Click® Teacher Guide: September 2017

BE A SCIENTIST

Students explore what it means to be a scientist. They will look for elements of science as they read how fictional characters test out solutions and apply science thinking. They will also hear from an anthropologist who explains how she uses science to study monkeys.

CONVERSATION QUESTION

How can we study things as scientists do?

TEACHING OBJECTIVES

- **Students will learn about the lives of scientists**
- **Students will learn about the scientific method**
- **Students will read and analyze nonfiction articles**
- **Students will obtain, evaluate, and communicate information**
- **Students will plan and carry out investigations**
- **Students will ask science questions**

In addition to supplemental materials focused on core STEM skills, this flexible teaching tool offers vocabulary-building activities, questions for discussion, and cross-curricular activities.

SELECTIONS

- **Ben, the Bubble Scientist**

Fiction, ~550L

- **Meet a Scientist**

Interview, ~650L

- **The Great Scientific Cookie Caper**

Fiction, ~550L

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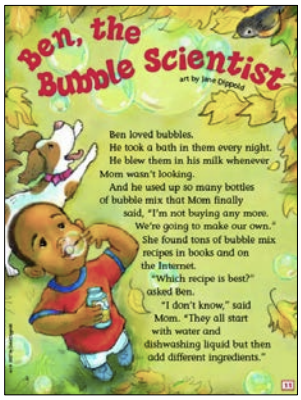
Ben, the Bubble Scientist

pp. 11–13, Fiction

What fun to blow bubbles! But when Ben and his mom run out of bubble soap, they use science to come up with their own solutions. Use this story to help students see how science can be used in everyday situations.

Lexile Score: ~550L



RESOURCES

- Ben's Bubbles Graphic Organizer
- The Bubble Experiment Graphic Organizer

OBJECTIVES

- Students will read and analyze a nonfiction article
- Students will obtain, evaluate, and communicate information
- Students will plan and carry out investigations

KEY VOCABULARY

***ingredients* (p. 11)** the things that are used in a recipe to make something
***experiment* (p. 12)** a scientific test that uses a series of actions and carefully observed results
***mixtures* (p. 12)** combinations of different things

ENGAGE

Conversation Question: How can we study things as scientists do?

Invite students to look at the first page of the story and share their experiences blowing bubbles as shown. Use a small bottle of bubble soap and wand and ask volunteers to demonstrate how to blow bubbles. Explain that this is a small bottle of bubble mixture and won't last long. Share that in the story, Ben and his mother use science to invent ways to make their own bubble mixture. Ask students to share how science might be used in this story.

INTRODUCE VOCABULARY

Write the vocabulary words where they are visible to the class. Together, read the words aloud. Ask volunteers to share possible meanings. Acknowledge correct meanings, and then have students examine the illustrations in the story to point out examples of each word with a partner.

READ & DISCUSS

Ask students to point out how science is used in the story. Have them use the illustrations and text to explain with examples. Use the following prompts in the discussion:

- What were Ben and his mother trying to find out?
- In what ways was this bubble fun an experiment?
- What results do you expect from the experiment?

CONCEPT FOCUS: OBTAIN INFORMATION

INSTRUCT: Eight cups of mixtures is a lot to keep track of. Ask students what Ben could do to record the results of his experiment. Use *Ben's Bubbles* organizer for students to help Ben out. With a partner, students fill in the missing ingredients that were used in the story.

Next, have students predict what the bubbles might look like from each of the mixtures.

ASSESS: Review the students' charts to see if they include the eight different cup ingredients and that their predictions are sensible.

EXTEND

Science Have students work in groups to conduct their own bubble experiment. Use the same bubble mixture and procedure as described in the story. Have students record and evaluate their results using *The Bubble Experiment* organizer. Each group will then communicate their findings to the class.

Ben's Bubbles

Scientists conduct experiments to try and answer their questions about what they are studying. What question did Ben and his mother have about bubbles?

_____

Look for the ingredients that were used in their cups. Predict how you think the bubbles might turn out.

Cup	Ingredients	Quality of Bubbles Prediction
1	Dishwashing soap and water	
2		
3		
4		
5		
6		
7		
8		

Ben, the Bubble Scientist

The Bubble Experiment

Scientists conduct experiments to try and answer their questions about what they are studying. What question do you have about bubble mixtures?

_____

Cup	Ingredients	Quality of Bubbles
1	Dishwashing soap and water	
2		
3		
4		
5		
6		
7		
8		

Review your results. What can you conclude from the bubble experiment?

Results:

Conclusion:

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Meet a Scientist

pp. 14–19, Interview

An interview of anthropologist, Dr. Erin P. Riley, provides a view into the everyday work of a scientist's work in the jungle. Use this interview to help students ask and answer questions about the science process.

Lexile Score: ~650L

OBJECTIVES

- Students will read and analyze an interview
- Students will ask science questions
- Students will obtain, evaluate, and communicate information

KEY VOCABULARY

anthropologist (p.14) a scientist who studies the ways humans, apes, and monkeys live now and in the past

***habituated* (p.15)** to cause (a person or animal) to become familiar with particular place or situation

***observation* (p.18)** the activity of paying close attention to something to get information

ENGAGE

Conversation Question: How can we study things like scientists?

Introduce the article by showing students a map of Indonesia and zooming into the island of Sulawesi. Explain that they will be reading an interview of a scientist on this island who studies a special kind of monkey. Have students share what they imagine it is like on this island and what they hope to find out from the interview.

INTRODUCE VOCABULARY

Together, review the vocabulary words and read them aloud. Have students copy each word, and then scan the article with a partner to locate the words. Using context clues students suggest a definition. Finally, students look up the word and correct any of their misconceptions.

READ & DISCUSS

After students read the article, lead a class discussion about what they learned about being a scientist from the interview. Ask students to look for and point out the characteristics of a scientist found in the interview. Have them use examples so support their ideas. For example, they might state that a scientist asks questions, and then use evidence on page 17 to support their idea.

CONCEPT FOCUS: ASK QUESTIONS

INSTRUCT: Review how interviewers use questions to gain information. Have students analyze the questions in the interview. Explain how good interview questions allow the person to talk and explain, rather than giving a one word answer. Point out how the second question, "Why not?", is a follow-up question to find out more details. Have students share examples of open-ended and follow-up questions in the interview.

Ask students to think of the three other questions they would ask Erin Riley.

ASSESS: Review the students' questions to see if they are relevant to the topic and constructed as either open-ended or follow-up questions.

EXTEND

Language Arts Students write a narrative pretending to be an assistant to Erin Riley on the island of Sulawesi. Have them write in first person using details gained from the article as a basis for what activities they are doing and how they are assisting with the scientific study. Encourage creativity as they make observation about the monkey's behavior.

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The Great Scientific Cookie Caper

pp. 27–33, Fiction

The children in this story find out that the kitchen is full of science possibilities. Use this story to demonstrate how science thinking is a part of inventive cooking.

Lexile Score: ~550L


The Great Scientific Cookie Caper

by Susan Yoder Ackerman
art by Paige Billin-Frye

"There's smoke pouring out of the oven!" Lucas yelled.

"Aaaa!" Grandma grabbed potholders and pulled out a smoking tray of blackened cookies. "I got distracted and forgot to set the timer again."

"We can't eat these!" squealed Samia.

"You're right," Grandma agreed as she scraped the burnt cookies into the trash. "But don't look so sad. We can make another batch of chocolate chip cookies. It won't take long!"

"Yum! Will they be puffy and soft and gooey in the middle? That's my favorite," said Samia.

"I like mine flatter and crispier," said Lucas.

"Well, I'm never sure how my cookies will turn out, especially when I get distracted," said Grandma. "I guess we'll just have to take our chances."

RESOURCES

- Cookie Caper Experiment Graphic Organizer

OBJECTIVES

- Students will read and analyze a nonfiction article
- Students will obtain, evaluate, and communicate information
- Students will plan and carry out investigations

KEY VOCABULARY

experiment (p.28) a test that uses a series of actions and carefully observed results

***scientifically* (p.28)** done in an organized way that agrees with the methods and principles of science

***control* (p.28)** a sample that remains the same throughout the experiment.

***variable* (p.28)** something that changed in an experiment

ENGAGE

Conversation Question: How can we study things like scientists?

Introduce the story by looking at the illustrations together and having students point out what they notice. Explain that the characters will be using science to help them bake better cookies. With a partner, have students describe the best chocolate chip cookie and what ingredients might make their favorite cookie better.

INTRODUCE VOCABULARY

Write the vocabulary words where they are visible to the class. Together, read the words aloud. Explain what the words mean in the context of baking cookies. Have students write questions using one vocabulary word in each. Check to ensure the vocabulary words are used correctly. Choose a few student questions to use as an assessment after reading the story.

READ & DISCUSS

Ask students to point out how science is used in the story. Have them use the illustrations and text to explain with examples. Use the following prompts in the discussion:

- How is the family using science to bake cookies?
- What control are they using? Why is this important?
- What variables are they using in their cookie baking?

CONCEPT FOCUS: PLAN INVESTIGATIONS

INSTRUCT: Review how science was used in the kitchen. Have students identify the control and variables used as the characters approach cookie baking scientifically. Then, have students the *Cookie Caper Experiment* to design their own cookie caper experiment. Have students explain their experiment to a partner and compare experiment plans with them.

ASSESS: Review the students' graphic organizers to see if they are using science thinking to plan their experiment.

EXTEND

Science If possible, make cookies with your class to demonstrate how science is used in baking. Use the recipe in the story as a control, and then divide the dough into three smaller amounts and add or change ingredients (variables) suggested by the students. Bake the cookies and examine (and taste!) the results.

Cookie Caper Experiment

Describe how you like your chocolate chip cookies:

_____

_____

Look at the recipe on page 33 and decide on what ingredient (variable) you would change to try and make the cookies the way you like.

I would change this variable: _____

In the story, the grandma explained how to use a control. Describe how you would use a control in your experiment.

My control would be _____

Plan your experiment below in five steps.

Step 1: _____

_____

Step 2: _____

_____

Step 3: _____

_____

Step 4: _____

_____

Step 5: _____

_____