Sensing Vibrations Name:_____

Grade 6 Date:_____

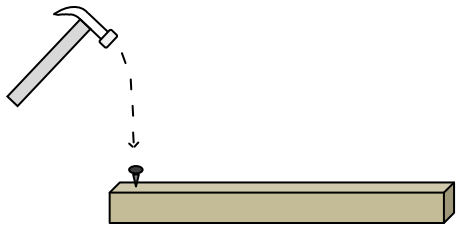
Directions: For each of the questions below, choose the BEST answer and circle the letter.

1. When scientists record vibrations from an earthquake, they are measuring_____.

   A. energy
   B. mass
   C. temperature
   D. time

2. A carpenter is hammering a nail into a wooden board. Each time the carpenter hits the nail, some energy is transferred. Which order best describes the transfer of energy?

   A. hammer, nail
   B. nail, board, hammer
   C. hammer, nail, board
   D. nail, board



3. Mary and Carlos are designing a sensor for Ace Electronics to monitor vibrations in buildings. Mary and Carlos have met with a team from Ace Electronics and learned they will need to design a sensor that can detect very small vibrations. Which best describes what Mary and Carlos have accomplished?

   A. They created a prototype to try to solve the problem
   B. They redesigned the sensor.
   C. They tested the prototype and saw how well it solved the problem
   D. They identified the problem.

4. Mary and Carlos decided on a design they thought would solve the problem, researched materials to build the sensor, and built a prototype sensor. What should Mary and Carlos do next?

    A. Identify the problem.
    B. Test the sensor prototype and see how well it solves the problem.
    C. Present the results of their test to Ace Electronics.
    D. Redesign to improve the solution.

5. Rick is building a sensor to detect vibrations. He would like to test how well his sensor works compared to his friend's. What is most important for Rick and his friend to communicate to each other so they can compare test results?

    A. How much their sensors weigh.
    B. The possible ways they will redesign their sensors in the future.
    C. Their predictions of how well their sensors will perform.
    D. How they will set up a fair test investigation to test their sensors.

6. Raoul is walking through the school cafeteria. He accidentally bumps a table and water spills from a glass sitting on the table. The water spilled because energy is transferred from:

    A. The cafeteria floor to the glass of water.
    B. Raoul to the glass of water.
    C. Raoul to the table and then to the glass of water.
    D. Raoul to the glass of water and then to the table.

7. Which of the following statements is true? Energy can_____.

    A. only exist as potential energy
    B. only exist as kinetic energy
    C. exist as kinetic and potential energy
    D. never be converted between kinetic and potential energy

8. Which of the following best describes an example of kinetic energy?

   A. A basketball sitting on the gym floor.
   B. A sweatshirt lying on a chair.
   C. A skier at the top of a hill.
   D. A pencil falling off a desk.

9. A sensor can be an important device for detecting vibrations. This is because:

   A. vibrations can only be detected using sensors.
   B. sometimes vibrations are too large for humans to detect.
   C. sometimes vibrations are too small for humans to detect.
   D. we don't need sensors to detect vibrations because we can always sense them.

10. Sensor 1 and Sensor 2 both detect vibrations. Sensor 1, however, is more sensitive than Sensor 2. This means that _____.

    A. Sensor 1 will be able to detect smaller vibrations than Sensor 2
    B. Sensor 2 will be able to detect smaller vibrations than Sensor 1
    C. both sensors will be able to detect the same level of vibrations
    D. neither sensor will be able to sense larger vibrations

11. Tricia drops a book on her desk. Her pencil, which is also lying on the desk, moves. This is an example of energy being _____.

    A. created
    B. destroyed
    C. magnified
    D. transferred

12. When a carpenter holds a hammer one foot above a nail, the hammer has:

    A. potential energy.
    B. kinetic energy.
    C. elastic energy.
    D. no energy.