



PEBBLES and the BIGGEST NUMBER

Get to Know Pebbles

A Butterfly Science Exploration Workbook

Target Audience: K-2
Time: five 45-minute lessons



NEXT GENERATION SCIENCE STANDARDS:

- K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
- K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.
- K-ESS3-1. Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live.

ACTIVITY GOAL:

After reading *Pebbles and the Biggest Number*, students will use the “Get to Know Pebbles” workbook to explore the science of butterflies.

LEARNING OBJECTIVE:

Students will engage in the “Get to Know Pebbles” workbook activities while following along with the accompanying Presentation to explore the following butterfly science concepts:

- life cycle of a butterfly
- monarch migration
- butterfly anatomy
- butterfly basic needs

MATERIALS:

- One printed or digital copy of “Get to Know Pebbles” science workbook per student
- Means to display “Get to Know Pebbles” Presentation ex. Smartboard or projector
- Scissors
- Glue
- Pencils
- Crayons or colored pencils

LESSON 1

Material covered:

- Science Workbook – cover, pages 1 and 2
- Presentation – slides 1-5

★ WHOLE GROUP TEACHING:

- Use slide 3 to help students complete page 1 of their science workbook by brainstorming what they already know about butterflies and what they want to learn
- Brainstorming lists can be recorded on large paper, a white board, or digitally depending on class resources
- **Grades K-1** – Teacher writes brainstorm list for students to reference
- **Grade 2** – Students can take turn writing their questions on brainstorm list
- Read the book *Pebbles and the Biggest Number*
- **Grades K-1** - Focus on the main text passages and skip over some of the science facts to keep the story moving, spotlight a science fact or two depending on the individual interests of your students
- **Grade 2** – Include as many side facts and science spots as you can, add side questions to your brainstorm list along the way, to answer as time permits during the week
- Use slide 5 to help guide students in completing the task on page 2 of their science workbook

★ STUDENT ACTIVITY:

- Before Reading – complete page 1 of the science workbook
- **Grade K-1** – Can write in key words only or guided writing following the teacher or copying from group brainstorm list
- **Grade 2** – Can write in whole sentences or reword group questions to make them their own thoughts
- After Reading - complete page 2 of the science workbook
- **Grade K-1** – Can draw a picture to represent what they learned
- **Grade 2** – Can draw a picture and write a caption or label to explain what they learned from the book

🔍 Checks for Understanding:

- Students can share their learning from page 2 in their science notebook with a shoulder partner, table group, or individually with the teacher depending on class size and time
- As a class answer any questions on the brainstorm list that you've learned the answers to

LESSON 2

Material covered:

- Science Workbook – pages 3-6
- Presentation – slides 6-20

★ WHOLE GROUP TEACHING:

- Use slides 6-8 to introduce many butterfly science topics, focusing today on parts of a butterfly body and monarch migration
- **Grades K-2** – Students can take turns answering questions from slides 9-20

★ STUDENT ACTIVITY:

- **Grades K-2** – Should follow along in the science workbook on pages 3-6 to color and circle the correct parts of the butterfly body and draw arrows indicating monarch butterfly migration

? Checks for Understanding:

- Students can share out similarities and differences between butterfly and human bodies, this can be done independently as an exit ticket, verbal share-outs by table, or as a class Venn diagram
- Answers can be added to the brainstorm list from lesson one

LESSON 3

Material covered:

- Science Workbook – pages 7-12
- Presentation – slides 21-31

★ WHOLE GROUP TEACHING:

- Use slides 21-23 to refresh students about the life cycle of a butterfly
- **Grades K-2** Use slide 24 to check student understanding of the stages of the butterfly life cycle
- Use slide 26 to discuss the cyclical nature of the butterfly's life cycle and the life cycles of all creatures
- Use slides 27-31 to help students visualize each stage in the life cycle of a butterfly

★ STUDENT ACTIVITY:

- **Grades K-2** - Cut out the 4 stages of the butterfly life cycle on page 7 in the science workbook and glue them under the correct stage name and order on page 8
- **Grades K-1** - Can draw pictures to represent each of the four life cycle stages on pages 9-12 of the science workbook
- **Grade 2** - Can draw pictures and label or write a sentence explaining what they know about this stage of the life cycle

? Checks for Understanding:

- Check student science workbooks for mastery of the butterfly life cycle content

LESSON 4

Material covered:

- Science Workbook – pages 13-14
- Presentation – slides 32-36

★ WHOLE GROUP TEACHING:

- Use slides 32-34 to review what students have already learned about butterflies
- **Grades K-2** - Have students infer answers to the questions on slide 35 from what was reviewed as a class, although students to discuss and debate answers to help form a more solid understanding of the butterflies
- **Grades K-1** - Teacher can write a list of items for students to copy from ideas discussed during the group discussion

★ STUDENT ACTIVITY:

- **Grade K-1** - Can copy key words or use guided writing to list three things butterflies on page 13 of the science workbook
- **Grade 2** - Can independently write key words or sentences describing three things butterflies need on page 13 of the science workbook
- **Grades K-2** - Draw a picture on page 14 depicting a healthy ecosystem and habitat for a butterfly, include at least the three things listed on page

🔍 Checks for Understanding:

- Teacher selected students can serve as models for a what a healthy habitat can look like, show exemplars that include the correct food, weather, habitat, and butterfly

LESSON 5

Material covered:

- Science Workbook – pages 15-16
- Presentation – slides 37-41

★ WHOLE GROUP TEACHING:

- Use slides 37-40 to guide students through the lesson activities
- **Grades K-2** Have students spot which butterfly is a monarch on slides 38 and 39, allow students to defend their answers by describing the monarchs' precise patterns and colors

★ STUDENT ACTIVITY:

- **Grades K-2** - On page 15 make Pebbles look like a monarch with the correct patterns and colors
- **Grades K-1** - Can get creative designing their own butterfly with unique colors and patterns
- **Grade 2** – Challenge students to create a butterfly for a certain habitat, to have camouflage, or to fool a certain predator

🔍 Checks for Understanding:

- Check student science workbooks for mastery of the week's science topics
- Have students answer any remaining questions from the brainstorm list from lesson one