



Building Community®

Be Water Wise Teacher's Guide

Introduction

Be Water Wise is a coloring and activity book that explains water science concepts and presents ways to save water in daily life. The colorful illustrations engage students while introducing them to key water science concepts such as the three states of water and the water cycle. This teacher's guide contains vocabulary, suggestions for classroom discussions, and further classroom activities for each page in the booklet.

Standards

The book supports multiple state science standards in physical, earth, and life sciences. Specific standards pertain to the three states of matter, water as basic earth material, natural resources, and living things and the environment.

Vocabulary

cycle – any complete round of occurrences that repeats or is repeated (p.3)

precipitation – water that falls to earth as rain, snow, or hail (p. 3)

evaporate – to change from a liquid to a gas state as happens to water when heated by the sun (p. 3)

transportation – a method for getting from one place to another

crops – food grown on a farm or in a garden (p. 4)

recycle – to process or adapt so as to make suitable for reuse (p. 7)

Cover Page

Explain to children that this booklet contains important information about water: how we use it in our lives, how it exists in nature, and the importance of saving it.

Ask students the following about the cover illustration:

- How many forms of water can you see? (*three: solid in the snow, liquid in the ocean, and vapor/gas in the clouds*)
- How many children are there? (*six*)
- Why do you think the farm is included in the picture? (*to grow our food we need water, shown in the gray irrigation pipes*)
- How many ways that people use water are shown? (*four: sailing, fishing, swimming, irrigating crops*)

Explain that people use water in many ways, both for survival (such as growing food) and for pleasure (such as swimming and boating). The picture shows water in several forms: the water in the ocean, the clouds in gas form, and the snow in a frozen (solid) form.

Page 2

Read and explain the sentence at the top of the page. Have the students color all the water in the drawings in blue.

Ask students the following about the illustrations.

- What form of water is shown coming out of the teakettle? (*gas*)
- What form of water is shown in the picture with the girl? (*liquid*)
- What form of water is shown in the third picture? (*solid*)
- What is happening to the ice cube that is outside the tray? (*It is changing forms from solid to liquid through melting.*)
- What does this say about the forms of water? (*They can change from one to the other.*)

Explain the features of water, the forms it can take, and where we find it in our environment. Ask the students how they use and experience water in its various forms in their daily lives, including their play/vacations.

Page 3

Read and explain the sentence at the top of the page. Explain that water moves in a continuous cycle, known as the water cycle, moving from the sky to earth and back again to the sky. (See User Notes.) Have the students color the illustration as indicated. As they do so, explain how the drawing shows this cycle. Tell the students to leave the top of the mountains white, where the snow is.

Ask students the following about the illustration.

- What makes the water rise up from the ocean toward the clouds? (*evaporation*)
- What role does the sun play in this cycle? (*The heat from it causes water to evaporate.*)
- What causes the rivers flowing down the mountains? (*melting snow flowing downhill*)
- What state of water is in the clouds? (*gas, also called vapor*)
- What state of water shown on the previous page is similar to the state in the clouds? (*steam coming from the kettle*)

Ask students if they can think of an example of another one of nature's cycles, where things are continually changing and flowing in a repeating circle. (*the seasons*)

Page 4

Read the question at the top of the page and have students circle the items that use water. Explain that this page illustrates some of the ways people use water in their lives, the way the cover drawing did.

Ask students the following about the illustrations.

- What are the various ways humans use boats on water? (*Answers will vary, but include: for recreation, like sailing, kayaking, canoeing, or river rafting; for transportation, such as a ferry or steamship to transport people or cargo; for fishing.*)
- What are some other water activities besides boating that people enjoy? (*Answers will vary, but include: waterskiing, wind surfing, snorkeling, scuba diving, swimming, inner tubing.*)
- Ask students if they have gardens at home. How are they watered? (*Answers will vary, but include: by hose or drip system.*) What happens if the plants aren't watered? (*They die.*)
- The girl and the doll are in the same position, but what is different about them? (*The doll doesn't need water to exist, but the girl does.*)

Tell students that our bodies are made up of about 60% water. There is a direct connection between water and life, both plant and human. Life on this planet as we know it could not exist without water.

Page 5

Explain to children that this page shows more ways that people use water, both at home in daily tasks, and for fun. Read the question at the top of the page and have students circle the drop of water in each picture.

After they have finished the activity, invite students to share what the water-use activity is in each picture.

- Top left: *bathing*
- Middle left: *drinking*
- Bottom left: *sailing*
- Top right: *cooking*
- Middle right: *cleaning*
- Bottom right: *swimming*

After reading the User Notes, ask students if they can think of any other ways we use water in our lives that haven't been mentioned yet. (*Answers will vary, but include: washing clothes, brushing teeth, flushing the toilet, and washing the car.*)

Page 6

Read the question at the top of the page and have students complete the activity. Explain that many people, and other forms of life, rely on water for their life or their work.

Ask children to share what or who is benefitting from water in each picture.

- Top left: *the fish need to live in water to survive; the boy enjoys the fish*
- Top right: *the people whose house is on fire need water to put out the fire; the fireman needs water to do his job*
- Bottom left: *the plants grow from the water distributed by the irrigation pipes; the farmers earn their living growing the crops*
- Bottom right: *the dogs need water to survive; their owners enjoy having healthy, happy dogs*

Page 7

Stress to students that water is a precious natural resource that we need to conserve and not waste so that the planet's supply can meet everyone's needs. Read the statement at the top of the page and have children complete the activity.

Ask children the following questions about the water-saving tips conveyed by the illustrations.

- What message is indicated by the first row of pictures? (*A dripping tap wastes water.*)
- What message is shown by the second row of pictures? (*The middle drawing shows a washer with more clothes in it, and this is the best way to wash clothes because washing smaller loads wastes water.*)
- What message does the third row of pictures show? (*Don't let the bathtub faucet drip; it wastes water.*)

Discuss with children that with the world population growing and with drought climate in some places, some people don't have enough water to meet their basic needs. For this reason, it helps both people and the planet to save water whenever possible. Tell students it is important they and their families do their part to save water at home by following the tips suggested on this page.

Page 8

Here are some more ways that children and their families can save water in their daily lives. Read the statement at the top of the page and have the students complete the activity.

Ask children the following questions about the water-saving messages conveyed by the illustrations.

- What message is indicated by the first row of pictures? *The picture on the right shows the children wasting water by leaving the hose running while they soap the car. The picture on the left shows the boy saving water by turning off the hose before they scrub.*

- What message is indicated by the second row of pictures? *The picture on the right shows water wasted in two ways: by the sprinkler running onto the sidewalk; and with the sprinkler running midday, when the sun is higher and can evaporate the water. The picture on the left shows water saved in two ways: the smaller sprinkler doesn't spill onto the sidewalk; and the lawn being watered in early morning prevents the sun's heat from evaporating it.*
- *BONUS QUESTION: In what other ways, not stated in the text, do the two pictures on the bottom row show saving water (on the left) and wasting water (on the right)? The small lawn at left means less water is needed, as the rest of the yard is a "drought tolerant" landscape, which needs less water; The full-sized lawn at right wastes water as it takes a lot of water to keep it growing.*