Assessment Questions

Module 1.0: Softball vs. Baseball

1. To find the acceleration of a softball, which of the following would you apply:
    a. Speed/time minus initial speed
    b. Final speed minus initial speed/time
    c. Final speed plus initial speed/time
    d. 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:
    a. Mass on ball
    b. Distance divided by time
    c. Mass times acceleration
    d. None of the above

Module 2.0: The Field of Play

1. If the First Baseman ran to (11,-5) to catch a foul ball and then needed to throw to the Pitcher at (0,-5) to make the play. How far would they throw?
    a. -5
    b. 0
    c. 6
    d. 11

2. Using the Pythagorean Theorem and the distance between the First Baseman and the Pitcher:

(a) Per Question 1: Calculate (C), the distance between the First Baseman (11, -5) to the Catcher (0, -11).

(b) The distance between the pitcher (0, -5) to the catcher (0, -11).

a. 7
b. 12.5
c. 15.5
d. 11

Module 3.0: 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)

Module 4.0: Advancements in Baseball

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. Gameplan technology can be used for the following:

a. To view plays in real time in slow-motion.
b. To view a play in slow-motion in real time.
c. To effectively evaluate a player or team's talent.
d. All of the above.

3. Bonus: True or False: The Brooklyn Giants and Cincinnati Reds were the first teams in MLB history in a televised game.

Module 5.0: What is a Golf Ball?

1. What is the value of identifying criteria and constraints?

2. Which of the following is *not* a way golf ball technology changed over time?
    a. The golf ball got smaller and lighter.
    b. The golf ball changed shape.
    c. The golf ball now has dimples.
    d. The golf ball is made of various materials.

3. Which of the following is NOT a likely reason new golf ball technology would emerge in the game?
    a. A new material is created that absorbs vibration.
    b. A microchip that can track distance and speed is cheap enough to mass produce.
    c. The rules of the game change.
    d. The material and shape of the golf club change.

Module 6.0: Scoring in Golf

1. Using the scorecard below, calculate the score for hole 6.

STEM sports
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HOLE	1	2	3	4	5	6	7	8	9	OUT
PAR	9	8	3	6	7	11	5	10	8	
Person 1	4	5	5	3	4	8	5	8	5	

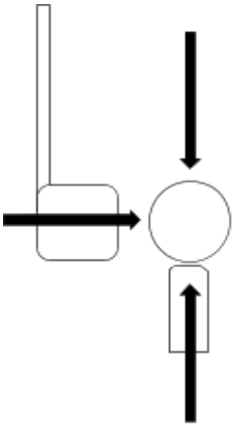
a. 3
b. -3
c. 8
d. -8

2. In order to calculate your score for the whole game, what information do you need? (*Hint: there are multiple answers*)
   a. Par
   b. Handicap
   c. Strokes per hole
   d. Course rating

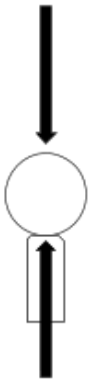
3. Which of the following is the best mathematical expression to calculate your score for the whole game?
   a. Total number of strokes = par
   b. Total number of strokes
   c. Par = total number of strokes
   d. The sum of each hole scored

Module 7.0: Force of a Golf Swing

1. Does the diagram below show a balanced or unbalanced force?



2. Does the diagram below show a balanced or unbalanced force?



3. Which of Newton's Laws can you use to calculate the force acting on a golf ball?

a. Newton's 1st Law
b. Newton's 2nd Law
c. Newton's 3rd Law

Module 8.0: Climate and Weather in Golf

1. What are the four common air masses?
    a. Maritime, Continental, Tropical, and Polar
    b. Ocean, Land, Hot and Cold
    c. Ocean, Land, Tropical, and Polar
    d. Maritime, Continental, Hot and Cold

2. What happens when two air masses collide?
    a. Weather
    b. Fronts
    c. Earthquake
    d. Tornado

3. Describe the interaction when a cool, moist air mass collides with a warm air mass.
    **Cold Front*

Assessment Key

Module 1.0: Softball vs. Baseball

1. B
2. Second
3. C

Module 2.0:The Field of Play

1. D
2. C

Module 3.0: Is it Fast or Slow?

1. D
2. F
3. Radar

Module 4.0: Advancements in Baseball

1. C
2. D
3. T

Module 5.0: What is a Golf Ball?

1. Answers will vary.
2. B
3. A

Module 6.0: Scoring in Golf

1. B
2. A, C
3. A

Module 7.0: Force of a Golf Swing

1. Unbalanced
2. Balanced
3. B

Module 8.0: Areas of the Golf World

1. A
2. B
3. Answers will vary. Strong storms that move quickly, followed by cooler, fair weather.