

## Section 4

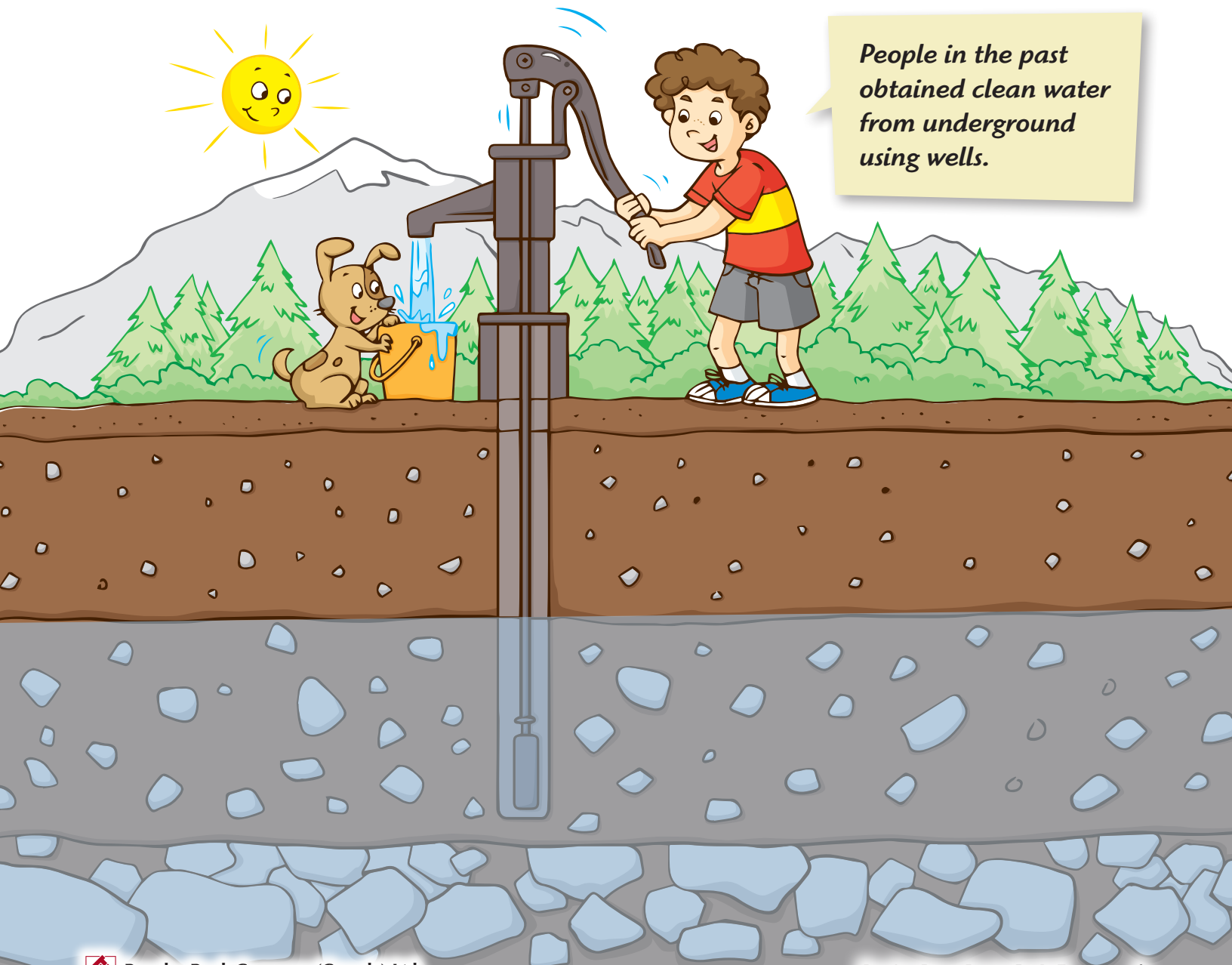
### Understanding Earth and Space Systems

#### EXPLORATION 2

## Nature's Water Filter

Discover how soil filters water.

Water can help us clean dirty things, but what can help us make water clean? You might be surprised to learn that seemingly dark and dirty soil, including rocks and gravels, is a natural water filter. It has the power to remove dirt from water and provide us with clean water to use. Do you know how soil cleans water?



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# Nature's Water Filter

In this experiment, you will learn how soil acts as a natural water filter.

**Level of  
Difficulty:**

**moderate**

**Time  
Needed:**

**1 hour**

## Hypothesis:

**Circle the word to show your hypothesis.**

Soil **can / cannot** be used to filter water.

## Materials:

- 2-L bottle
- water
- sand
- crushed stones
- a coffee filter
- pea gravel
- potting soil

## Steps:

1. With the help of an adult, cut the plastic bottle in half. Turn the top half upside down to create a funnel and put it onto the bottom half.
2. Place the coffee filter into the funnel.
3. Pour the sand, the pea gravel, and then the crushed stones into the funnel to create a water filter.
4. Mix the potting soil with the water to create dirty water.
5. Pour the dirty water slowly into the filter.
6. Observe the filtered water.
7. Pour the filtered water into the filter again. Observe the filtered water again.

*Use one cup of each type of rock – sand, pea gravel, and crushed stones.*



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### Conclusion:

**Circle the correct words after conducting the experiment.**

The dirty water **became / did not become** cleaner after it passed through the layers of soil.

My hypothesis was **correct / incorrect** .

### Explanation:

The more times the dirty water went through the filter, the cleaner the water became. This happened because of the gaps and spaces among the stones, gravel, and sand. When the dirty water passed through the layers, some of the potting soil got trapped in these spaces. Therefore, the filtered water became cleaner than before.

In nature, the same process happens as well but on a much larger scale. As rainwater seeps into the ground, different layers of soil filter out things of different sizes from the water. When water keeps seeping deeper into the ground, it may eventually reach solid, dense rocks where it collects and forms an underground reservoir.

