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What Is a Glyph?

A *glyph* is a pictograph or hieroglyph. It is a non-standard way to collect, display, and interpret data. Students create pictures (the glyphs) by answering questions using a legend. The details in the picture provide information about the person who created the glyph.

The Magic of a Glyph

Learning to count, sort, make tally marks, combine sets, measure, and make patterns are all mathematical skills that students use regularly. The magic of using a glyph to practice these skills is that, in the process, students are also thinking critically by comparing and contrasting, reasoning, and drawing conclusions.

Glyphs easily span the entire curriculum. They are a perfect springboard for incorporating literature as well as reading, writing, math, and science. In addition, glyphs build classroom community as students learn about one another's interests and unique personalities. Most importantly, students are motivated to learn because glyphs are personal and meaningful.

Each glyph in this book includes directions, a legend, a data analysis page, and the patterns needed to complete it.

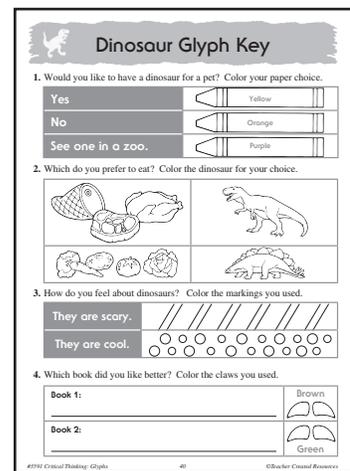
As you incorporate glyphs into your curriculum, children naturally become energized to learn about each other and, in turn, the skills needed for 2nd grade. This book allows teachers to provide hands-on activities that will stimulate children's minds in a fun and creative way!

 The *directions* explain how to construct the glyph and any special materials needed.

 The *glyph key* provides the questions to ask the children and the details to add to the picture. Students can fill in their own glyph keys before or after assembly of the glyphs. Determine which system will work better for your students and be consistent for each glyph.

 The *glyph data page* is where math skills are practiced and critical thinking begins. The page may be reproduced for each child or completed as a whole class. If completing it as a whole class, you may wish to enlarge the page, rewrite it on chart paper or use a document camera, so all students are able to see and participate in the analysis process. With practice, students should fill in their own pages.

 The *patterns* can be copied, enlarged, traced, or simply used as guides for students who prefer to make their own shapes.

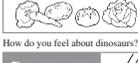


Dinosaur Glyph Key

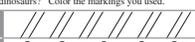
1. Would you like to have a dinosaur for a pet? Color your paper choice.

Yes	Yellow
No	Orange
See one in a zoo.	Purple

2. Which do you prefer to eat? Color the dinosaur for your choice.

3. How do you feel about dinosaurs? Color the markings you used.

They are scary.	
They are cool.	

4. Which book did you like better? Color the claws you used.

Book 1:	
Book 2:	

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Meeting Common Core Standards

Mathematics—Grade 2

Operations and Algebraic Thinking

- Represent and solve problems involving addition and subtraction.
- Add and subtract within 20.

Measurement and Data

- Measure and estimate lengths in standard units.
- Relate addition and subtraction to length.
- Represent and interpret data.

Geometry

- Reason with shapes and their attributes.



English Language Arts Standards—Grade 2

Reading: Literature

- By the end of the year, read and comprehend literature, including stories and poetry, in the grades 2–3 text complexity band proficiently, with scaffolding as needed at the high end of the range.

Reading: Informational Text

- Compare and contrast the most important points presented by two texts on the same topic.

Writing

- Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words to connect opinion and reasons, and provide a concluding statement or section.
- Recall information from experiences or gather information from provided sources to answer questions.

Speaking and Listening

- Participate in collaborative conversations with diverse partners *about grade 2 topics and texts* with peers and adults in small and larger groups.
- Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
- Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.
- Produce complex sentences when appropriate to task and situation in order to provide requested detail or clarification.

Language

- Determine or clarify the meaning of unknown and multiple-meaning words and phrases *based on grade 2 reading and content*, choosing flexibly from an array of strategies.

Motor Development Skills



Write numbers.



Cut with scissors.



Draw shapes.



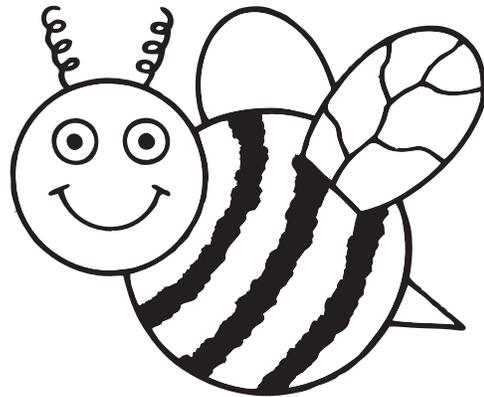
Color with crayons.



Bee Glyph

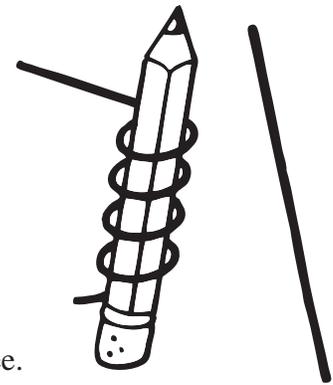
Materials

- 1 large paper plate (for the bee's body)
- 1 small paper plate (for the bee's head)
- yellow and black tempera paint and brushes
- black chenille stems (for the antennae)
- white construction paper (for the wings)
- black construction paper (for the stingers)
- glue and scissors
- Bee Glyph Key for each student (page 45)
- Bee Glyphs Data page for each student (page 46)
- Bee Patterns (page 47) and Bee Extension (page 48)



Making the Bee Glyph

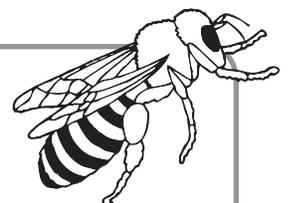
1. Read two different books about bees and fill in the titles on the student glyph key pages.
Suggestions: *The Very Greedy Bee* by Steve Smallman and *Are You a Bee?* by Judy Allen
2. Give each student 1 large and 1 small paper plate to paint yellow.
3. Ask each student which book he or she likes better.
 - If **Book 1**, glue or staple the head on the left side of the big plate, so the bee is flying to the left.
 - If **Book 2**, glue or staple the small plate on the right side of the big plate, so the bee is flying to the right.
4. Ask each student if he or she likes to touch insects.
 - If **yes**, 3 black stripes are painted on the bee's body.
 - If **no**, 4 black stripes are painted on the bee's body.
5. Ask each student if a bee has ever buzzed in his or her ear.
 - If **yes**, use a pencil to wrap the chenille stem around to make it curly. Then bend it in half to look like 2 curly antennae.
 - If **no**, bend the chenille stem in half to look like 2 straight antennae. Attach the antennae to the back of the bee's head with tape or staples.
6. Ask each student if he or she has ever been stung by a bee.
 - If **yes**, cut a long, black, triangular stinger and glue it to the end of the bee.
 - If **no**, cut a short, black, triangular stinger and glue it to the end of the bee.
7. Finally, have each student make 2 wings for the bee. Glue one to the front of the bee's body; glue the other to the back of the body. Make sure the head is on the correct side!
8. Draw eyes and a smile on the bee.



Extension: Provide each student with the paper, "Can You Find My Bee?" Have each student fill in the blanks. Display the bees on a bulletin board. Take turns reading the glyph clues aloud. Students must look for a bee (interpret the data) that matches the description being read.

Bee Glyph Analysis

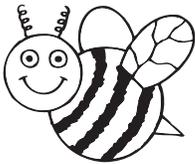
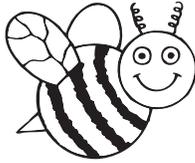
1. Copy the Bee Glyph Key page for each student to fill in.
2. Pair-share to examine and interpret each other's Bee Glyphs.
3. Sort the completed Bee Glyphs with students according to each question.
4. Fill in the Bee Glyphs Data page as you answer each question.



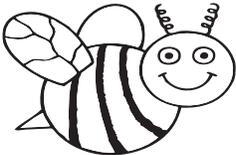
Bee Glyph Key



1. Which book did you like better? Color the bee that matches your choice.

<p>Book 1:</p> <p>_____</p>	 <p>Left</p>
<p>Book 2:</p> <p>_____</p>	 <p>Right</p>

2. Do you like to touch insects? Circle the number of stripes your bee has and color the bee.

<p>Yes</p>	 <p>3</p>
<p>No</p>	 <p>4</p>

3. Has a bee buzzed in your ear? Trace your bee's type of antennae.

<p>Yes</p>	 <p>Curly</p>
<p>No</p>	 <p>Straight</p>

4. Have you ever been stung by a bee? Color the stinger for your answer.

<p>Yes</p>	
<p>No</p>	



Bee Glyphs Data

Let's analyze our Bee Glyphs data!

1. Count how many bees are flying to the left. _____

This means that _____ students liked **Book 1**.

2. Count how many bees are flying to the right. _____

This means that _____ students liked **Book 2**.

3. Count how many students like to touch insects.

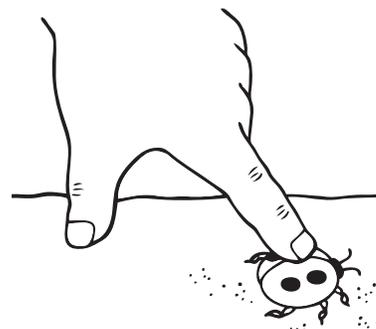
_____ students like to touch insects.

_____ students do not like to touch insects.

Write a subtraction sentence using the 2 numbers.

Remember to put the greater number first.

_____ - _____ = _____

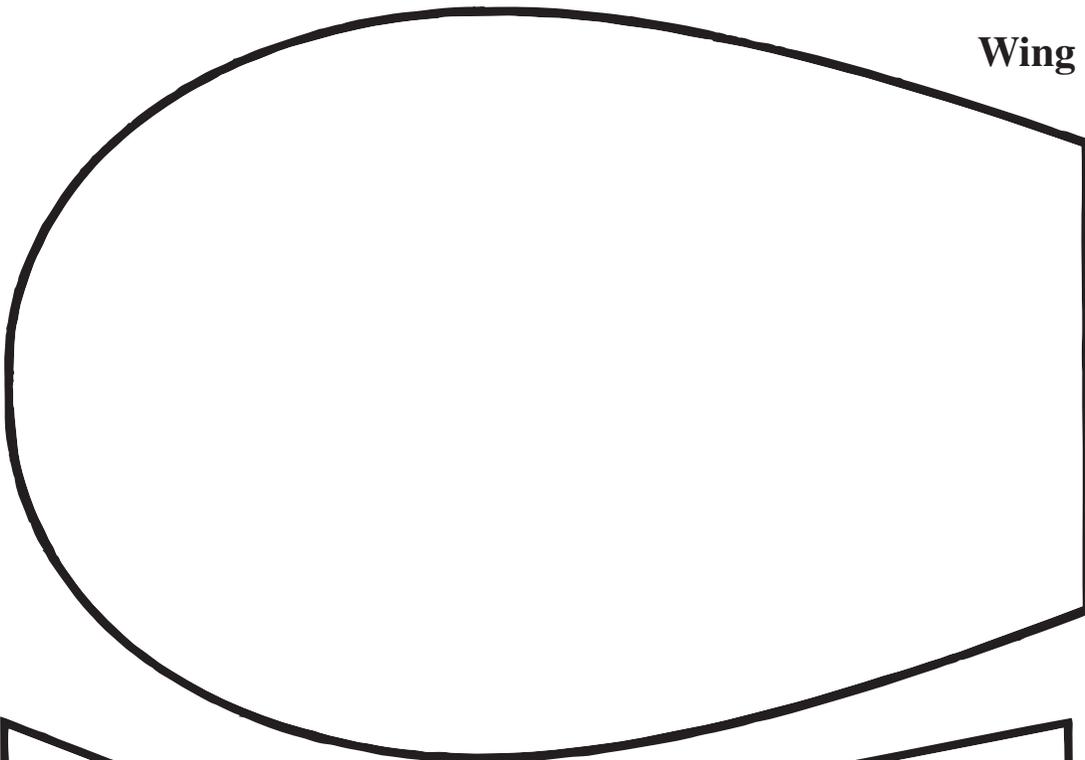


4. Use tally marks to show how many students have had bees buzz in their ears. Fill in the totals for each choice. Circle the greater number.

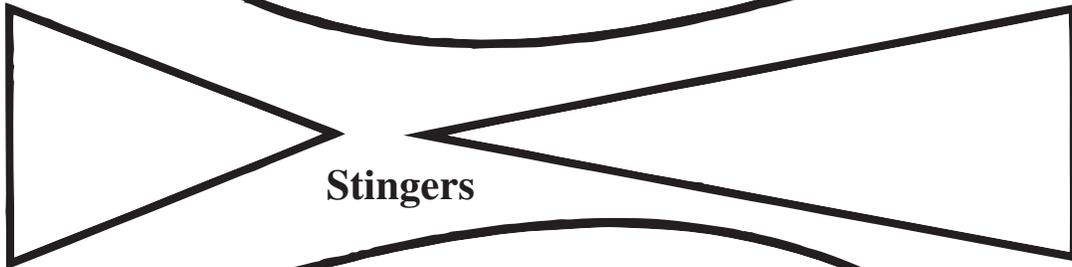
Buzzed	No Buzz
Total	Total

5. Look at the stingers. What information can you gather about how many students have been stung by a bee? Write a sentence to tell about it.

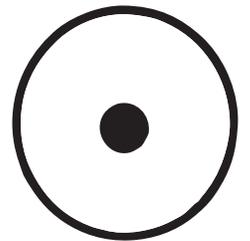
Bee Patterns



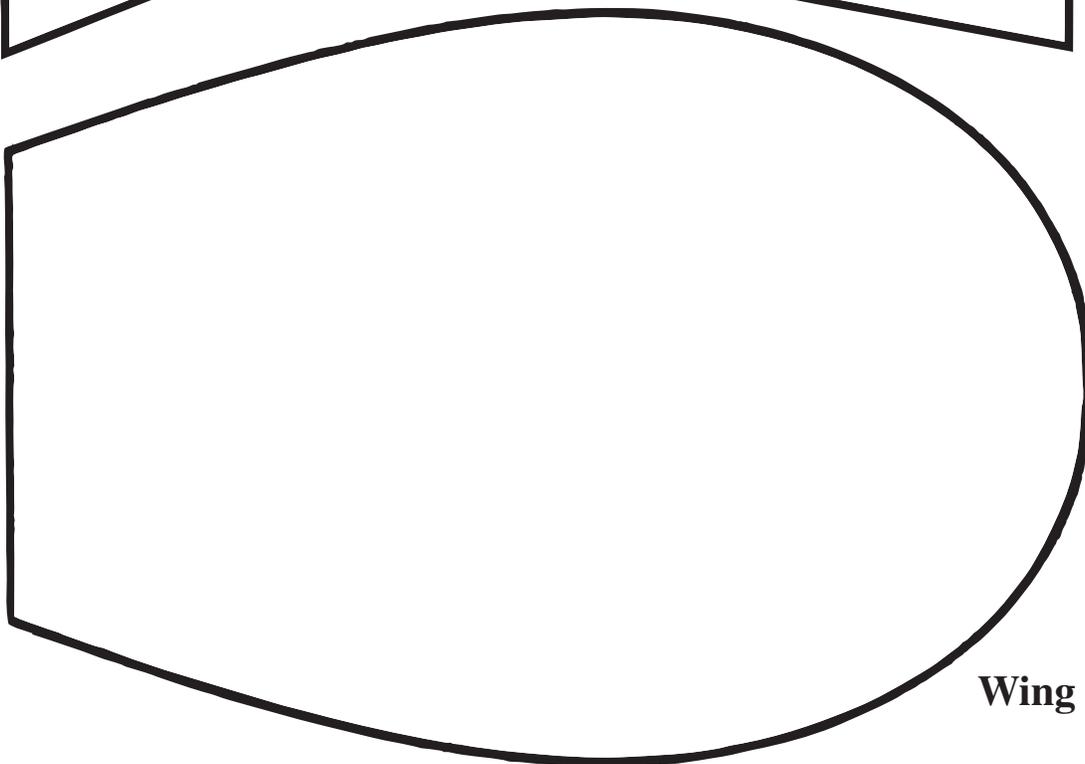
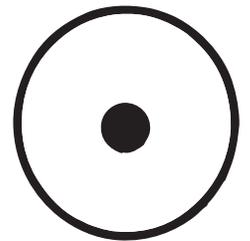
Wing



Stingers



Eyes



Wing



Bee Extension

Can you find my bee?



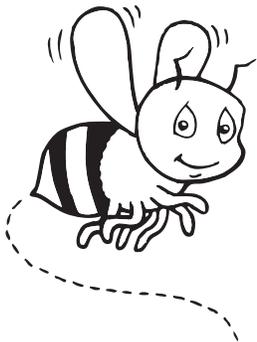
I liked Book _____.

I _____ to touch insects.

A bee _____ buzzed in my ear.

I _____ been stung by a bee.

Can you find my bee?



I liked Book _____.

I _____ to touch insects.

A bee _____ buzzed in my ear.

I _____ been stung by a bee.

Can you find my bee?



I liked Book _____.

I _____ to touch insects.

A bee _____ buzzed in my ear.

I _____ been stung by a bee.