

# SCIENCE MISSION: MARBLE MAGIC



## MATERIALS

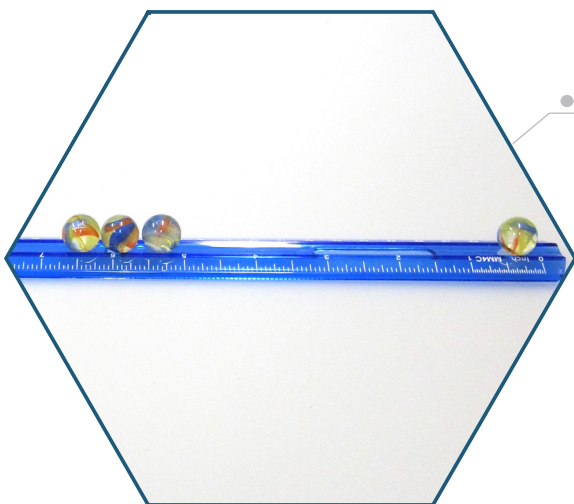
- Ruler with a groove down the middle
- 10 small marbles
- 1 large marble

Caution: Only adults should handle the marbles and complete the experiment.



## Directions

1. Line up 2 marbles in the middle of the ruler.
2. Place 1 marble on the right edge.
3. Ask your child to predict what will happen when you flick the outer marble. (Some children will likely predict that the 2 marbles in the middle will roll away; only the farthest marble will roll away. The energy of 1 marble will transfer through the middle marble to the farthest marble.)
4. Repeat the experiment with different numbers of marbles (e.g., flick 2 marbles at 3 marbles).
5. Record how many marbles are flicked and how many marbles move.
6. Discuss the pattern that emerges. (The number of marbles flicked equals the number of marbles that roll away, suggesting that a transfer of energy occurs relative to the kinetic energy of the number of marbles that hit the middle.)



## CHALLENGE

Place 1 large marble on the right edge of the ruler and place 4 small marbles in the middle of the ruler. Ask your child to predict how many marbles will roll away (2 marbles should roll away). Ask them to decide how much energy the large marble had (approximately 2 to 2 ½ of small marbles worth energy).