

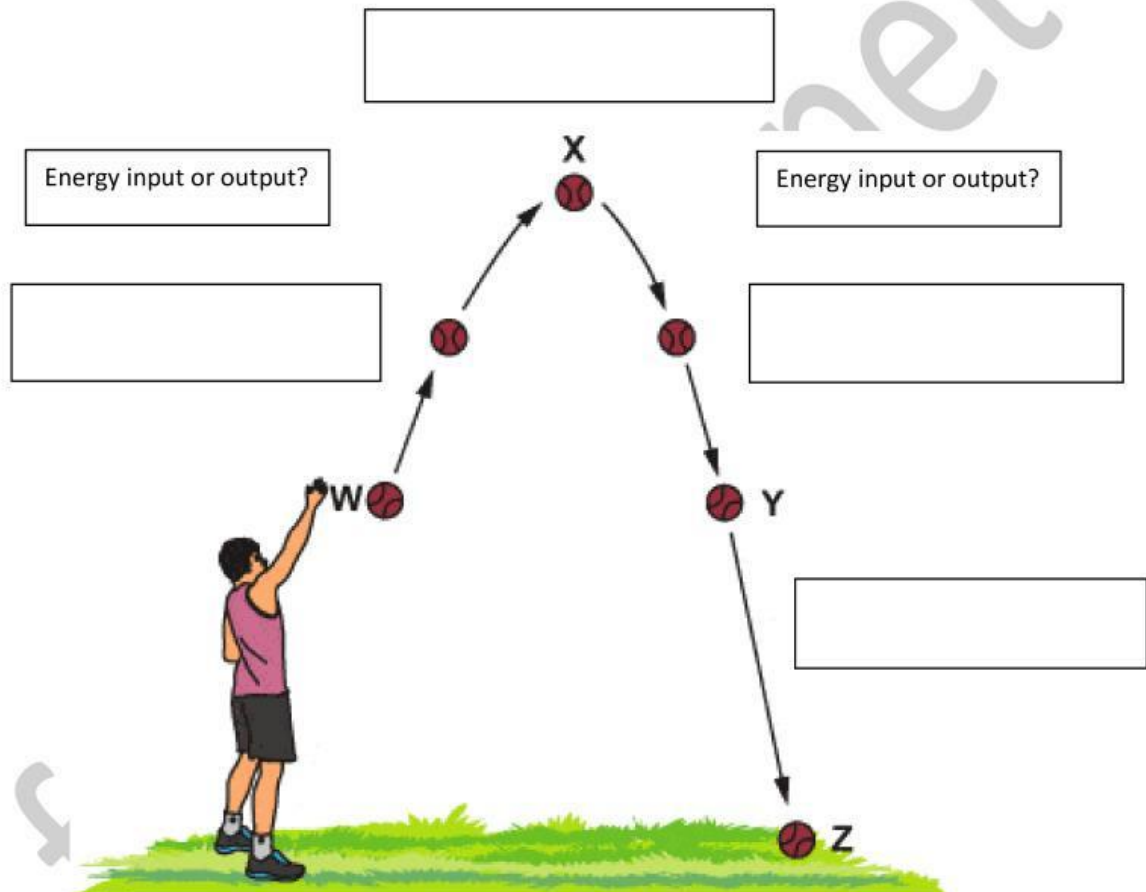
Learning Target: I can analyze and interpret data from graphical displays that illustrate the relationships between kinetic energy, potential energy, mass, speed/velocity, and gravity.

### Potential & Kinetic Energy Graphical Analysis Interactive Activity



**Part 1:** Analyze the diagram below to write in or drag and drop the description next to its correct position.

100% Potential energy, 0% Kinetic energy	Energy output	Potential energy is decreasing, Kinetic energy is increasing
0% Potential energy, 100% Kinetic energy	Energy input	Potential energy is increasing, Kinetic energy is decreasing



**1. At which point(s) does the ball have maximum potential energy and minimum Kinetic energy?**

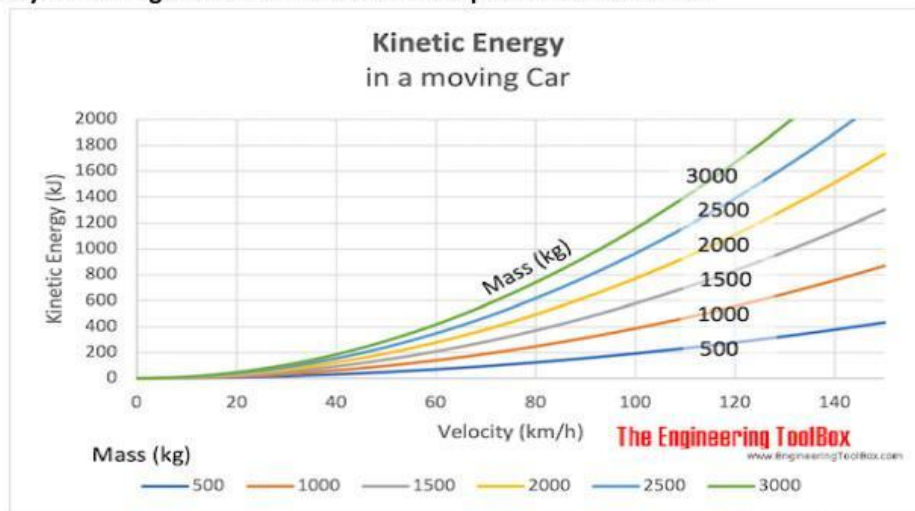
- A. Points W and X      B. Points Y and Z      C. Point Y only      D. Point X only

**2. When does the ball have increasing kinetic energy and decreasing potential energy?**

- A. Points W and X      B. Point X only      C. Point W only      D. Point Y only

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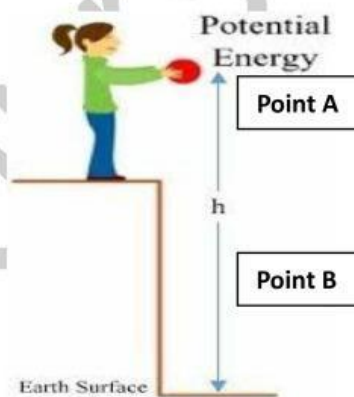
**Part 2: Analyze the diagrams below to answer the questions that follow.**



3. What is the relationship between kinetic energy, mass, and velocity as shown in the diagram above? \_\_\_\_\_

4. Is this a direct or inverse relationship? Explain your answer. \_\_\_\_\_

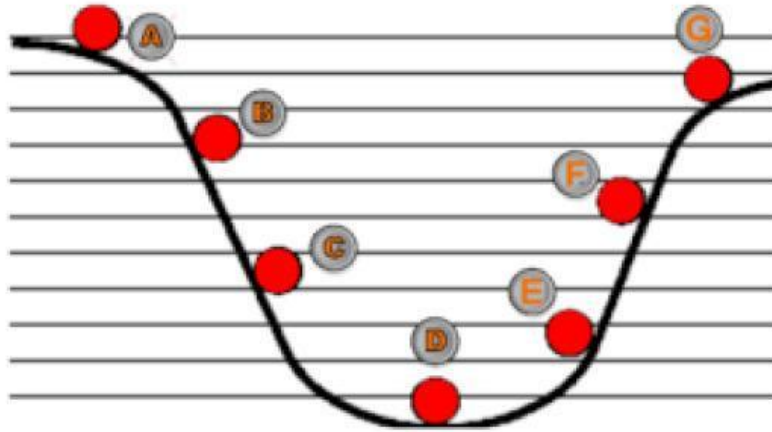
5. What would happen if the mass decreased? \_\_\_\_\_



6. What happens to the ball's energy as it moves from Point A to Point B?

- A. The ball's potential energy increases, and its kinetic energy increases.
- B. The ball's potential energy increases, and its kinetic energy decreases.
- C. The ball's potential energy decreases, and its kinetic energy decreases.
- D. The ball's potential energy decreases, and its kinetic energy increases.

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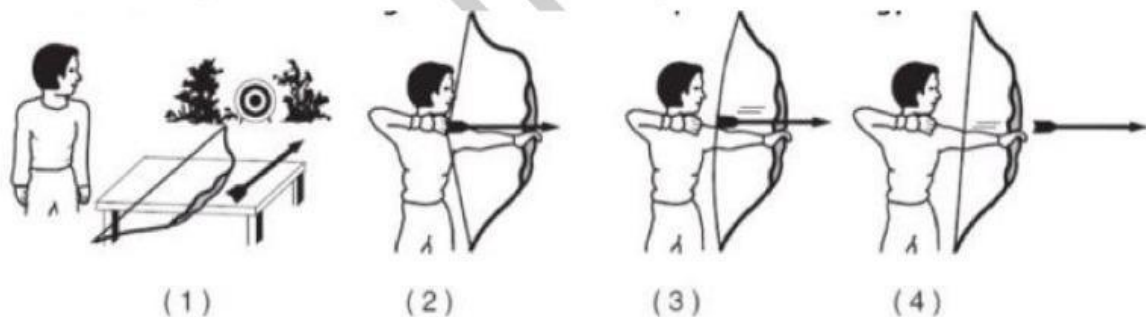
7. At which point are the ball's kinetic and potential energies approximately the same?

- A. D      B. F      C. A      D. G      E. C

8. Where is the ball's kinetic energy at its maximum and potential energy at its minimum?

- A. D      B. F      C. A      D. G      E. C

Rihanna is learning how to shoot a bow and arrow at a target.



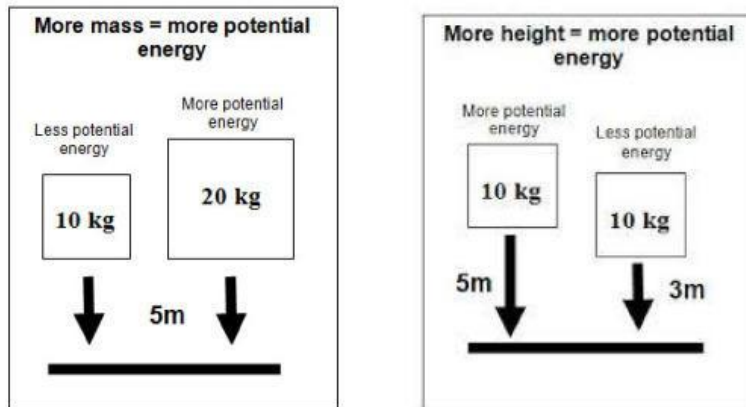
9. At which point does the bow and arrow have the greatest amount of kinetic energy?

- A. 1      B. 2      C. 3      D. 4

10. At which point does the bow and arrow have the greatest amount of potential energy?

- A. 1      B. 2      C. 3      D. 4

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11. Look at the diagrams above. What can you summarize by analyzing the diagrams above?

- A. The more mass and the less height, the more potential energy.
- B. The less mass and the more height, the more potential energy.
- C. The more mass and the more height, the more potential energy.
- D. The more mass and the more height, the less potential energy.

Part C: Read the scenarios and answer the questions that follow.

12. Evan climbed the stairs to go down a slide. When Evan slid down the slide he came to a stop. When did Evan have the most potential energy?

- A. While climbing the stairs to get to the top of the slide.
- B. While standing at the top before going down the slide.
- C. At the bottom of the slide when he stopped.
- D. While he was sliding down the slide.

13. Carla is skiing down a hill; she is going faster and faster. Which statement is true?

- A. Carla's kinetic energy is turning into potential energy.
- B. Carla is gaining potential energy as she goes down the hill.
- C. The kinetic and potential energy remain balanced as Carla go down the hill.
- D. Carla's potential energy is turning into kinetic energy as she goes down the hill.