



I'm Thinking of a Number

Math Concepts: Comparing, Number line

Materials: Paper and pencil - or - None

Players: 2

Set up: Use the paper and pencil to keep track of the questions and answers. If you play verbally, no paper is needed. Choose roles – one player is the Puzzler and the other is the Questioner. The Puzzler starts by saying “I’m thinking of a number between 1 and $<\#>$.”

Play: The Questioner asks questions of the form: “How does your number compare to $<\#>$?” The Puzzler answers by saying that their number is greater than, equal to, or less than that number.

Goal: The Questioner tries to guess the Puzzler’s number with as few questions as possible.

Example game: The Puzzler thinks of 6 and starts with “I’m thinking of a number between 1 and 10.”

Questioner: “How does your number compare to 5?” – Puzzler: “My number is greater than 5.”

Questioner: “How does your number compare to 7?” – Puzzler: “My number is less than 7.”

Questioner: “How does your number compare to 6?” – Puzzler: “Congratulations, my number is equal to 6!”

– DISCUSSION AND TIPS –

Discuss which number is best to ask about at a given moment in the game.

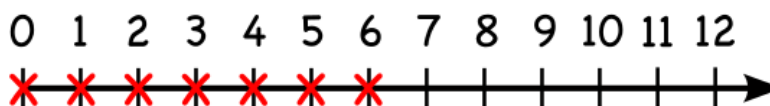
Discuss how much information a certain guess gives you. How many numbers can you cross off after a given guess?

Discuss what is a reasonable number of questions for a given range of numbers.

– VARIATIONS –

Question limit: Set a limit and challenge your children to discover the answer in at most that many questions.

Scoring: Count the number of questions asked over several rounds. The player with the lowest total wins.



Number line: Use a number line to keep track of the information and to practice with a number line. Each time a question is answered, mark off the numbers that are no longer possible. For example, if the range is 0 to 12 and the number is larger than 6, then the numbers 0, 1, 2, 3, 4, 5, and 6 are crossed off.

Grade 2: Use an extended range of numbers, say up to 100.