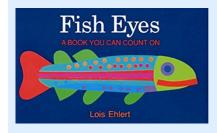
DISCOVERING THE MATH: BOOK GUIDE



AUTHOR:

Lois Ehlert

Fish Eyes is a counting story about a small fish who explains what he would see if he became a beautiful fish who flipped down rivers and splashed in the sea.

Ages: 2 to 6 years

ATOS Reading Level:

Not available

Lexile: Not available

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Fish Eyes

Can you add your way through the ocean with an adventurous little fish?

Topics: counting, adding, shapes, patterns, comparisons, sorting

Activities To Do Together:

Before you read the book Fish Eyes with your child:

 Look at the fish in the story together. Talk about the shapes that Lois Ehlert used when designing the fish in the book.

As you read Fish Eyes with your child:

- Ask them periodically how many fish they think will be on the next page.
- On the page with "1 one green fish," ask your child to compare the green fish and the brown fish. How are they alike? How are they different?
- Point out the written numeral and how it corresponds with the number of fish described on the page. How does that number change when you add one more fish?

When you are done reading Fish Eyes:

- Encourage your child to use various shapes to design their own fish. Ask them to tell you about the shapes they used to make the fish and how many of each shape they used.
- Look with your child for triangles throughout the story.
 Where does your child see triangles? Try this with other shapes too. Where do you see circles? Rectangles?
- Compare the fish. Look for large fish, small fish, colorful fish. Find the most colorful fish, the fish with the most circles, etc.
- Count the fish. Find the page of the book that has the most fish. How many fish are there on that page?
- Ask your child to draw a fish with a repeating pattern.
 Then ask your child to describe the fish's pattern.
- Draw tall thin triangles, low wide triangles, and triangles with sides that are the same length. Notice how all triangles have three straight sides and three angles.

Conversations During Daily Routines with Infants and Toddlers:

- Snack time Place two apple slices on a plate. Count them with your child. Add one more apple slice. Count to see how many you have now.
- 2. Play time Count a small group of toys together. Add one more. Count again. Now how many do you have?
- 3. Outside time Create collections of objects that have similar characteristics. Talk about their similarities.
- 4. Art Time Make a simple fish using a circle and triangle. Talk about each shape.
- 5. Dressing time Talk about repeating patterns on clothing.

Questions for Mathematical Thinking:

- 1. How are the fish in this book alike? How are they different?
- 2. Which is your favorite fish in the book? How do you think the author created the fish? What does it look like? What shapes do you see in your favorite fish?
- 3. Find a fish with spots in the book. Count the spots. How many are there? How many spots would the fish have if it had one more spot?
- 4. Six fantailed fish plus one small fish equals seven fish. Four spotted fish plus three striped fish also equal seven fish. What other ways can you think of to add fish to make a total of seven fish?
- 5. Find a page with lots of circles. What do the circles represent?

Early Math Project Resources:

Visit <u>Fish Eyes Activities</u> (earlymathca.org/fish-eyes)

Follow this <u>link</u> or visit earlymathca.org/external-resources for additional online resources.

Math words found in the story: add, eight, five, four, nine, one, plus, seven, six, ten, three, through, two

Related math words: addition, counting, equation, increasing by one, patterns

Words to build reading comprehension: darting, fantailed, scales, suit

Spanish Title: Not available

Related Books: Quack and Count by Keith Baker; Animals on Board by Stuart J. Murphy

Click this link to the World Catalog or enter https://bit.ly/3RYqzWI to find Fish Eyes in the public library.





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Math Connections: Use the book *Fish Eyes* to introduce counting and addition. This story can also be used to reinforce understanding of sorting, patterns, shapes, and the concept of cardinality.

Children who are just learning to count can practice counting the fish on the first pages of the story. Encourage your child to point to and count the fish.

Cardinality is the understanding that the last object counted (when all of the objects in a group have been counted once and only once) represents the total number of objects in the group. Children often recount a group of objects they have just counted when asked the question "How many are there?" until they develop an understanding of the concept of cardinality. Children have mastered this concept when they can tell you with confidence that the last number said is also the total number of objects.

Children who have had more experience counting may enjoy counting and making comparisons, answering questions like "Which fish has the most circles?" or "Which page has the most fish?"

With preschool and elementary school age children, explore the addition in the book. Talk about how the addition described in the story would look if it was written down on paper. For example, "5 spotted fish plus me makes 6" could be written as 5+1=6 or as 6=5+1. Talk about how the = sign means that the numbers on both sides of the equal sign are worth the same amount.

Have fun sorting the fish by common attribute and keep track of what you notice with a simple tally chart or graph. Which fish have stripes? Circles? Teeth? Which fish are colorful? What do all of the fish have in common? Which fish are alike? Which fish are different?"

Explore shapes with *Fish Eyes*. Ask your child to identify the different shapes that make up the fish in the story. They will find circles, triangles, squares, and rectangles throughout the book. Ask your child how many circles or triangles they see on a certain page. Are there more triangles or rectangles? Which triangle is the biggest? Have a shape scavenger hunt within the pages of the book!

Vocabulary for Extending Math Concepts:

Vocabulary for Reading Comprehension: darting, fantailed, scales, suit





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Talk about the patterns that exist in the book, both the patterns on the fish and the pattern of adding one fish. As you read, ask your child to predict how many fish they think will be on the next page. Ask them why they think there will be that many fish.

| Age Level | Related Infant Toddler Foundations, Preschool Foundations and CA State Standards |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Infant/ Toddler | Spatial Relationships The developing understanding of how things move and fit in space; Number Sense The developing understanding of number and quantity; Classification The developing ability to group, sort, categorize, connect, and have expectations of objects and people according to their attributes. |
| Preschool/ TK | Number Sense 1.0 Children begin to understand numbers and quantities in their everyday environment. 1.2 Recognize and know the name of some written numerals. 2.2 Understand that adding to (or taking away) one or more objects from a group will increase (or decrease) the number of objects in the group. 2.3 Understand that putting two groups of objects together will make a bigger group. 2.4 Solve simple addition and subtraction problems nonverbally (and often verbally) with a very small number of objects. Algebra and Functions 2.0 Children begin to recognize simple, repeating patterns. |
| Kindergarten | Counting and Cardinality K.CC.1, K.CC.2, K.CC.3 Know the number names and the count sequence. K.CC.4, K.CC.5 Count to tell the number of objects. Operations and Algebraic Thinking K.OA.1 Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. |

