



AUTHOR:
Stuart J. Murphy

ILLUSTRATOR:
David T. Wentzel

Eddie must guess the player's age correctly to keep from getting dunked in the pool. Could it be luck or his math skills that are keeping him dry? Will anyone succeed in dunking Eddie in the pool?

Ages: 4 to 7 years

ATOS Reading Level:
2.4

Lexile: 720L

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More or Less

Can Eddie's math skills keep him from getting dunked?

Topics: comparison, even, odd, strategy, reasoning

Activities To Do Together:

Use *More or Less* to strengthen your child's logic and reasoning skills and to compare numbers using less than or greater than.

Before reading the book:

- Ask your child if they have ever seen a dunk tank. If so, where was it and did someone get dunked? If not, explain where you might see a dunk tank and how it works.
- Ask your child to think of a number between 1 and 20 without telling you the number; try to guess the number by asking a series of yes/no questions. Switch roles and ask your child to try to guess a number you are thinking of by asking yes/no questions.

While reading the book:

- Eddie asks a series of questions to try to figure out a person's age. After reading one of Eddie's questions, ask your child what number would be a reasonable guess or next question based on the person's answer.
- Discuss possible questions Eddie could ask to narrow down the person's age.

When you have finished reading the book:

- Practice guessing a mystery number. Take turns guessing the other person's number. Discuss the types of questions that help to eliminate a lot of numbers.
- Guess someone's birthdate.
- Guess how tall someone is in inches.
- Encourage your child to come up with a series of questions to quickly guess a secret number.
- Using their list of questions, ask your child to predict how many questions they will need to ask to correctly guess the number. Was their prediction more than, less than, or equal to the actual number of questions asked?



Questions for Mathematical Thinking:

1. Explain the strategy behind Eddie's guesses. How does he guess the ages of the people at the big picnic?
2. Why do you think Eddie asks people if their age is below 50?
3. What questions would you ask if you were Eddie? Why would you ask those questions? What would they tell you?
4. What is a good first question if you were guessing a number between 1 and 20?

Early Math Project Resources:

Visit [More or Less Activities](http://www.earlymathca.org/more-or-less) (www.earlymathca.org/more-or-less)

Follow this [link](#) or visit earlymathca.org/external-resources for additional online resources.

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Vocabulary

Math words found in the story: at least, between, even, fewer, greater, less, more, number, odd number, older than, younger than

Related math words: equal, equivalent, greater than or equal to, less than or equal to, not less than, not more than

Words to build reading

comprehension: dunk tank, muttered

Related Books: *Just Enough Carrots* by Stuart J. Murphy

Click this link to the [World Catalog](#) or enter bit.ly/40mT3v1 to find *More or Less* in the public library.

Math Connections:

Use *More or Less* to introduce odd and even numbers, problem solving strategies, and the concepts of greater than or less than. After reading the story, talk with your child about the types of questions that helped Eddie figure out a person's age. Ask your child if it was just luck or if Eddie used a strategy, if so what strategy did Eddie use? Read the story a second time and talk with your child about the numbers Eddie was able to eliminate with each of the questions he asked. Have fun using logical number guessing strategies to figure out the day of the month of somebody's birthday, how tall a person is in inches, or the number (or value) of coins in a jar.

When playing a number-guessing game with your child, use clues such as: "The number I am thinking of is greater than 10 but less than 50"; "My number is even". When it is your turn to guess a number, model asking some strategic questions such as: "Is your number greater than 50?"; "Is your number odd?". Your child may want to keep track of the numbers that have been eliminated on a 100 chart. A 100 chart is simply the numbers from 1 to 100 written in ten rows of ten numbers. There is a printable chart available on the Early Math Project website (earlymathca.org/printables-and-online), or you or your child could create your own. To use the 100 chart, your child would cross out (or color in) any numbers that are eliminated by a question. For example, if your child asks if your number is odd, and you say no, your child would cross out all the odd numbers. Encourage your child to analyze the numbers that are left on the chart to decide what question to ask next.

More or Less could also be used to introduce the written symbols for less than ($<$) and greater than ($>$). There are different ways to introduce these symbols. The smaller part of the symbol points to the smaller number and the larger part of the symbol points to the larger number. It is also common for some teachers to compare the symbol to an alligator's mouth. They say, "the alligator eats the larger number", so the open side of the symbol is always next to the larger number. Encourage your child to come up with their own way of remembering how the symbol is used and then to teach it to you. Practice using the symbols by playing a written game of guess the number. Instead of asking the questions out loud, write the questions using the less than ($<$) and greater than ($>$) symbols. For example, "Is the number < 10 ?"

DISCOVERING THE MATH: BOOK GUIDE

Enjoy a game of *Bagel*, *Pico*, *Fermi* with your child. This is a fun number guessing game that teaches strategy and reasoning. You only need writing materials to play. The directions for the game are found in the Early Math Project's webpage *Activities for More or Less*.

Age Level	Related Preschool Foundations and California Common Core State Standards
Preschool/ TK	<p>Number Sense 1.0 Children begin to understand numbers and quantities in their everyday environment. 2.0 Children begin to understand number relationships and operations in their everyday environment.</p> <p>Algebra and Functions 1.0 Children begin to sort and classify objects in their everyday environment. 2.0 Children begin to recognize simple, repeating patterns. Measurement 1.0 Children expand their understanding of comparing, ordering, and measuring objects.</p> <p>Mathematical Reasoning 1.0 Children use mathematical thinking to solve problems that arise in their everyday environment.</p>
Kindergarten	<p>Counting and Cardinality K.CC.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.</p> <p>Measurement K.MD.1 Describe and compare measurable attributes.</p>
Grade 1	<p>Number and Operations in Base Ten 1.NBT.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$.</p>

