Assessment Questions

Module 1.0: The STEM Bike

1) True or False: Quality scientific observations involve the use of descriptive words, measurements, and details.

2) _____ is the relationship or expression involving one or variables.
   a. Properties
   b. Observations
   c. Function
   d. None of the above

3) _____ is any trait that can be measured, such as mass, color, density, length, odor, and temperature.
   a. Function
   b. Properties
   c. Scientific Observations
   d. Quality Observations

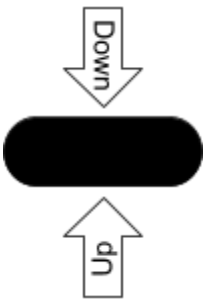
Module 2.0: Ideal Pressure for Balance

1) Molecules are always...
   a. Invisible
   b. Different colors
   c. Different sizes
   d. Moving

2) Like an inflated bicycle tire, molecules under pressure...
   a. Move faster
   b. Move slower
   c. Get smaller
   d. Get squished

Module 3.0: Changing Gears

1) Look at the force diagram to the right. How would you describe the forces?
   a) Balanced, moving downward
   b) Balanced, moving upward
   c) Balanced, not moving
   d) Unbalanced, moving downward
   e) Unbalanced, moving upward
   f) Unbalanced, not moving



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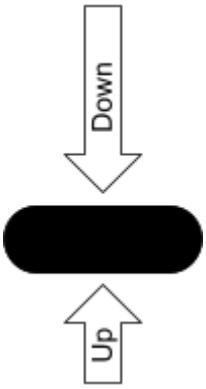

Module 4.0: Calculating Calories and Heart Rate

1) A person pedals their bike for a quarter of an hour, how long did the person pedal?
    a) 25 minutes
    b) 15 minutes
    c) 4 minutes
    d) 30 minutes
2) A person that weighs 40 kilograms pedals their bike for 0.5 hours. If the MET value is 7.3, use the equation C = MET * Weight * Time to calculate the number of calories burned.
    a) 1460
    b) 146
    c) 47.8
    d) 292

Module 5.0: The Need for Speed

1) True or False: Math is a fundamental and important part of conducting scientific experiments.

2) You can use the formula for averages to calculate:
    a. Batting average
    b. Average speed
    c. None of the above
    d. All of the above

Module 6.0: Helmet Technology

1) What is a reason an engineer would design simpler technology?
    a) It's too expensive to produce.
    b) It's too easy to make at the factory.
    c) Some people don't like it.

2) What are the steps of the Engineering Design Process?
    a) Make, Improve, Test, Think
    b) Draw, Think, Imagine, Plan, Make
    c) Ask, Imagine, Plan, Create, Improve

Module 7.0: Energy of the Ride

1. The more body movement involved in riding a bike, it has _____ energy.
    a. less
    b. more

2. If the velocity of the bike ride is doubled, the energy of the bike ride _____.
    a. is reduced by half the amount
    b. remains the same
    c. is increased by double the amount

Module 8.0: Advancements in Bike Technology

1) True or False: Bikes and Bike Helmets are examples of technology.

2) Which of the following is the best way to collect information when analyzing technology?
    a) Take measurements and test the equipment
    b) Record the color and style
    c) Note how the cost has changed over time
    d) Look it up online