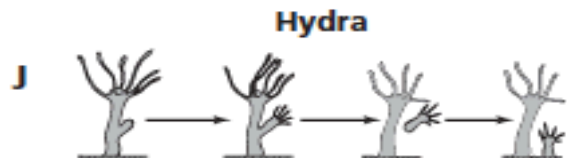
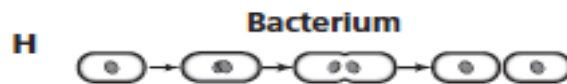
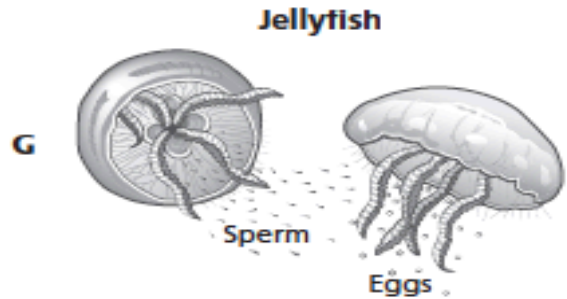
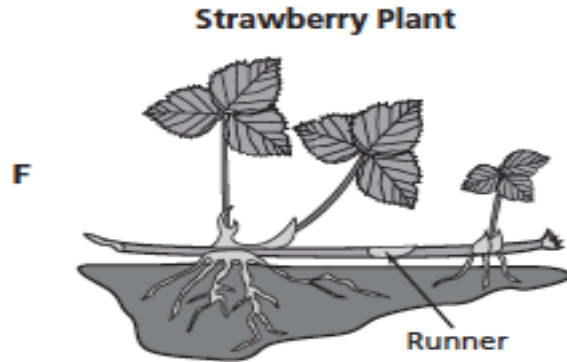


August 14, 2014

4 Which diagram is the best example of an organism undergoing sexual reproduction?



You must explain why your answer is correct.

Please write the page number in your book that supports your explanation.

Use the index of your book to help you.

GET OUT HW!

Homework

- Take out your homework.
- Let's go over it!

Review

A car is traveling forward at an initial velocity of 10 meters per second. The car then accelerates forward at a rate of $\frac{1}{2}$ meter per second² for 20 seconds.

$$V_f = V_i + at$$

Velocity(final) = velocity(initial) + acceleration × time

What is the final velocity of the car?

- F** 10 meters per second
- G** 20 meters per second
- H** 25 meters per second
- J** 30 meters per second

Something to think about...

- <http://www.sciencechannel.com/tv-shows/head-rush/videos/head-rush-terminal-velocity.htm>

Chapter 13

Day 4

(Lesson 2)

Distinguish between speed and velocity.

Identify and explain how Newton's laws of motion relate to the movement of objects.

What You Will Learn

- What a force is
- What happens when forces combine

What Mastery Looks Like

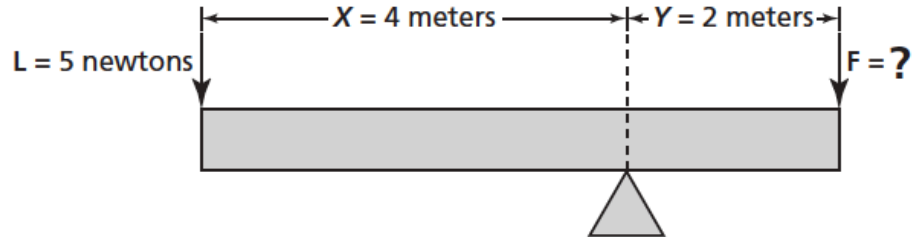
A student uses a lever to apply a 20-newton force to a box while moving the box a distance of 0.5 meter.

$$\text{Work}(w) = \text{Force}(F) \times \text{Distance}(d)$$

How much work did the student do while moving the box?

- F** 10 joules
- G** 40 joules
- H** 100 joules
- J** 400 joules

Work is performed by a lever when a load (L) of 5 newtons is applied at one end, as shown below.



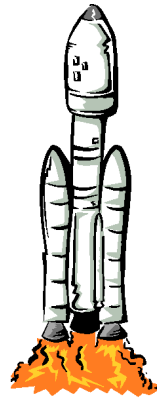
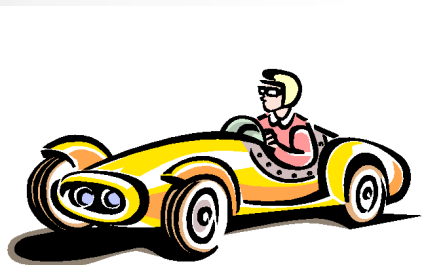
$$F = \frac{(L \times X)}{Y}$$

Using the formula, what force (F) is required to make the lever balanced?

- F** 5 newtons
- G** 10 newtons
- H** 20 newtons
- J** 40 newtons

Force

- What is a force? (white board)
- A push or pull that one object exerts on another object



Forces



Force

- Force has two things.
 - Direction
 - size



Force

- The direction of the force is the direction of the push or pull.
- Pushing or pulling harder increases the size of the force exerted



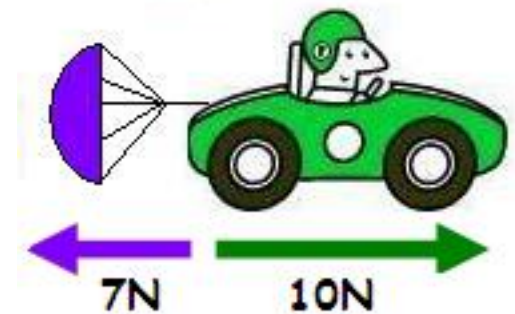
Force

- The size of force is measured in Newtons. (N)



When Forces Combine

- Net Force: The combination of all the forces acting on an object is the net force.



Net force
 $12\text{ N} - 10\text{ N} = 2\text{ N}$
to the right

When the forces are in different directions, you subtract the smaller force from the larger force to determine the net force.

Net Force

$$\begin{array}{c} 5 \\ \longrightarrow \end{array} + \begin{array}{c} 5 \\ \longrightarrow \end{array} = \begin{array}{c} 10 \\ \longrightarrow \end{array}$$

$$\begin{array}{c} 5 \\ \longrightarrow \end{array} + \begin{array}{c} -5 \\ \longleftarrow \end{array} = 0$$

$$\begin{array}{c} 5 \\ \longrightarrow \end{array} + \begin{array}{c} 10 \\ \longrightarrow \end{array} = \begin{array}{c} 15 \\ \longrightarrow \end{array}$$

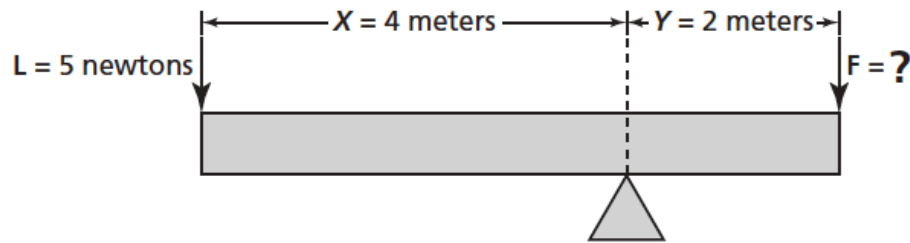
$$\begin{array}{c} 5 \\ \longrightarrow \end{array} + \begin{array}{c} -10 \\ \longleftarrow \end{array} = \begin{array}{c} -5 \\ \longleftarrow \end{array}$$

$$\begin{array}{c} 5 \\ \longrightarrow \end{array} + \begin{array}{c} -15 \\ \longleftarrow \end{array} = \begin{array}{c} -10 \\ \longleftarrow \end{array}$$

$$\begin{array}{c} 10 \\ \uparrow \end{array} + \begin{array}{c} -5 \\ \downarrow \end{array} = \begin{array}{c} 5 \\ \uparrow \end{array}$$

Can you solve?

Work is performed by a lever when a load (L) of 5 newtons is applied at one end, as shown below.



$$F = \frac{(L \times X)}{Y}$$

Using the formula, what force (F) is required to make the lever balanced?

- F** 5 newtons
- G** 10 newtons
- H** 20 newtons
- J** 40 newtons