NATIONAL GEOGRAPHIC Young Explorer!

Teacher's Guide

April 2010

Dear Educator:

As April showers scrub the earth clean of the remnants of a long winter, flowers start to bloom and baby birds start to hatch. New life springs up across the land. It seems fitting then that our theme for this month's issue of Young Explorer is "Celebrate Earth."

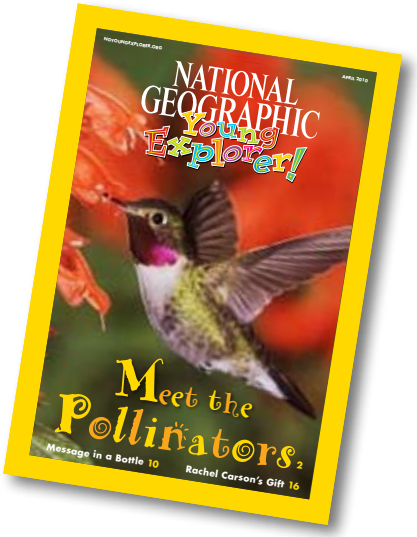
In "Meet the Pollinators," children learn about the connection between pollinators like bees and how plants grow. Readers are introduced to several different pollinators, from bees to bats. They'll learn how flowering plants and pollinators work together to make seeds. Without seeds, new plants can't grow!

Next, readers learn where a plastic bottle goes once it is empty. "Message in a Bottle" is a perfect story to spark discussions about recycling and how we use Earth's resources. The story takes readers down two possible paths an empty plastic bottle can go. Children will learn about where trash can end up, and the role each person plays in determining trash's ultimate destination. The activity master on p. T21 will help to reinforce the kinds of trash we can recycle, beyond plastic.

Finally, young readers will be introduced to Rachel Carson, the founder of the modern environmental movement. Children will learn about her life and how she used her love of nature, research, and writing to change the way people thought about our natural world and the way all living things are connected.

From our food production to learning how to protect and conserve our resources, this issue prepares children to take care of our world. In honor of Earth Day, celebrate our Earth together!

Jacalyn Mahler
Editor in Chief



NATIONAL GEOGRAPHIC Young Explorer!

Teacher's Guide
April 2010

Curriculum Connections
- Science • Social Studies • Reading • Writing

Skills
- Connect prior knowledge and experience
- Ask and answer questions
- Sum up main ideas
- Write sentences
- Read multi-syllabic words

High-Frequency Words
about (pp. 17, 20, 21); **are** (pp. 2, 5, 23, poster); **could** (pp. 12, 14); **from** (pp. 4,12,14); **grow** (pp. 2, 8, poster); **her** (pp. 18, 20, 21); **made** (p. 14); **make** (pp. 7, 8); **many** (pp. 17, 21); **where** (pp. 10, 15); **your** (pp. 10, 11, 14, 15)

Decoding Skills
Vowel Pairs: b**ee** (pp. 2, 9); **ea**t (pp. 6, 9, poster); h**ea**r (p. 9); k**ee**p (p. 13); m**ee**t (p. 2); n**ea**r (p. 18); s**ea** (p. 20); s**ee**ds (pp. 7, 8, poster); sw**ee**t (pp. 5, 6, poster); tr**ee**s (poster); y**ea**rs (p. 12)

Compound Words
butterfly (p. 4); hummingbird (p. 4); landfill (p. 12); something (p. 14); sometime (pp. 8, 13)

Syllables - 3 or more
busiest (p. 2); butterfly (p. 4); different (p. 20); favorite (poster); flowering (p. 2); hummingbird (p. 4); microscope (p. 19); pollinate (p. 4); pollinating (p. 9); pollinators (p. 2); scientist (p. 19)

Explore New Words

Teacher's Guide
April 2010

Curriculum Connections
- Reading
- Writing

Standards Correlations: Language Arts
- Improve decoding and word recognition
- Develop academic vocabulary
- Explore multiple-meaning words
- Read aloud with fluency
- Read multi-syllabic words

Literacy Skills
- Write sentences

Activity Masters

Explore New Words

Before Reading

Before you read the stories with children, use the "Explore New Words" side of the poster to introduce key content words. First, direct their attention to the photos one at a time, and ask them what they notice about each one.

If children name the key word, point to the word on the poster. If they do not, identify the word for them. Next, develop the meaning for each word. Use the following steps to teach *butterfly:*

1. **Pronounce** Tell children when they read "Meet the Pollinators," they will learn how some animals help flowering plants grow. Invite children to say the word *butterfly* with you. Then have the class say the word *butterfly* again, clapping three times for three syllables: *but-ter-fly.*
2. **Explain** Tell children that a *butterfly* is a flying insect. It begins its life as a caterpillar. Say, *Many butterflies have colorful wings.*
3. **Engage** Ask students to help you complete this sentence: *A* _____ *begins life as a caterpillar.* (butterfly)
4. **Involve** Say: *Listen to this sentence and tell me if I'm using the word* butterfly *correctly. A butterfly flies from flower to flower.* Ask students for a thumbs-up or a thumbs-down. Explain that those who voted 'yes' are correct because butterflies fly from flower to flower looking for food.
5. **Elaborate** Ask children where they have seen butterflies and to describe what they were like.

Repeat the process to teach the other key concept vocabulary.

After you develop the meaning of each word, point to the word on the poster. Have children repeat it. Lead the class in clapping out the syllables.

Next, read the sentences at the top of the poster aloud. Call on different volunteers to read each key word, repeat the last sound, and spell out the letters in the word.

Finally, guide children in reading the sentence that appears below the big picture. Volunteers can point to the bold word and then find the same word below the smaller photos. You may want to keep the "Explore New Words" poster displayed in the classroom. As you work through the stories in Young Explorer, ask children to raise their hands when they read or hear one of the new words.

For word work practice, children can complete the activity master on p. T5. You can use the activity on p. T7 to assess children's understanding of the new words' meanings. Chldren's stories will vary, but they should reflect the correct usage of the new vocabulary.

WORD WORK

Name: _____

Explore New Words

Word Bank

butterfly seed trash recycle
pollen scientist pollinate

Say each word in the Word Bank. Write the words that have one syllable.

1. _____ 2. _____

Write the words that have three syllables.

3. _____ 5. _____

4. _____ 6. _____

Now write all the words in ABC order.

7. _____ 11. _____

8. _____ 12. _____

9. _____ 13. _____

10. _____

WORD WORK

Name: ANSWER KEY

Explore New Words

Word Bank

butterfly seed trash recycle
pollen scientist pollinate

Say each word in the Word Bank. Write the words that have one syllable.

1. seed
2. trash

Write the words that have three syllables.

3. butterfly
5. recycle
4. pollinate
6. scientist

Now write all the words in ABC order.

7. butterfly
11. scientist
8. pollen
12. seed
9. pollinate
13. trash
10. recycle

VOCABULARY

Name: _____

Explore New Words

Write a story. Use at least four new words you learned. Then draw a picture.

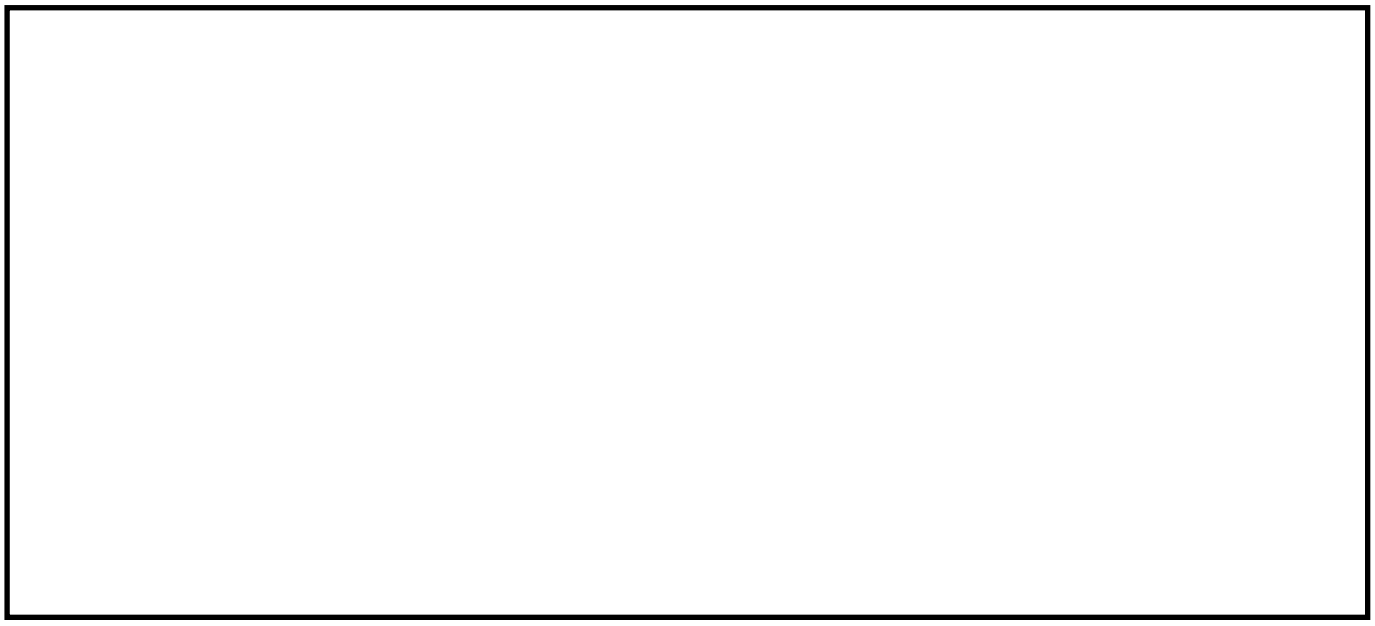
_____

_____

_____

_____

_____.



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Word Bank

butterfly seed trash recycle

pollen scientist pollinate

Meet the Pollinators

Teacher's Guide
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Curriculum Connections
- Language Arts
- Life Science

Standards Correlations: Language Arts
- Improve decoding and word recognition
- Practice reading high-frequency words
- Relate prior knowledge to text
- Develop academic vocabulary
- Produce written work
- Compare and contrast details
- Read aloud with fluency
- Read multi-syllabic words
- Construct mental images

Standards Correlations: Science
- Understand the characteristics of organisms
- Understand organisms and their environments

Literacy Skills
- Develop academic vocabulary
- Sum up main ideas

Activity Master

PAGES 2-9, POSTER

Meet the Pollinators

Preview/Build Background

Ask children to open their magazines to pp. 2-3. Point to the photo and ask children what is shows (a bee on a flower). Encourage volunteers to share what they know about bees and flowers. Ask, *What are some reasons a flower might need bees? What are some reasons bees might need flowers?* Record all reasonable responses. Explain that they will have a chance to add to or change their ideas after they read the story.

Together with children, read the story title and introduction on p. 2. Explain that when they read the story, they will learn how bees and other animals help flowering plants grow.

Vocabulary

Teach Key Concept Vocabulary

Display these key words from the story: *flowering plant, nectar, pollen, pollinate, seeds.* Use the following steps to teach *seed:*

1. **Pronounce** Remind children that when they read "Meet the Pollinators," they will learn how some animals help flowering plants grow. Ask children to say the word *seed* aloud with you. Then have children pronounce the word *seed* aloud together, clapping once for one syllable: *seed.*
2. **Explain** Tell children that a *seed* is the part of a flowering plant that is able to grow into a new plant.
3. **Engage** Ask students to help you complete this sentence: *The flower grew from a* _____ . (seed)
4. **Involve** Say: *I want to use the word* seed *in a sentence. Listen to this sentence and tell me if I'm using the word* seed *correctly. A new plant grew from the seed.* Ask students for a thumbs-up or a thumbs-down. Explain that those who voted 'yes' are correct because a *seed* is able to grow into a new plant.
5. Ask children to name some foods that have seeds. As you record their responses, reinforce their understanding by saying, *Yes, (an apple) has seeds.*

Repeat the process to introduce the other key concept vocabulary.

High-Frequency Words

Create a word card for each of these high-frequency words from the story: *are, from, grow, make.* Display any previously introduced words, both regular and irregular. Have the class read the cards aloud as a group. You may want to use the following steps to teach any new words; for example, the word *are.*

- Hold up the word card *are.* Say, *This word is* are.

- Write a simple sentence on the board using *are. (Tom and I* are *friends.)* Read the sentence aloud. Underline the word *are* as you reread the sentence. Have children repeat the word after you.

Meet the Pollinators

(continued)

High-Frequency Words, continued

- Lead children in noting the sounds and spelling patterns. (For example: Say, *What letter (or sound) does this word begin with? How many letters are in this word? What letter (or sound) does this word end with?*

- Next, have children spell out the word as you point to each letter. *(are: a, r, e)* Ask, *What is this word?* (are) Then have children write the word in the air with a finger. Finally, have children write the word on a piece of paper.

Repeat the process to introduce the other high-frequency words.

English Language Learners In pairs, have children listen to "Meet the Pollinators" multiple times at http://www.nationalgeographic.com/ngyoungexplorer/readstory.html as they follow along with their copy of National Geographic Young Explorer. Encourage them to chime in when they recognize the high-frequency words.

Access Science Content

Direct children back to pp. 2-3. Invite a volunteer to read the title and another to read the deck. Say, *From this first page, you can tell that pollinators are animals that help flowering plants grow. Bees are one type of pollinator. Let's read to find out what other animals help flowering plants grow.*

Work through the story with children. Pause on p. 5 to reinforce what children have learned. Say, *Wow! We just learned about three different pollinators!* After volunteers name the three pollinators, say, *Hummingbirds, butterflies, and some bats are pollinators. How else are these animals alike?* (They all have wings. They all fly.) *How are the animals different?* Lead children to understand that hummingbirds are birds; butterflies are insects; and bats are mammals. They also may mention that bats are active at night. Next, say, *I wonder how these animals pollinate flowers? Let's keep reading to find out.*

Pause at the end of p. 7. Say, *We just learned how the animals, or pollinators, pollinate flowers. Let's review this process. First, there are flowers. Flowers attract pollinators. That means flowers get the pollinators' attention so they will come to the flowers. How do flowers do this?* (Flowers have strong smells, bright colors, or stripes.) *But why do you think pollinators want to come to the flowers?* (They come to eat nectar.) *So as the pollinators eat nectar, they move around. As they move around, they move pollen, too. That is a good thing because in order for flowers to make seeds, pollen needs to move from the anther to the stigma.*

After you read p 9, display the words *nectar, pollen,* and *seeds*. Reinforce the connection between them by displaying a chain of events, connected by arrows:

A pollinator comes to a flower to eat nectar. ➡ Pollen sticks to its body. ➡ The pollinator flies to another flower. ➡ Pollen falls onto the flower's stigma. ➡ The flower makes seeds. ➡ New plants can grow.

Meet the Pollinators

(continued)

Sum Up

After children read "Meet the Pollinators," revisit the questions you asked before reading. *(What are some reasons a flower might need bees? What are some reasons bees might need flowers?)* Invite children to add to or change their initial answers to the questions. Encourage them to point to the text and pictures that provide new understandings.

Assess and Reteach

Materials Activity Master, p. T13; "Some Trees Need Bees" poster; "Meet the Pollinators" audio

Assign the activity master on p. T13 to check children's comprehension of the key science concepts. Use the answer key to score the assessment. As an alternate assessment, you may want to have **English Language Learners** listen to the audio and then draw pictures of the pollination process.

Based on the results, you may want to reteach key science concepts. For example, children may not understand the **process of pollination** or the role animals play in pollination. You can use the poster "Some Trees Need Bees" to reteach pollination and its importance in our food supply. Invite a volunteer to read the deck.

Next, ask children to follow along as you read each caption. Then have children read each caption aloud with you. Discuss each step of the process, prompting children to sum up the information in their own words. Then work together to develop a chain of events, connected by arrows.

Flowers bloom. ➧ Bees come to drink nectar. ➧ Pollen sticks to bees. ➧ Pollen falls onto the stigma. ➧ Apple blossoms make seeds. ➧ Seeds grow into trees.

Finally ask, *Why wouldn't we have apples without pollinators?* (Flowering plants need seeds to grow. Pollinators help fruit trees make seeds.)

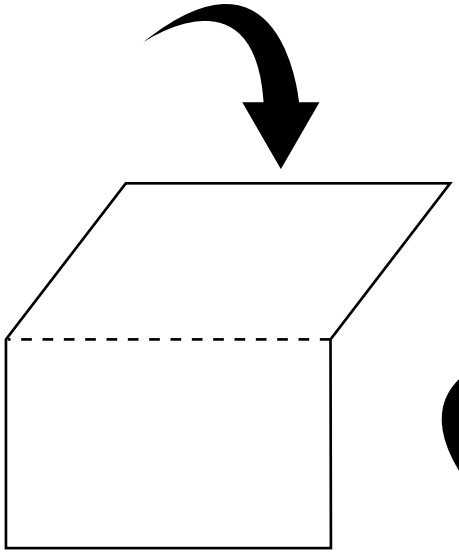
Meet the Pollinators

(continued)

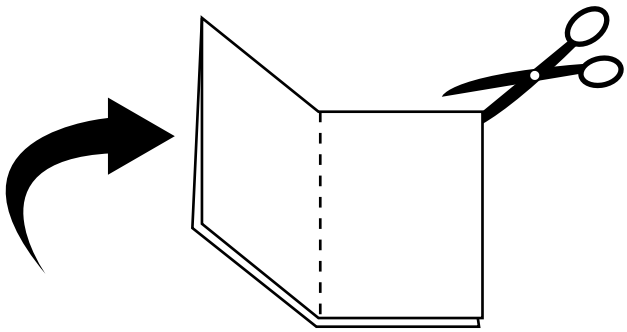
Extend the Learning

High-Frequency Words Display the high-frequency words for "Meet the Pollinators." Have children read the story aloud as they listen to the audio at http://www.nationalgeographic.com/ngyoungexplorer/readstory.html. Tell children that they are high-frequency word detectives. Their job is to find the high-frequency words in the story as they read. Once they have found where the high-frequency words appear in the story, they can find the same words in the classroom and other print materials that you provide.

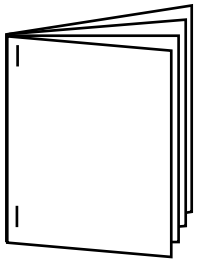
The Buzz on Bees! Invite children to create a fold-up book that shows how bees help us, not hurt us, so people are less afraid of bees—and start to appreciate them! Children can show bees as farmer's helpers, for example. Children also can make up a catchy slogan: *Please be kind to bees!*



Fold paper in half.



Fold in half again, then cut along folded edge.



Staple pages to make your book.

Challenge Draw a flower. Label the following parts: petals, stigma, anther.

Name: _____

Meet the Pollinators

Read the story. Then complete each sentence to show what you learned.

1. Pollinators help flowering plants _____.

Name two pollinators.

2. _____ **3.** _____

List three ways flowers attract pollinators.

4. _____

5. _____

6. _____

7. Flowers have _____. It is a powder that can stick to an animal's body.

8. Pollen can fall onto a flower's _____.

9. When pollen falls onto the stigma, the flower can make _____.

10. Pollinators can take _____ to other flowers.

11. The seeds may grow into new _____.

ASSESS

Name: ANSWER KEY

Meet the Pollinators

Read the story. Then complete each sentence to show what you learned.

1. Pollinators help flowering plants make seeds.

Name two pollinators.

2. bee or hummingbird

3. butterfly or bat

List three ways flowers attract pollinators.

4. strong smells

5. bright colors

6. stripes

7. Flowers have pollen. It is a powder that can stick to an animal's body.

8. Pollen can fall onto a flower's stigma.

9. When pollen falls onto the stigma, the flower can make seeds.

10. Pollinators can take pollen to other flowers.

11. The seeds may grow into new plants.

Message in a Bottle

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Curriculum Connections

- Language Arts
- Science

Standards Correlations: Language Arts

- Improve decoding and word recognition
- Practice reading high-frequency words
- Relate prior knowledge to text
- Develop academic vocabulary
- Produce written work
- Compare and contrast details
- Read aloud with fluency
- Read multi-syllabic words
- Construct mental images
- Predict

Standards Correlations: Science

- Understand how people depend on and affect the environment

Activity Masters

PAGES 10-15

Message in a Bottle

Preview/Build Background

Invite children to open their magazines to pp. 10-11. Have a volunteer read the title and deck. Ask, *What do you think the author means by,* "It's up to you?" Discuss the different things that come packaged in plastic bottles. Then ask children what they think happens to the plastic bottles after people have used them. Where does trash go? Record all reasonable responses. Explain to children that they will learn how their choices affect where empty plastic bottles go.

Vocabulary

Teach Key Concept Vocabulary Display these key words from the story: *landfill, ocean, plastic bottle, recycle, trash.* Use the following steps to teach *landfill:*

1. **Pronounce** Tell children when they read "Message in a Bottle," they will learn what can happen to things thrown in a trash can. Invite children to say the word *landfill* with you. Then have the class say the word again by syllable, clapping twice for two syllables: *land-fill.*
2. **Explain** Tell children that a landfill is a place where trash is taken and buried in the ground. Say, *A lot of trash ends up in landfills.*
3. **Engage** Ask students to help you complete this sentence: *When I throw something away, it will go to a* _____. (landfill)
4. **Involve** Say: *Listen to this sentence and tell me if I'm using the word* landfill *correctly. Trash is buried in a landfill.* Ask students for a thumbs-up or a thumbs-down. Explain that those who voted 'yes' are correct because a landfill is a place where trash is buried.
5. **Elaborate** Ask children to think about the problems that landfills might create. Lead them to understand that landfills require a lot of space and people may run out of room to bury trash. Also, burying garbage in the ground can lead to possible problems with spillage and pollution.

Repeat the process to introduce the other key concept vocabulary.

Teach High Frequency Words Create a word card for each of these high-frequency words from the story: *could, from, made, where, your.* Display any previously introduced words, both regular and irregular. Have the class read the cards aloud as a group. You may want to use the following steps to teach any new words; for example, the word *could.*

- Hold up the word card with *could.* Say, *This word is* could.
- Write a simple sentence on the board using *could.* (*One day, you* could *be a teacher or a doctor.)* Read the sentence aloud. Underline the word *could* as you reread the sentence. Have children repeat the word after you.
- Lead children in noting the sounds and the spelling patterns. (For example: Say, *What letter (or sound) does this word begin with? How many letters are in this word? What letter (or sound) does this word end with?)*
- Next, have children spell the word as you point to each letter. *(could: c, o, u, l, d)* Ask, *What is this word?* (could) Then have children write the word in the air with a finger. Finally, have children write the word on a piece of paper.

Message in a Bottle

(continued)

Vocabulary, continued

English Language Learners In pairs, have children listen to "Message in a Bottle" multiple times at http://www.nationalgeographic.com/ngyoungexplorer/readstory.html as they follow along with their copy of National Geographic Young Explorer. Encourage them to chime in when they recognize the high-frequency words.

Read and Discuss

Tell children that pp. 12-13 describe what can happen when you throw a plastic bottle in a trash can. After you read p. 12 with children, ask, *How do you think your trash gets from the trash can to the landfill? What do you think the bulldozer is doing at the landfill? Why do you think a plastic bottle can stay there for hundreds of years?* Explain that plastic does not break into small pieces easily like paper or food products. Ask children to think about a piece of paper that has been left in the rain for a few days. Does it look the same? Does it look thinner? Is it still in one piece? Now think about a plastic bottle that has been left in the rain. Does it look the same? Plastic is a strong material. A plastic bottle can sit in a landfill for a long time—and trash takes up a lot of space!

After you read p. 13 with children, help them to understand how trash sometimes ends up in the oceans. Invite children to share their ideas as to how this might happen. (Landfills overflow. People and ships dump trash directly into the ocean. Trash thrown on the street can go down storm drains that flow into streams and rivers and eventually the oceans.)

Tell children that pp. 14-15 describe what happens when you choose to recycle a plastic bottle. Point out the special bins that the children in the photos have. Ask children to share what they know about recycling. After you read the pages with children, ask, *Where do you think a plastic bottle goes after you put it in a recycling bin?* Help children understand that often it is picked up in a truck, sorted, and taken to a special place where it is made into new things such as the toy tea set and truck shown in the photos.

Sum Up

Revisit the question you posed before reading: *What do you think the author means by,* "It's up to you?" Invite volunteers to describe the two choices they can make—toss or recycle—and where a plastic bottle may wind up, depending on their choice.

Assess and Reteach

Materials Activity Masters, pp. T19; "Message in a Bottle" story

Assign the activity master on p. T19 to check children's comprehension of the story. Use the answer key to score the assessment. Based on the results, you may want to reteach key concepts. For example, children may not understand what it means to **recycle.**

Message in a Bottle

(continued)

Assess and Reteach, continued

Read aloud pp. 14-15 of the story. Explain to children that recycle means to "use something again." In many cities, people can recycle paper, glass, aluminum, as well as plastic. By throwing away less trash, we protect Earth's land and water.

High-Frequency Words

Display the high-frequency words for "Message in a Bottle." Have children read the story aloud along with the audio at http://www.nationalgeographic.com/ngyoungexplorer/readstory.html. Remind children that they are high-frequency word detectives. Their job is to find the high-frequency words in the story as they read. Children should update their high-frequency word books with any new words they find. Next, have children write the high-frequency words from the story on cards. Have children sort the cards into different groups. They can group them by the first letter, the last letter, or the number of letters in each word. Finally, have children arrange the cards in ABC order.

Extend the Learning

Categorize Explain that in most towns people can recycle paper, glass, plastic, and aluminum. Draw five columns on a large piece of chart paper and write Paper, Glass, Plastic, and Aluminum at the top of each column, with Trash as the fifth column. (Give children examples of items made from each material.) Invite children to help you categorize the following items: soda can, milk jug, newspaper, jelly jar, banana peel. Invite children to share examples of each category and write them in the appropriate column. Distribute the activity master on p. 21 for more practice.

Recycle Tell children that their class will start a recycling campaign at school. Have teams of 3-4 students create posters that show what happens when recyclable things like plastic end up in the ocean or in landfills. Each team should use the Internet and print materials to research things that can be made out of recycled plastic, metal, and paper and use the information on their posters. Encourage children to get their parents and the community involved in the recycling effort.

Word Problems Invite children to write addition and subtraction word problems for each other to solve. Examples: If you throw away one plastic bottle every day, how many will you throw away in a week? (seven) If you recycle two bottles and your brother recycles four bottles, how many will you recycle in all? (six) If you have 10 bottles in your recycle bin and two fall out, how many are left in the recycle bin? (eight)

Reuse Remind children that they can often reuse recyclable items before they are recycled. Explain that you will make watering jugs out of empty plastic containers. You can use the watering jugs to water your class garden! Use a clean, empty half gallon milk or juice jug with its lid (a screw top is best). Children will need your help to poke holes in the lid of the jug. Then children can decorate their jugs. Once the watering jug is complete, model how use it to water plants. At the end of the school year, encourage children to recycle any watering jugs that are no longer wanted or used.

ASSESS

Name: _____

Message in a Bottle

Read the story. Then complete each sentence to show what you learned.

1. When you throw your plastic bottle in a trash can, it may go to a _____.

2. Your bottle can stay in a landfill for _____ of years.

3. Sometimes the _____ you throw away ends up in the ocean.

4. When you _____ plastic, it can be made into something new.

5. Name one thing made from recycled plastic.

   _____.

ASSESS

Name: ANSWER KEY

Message in a Bottle

Read the story. Then complete each sentence to show what you learned.

1. When you throw your plastic bottle in a trash can, it may go to a landfill.

2. Your bottle can stay in a landfill for hundreds of years.

3. Sometimes the trash you throw away ends up in the ocean.

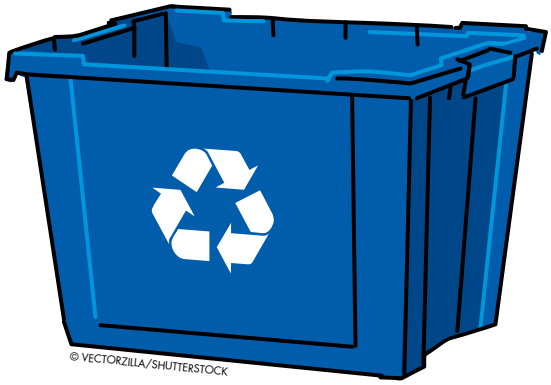
4. When you recycle plastic, it can be made into something new.

5. Name one thing made from recycled plastic.
   toys.

Name: _____

Recycle!

Cut out the pictures at the bottom of the page. Place them on the recycle bin or the trash cans.



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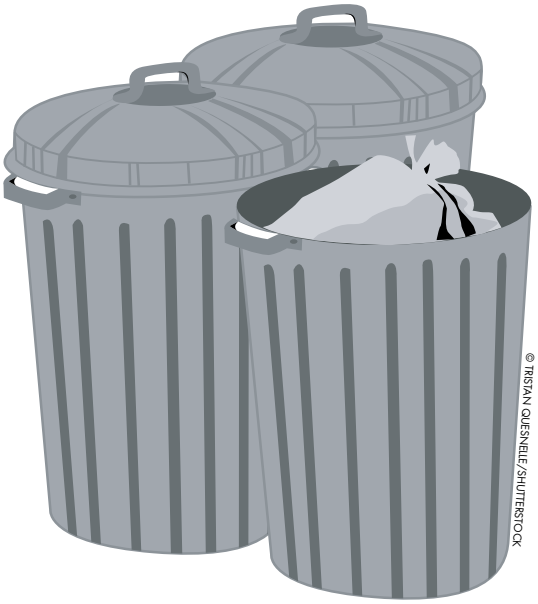

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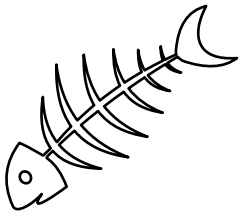

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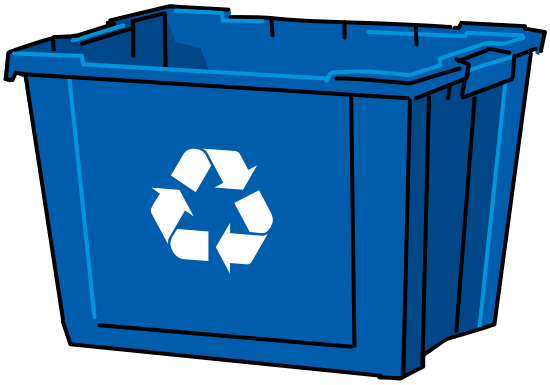
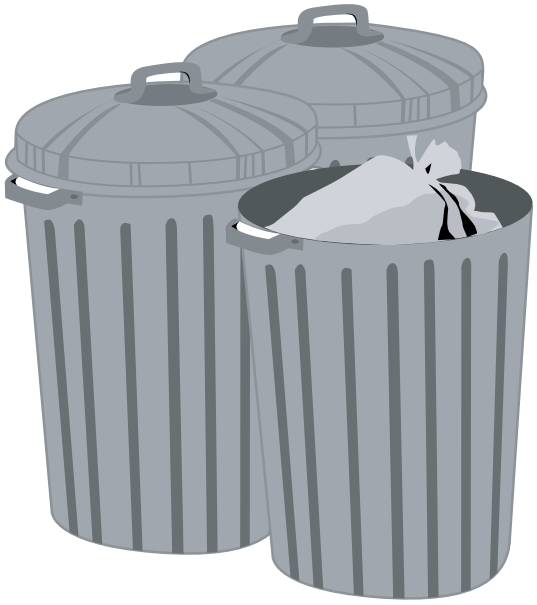
CRITICAL THINKING

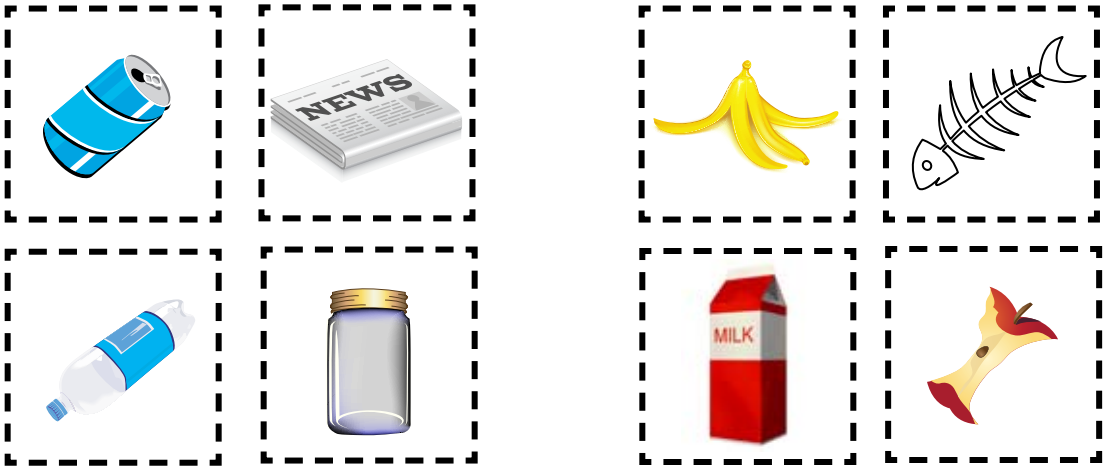
Name: ANSWER KEY

Recycle!

Cut out the pictures at the bottom of the page.
Place them on the recycle bin or the trash cans.







Rachel Carson's Gift

Teacher's Guide
April 2010

Curriculum Connections
- Language Arts
- Social Studies

Standards Correlations: Language Arts
- Improve decoding and word recognition
- Practice reading high-frequency words
- Relate prior knowledge to text
- Develop academic vocabulary
- Produce written work
- Read aloud with fluency
- Read multi-syllabic words
- Construct mental images

Standards Correlations: Social Studies
- Study people, places, and environments

Activity Masters

PAGES 16-23

Rachel Carson's Gift

Preview/Build Background

Invite children to open their magazines to pp. 16-17. Ask them to follow along as you read the story title and introduction aloud. Point out the portrait and ask children who they think it is. Then point out the book cover and read the title. Explain that they are going to learn about Rachel Carson's life and why her book was so important.

Next, direct attention to the photograph and caption on p. 16. Ask children why someone might have a park named after her. To prompt discussion, you may want to remind them they learned about monuments when they read "It's an Honor" in the January-February 2010 issue of YOUNG EXPLORER.

Vocabulary

Teach Key Concept Vocabulary Display these key words from the story: *crops, explored, healthy, nature, pests, scientist.* Use the following steps to teach the word *scientist:*

1. **Pronounce** Ask children to say the word *scientist* aloud with you. Then have the class say the word again, clapping three times for three syllables: *sci-en-tist*
2. **Explain** Tell children that a scientist is a person who observes and studies things in the world such as stars and animals and rocks. Say, *Scientists are interested in learning about the natural world. Rachel Carson was a scientist.*
3. **Engage** Ask students to help you complete this sentence: *The _____ watched the mother bird feed her chicks.* (scientist)
4. **Involve** Say: *Listen to this sentence and tell me if I'm using the word* scientist *correctly. If you like learning about animals, you should become a scientist.* Explain that those who voted 'yes' are correct because some *scientists* study plants and animals.
5. **Elaborate** Ask children to name other things scientists might study. Encourage them to answer the question: *What makes a good scientist?*

Repeat the process to introduce the other key concept vocabulary.

High-Frequency Words Create a word card for each of these high-frequency words from the story: *about, her, many.* Display any previously introduced words, both regular and irregular. Have the class read the cards aloud as a group. You may want to use the following steps to teach any new words; for example, the word *about.*

- Hold up the word card *about.* Say, *This word is* about.
- Write a simple sentence on the board using *about. (This story is* about *Rachel Carson.)* Read the sentence aloud. Underline the word *about* as you reread the sentence. Have children repeat the word after you.
- Lead children in noting the sounds and the spelling patterns. (For example: Say, *What letter (or sound) does this word begin with? What is the next sound? How many letters are in this word? How many syllables does the word have?)*
- Next, have children spell out the word as you point to each letter. *(about: a, b, o, u, t)* Ask, *What is this word?* (about) Then have children write the word on a piece of paper.

Rachel Carson's Gift
(continued)

Read and Discuss

As you read the story with children, help them connect the text to the photos and captions. For example, explain that the small photo at the top of p. 18 shows Rachel "when she was young." The large photo across pp. 18-19 shows "the woods near her house." After reading p. 19, pause and ask, *Why do you think Rachel became a scientist?* (She loved nature. She wanted to study plants and animals.) Then ask, *What special tool do you see in the photograph? Why do scientists use microscopes?* If necessary, explain that a microscope has a special lens that lets scientists see tiny things that are deep inside an object.

After reading p. 21, pause and ask, *What do you think Rachel and her nephew were doing in the photo on p. 20?* (looking at things on the beach like shells) *Why do you think people told Rachel Carson about the sick birds?* (She was a scientist who studied animals. They knew she cared about nature and might do something to help the birds.)

After reading p. 22, pause and ask, *Why did the farmers use DDT on the crops?* (Pests were eating the crops. Farmers wanted to save the crops for people to eat.) *Besides killing pests, what other effect did DDT have?* (It hurt baby birds.) Explain that when birds were exposed to the poison, the egg shells became thin and the baby birds inside died.

After reading p. 23, pause and ask, *What happened when farmers stopped using the DDT?* (Birds started laying healthy eggs again.) *How did Rachel get farmers to stop using DDT?* (Her book *Silent Spring* taught people about the dangers of DDT.)

Assess and Reteach

Materials Activity Master, pp. T27; "Rachel Carson's Gift" story

Assign the activity master on p. 27 to check children's comprehension of the story. Use the answer key to score the assessment.

Based on the results, you may want to reteach key concepts. For example, children may not understand how Rachel Carson's book changed people's thinking. Explain that Rachel Carson was a scientist, so people respected her ideas. She was also a good writer and able to help people understand science. So many people read her books. When she learned about DDT and its danger to animals, she wrote about it. People read her book and demanded that farmers stop using DDT.

Reread the story with children, asking them to focus on how Rachel Carson showed her love of nature (became a scientist; studied plants and animals; wrote about plants and animals; wrote about the dangers of DDT and got farmers to stop using it). Pause at the end of each page to help children sum up the main ideas.

Rachel Carson's Gift

(continued)

High-Frequency Words

Display the high-frequency words for "Rachel Carson's Gift" Have children read the story aloud along with the audio at http://www.nationalgeographic.com/ngyoungexplorer/readstory.html. Remind children that they are high-frequency word detectives. Their job is to find the high-frequency words in the story as they read. Children should update their high-frequency word books with any new words they find. Next, have children write the high-frequency words from the story on cards. Have children sort the cards into different groups. They can group them by the first letter, the last letter, or the number of letters in each word. Finally, have children arrange the cards in ABC order.

Extend the Learning

Poetry Tell children that in honor of National Poetry Month, they will write a poem that will make someone care about something important to them. Ask them to think about something they care about such as friends, family, animals, a clean neighborhood, or being fair or kind. Brainstorm ways they can make others care, too. Then write a poem that shows why their cause is important and that makes their classmates care, too! Ask them to share their poem with the class.

Explorations Remind children that they can use their senses to explore the world around them. Encourage them to observe their environment using their senses. Tell them that what they see, hear, feel, and smell, will help them decide if the environment is healthy. Ask, *When you look around outside, do you see trash, wildlife, plant life? Do you smell chemicals like gas or cleaners?* In small groups, have children create a senses chart. Tell them they should show how they used their senses to observe their immediate environment and to get an idea of how healthy it is. They can describe or show their conclusions. Children should answer the following question: *Is the environment around our school healthy?*

ASSESS

Name: _____

Rachel Carson's Gift

Read the story. Then complete each sentence to show what you learned.

1. Rachel Carson wrote a _____. It changed the way many people think of nature.

2. Rachel loved _____.

3. Rachel grew up to become a _____.

4. Rachel's first book described different things that live in the _____.

5. Rachel decided to find out why _____ were sick and dying.

6. Rachel learned that a poison, called _____, was hurting baby birds.

7. _____ used DDT to kill pests that ate crops.

8. Rachel wrote a book called _____ that said DDT hurt more than it helped.

9. Farmers stopped using DDT. Birds started laying healthy _____ again.

ASSESS

Name: ANSWER KEY

Rachel Carson's Gift

Read the story. Then complete each sentence to show what you learned.

1. Rachel Carson wrote a book. It changed the way many people think of nature.
2. Rachel loved nature.
3. Rachel grew up to become a scientist.
4. Rachel's first book described different things that live in the sea.
5. Rachel decided to find out why birds were sick and dying.
6. Rachel learned that a poison, called DDT, was hurting baby birds.
7. Farmers used DDT to kill pests that ate crops.
8. Rachel wrote a book called Silent Spring that said DDT hurt more than it helped.
9. Farmers stopped using DDT. Birds started laying healthy eggs again.