In This Guide
In this guide, you will find language arts, science, and social studies lessons for the articles in this issue of Young Explorer Scout.

Young Explorer Magazine
Young Explorer classroom magazines for kindergarten and grade 1 develop young readers’ literacy skills through engaging informational text. Great storytelling and stunning photographs teach students about our planet and the people, plants, and animals that live on it. Encourage your students to read and explore our world with Young Explorer magazines.

Scout
The Scout edition is written for kindergarten students. Some articles with characteristics of emergent text will be easier for students to read. You may find that other articles are better suited for teacher read-alouds.

Visit Young Explorer’s website, NatGeo.org/explorermag, to find additional resources for extending your students’ learning.

Your Subscription Includes:
• Magazines   • Classroom Posters   • Projectables
• Teacher’s Guides   • Digital Magazines (additional subscription required)
BACKGROUND
Since 1888, the National Geographic Society has funded scientists and explorers and shared their findings with the world. To support educators who use our resources, we have created a Learning Framework, which lays out what we believe students should learn from their experiences with the Society.

PURPOSE
The Learning Framework was designed to convey the Society’s core beliefs and values. It is built around a set of attitudes, skills, and knowledge that embody the explorer mindset.

To determine the learning outcomes within the Learning Framework, we dug deep into national standards in key subject areas. We also sought advice from subject matter and child development experts, along with the combined expertise of NG instructional designers, researchers, and content developers. To learn more, go to: https://www.nationalgeographic.org/education/learningframework/

IMPLEMENTATION
Each article in this magazine has a knowledge-based link to the Learning Framework. Students will use the skills and attitudes as they do the activity on the back cover. The activity relates to the articles “A Cub in the Wild” and “Message in a Bottle.”

MINDSET OF AN EXPLORER

KEY FOCUS AREAS

A ——— Attitudes

National Geographic kids are:
CURIOS about how the world works, seeking out new and challenging experiences throughout their lives.
RESPONSIBLE, with concern for the welfare of other people, cultural resources, and the natural world. NG kids are respectful, considering multiple perspectives, and honoring others regardless of differences.
EMPOWERED to make a difference. NG kids act on curiosity, respect, and responsibility. They are adventurous and persist in the face of challenges.

S ——— Skills

National Geographic kids can:
OBSERVE and document the world around them and make sense of those observations.
COMMUNICATE experiences and ideas effectively through language and media. They are storytellers!
COLLABORATE with others to achieve goals.
SOLVE PROBLEMS by generating, evaluating, and implementing solutions after identifying alternatives, weighing trade-offs, and making well-reasoned decisions.

K ——— Knowledge

National Geographic kids understand:
THE HUMAN JOURNEY is all about where we have been, where we live now (and why), and where we are going.
OUR CHANGING PLANET encompasses all that coexists on our planet— interconnected through systems that generate and nurture each other.
WILDLIFE AND WILD PLACES inhabit our planet—from the butterflies in our back yards to the lions in Africa.
A Cub in the Wild

LANGUAGE ARTS

Objective
- Students will describe the connection between pieces of information in a text.

Standard Supported
- CCSS Reading Informational Text: With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text. (K-3)

Resources
- Language Arts Master [page 5]

Summary
A panda cub and his mother live in the wild. A bamboo forest is their habitat, or home. The cub gets what he needs in the forest to live and grow. Some pandas live in reserves, when their forests are cut down. People take care of these pandas. The reserve is a safe place for the pandas to live and get what they need to survive.

WORD WORK
Sight Words: a, in, the, up, is, and, there, eat, he, get, are, for, do, not, down, they, no, of, it

BUILD VOCABULARY AND CONCEPTS
- panda cub
- bamboo forest
- habitat
- reserve

The words above are used in the article. Pronounce the words and ask students to pronounce them after you. Find pictures that you can add to the word wall for each of the words, and use the photos in the article to talk through the meanings of each of the words with students. Point out the panda cub and the bamboo forest. Explain to students that the bamboo forest is the panda’s habitat, or home. Let students know that when bamboo forests are cut down, pandas no longer have a place to live. So, people set up forest reserves where pandas can get what they need and have a safe place to live. Ask students to listen for the vocabulary words as you read the article.

READ AND DISCUSS
Read the article “A Cub in the Wild” aloud to students as they follow along. You may want to read the entire article first, and then reread the article, taking time to stop and discuss each two-page spread.

Pages 2–3  Read the title and text. Ask students: Where does a panda cub grow up? (in the wild) Where is the cub’s habitat, or home? (a forest) Ask students to look at the picture of the giant panda cub and describe how it looks. They should notice its black and white fur, and they might notice the shape of its ears.

Pages 4–5  Read the text. Ask: What do we learn about the forest? (It is cool and wet, and bamboo grows in the forest.) Ask students why bamboo is important for pandas. (Pandas eat bamboo.) Have students look at the map on page 4. Point out China on the map, and let students know that this is where wild pandas live and where bamboo forests grow. You might also point out on the map where students live.

Pages 6–7  Read the text. Ask: What grows in the forest? (Trees grow in the forest.) Why are trees important for pandas? (Pandas climb trees.) What does the cub get in the forest? (He grows up in the forest and gets what he needs there.) Have students look at the pictures on pages 6 and 7 and describe what they see.

Pages 8–9  Read the text. Ask: What is a reserve? (A reserve is a safe place for animals.) Why do some pandas have to live in a reserve? (Their forest habitats have been cut down, and they have no food or shelter.) What happens to these pandas? (People take care of them on a forest reserve and make sure they get what they need.) Have students look at the pictures on pages 8 and 9 and describe what they see.

TALK AND WRITE
Students can respond to the article by talking and writing. Use the following prompts to guide them. You might also want to use the Language Arts Master for this article.

- Talk about what you learned about pandas.
- Draw something you learned about what a panda cub needs.
A Cub in the Wild

Objective
• Students will learn about a panda cub’s habitat.
• Students will learn that people make choices to help other living things and can come up with solutions to problems.

Standard Supported
• NGSS ESS3.C: Human Impacts on Earth Systems: Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. (K-ESS3-3)

Learning Framework Key Focus Area
• Skills: National Geographic kids can: SOLVE PROBLEMS by generating, evaluating, and implementing solutions after identifying alternatives, weighing trade-offs, and making well-reasoned decisions.

Resources
• A Panda Cub’s First Year poster (Teacher’s Edition)
• Science Master (page 6)

Science Background
Giant pandas are one of the rarest mammals. Only about 1,500 survive in the wild in remote bamboo forests in the mountains in central China. Giant pandas eat mostly bamboo shoots and leaves, eating nearly 12 hours a day. They have to eat a lot to stay healthy. The average life span of giant pandas in the wild is 20 years. They weigh about 300 pounds and are about 4-5 feet in length/height. They are excellent tree climbers and swimmers.

EXPLORE
As a class, come up with questions about giant pandas. Some example questions:
• Where do giant pandas live?
• What do giant pandas eat?
• How big is a giant panda?

EXPLAIN
After reading, have students discuss what they found out about giant pandas and if all of their questions have been answered. If not, be sure to research with students to find the answers to their unanswered questions.
• A forest is a panda cub’s habitat, or home.
• The forest is in China. It is cool and wet.
• Bamboo grows in the forest, and that’s what pandas eat.
• Trees grow in the forest, and pandas like to climb trees.
• The panda cub gets what he needs in the forest.
• Some pandas whose forests have been cut down live on reserves. Reserves are safe places for animals.
• People take care of pandas on the reserves and make sure the pandas get what they need.

Display A Panda Cub’s First Year poster. Have students look closely at the pictures as you read how old the cub is in each picture from birth to Year 1. You might also want to investigate other facts about panda cubs, such as how much they weigh or how tall they are at different ages.

ELABORATE
Extend Your Thinking
Review the activity on the back cover of the student magazine. Discuss what responsibility is. Brainstorm a list of ways people can be responsible and help save ocean animals. Divide the class into small groups. Ask each group to pick one animal and record facts about their animal. Then choose an idea from the activity or another idea from National Geographic Kid’s “Mission Animal Rescue Fundraising Kit” at http://images.nationalgeographic.com/wpf/media-content/file/MAR_Fundraising_Kit-cb1402327097.pdf. Provide supplies, and give groups time to complete their projects.

EVALUATE
Assess students’ understanding with the Science Master for this article. You might also use the following prompts.
• What is one thing a panda cub gets from its habitat?
• Describe how people help some pandas.
Look at the chart. Draw lines to match the information.

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<td>At birth, a cub doesn’t have much fur.</td>
<td>At 3 weeks, a cub is covered in fur.</td>
<td>At 6 weeks, a cub’s eyes are open.</td>
<td>At 3 months, a cub starts to crawl.</td>
<td>At 6 months, a cub starts to walk and climb trees.</td>
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1. A cub can crawl.  
2. A cub’s eyes are open.  
3. A cub can walk.  
4. A cub doesn’t have much fur.  
5. A cub is covered in fur.  

- birth
- 3 weeks
- 3 months
- 6 months
- 6 weeks
SCIENCE: A Panda’s Habitat

Draw a panda cub and its mother in their habitat.

Add labels to your drawing.

---
cub  mother  bamboo  tree---

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Message in a Bottle

LANGUAGE ARTS

**Objective**
- Students will ask and answer questions about unknown words in a text.

**Standard Supported**
- CCSS Reading Informational Text: With prompting and support, ask and answer questions about unknown words in a text. (K-4)

**Resources**
- Language Arts Master (page 9)

**Summary**
There are many things you can do with a plastic water bottle when it is empty. You could throw it away in the trash, where it will end up in a landfill, or you could recycle it, so it could be made into new things. You could also make something out of your bottle, such as a bird feeder. The choice is yours--toss, recycle, or use in a new way.

**WORD WORK**
- Sight Words: you, all, the, is, what, will, do, with, it, now, away, go, to, a, there, for, up, in, they, can, be, into, new, look, at, that, make, out

**BUILD VOCABULARY AND CONCEPTS**
- plastic bottle
- empty
- landfill
- ocean
- recycle

Introduce the vocabulary words to students by displaying them in the classroom on a word wall or on a board. Pronounce the words for students. Together, talk about what each means. You might have an empty and a full plastic water bottle on hand to use as examples. Ask students what they can do with the full water bottle.* Most will say they can drink the water. Let students know that as you read “Message in a Bottle,” they will find out what they could do with an empty water bottle. As you read and learn about the different choices, have students add information and pictures to the word wall.

*Please make sure students know that it is dangerous to reuse disposable bottles for drinking purposes.

**READ AND DISCUSS**
Read the article “Message in a Bottle” aloud to students as they follow along. You may want to read the entire article first, and then reread the article, taking time to stop and discuss each two-page spread.

**Pages 10–11** Read the title and text on pages 10 and 11. Then say: In your own words, tell what the question is that the text is asking of readers. [What will you do with an empty plastic water bottle?]

**Pages 12–13** Read the text. Ask: What is one thing you could do with the empty bottle? [throw it away] What will happen to the bottle, if you throw it away? [It will go to a landfill.] Have students look at the picture on page 12 and describe what they see. Let them know that this is a landfill. Have them ask and answer questions about what they see and make sure they understand what a landfill is. Ask: Besides a landfill, where else might your plastic bottle end up? [in the ocean] What might happen if the bottle ends up in the ocean? [It can hurt ocean animals.] Does it seem like a good idea to throw away your bottle? [no] Let’s read on to see if there are some other choices.

**Pages 14–15** Read the text. Ask: What else could you do with your empty bottle? [recycle it] What could happen to your bottle, if you recycle it? [It could be made into new things, such as toys, bags, and pens.] Ask students to look at the pictures of the recycled items. Have students ask and answer questions about what recycling means and make sure they understand that the plastic from empty water bottles is processed and used as a material to make these other items.

**Pages 16–17** Read the text. Ask: What else could you do with your empty bottle? [use it in a new way] Ask students to name some of the things they could do to use the bottle in a new way. [grow a plant in it; make a bird feeder out of it] Ask students if they have other ideas.

**TALK AND WRITE**
Students can respond to the article by talking and writing. Use the following prompts to guide them. You might also want to use the Language Arts Master for this article.

- Talk about what you learned about what you can do with an empty plastic bottle.
- Draw something you learned about one of the choices.
Message in a Bottle

SCIENCE

Objective
- Students will learn that people, by the choices they make, can reduce their impacts on the land and water.

Standard Supported
- NGSS ESS3.C: Human Impacts on Earth Systems:
  Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. (K-ESS3-3)

Learning Framework Key Focus Area
- Attitudes: National Geographic kids can: SOLVE PROBLEMS by generating, evaluating, and implementing solutions after identifying alternatives, weighing trade-offs, and making well-reasoned decisions.

Resources
- Reuse It! poster (Teacher’s Edition)
- Science Master (page 10)

Science Background
Since the 1950s, massive amounts of plastic, most as disposable products, have been produced. Most of these disposable products have ended up as trash. Approximately 91% of plastic is not recycled. Plastic takes more than 400 years to degrade, and huge amounts of plastic end up in our oceans, causing harm to the animals that live there. By mid-century, it is predicted that the oceans will have more plastic waste than fish.

For that reason, it makes sense that the three “Rs” students learn today aren’t only reading, writing, and arithmetic. They are also reduce, reuse, and recycle. The article “Message in a Bottle” focuses on a few ways to recycle and reuse empty plastic water bottles.

EXPLORE
With students, explore some of the ways you might be able to reduce, reuse, or recycle items in your classroom, such as paper. Together, research online and create a list that will work for you and your students, and then implement these ideas in your classroom.

EXPLAIN
Ask students to explain what they learned about what they can choose to do with an empty plastic water bottle. Ask: What are the three choices we learned about?

1. You could throw away the bottle.
2. You could recycle the bottle.
3. You could use the bottle in a new way.

Ask students to get into groups and decide, as a group, what they would choose to do with their empty plastic water bottle.* Have them explain why they made that choice, and then share their group’s choice with the whole class. You may want students to use these sentence frames to help them talk about their choices:

- We chose to [throw away, recycle, reuse] our bottle.
- We chose to do this because ________________.
- We chose to use our bottle in a new way. Here’s what we are going to do with our bottle: ________________.

*Please make sure students know that it is dangerous to reuse disposable bottles for drinking purposes.

ELABORATE
Read through the Reuse It! poster with students. Help them think about ways they can reuse some of the items they might usually throw away. You might also want to have students create planters out of empty cans, as shown on the poster. Gather the items shown and have students follow the steps to start a colorful classroom herb garden. Challenge students to think of other things they could make out of empty cans.

EVALUATE
Assess students’ understanding with the Science Master for this article. You might also use the following prompts.

- Why is it important to recycle?
- What are some ways to reuse plastic bottles or empty cans?
Write about or draw what you learned. Use the words below to help you.

landfill  ocean  plastic bottle  recycle

Something I Learned

An Interesting Fact

A Question I Have
SCIENCE: Trash to Treasure

Can you turn trash into treasure?

Think of something you usually throw away.

Design something new you could make from it instead of throwing it away.
We Need Trees

Objective
• Students will identify the reasons an author gives to support points in a text.
• Students will describe the relationship between pictures and text.

Standard Supported
• CCSS Reading Informational Text: With prompting and support, identify the reasons an author gives to support points in a text. (K-8)
• CCSS Reading Informational Text: With prompting and support, describe the relationship between illustrations and the text in which they appear (e.g., what person, place, thing, or idea in the text an illustration depicts). (K-7)

Resources
• Language Arts Master [page 13]

Summary
Trees are special plants. Animals live in them, and people make homes out of the wood that comes from trees. People and animals eat fruits that grow on trees. Trees make oxygen that is in the air we breathe. We need trees to help us live and grow.

WORD WORK
Sight Words: we, are, in, make, out, of, come, like, and, eat, a, to, help

BUILD VOCABULARY AND CONCEPTS
• trees
• oxygen
• plants
• air
• fruits

The words above are used in the article “We Need Trees.” Do a picture walk through the article to point out the words and the pictures that represent the words. Post the words on a classroom word wall. Refer to the word wall throughout discussion of the article, and, as you read and learn about trees, add more information and pictures to the word wall. As a class, find other pictures or have students draw pictures of different kinds of trees, plants, and fruit that grows on trees.

READ AND DISCUSS
Read the article “We Need Trees” aloud to students as they follow along. You may want to read the entire article first, and then reread the article, taking time to stop and discuss each two-page spread.

Pages 18–19 Read the title and the text. Ask: What do you think the main topic of this article is? (Students should be able to respond that the topic is trees.) What do you think we’ll find out about trees as we read on? (why trees are special, or why we need trees) Have students look at all of the pictures of different trees on these pages. Ask: What do you notice about these trees? How are they the same, and how are they different? Take some time to look at the pictures and guide students to notice the similarities and differences. (All of the trees have trunks/stems, but they look different from one another. Most of the trees have leaves and branches, but again they look different from one another.) With the class, find other similarities and differences between the pictures.

Pages 20–21 Read the text. Say: The text on these pages gives us reasons that tell us why we need trees and why they are special plants. Turn and talk with a partner to tell the reasons you learned about why trees are special plants. (Animals live in trees. People make homes out of trees. Trees grow fruits that animals and people eat.) Ask students to look at the pictures and tell what they see in the pictures and how the pictures match the text.

Pages 22–23 Read the text. Say: The text on these pages gives us more reasons why we need trees and why they are special plants. Turn and talk with a partner to tell the reasons you learned about why we need trees. (Trees make oxygen; air has oxygen, and we need air to live.) Tell students the last sentence on page 23 sums up, or summarizes, why we need trees. Guide students to understand that the information they learned about trees providing homes, food, and oxygen in the air for animals and people are all reasons why we need trees. Trees help us live and grow.

TALK AND WRITE
Students can respond to the article by talking and writing. Use the following prompts to guide them. You might also want to use the Language Arts Master for this article.
• Talk about why we need trees.
• Draw something you learned about trees.
We Need Trees

SCIENCE

Objective
• Students will learn that plants can change their environment.

Standard Supported
• NGSS ESS2.E: Biogeology: Plants and animals can change their environment. (K-ESS2-2)

Resources
• Science Master (page 14)

Science Background
There are many different types of trees, but they all have similar parts.
• roots that grow underground
• trunk (stem)
• branches
• leaves or needles
• some grow fruit or nuts
Like most plants, trees grow from seeds. Trees provide many things for people and animals and are a valuable natural resource.

ENGAGE
Engage students by having a discussion about trees. You might have them draw a tree and then compare their tree with others’ trees. Have pictures of trees available, and let students know what the different parts of a tree are. Ask students to find (or add) those parts on their drawings.

EXPLORE
If you have trees near your school, you might want to do a nature walk. Have students bring a “science notebook” on the walk so they can draw or write their observations. Spend as much time as you can observing the trees. Students can talk about what they see and notice things such as the shape of the leaves, the trunk and the texture of the bark, if some of the roots are visible above the ground, how tall or how small the tree is compared to other trees, and so on.

EXPLAIN
Ask students to explain what they learned about why we need trees. Help students make inferences about what they read, based on the text and the pictures in the article. Provide the bulleted information below to students, and guide them in finding the reason from the article that fits with each statement.

Reasons We Need Trees
• Animals need places to live. (Some animals live in trees.)
• People need places to live, too. (People use the wood that comes from trees to make homes.)
• People and animals need food to eat. (Trees grow food, like fruits.)
• We need air to live. (Trees make oxygen, which is in the air.)

ELABORATE
As a class, research to find other reasons we need trees or other types of trees that provide food for animals and people. You might also want to plan an Arbor Day celebration, which falls on April 27. Arbor Day is a day to celebrate the importance of trees. There are many ideas online for different ways to celebrate, with activities such as planting trees, creating posters, reading books, writing stories, and taking hikes to identify trees.

EVALUATE
Assess students’ understanding with the Science Master for this article. You might also use the following prompts.

• What is one reason we need trees?
• What is a food that grows on some trees?
LANGUAGE ARTS: Word Scramble

These words are all mixed up. Fix the words.

air  food  homes  plants  trees

1. We need ___________________. (ertes)

2. Trees are ________________________. (laptns)

3. Trees are __________________________. (meohs)

4. Trees grow __________________________. (odof)

5. Trees make the oxygen in __________________. (ria)
Go outside. Pick a tree. Look at the tree carefully.

**SCIENCE: Observe a Tree**

Name _________________________________________ Date ______________________

Draw a picture of your tree.

Draw a leaf from your tree.

Write three words or more that tell about the tree.

______________________________________  ______________________________________

Are there any birds, insects, or other animals in the tree? Write down the animals. Write what they are doing.

______________________________________  ______________________________________

Are there any flowers, fruits, or nuts on the tree? Write what they look like.

______________________________________  ______________________________________
A Cub in the Wild

Language Arts: A Panda Cub Grows, page 5
Students should use the chart for reference and then draw lines to correctly match the information in the two columns.

1. A cub can crawl. > 3 months
2. A cub’s eyes are open. > 6 weeks
3. A cub can walk. > 6 months
4. A cub doesn’t have much fur. > birth
5. A cub is covered in fur. > 3 weeks

Science: A Panda’s Habitat, page 6
Students should draw a panda cub and its mother in their habitat. They should label the cub, the mother, and a bamboo tree in their drawing.

Message in a Bottle

Language Arts: An Important Message, page 9
Students should write or draw about what they learned. They can use the words plastic bottle, landfill, ocean, and recycle to write sentences or label their drawings.

Science: Trash to Treasure, page 10
Students should draw a design of something new that they could make out of an item they would usually throw away.

We Need Trees

Language Arts: Word Scramble, page 13
Students should unscramble the words.

1. trees
2. plants
3. homes
4. food
5. air

Science: Observe a Tree, page 14
Students should go outside, pick a tree to observe, and draw and write about their observation.