

Name: _____

Assessment Questions

Module 1.0: Energy in Baseball

1. _____ speed = _____ energy (Options: more, less)
 - a. What are two ways you can make a baseball have more energy?
 - b. Step forward when throwing.
 - c. Use your upper and lower body to throw.
 - d. Increase your arm speed.
 - e. All of the above

2. What are two ways you can make a baseball have more energy?
 - a. Step forward when throwing.
 - b. Use your upper and lower body to throw.
 - c. Increase your arm speed.
 - d. All of the above

Module 2.0: Composition of a Baseball

Match the property to the function.

1. Small, fuzzy texture, bouncy, hollow inside	A. Hit with a club for long distances.
2. Tiny, light weight, bouncy, hollow inside	B. Hit with a wooden bat for short or long distances.
3. Small, dimpled, bouncy, solid	C. Bounce of a racket and the ground for medium distances.
4. Smooth texture with stitching, little bounce, solid	D. Bounce of a paddle and the wooden table for short distance

1. _____ 2. _____

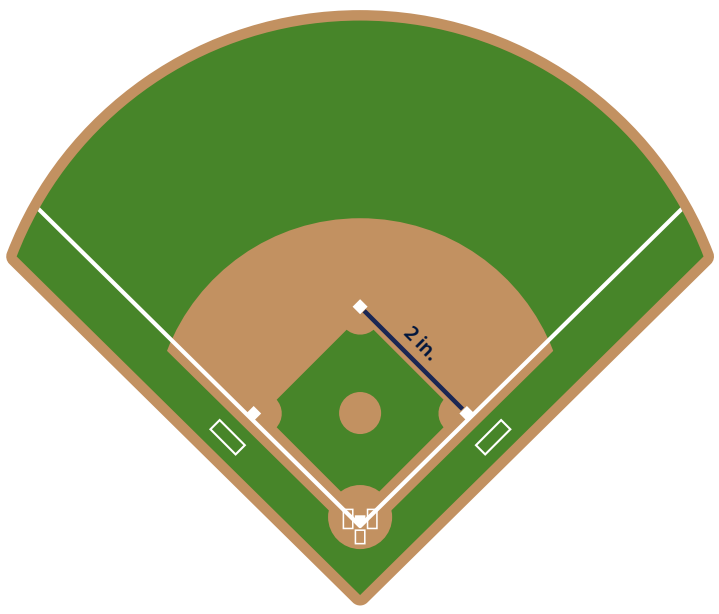
3. _____ 4. _____

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Module 3.0: The Field of Play

1. Which of the following is a key difference between the materials and surfaces of the original baseball field versus today's fields (hint: there is more than one answer)?
 - a. In the original field, the playing field/surface was all grass.
 - b. In the original field, the outline was spray painted.
 - c. In the modern field, the pitching mound is flat.
 - d. In the modern field, the grass is synthetic (fake)



2. List three similarities between the materials and surfaces of the original baseball field to the field used today.

3. Little League: Scaled Baseball Field

If the scale of the field diagram is 1 inch = 30 feet, what is the distance between first and second base?

- a. 2 inches
- b. 30 feet
- c. 60 inches
- d. 60 feet

Module 4.0: The Art of Pitching

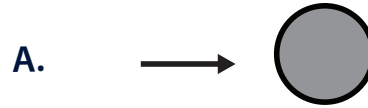
1. What causes the motion of a baseball?
 - a. The weight of the ball
 - b. Unbalanced Forces
 - c. Balanced Forces
 - d. Running

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2. Which ball would go further and faster?

- Ball A
- Ball B
- They will go the same
- They will go opposite



3. How does the size of an unbalanced force change the motion of the ball?

- The more force, the faster and further the ball will go.
- The more force, the faster the ball will go.
- The more force, the further the ball will go.
- Size of the force doesn't impact the motion of the ball.

Module 5.0: Engineering a Pitching Machine

1. Pre-only: What is a Criteria?

- Rules
- Guidelines to help your thinking or work.
- Things that hold you back in your thinking or work.
- A way to brainstorm ideas.

2. Pre-only: What is Constraint?

- Rules
- Guidelines to help your thinking or work.
- Things that hold you back in your thinking or work.
- A way to brainstorm ideas.

3. Post only: Why is it important to have clear criteria and constraints for a problem?

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4. Put the steps of the Engineering Design Process in order for designing a pitching machine:
 - a. Plan and build a prototype: Draw diagrams and build a device that will throw consistent pitches.
 - b. Brainstorming and multiple designs for a solution.
 - c. Identify the problem: Improving swing and hitting skills is difficult with the variables of a human pitcher.
 - d. Redesign: Make changes to your design based on the data and practice.
 - e. Test the prototype: Plan an experiment where you test the consistency of your prototype.
 - f. Communicate: Present your idea and results to the class or team.

Module 6.0: Success at the Plate

1. Which player was most successful at the plate?

Player 1	5/10
Player 2	2/10
Player 3	8/10
Player 4	1/10

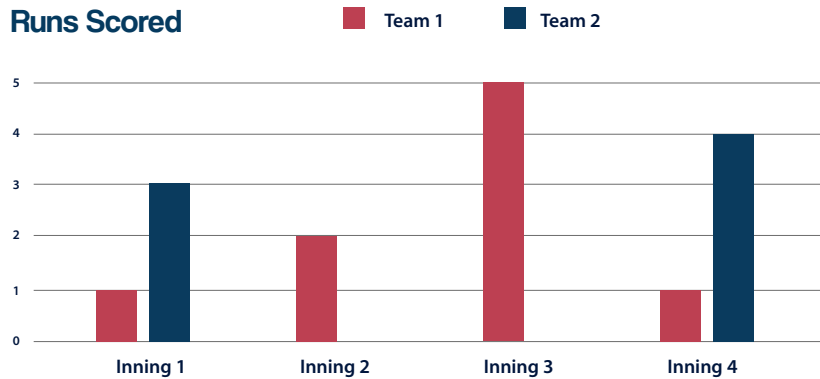
2. Which mathematical expression is true about how successful each player was based on the data table in question 1?
 - a. Player 3 < Player 2
 - b. Player 4 > Player 3
 - c. Player 1 > Player 2
 - d. Player 2 < Player 4

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Module 7.0: Player Statistics

- Based on the bar graph, which team had the most runs over four innings?
 - Team 1
 - Team 2
- Based on the bar graph, what is the total number of runs Team 2 scored over the four innings?
 - 7
 - 2
 - 6
 - 12



Module 8.0: Advancements in Baseball

- True or False: Technology, such as instant replay, has had only a positive impact on the game of baseball.
- Which of the following is part of the Engineering Design Process?
 - Criteria and Constraints
 - Brainstorming
 - Improvements
 - Asking questions
 - All of the above
 - None of the above
- Bonus: True or False: The MLB (Major League Baseball) Replay Command Center is located in New York.