#CRESTInnovator

CREST Science Olympiad (CSO)
Worksheet for
Class 5

Topic

Simple Machines

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Worksheet on Simple Machines

1. **Look at the picture below and identify which simple machine allows the flag to be raised and lowered.**

   a. Screw
   b. Wheel and axle
   c. Pulley
   d. Wedge

2. **What is the purpose of using an inclined plane to move heavy objects?**

   a. To reduce the force required to move the object
   b. To increase the speed at which the object is moved
   c. To change the direction of the force applied
   d. To prevent the object from sliding down

3. **Which of the following options correctly identifies the simple machine involved in the functioning of the given everyday object?**

   a. The scissors: Wheel and Axle
   b. The bicycle: Lever
   c. The screwdriver: Pulley
   d. Balance Scale: Lever

4. **A fishing rod works because the effort is between the load arm and the fulcrum. Which of the following objects works on the same principle?**

   a. Forceps
   b. Door hinges
   c. Ramps
   d. Doorstops

5. **Which practical scenario demonstrates the use of a wheel and axle?**

   a. Riding a bicycle
   b. Climbing a ladder
   c. Pushing a cart uphill
   d. Using a stapler

Answer Key

1. c - The simple machine that allows the flag to be raised and lowered in the given picture is a pulley. A pulley consists of a grooved wheel with a rope or cable running along the groove. By pulling on the rope, the flag can be moved up or down the flagpole.

2. a - The purpose of using an inclined plane is to make it easier to move heavy objects by reducing the amount of force needed. By spreading the force over a longer distance along the inclined plane, the effort required to lift or move the object vertically is reduced.

3. d - A balance scale uses a lever to compare the weights of objects. It has a fulcrum and an effort arm that balances the load arm, allowing us to measure weights accurately.

4. a - Forceps work like a fishing rod because the effort is applied between the load and the fulcrum. By squeezing the handles (effort), the force is magnified at the tips (load), making them useful for gripping and manipulating objects.

5. b - When you ride a bicycle, the pedals (wheel) are connected to the wheels (axle). As you pedal, the wheels rotate around the axles, enabling you to move forward with less effort. The wheel and axle combination in a bicycle allows for efficient and faster movement.

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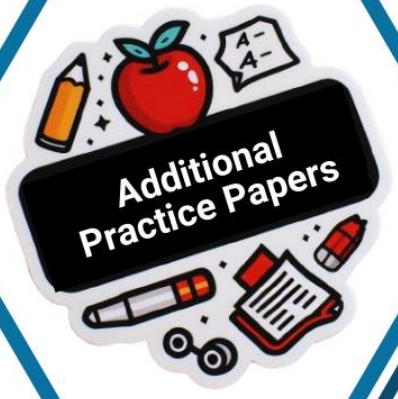

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