Magical Measurement Game

Strands:

Number & Quantity	X
Algebra	
Functions	
Geometry & Measurement	X
Statistics & Probability	

Work in teams to estimate, measure, and compare the lengths of classroom objects using informal measuring tools in this game for young learners.

Materials Needed:
- 1 or 2 dice
- Timer
- 20 same size paperclips
- 20 toilet paper rolls
- 1 box of toothpicks
- 1 package of drinking straws
- 1 package of plastic spoons
- 20 paper towel rolls
- Containers, 1 for each type of measuring tool

Where:

Outside	X
Inside	X
On-line	
On-site	

Set-Up:
- Place all the measuring tools in the middle of a table or on the floor in an open space. Leave the tools inside their containers.
- For 5 or more players, create teams of 2 or 3 players who work together.
- Play begins with the youngest player.

Object of the Game: Use informal measuring tools to estimate, measure, and compare lengths of objects near the game area.

On Your Turn:
1. Roll 1 die. The number that appears on the die is the ***magical*** number which is the number of units you will use when measuring.
2. As a team, choose a measuring tool from the ones provided. Your team will use the length of this tool as the unit of measure. Keep the tool on the table until Step 4.
3. a. Imagine how long an object must be if you line up the magical number of lengths of your tool.
   b. Before measuring, find **3** objects that you estimate to be this length. Your team has **1 minute** to do so.
4. a. Measure the length of each of the objects using your chosen measuring tool.
   b. Decide which object is closest to the magical number length.
   c. Bring this object back to the game area unless it is a stationary object.
5. Take turns with other teams, showing your object and how you measured using your tool.
6. a. Each team votes on which team found the object closest to the magical number length for the team's tool.
   b. The team with the most votes keeps the object nearby until the end of the game. If there is a tie, both teams keep their respective objects.
   c. Place all the measuring tools back in the container and put the container back where you found it.
7. Repeat Steps 1 through 6 two more times. Each team must pick a different measuring tool each round. No team can use the same measuring tool twice.

To Win: The team with the most objects after 3 rounds wins.

Think About It:
- If you use two different measuring tools to measure the same object, do you get the same number? Why or why not? Show an example.
- Is the length of your team's object the same as the length of another team's object?
  - If no, why are these lengths different?
  - If yes, why are the lengths the same?

Variations:

More Dice (Grades 3-5): Roll 2 dice instead of 1 to get a bigger magical number. Example: If a 2 and 3 are rolled, the numbers on the dice can be combined to get 2 **x** 3 = 6, or make one of the number a tens digit and the other a units digit to get 23 or 32. Before the game begins, decide which rule you are using to determine the magical number.

Which Tool is Best?: Start the game by picking an object to measure then decide which tool to use to measure that object. Measure the object and record the number and the unit (measuring tool) you used. Pick a different tool and repeat. Why do you get different numbers for the length of your object? Which tool is better to use and why?

Helpful Hints:

- When measuring, remember to line up your measuring tools long ways so the small ends of each tool touch but do not overlap. The measuring tool must also lie flat on the object you're measuring. Leaving gaps between measuring tools or not fully in contact with the object will give an inaccurate measurement of the length of your object.
- When describing the length of an object, it is very important to say what unit you are using to measure the length. For example, a length of 4 paperclips is not the same as a length of 4 straws.