



**SAMPLE**

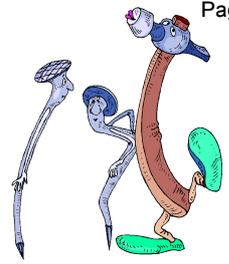
# Conquesta 2014

(International Multiple Choice Primary School Olympiads – Est. 1998)

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## Technology – Grade 7

Welcome to your Conquesta Olympiad. When you have decided which of the answers is correct, scratch out the letter in the matching square on your answer sheet using **ONLY a black or blue ballpoint or black khaki pen.** (Do not use pencils, crayons, pencil crayons, highlighters, tippex or glue.) If the answer to question 4 is c, then scratch out the letter c in the square containing c next to the number 4 (see example 1 below). If you've made a mistake and b should have been the answer, neatly cross out the mistake and then scratch out b (see example 2 below).

Example 1:- 

4.	a	b	<input checked="" type="checkbox"/>	d
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Example 2:- 

4.	a	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	d
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### Simple Machines

Have you ever thought about what life would be like without machines? What are machines? Not all machines are big complicated things like a car or truck. Cars are actually made up of simple machines.

Simple machines are 'simple' because they either have one moving part or no moving part at all. When you put simple machines together you get complex or compound machines such as lawn mowers, bicycles and cars.

A machine is any device that makes work easier. In Science, the word 'WORK' is defined as the force acting on an object to move it across a distance. Pushing, pulling, turning and lifting are common forms of work.

When you use a simple machine, you're actually doing the same amount of work – it just seems easier. A simple machine reduces the amount of effort needed to move something, but you wind up moving it a greater distance to accomplish the same amount of work. So remember there's a trade-off of energy when using simple machines.

1. Which one of these statements **best** describes a simple machine?

- (a) A single device that makes work easier.
- (b) A single part that moves.
- (c) A combination of moving parts making work easier.
- (d) A machine such as a car or truck.



2. Which of these explanations **best** describes the word 'WORK'?

- (a) The capacity to do work.
- (b) The rate of doing work.
- (c) The energy possessed by an object that is moving.
- (d) The measure of transferring energy from one system to another causing an object to move.

Match up the types of force used in (a) – (d) to the actions at questions 3 - 6.

- (a) Turning
- (b) Lifting
- (c) Pushing
- (d) Pulling

3. A hammer is used to remove a nail.

4. To cut with a pair of scissors.

5. A lid is unscrewed from a jar.

6. A crane is used to move a heavy load.

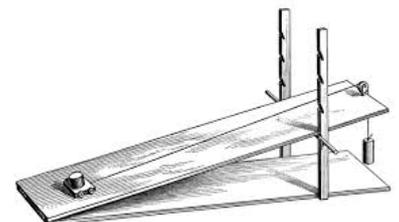


### Types of Simple Machines

#### An inclined plane



An inclined plane is a sloping surface, such as a ramp. An inclined plane can be used to alter the effort and distance involved in doing work, such as lifting loads. The trade-off is that an object must be moved a longer distance than if it was lifted straight up, but less force is needed.



The long part of the plane is called the run. The rise is the height you want to move the object. The slope between these two is called the gradient.

Inclined planes were used in early Science to explain speed and gravity. Two objects made of the same material and weighing the same, would be released at the same time down ramps of the same length, but different gradients. The object on the steeper ramp would finish first. Scientists, such as Archimedes and Galileo, found this very interesting.