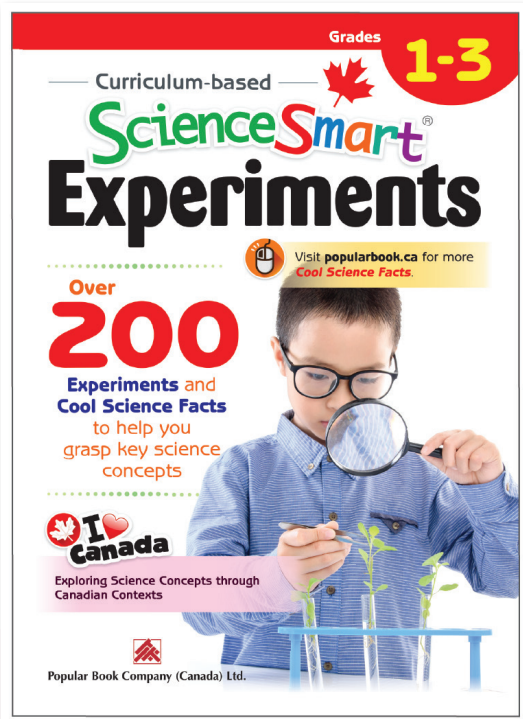


# Curriculum-based ScienceSmart Experiments

**Available  
Now!**



## **Curriculum-based ScienceSmart Experiments**

covers level-appropriate experiments and cool science facts to help Grades 1 to 6 children consolidate and master what they have learned at school. With the clear instructions and guidelines, children can experience different science concepts by working through the fascinating experiments. The “Cool Science Facts”, “Scientists at Work”, and “I Love Canada” sections provide fun facts and interesting elements to allow children to explore science concepts through Canadian contexts. Online support is available to provide more cool science facts and trivia to further stimulate children’s interest in learning and exploring science.

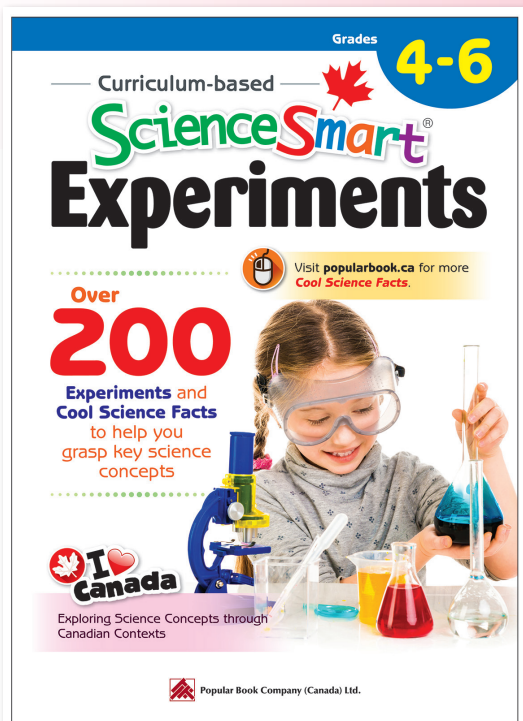
Grades 1 – 3    978-1-77149-224-9

Grades 4 – 6    978-1-77149-225-6

Full Colour • Perfect Bound

7½" X 10½" • 216 Pages

**CAD\$24.95 each**



## **Features:**

- Canadian curriculum-based content with Canadian contexts
- family friendly, with step-by-step instructions for experiments that can be done using household items
- expands children’s scientific knowledge on chemistry, physics, and biology
- bonus online materials to support learning content

grade indicator

curriculum-based content

experiment with clear step-by-step instructions

Grade 4 D1 Understanding Earth and Space Systems – Rocks and Minerals

## VOLCANO – a violent explosion

Volcanoes are classified as active, dormant, or extinct depending on several factors, such as the frequency of volcanic activity and the composition of the volcanoes. Volcanic eruptions can have devastating effect on people and the environment, but they can also have positive impacts on an area, such as bringing rich, fertile soil and creating new islands.

**What you need:**

- 2 teaspoons of baking soda
- 1/2 cup of cooking vinegar
- a plastic bottle
- clay
- a container
- 5 drops of red food colouring

**What to do:**

- Put some clay around the plastic bottle in the shape of a volcano. You can paint it brown and paint some trees on it to make it look more realistic.
- Put the baking soda in the bottle.
- Pour the cooking vinegar into the container till it is half full.
- Add the food colouring and mix it with the vinegar.
- Pour the mixture into the bottle.
- Watch as your volcano erupts.

**Difficulty:** 1 2 3 4 5

**Time needed:** 1-2 hours

This experiment can help you understand why volcanoes erupt. You will also learn about how igneous rock is formed.

**WHAT happened!**

The baking soda and cooking vinegar react to form carbonic acid, which is an unstable substance. It breaks apart into water and carbon dioxide, shooting out from the bottle as magma does in a volcano.

**Why do volcanoes erupt?**

Magma is liquid rock inside a volcano. When pressure builds up, the magma searches for weak spots on the Earth's surface and shoots out in the form of red, hot lava.

**I Love Canada**

Mount Edziza is a volcano located in British Columbia – its last eruption was about 1000 years ago. Mount Edziza consists of igneous rocks.

Igneous rock, one of the three classes of rocks, is formed when lava cools and hardens on or below the Earth's surface. You may visit [www.popularbook.ca](http://www.popularbook.ca) to learn more about the three classes of rocks.

online support

"I Love Canada" section with Canadian contexts

"Cool Science Facts" section

Grade 3 Cool Science Facts Understanding Earth and Space Systems – Soils in the Environment

- Do you know that sand makes sound?
- Can you take a bath in sand?
- What makes the mud from the Dead Sea different from other mud?
- Are there any plants on the moon?
- Pottery is made of clay. Then, what is glass made of?

Find the answers on the next page.

**3**

**Dead Sea**

Due to the evaporation of water in the Dead Sea, over thousands of years, the salt and have been absorbed into the mud as the body of water is drying out. The mud has higher mineral content and salt than other muds.

**4**

There is no air or water, the two essential things that plants need, on the moon. Hence, there are no plants on the moon.

**5**

Sand is an ingredient used to make glass.

**The Pedologist**

Do you like to dig in the dirt and examine the soil's colour, texture, and inhabitants? If so, you may be interested in pedology. Pedology is an area of science concerned with studying soils. It is the study of how living things interact with the soil and how human activities affect soil. Pedologists study soil properties, how soil is formed, how living things interact with the soil, and how human activities affect soil. They classify soil, examine the effects of pollution on it, and decide how to maintain good soil conditions for the benefit of plant life and for agriculture. Many pedologists work in the fields of agriculture and ecology.

Vasily Dokuchaev was a Russian scientist born in 1846. He created the first soil classification system by studying how different soils were formed and why they were different. He then wrote about the information down so others could use it to classify soil. He is considered by many to be the father of pedology.

**5**

Sand is an ingredient used to make glass.

**How glass is made:**

Ingredients: sand, soda, lime

Process: melted mixture (molten glass) → furnace → hollow tube → a glob of molten glass → glass-blower

"Scientists at Work" section

To access marketing materials, please visit [www.popularbook.ca/marketing](http://www.popularbook.ca/marketing).