

Name: _____

Class: _____

Assessment Questions

Module 1.0: Softball vs. Baseball

1. To find the acceleration of a softball, which of the following would you apply:
 - b. Speed/time minus initial speed
 - c. Final speed minus initial speed/time
 - d. Final speed plus initial speed/time
 - e. Velocity divided by initial speed

2. Fill in the blank: By using Newton's _____ Law, we can calculate the force put on the ball when throwing/pitching using different flight patterns. (First, Third, Second, Fifth)

3. To find the force acting on the ball, which of the following applies:
 - d. Mass on ball
 - e. Distance divided by time
 - f. Mass times acceleration
 - g. None of the above

Module 2.0: Evolution of a Softball Glove

1. Fill in the blank: Most materials used in our daily lives we once derived from _____ re-sources. (synthetic, natural, chemical)

2. True or False: Both synthetic and natural materials impact our society.

3. Describe the manufacturing process or steps to making either a glove from natural materials or synthetic materials.

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Module 3.0: Forces in Softball

1. True or False: A full swing and a bunt swing incur the same amount of force when hit.
2. Which of the following applies to Newton's Third Law?
 - a. For each action there is an opposite reaction.
 - b. For multiple actions there is an equal reaction.
 - c. For every action there is an equal and opposite reaction.
 - d. For some actions there is more than one action.
3. Fill in the blank: A _____ diagram can demonstrate the force acting on the ball when hit, dropped, or thrown. (field, pitcher's, force, gravity)

Module 4.0: Is it a Ball or Strike?

1. The equation $KE = \frac{1}{2}mv^2$ best describes the relationship between:
 - a. Kinetic energy, weight, and speed
 - b. Mass, energy, and speed
 - c. Speed, Kinetic energy, and gravity
 - d. Kinetic energy, velocity, and speed
2. True or False: A fastball, curveball, and change-up will each travel at the same number of meters per second.
3. Fill in the blank: A _____ gun is an effective form of technology to measure the speed of a throw/pitch. (meter, radar, water)

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Module 5.0: The Field of Play

***6th grade standard**

1. By using a _____ plane system, we can determine which positions require the strongest arms and fastest players.
 - a. large
 - b. coordinate
 - c. diagram
 - d. box
 - e. All of the above
 - f. None of the above

***8th grade standard**

2. Fill in the blank: The _____ Theorem can determine the distance between players on the field. (plotted, square, pythagorean)
3. Bonus: True or False: A softball diamond is larger than a baseball diagram.

Module 6.0: Be a Hitter!

1. A high school scout is looking for a hitter who successfully gets a hit at least 0.45 of the time, or a batting average of .450. Which player would likely be of interest to the scout?
 - a. Player 1: 2/6 hits
 - b. Player 2: 9/20 hits
 - c. Player 3: 3/9 hits
 - d. Player 4: 3/8 hits
2. The probability of a batter getting hit by a pitch is 0.23. If you have 150 at-bats during a season, how many times would you likely get hit?
 - a. 35
 - b. 44
 - c. 55
 - d. 77

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Assessment Questions

Module 7.0: Keeping Score

1. True or False: Ratios are unable to find the probability of a team's overall success.
2. Which of the following teams has the greatest chance of winning?
 - a. 100:1 odds
 - b. 2:1 odds
 - c. 3:1 odds
 - d. 4:1 odds
3. If a strike to pitch ratio is $58/100$, the unit rate would be:
 - a. .42
 - b. .58
 - c. 1.72
 - d. .33

Module 8.0: Advancements in Softball

1. Choose the best answer: instant replay is an example of:
 - a. New technology
 - b. Different technology
 - c. Technology produced as the game has evolved/changed.
 - d. Dead technology
2. Which is the best reasoning: why do engineers, scientists and coaches need consistent and controlled data?
 - a. They can make changes to their designs.
 - b. They can draw conclusions on the root of the problem.
 - c. They can see all the things challenging the outcome at once.
 - d. They can record their data and present it.
3. True or False: Identifying and creating a list of criteria and constraints for a redesign is logical.