Name: _____

Date: _____

Lesson Assessment

1. Mateo, Katy, and Robb are all competing in a sled race. They raced each other three times. Mateo always started from Height A, Katy always started from Height B, and Robb always started from Height C. The table shows how fast each person was going when they reached the forest at the bottom of the hill each time. The winner is the person that goes the fastest.

Sledder	Trial #1	Trial #2	Trial #3
Mateo	24 miles per hour	21 miles per hour	22 miles per hour
Katy	17 miles per hour	16 miles per hour	18 miles per hour
Robb	10 miles per hour	9 miles per hour	8 miles per hour

What kind of pattern do you notice?

a. Mateo always went faster than Katy and Robb.
b. Katy always went faster than Mateo and Robb.
c. Robb always went faster than Mateo and Katy.

2. Why does the same person always win the sled races? Explain in terms of energy.

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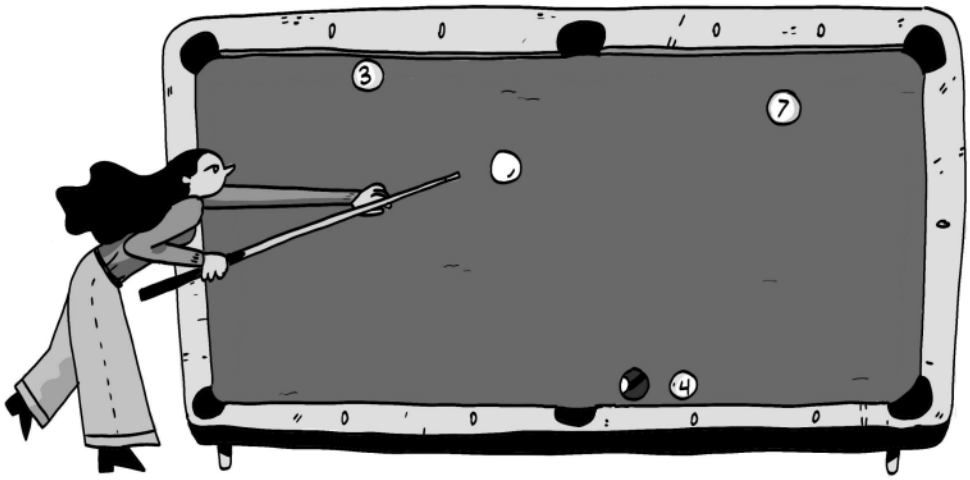
3. Robb wants to win the next sled race. He asks for your advice. What would you tell him he should change in order to win? Explain why your solution would work in terms of energy.

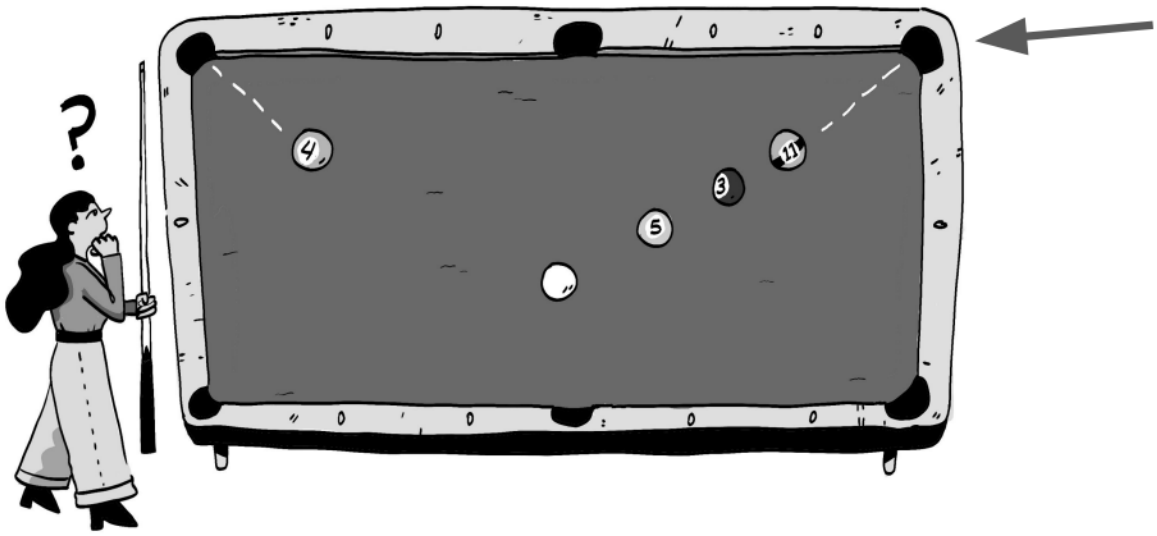


Camila is playing a game of pool. The game works by having players hit a white ball with a stick. The white ball then rolls across the table and collides with another pool ball.

4. In the picture above, Camila hits the white ball from her current position. What do you predict will **most likely** happen?

a. The white ball will hit the 3-ball and make a sound. Then the 3-ball will start to move.
b. The white ball will hit the 3-ball, but will not make a sound. Then the 3-ball will start to move.
c. The white ball will hit the 7-ball and make a sound. Then the 7-ball will start to move.
d. The white ball will hit the 7-ball, but will not make a sound. Then the 7-ball will start to move.

5. Why did you choose your answer to Question 4? Explain in terms of energy.



6. If Camila gets the 11-ball into the corner pocket (see arrow), then she wins the game! What is **the biggest problem** that might prevent Camila from winning the game?

a. The 4-ball is in the left corner. There may not be enough energy transferred to the 4-ball to get it to move.
b. The 5-ball and 3-ball are in front of the 11-ball. There may not be enough energy transferred to the 11-ball to get it to move.
c. The 5-ball and 3-ball are in front of the 11-ball. There is no way to get energy to the 11-ball or get it to move.
d. The 5-ball and 3-ball are in front of the 11-ball. There may be too much energy transferred to the 11-ball to get it to move.

7. What do you predict will **most likely** happen if Camila lightly taps the white ball, giving it just a small amount of energy?

a. The white ball will transfer energy to the 5-ball. The 5-ball will move a little and then stop.
b. The white ball will transfer energy to the 5-ball. Then the 5-ball will transfer energy to the 4-ball. The 4-ball will move a little and then stop.
c. The white ball will transfer energy to the 5-ball. Then the 5-ball will transfer energy to the 3-ball. Then the 3-ball will transfer energy to the 11-ball. The 11-ball will move and may go into the right corner pocket.

8. What do you predict will **most likely** happen if Camila hits the white ball really hard, giving it a large amount of energy?

a. The white ball will transfer energy to the 5-ball. The 5-ball will move a little and then stop.
b. The white ball will transfer energy to the 5-ball. Then the 5-ball will transfer energy to the 4-ball. The 4-ball will move a little and then stop.
c. The white ball will transfer energy to the 5-ball. Then the 5-ball will transfer energy to the 3-ball. Then the 3-ball will transfer energy to the 11-ball. The 11-ball will move and may go into the right corner pocket.