

9L Pressure and moments

Extension questions

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Answer the following questions:



Click mouse to reveal answer

- Q1. What can a push or pull force do to an object?
- Q2. What do objects do when an unbalanced force acts upon them?
- Q3. What is pressure?
- Q4. How do you calculate pressure...or give its formula?
- Q5. Pressure depends on two factors...what are they both?
- Q6. What is pressure measured in?
- Q7. Why is a gas easily compressed when compared to a liquid or solid?
- Q8. How do snow shoes work?
- Q9. Is the air pressure inside a bicycle tyre higher or low when compared with atmospheric pressure?
- Q10. What part of a car uses hydraulics?
- Q11. Why can liquids be used to transmit pressure?
- Q12. Is a screwdriver an example of a simple lever?
- Q13. What do levers do?
- Q14. How do you calculate a moment force?
- Q15. The longer the lever, the easier it seems to lift something...why?
- Q16. Which part of the human arm acts like a pivot?

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Answers:

A1. Change its speed, shape or direction

A2. Speed up or slow down

A3. Gas particles exert pressure when they collide with things like a container wall.

A4. Pressure (Nm^2) is calculated by dividing the force (N) by the area (m^2)

A5. Size of force (N) Area that it is acting on (m^2)

A6. Newton Metres² (Nm^2)

A7. Because the particles in a gas are a long way apart

A8. By spreading the person's weight

A9. Higher

A10. The braking system

A11. Because the particles in liquid are not easily compressed

A12. Yes

A13. Make it easier to lift things or apply a turning force

A14. Moment (Nm) is calculated by multiplying the force (N) by the distance (m)

A15. The longer the lever the bigger the turning effect or moment

A16. The elbow

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multiple choice

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1: Snowshoes work because they ?

- A Decrease your weight
- B Make the snow hard
- C Increase your weight
- D Spread your weight

2: What is the unit for pressure ?

- A Newton metres
- B Newton metres²
- C Newtons
- D Centimetres

3: Why can you press a drawing pin into wood and not your thumb ?

- A The pin cuts the wood
- B The pin focuses the force applied
- C The pin decreases the force applied
- D The pin melts the wood

4: You are on a see saw with your bigger brother, How could you level it ?

- A Scream louder
- B Move you mass to the centre
- C Jump up and down
- D Move your mass to the very edge

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multiple choice

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1: Snowshoes work because they ?

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- B
-
- C
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- D Spread your weight
-

2: What is the unit for pressure ?

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- A
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- B Newton metres²
-
- C
-
- D
-

3: Why can you press a drawing pin into wood and not your thumb ?

-
- A
-
- B The pin focuses the force applied
-
- C
-
- D
-

4: You are on a see saw with your bigger brother, How could you level it ?

-
- A
-
- B
-
- C
-
- D Move your mass to the very edge
-

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literacy in science

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Answer all the questions below:



Click mouse to reveal answer

1) Unscramble the following words:

pruressse

potiv

lerve

mntome

2) Make three sentences using the following nine words or phrases:

gas particles
lever
moment

bouncing off
simple machine
turning force

walls of a container
work
newton metre

3) Match the word or phrase with the right meaning:

Pressure



A simple machine that applies a turning force around a point

Moment



The effect of a force spread over an area

Lever



The turning effect of a force applied through a lever

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complete the sentence

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Place the right word or words to complete the sentence:

 [Click mouse to reveal answer](#)

lever

terminal

balanced

simple

inflated

wide

pressure

newtons

depends

- a) A force applied to a _____ has a turning effect or moment.
- b) Gases exert _____ on their containers because their particles are in constant collision with the container's walls.
- c) Pressure is measured in _____ per metre squared.
- d) A lever like a screwdriver is a _____ machine.
- e) At _____ velocity, up thrust due to air resistance is equal to weight force.
- f) When levers are _____, the moments are the same each side of the pivot.
- g) Balloons _____ at sea level are much more likely to pop on top of mountains.
- h) The turning effect _____ on the size of force and its distance from the pivot.
- i) A Polar bear has _____ feet to stop ice breaking under its weight.

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complete the sentence

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Place the right word or words to complete the sentence:

lever

terminal

balanced

simple

inflated

wide

pressure

newtons

depends

- a) A force applied to a lever has a turning effect or moment.
- b) Gases exert pressure on their containers because their particles are in constant collision with the container's walls.
- c) Pressure is measured in newtons per metre squared.
- d) A lever like a screwdriver is a simple machine.
- e) At terminal velocity, up thrust due to air resistance is equal to weight force.
- f) When levers are balanced, the moments are the same each side of the pivot.
- g) Balloons inflated at sea level are much more likely to pop on top of mountains.
- h) The turning effect depends on the size of force and its distance from the pivot.
- i) A Polar bear has wide feet to stop ice breaking under its weight.