DISCOVERING THE MATH: BOOK GUIDE



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Count along as a small frog eats and eats until he is no longer a small frog. Now the much bigger frog has a problem. The half-sunk log that the frog is sitting on starts to rise. What's going to happen?

Ages: 1 to 6 years

ATOS Reading Level: 3.10

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Early Math Project

A Frog in the Bog

Why does the frog decide never to sit on a half-sunk log?

Topics: counting, comparison, predicting, sequencing

Activities To Do Together:

Before reading the book:

- Notice that the words frog and bog are rhyming words. Ask your child if they can think of another word that rhymes with frog.
- If you child isn't familiar with the word bog, explain that a bog is a type of wetland, a place where land is often covered with shallow water. Ask your child to tell you about the creatures that they think live in a bog.

While reading the book:

- Encourage your child to listen for words that rhyme with frog.
- · Count the creatures the frog swallows.
- Notice together how the frog changes. Ask your child why they think the frog's appearance is so different throughout the story.

When you have finished reading the book:

- Compare the tick, fleas, flies, slugs, and snails. How are they the same? How are they different? Compare quantities. Talk about what the frog swallowed. You might ask, "Did the frog swallow more slugs or ticks? How do you know?" Or you might ask, "The frog swallowed three flies. Did it swallow more than three of any creature?"
- Practice counting with a muffin tin. Use this printable (bit.ly/47M51D7) or cut out six circles that fit inside the wells of the muffin tin. Number the circles one though six. For example, the circle with the number three will show the number 3, an image of three dots, and the word "three." Place each circle in its own well, number side up. Collect a group of small objects (small pebbles, leaves, marbles, etc.). Ask your child to fill the wells of the muffin tin so the number of objects in each tin is the same as the number in the well. Your child can refer to the dots on the card if they aren't sure how many objects to place in the well. Your child may enjoy using tongs to move objects into the wells.



Conversations During Daily Routines with Infants and Toddlers:

- Meal time Reinforce the idea of *more* or *less* when you're eating. Ask you child if they want *more* food. Notice who has *less* carrots or *more* broccoli. Compare what you see on the table by quantity.
- 2. Play time Stack three or four blocks with your child. Count the blocks. Put one more block on the stack and count to find out how many blocks you have now.
- 3. Dressing time Count the buttons on your child's shirt. Count the buttons on your own shirt. Talk about which shirt has the most buttons. How many more does it have?
- 4. Reading time When reading with your child, count, describe, and compare what you see in the illustrations of the story. Are there more snails or flies?

Questions for Mathematical Thinking:

- 1. What happened in this story from start to finish?
- 2. Why does the frog keep growing bigger and bigger?
- 3. What does the frog eat that seems to make him grow the very biggest? Why do you think so?
- 4. Do you think it would be easy to mistake an alligator for a half-sunk log? Why do you think that?
- 5. The frog screams "gator" and out of the frog come all of the snails, slugs, flies, fleas, and the tick. What happens to the frog?
- 6. Why do you think the alligator decided not to chomp on the frog?

Early Math Project Resources:

Visit <u>A Frog in the Bog</u> (countplayexplore.org/book/a-frog-inthe-bog) to find activities and related California Learning Foundations and/or Mathematics Standards for this book.

Vocabulary

Math words found in

the story: big, bigger, five, four, half-sunk, inside, itty-bitty, later, little, middle, one, small, smaller, three, tiny, two, whole, wide

Related Math Words:

all together, how many, less, less than, more, more than

Words to Build Reading

Comprehension:

belly, bog, chomp, crater, glugs, holler, inhales, reeds, romps, slink, slither, sludge, slugs, swamp, tick

Related Books: Banana

for Two by Ellen Mayer; Over in the Meadow illustrated by Ezra Jack Keats; Five Little Pumpkins by Dan Yaccarino; The Water Hole by Graeme Base

Click this link to the World Catalog or enter bit.ly/3rZ2BB1 to find A Frog in the Bog in the public library.







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Math Connections: Use *A Frog in the Bog* to help your child practice essential counting skills.

Counting has many stages. Children first develop an understanding of quantity, the idea that there is more or less of something. While reading *A Frog in the Bog*, explore quantity by talking about whether there are more snails or flies, more fleas or frogs. Talk about what happens to the frog as he swallows more and more creatures.

As children start learning number names, it's very common for them to say those names out of order. Don't be surprised to hear your child say, "one, two, three, six, five, ten." They will begin to say the numbers in order more consistently with practice.

Young children typically like to count. Count together often and make it fun. Count the number of buttons on a shirt, the number of stairs climbed, the number of crackers on a plate, the number of dogs at the park, etc. Children need many experiences with counting. Over time they will learn what number come next in a sequence. Counting small collections of objects, like shells, toy cars, or silverware helps children develop number sense which is an important foundation for addition, subtraction, and other types of math. While reading *A Frog in the Bog*, count the creatures you see together.

One-to-one correspondence is a concept that children develop with counting practice. They begin to understand that when counting a collection of objects, each object is counted once and only once. They begin to understand that each object is given only one number name. With practice, children develop strategies for counting each object only one time. Their strategies might include putting the objects into a line, putting objects into stacks or groups, or moving objects out of the group as they are counted. As your child begins to count larger groups of objects, talk about the strategies they are using to make sure that each object is only counted once. As you read the story, notice which groups of animals are easiest to count. For example, it's easier to count the three flies that are flying in a straight line rather than the mixed up group of creatures the frog has swallowed. Ask your child what might make it easier to count the creatures the frog has swallowed.



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Another important counting concept, known as **cardinality**, is the idea that the very last object counted in a group tells you the total number of objects in the group. When your child counts a group of objects, ask "How many do you have?" It is common for children to count the objects over again when asked this question because they don't fully understand that the last number said is the total number of objects. Once your child consistently tells you that the last number counted is the number of objects in the group, then they understand cardinality.

As children become more comfortable with counting they begin to associate number names with written numbers. For example, they associate the value of three, with the word "three" and the written symbol "3". As you read the story, point out some of the number words that are included in the story. If your child expresses an interest in knowing what the numbers look like when written as numerals, write the numbers 1-5 on a piece of paper.

Dr. Megan Franke's keynote presentation at the 2019 Early Math Symposium provides additional information on young children's counting. Her keynote, *Insights on Young Children's Counting and Early Problem Solving* can be found at this <u>link</u> or by typing bit.ly/45wppXt into your browser.

