1. **An engineer tests four bridge designs.**

Bridge	Design	Bridge Height	Slowly Moving Water	Quickly Moving Water
1		5 feet	has no impact	has no impact
2		15 feet	breaks one pole	causes bridge to fall
3		25 feet	has no impact	breaks one pole
4		35 feet	breaks three poles	causes bridge to fall

An area has floods of 6 feet with quickly moving water. Which bridge design change will *likely* work the *best* in the area?

A   Bridge 1 can be made taller.

B   Bridge 2 can be made wider.

C   Bridge 3 can be made with fewer poles.

**D**   Bridge 4 can be made with smaller poles.

2. **Light travels in waves. As the amplitude of a wave increases, light gets brighter.**

    Which image shows the *brightest* light wave?
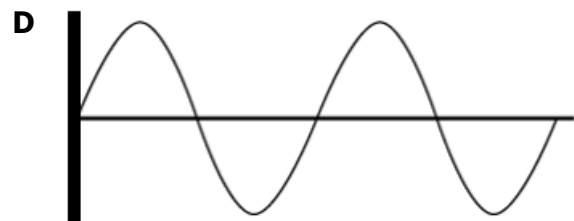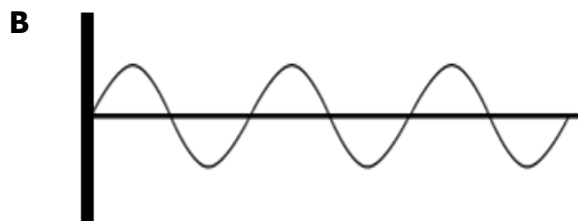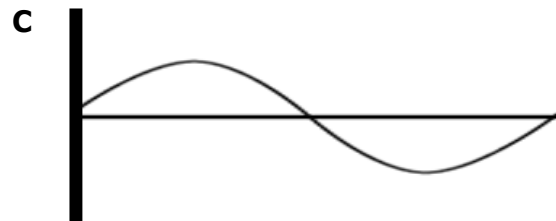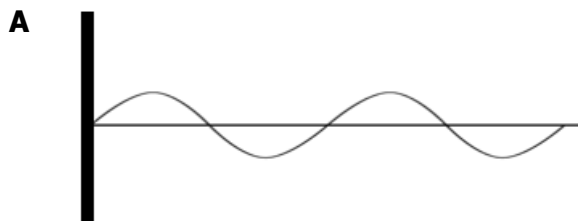
3. **The Arctic fox has thick, white fur, and the red fox has thin, orange-red fur. Which statement matches a fox's characteristic with the area where it is *likely* to survive?**

    A The Arctic fox has thick fur that helps it survive in a warm environment.

    B The red fox has thin fur that helps it survive in a cold environment.

    C The Arctic fox has white fur that helps it survive in a snowy environment.

    D The red fox has orange-red fur that helps it survive in a rainy environment.

4. **A student stretches the string on a bow to different distances and shoots an arrow. The student records the distance the string is stretched and the time the arrow takes to hit a target.**
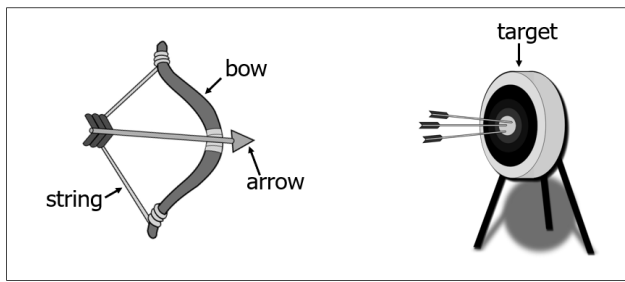
Distance Stretched (centimeters)	Time (seconds)
5	4
7	2
9	1

    What is the relationship between the speed of the arrow and its energy?

    A When the string is stretched to 9 centimeters the arrow moves the fastest because it receives a large amount of energy from the string.

    B When the string is stretched to 5 centimeters the arrow moves the slowest because it receives a large amount of energy from the string.

    C When the string is stretched to 9 centimeters the arrow moves the slowest because it receives a small amount of energy from the string.

    D When the string is stretched to 5 centimeters the arrow moves the fastest because it receives a small amount of energy from the string.