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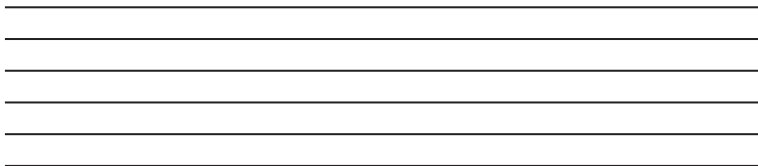
# Assessment Questions

## Module 1.1: Intricacies of a Volleyball Court

1. Suzie wants to know if there is an unused area at the park large enough for a volleyball court. She measured and the length was 50 feet with a width of 25 feet. The area of a normal indoor court is 1800 ft<sup>2</sup>. Is the area at the park large enough for a volleyball court?
  - a. Yes
  - b. No
  
2. Select all of the equations that could be used to calculate perimeter:
  - a.  $L \times W$
  - b.  $L + W + L + W$
  - c.  $S \times S$
  - d.  $L + L + W + W$
  - e.  $2L + 2W$

## Module 2.1: Geometry of a Volleyball Net

1. Are these Parallel or Perpendicular lines in the net?



2. Are these Parallel or Perpendicular lines in the net?



3. True or False: The volleyball net runs perpendicular to the ground.



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## **Module 3.1: Volleyball Properties**

1. Select all of the following that could be used to make good observations:
  - a. Five Senses
  - b. Opinions
  - c. Measuring tools, such as a tape measure or scale
  - d. Vague
  - e. Detailed
  
2. Alyssa is making observations of properties on several balls to identify which sport they belong. Which of the following observations best fit volleyball?
  - a. Bumpy, medium weight of 623 g, orange, firm, large, sphere.
  - b. Smooth, lightweight of 280 g, white, parallel lines, firm yet compressed, large, sphere.
  - c. Smooth, lightweight of 125 g, white and red, stitching, firm, small enough to hold in one hand, sphere.
  - d. Bumpy, medium weight of 432g, brown, stitching, firm, medium size, prolate spheroid shape (a long circle with pointed ends).

## **Module 4.1: Calculating Total Force**

1. When does gravity act on the volleyball?
  - a. When a player bumps the ball.
  - b. When a player misses a hit and the ball bounces off the ground.
  - c. When the ball is falling toward the ground.
  - d. When the ball is going up after a set.



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2. While Julie is serving the volleyball, which of the following is true about balanced and unbalanced forces (multiple answers)?
  - a. When she is holding the ball, the ball is experiencing balanced forces.
  - b. When she is holding the ball, the ball is experiencing unbalanced forces.
  - c. When she is hitting the ball, the ball is experiencing balanced forces.
  - d. When she is hitting the ball, the ball is experiencing unbalanced forces.

## **Module 5.1: Improving Serving**

1. Brooklyn changes her foot placement and her toss during practice, tallying her serve for the next three practices. She improved her serve from 6/10 to 7/10. Did she perform a controlled experiment?
  - a. Yes, because she collected data before and after her change.
  - b. No, because she only collected data on herself.
  - c. Yes, because she collected data for three practices.
  - d. No, because she changed two things.
  
2. Put the following in order of how a volleyball player can assess his/her serve to ensure improvement:
  - a. Collecting Data
  - b. Asking a question about how they can improve their serve
  - c. Report out to a coach
  - d. Research
  - e. Changing one variable at a time
  - f. Making a hypothesis
  - g. Analyzing data

1.\_\_\_\_ 2.\_\_\_\_ 3.\_\_\_\_ 4.\_\_\_\_ 5.\_\_\_\_ 6.\_\_\_\_ 7.\_\_\_\_



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3. When Jaime changed her foot placement while serving at practice, she improved her serves from 5/10 to 7/10. What conclusion can she draw from this evidence?
  - a. She's a better server.
  - b. Her change in foot placement improved her serve.
  - c. She had a better practice than normal.
  - d. She should use a torque serve to improve.

## **Module 6:1 Kinetic Energy and Speed**

1. True or False: If a volleyball is hit with more energy, it will have more speed.
2. Bridgette served, bumped and set the ball. She measured and recorded the speed of each. A bump was hit at 10 mph, the set at 8 mph, and serve at 15 mph. Which of the following is a correct mathematical expression in order from fastest to slowest?
  - a.  $15 \text{ mph} < 10 \text{ mph} > 8 \text{ mph}$
  - b.  $15 \text{ mph} > 10 \text{ mph} > 8 \text{ mph}$
  - c.  $15 \text{ mph} > 10 \text{ mph} < 8 \text{ mph}$
  - d.  $15 \text{ mph} < 10 \text{ mph} < 8 \text{ mph}$



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## **Module 7.1: Successful Serving**

1. Lydia makes  $\frac{6}{10}$  serves and Lisa makes  $\frac{13}{20}$ . Which mathematical expression is correct?
  - a.  $\frac{6}{10} > \frac{13}{20}$
  - b.  $\frac{13}{20} < \frac{6}{10}$
  - c.  $\frac{6}{10} < \frac{13}{20}$
  - d.  $\frac{6}{10} = \frac{13}{20}$
2. Lee serves  $\frac{8}{10}$  underhand serves and  $\frac{6}{10}$  torque serves. Which serve should he use in the game?
  - a. Underhand
  - b. Torque

## **Module 8.1: Adaptive Technology**

1. Put the steps of the Engineering Design for Adaptive Volleyball in order:
  - a. Plan and build a prototype: Draw diagrams and build a device or implement a support.
  - b. Brainstorming and multiple designs for a solution.
  - c. Identify the problem: Some of the players in adaptive volleyball need assistance to retrieve balls that have gone out-of-play.
  - d. Redesign: Make changes to your design based on the data and interviews.
  - e. Test the prototype: Record data and interview participants on its success.
  - f. Communicate: Present your idea and results to the class.
  - g. Research: Learn more about adaptive sports and who plays.

1.\_\_\_\_ 2.\_\_\_\_ 3.\_\_\_\_ 4.\_\_\_\_ 5.\_\_\_\_ 6.\_\_\_\_ 7.\_\_\_\_



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2. List 2-3 challenges of adaptive sports.

3. List 2-3 benefits of adaptive sports.