Name: KEY

Survey of Physical Science Newsflash

Newsflash Topic	Simple Machines
DUE DATE	

Newsflash Directions:

If there is a reading assignment you should:

1) READ
2) HIGHLIGHT IMPORTANT INFORMATION YOU FIND
   (do NOT highlight the entire thing)
3) Answer any questions

If there is a measurement, graphing or other activity you should:

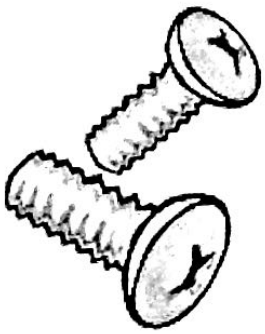
1) READ all DIRECTIONS because you might need things like
   Glue, scissors, colored pencils or a calculator
2) FOLLOW all DIRECTIONS to complete the assignment

****IF YOU NEED HELP - LET MS. AXON or MR. CLOUGH know ****

Name _____ Date _____

Simple Machines

By Sharon Fabian



Machines make work easier. When a caveman had to move a rock that was too heavy to lift, he might have used a big stick to make it easier. A long, long time ago, someone invented the wheel, and that made things a lot easier. By the Industrial Age, people were inventing all kinds of machines. New vehicles and new factory machines made life easier and gave people free time that we never had before. We really liked these inventions that made our lives easier! People are still creating new machines all the time. There is something really fun about inventing a contraption that seems to do some of our work for us.

Machines make work easier. So to understand machines, you first have to know what work is, scientifically speaking. Maybe you define work as carrying out the garbage, raking leaves, or cleaning your room. These are all forms of work, but scientists have a more scientific definition. To them, work is using a force to move an object across a distance.

There is a mathematical formula for this: W = F x D. It means "work equals force times distance."

Machines make it possible to move larger objects or to move objects faster or farther. Machines make work easier by adjusting the force or the distance to your advantage. They are used to push, pull, and lift. A machine can be used to increase the force or the distance, but not both. To get more force, you have to give up some distance. To get more distance, you have to give up some force. It's a scientific law called conservation of energy.

Machines let you do more with less muscle power. When a machine is used to increase force, that is called mechanical advantage. For example a jack used to lift a car has a lot of mechanical advantage. So does a crane used to lift a heavy steel beam. A hammer used to pound in a nail has mechanical advantage too.

While there are probably too many kinds of machines to count, many of them are really just combinations of six basic machines. These are called the six simple machines. They are the inclined plane, lever, wedge, screw, wheel and axle, and the pulley. Here are a few examples:

inclined plane - the slide on the playground

lever - your snow shovel

wedge - an axe for splitting logs

screw - nuts and bolts to fasten things together

wheel and axle - on your favorite sports car or little red wagon

pulley - the mechanism that raises the flag on a flagpole

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A Mousetrap game is a neat example of lots of simple machines working together, even though it doesn't really make the job of catching that mouse any easier! The next time you play Mousetrap, see how many simple machines you can identify.

Simple Machines

Questions

_____ 1. A snow shovel is an example of:

A. an inclined plane
B. a wedge
C. a pulley
D. a lever

_____ 2. A large stick used to move a heavy rock is a simple machine.

A. false
B. true

_____ 3. All possible machines have now been invented.

A. false
B. true

_____ 4. One machine can increase both the force and distance at the same time.

A. false
B. true

_____ 5. Complex machines are combinations of more than one simple machine.

A. false
B. true

_____ 6. "Work equals force times distance" can be written:

A. W = F / D
B. W = F + D
C. W = F x D
D. W = F - D

7. What kind of simple machines are the blades of a pair of scissors?

_____

_____

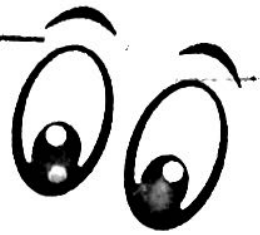
8. What kind of simple machines might you find inside of a clock (the old fashioned kind with hands)?

_____

_____

Name: _____

I Saw a Simple Machine!



During our day, we use and see simple machines all around us. As you go through your day (in school or out of school) make sure you pay attention.

On the chart below, identify what Simple Machine you saw and what it was used for.

*Bonus, take a picture and send it to Ms. Axon

axons@nths.net

Simple Machine Name	Where I Saw It	What It Does