

Name: AXON

Survey of Physical Science Newsflash

Newsflash Topic	Compound & Simple MATCHINGS
DUE DATE	2/23/17

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:

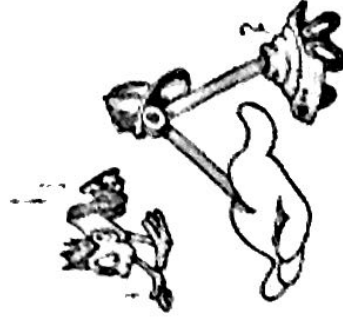
- 1) READ all DIRECTIONS because you might need things like
Glue, scissors, colored pencils or a calculator
- 2) FOLLOW all DIRECTIONS to complete the assignment

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

Complex Machines

By Sharon Fabian

Let's say you already know about the six simple machines: inclined plane, wedge, screw, lever, wheel and axle, and pulley. You've probably figured out that these six machines were invented ages and ages ago. So what has been happening since then? Did someone invent simple machine number 7, 8, 9, 10, and so on? How many simple machines do we have by now? Hundreds? Thousands?



Let's look at a bicycle for an example. A bicycle is a much newer machine than the simple lever that a cave man used to move a big old rock, but it's not as new as, say, a laptop computer. Where does a bicycle fit into the world of machines? Well, a bicycle is not number 7, or 100, or even 1000. A bicycle is actually a combination of several of those six basic simple machines. A bicycle gear is actually a combination of simple machines all by itself. A gear is a wheel, but the teeth on the gear are little wedges. What other simple machines can you find on a bicycle?

Gears, along with other simple machines, make up many of the machines you use every day. Some examples are the lawn sprinkler, a watch, and the gearbox in a car.

Escalators and elevators use combinations of simple machines. So does a hand drill. So do sewing machines, parking meters, and windmills.

Machines that use a combination of two or more simple machines are called complex machines. Machines can do all kinds of jobs today and make our lives easier in many ways. There was one person, however, who liked to invent machines that seemed to make work more complicated, not easier. That man was Rube Goldberg. Mr. Goldberg was trained as an engineer. In college he might have learned about making some of the latest machines. Then he became interested in drawing and writing cartoons. Rube Goldberg cartoons showing crazy, complicated machines doing simple tasks became popular everywhere.

To really appreciate one of his cartoons, of course you will have to see it, but here is a description of one of them. This cartoon shows a window-cleaning machine. The machine is started when a man slips on a banana peel. He falls on a rake which makes the handle fly up. The handle flips a horseshoe onto a rope. The rope sags, tipping the attached watering can. The water soaks a mop and also drips on a sleeping dog. The dog thinks it is raining and runs indoors, knocking down a sign, which bumps a standing ashtray, which rocks back and forth and swipes the mop against the window. You really have to see it.

Rube Goldberg contraptions have become so popular that there are now contests in middle schools, high schools, and colleges to build new and more ridiculous Rube Goldberg-type inventions. Each year Purdue University holds the Rube Goldberg Machine Contest National Challenge.

Challenges in past years have included: put toothpaste on a toothbrush (1987), toast a slice of bread (1991), shut off an alarm clock (1998), raise and wave a flag (2002), and inflate and pop a

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balloon (2012). Winning entries are the ones that are the most complicated and ridiculous. Each one includes a number of different simple machines and assorted other stuff.

As we know, the definition of a machine is something that makes work easier. This is true of simple machines and more complex machines. But every rule has its exceptions, and maybe the Rube Goldberg machines are an exception to the definition of a machine. They may be the only machines that make work more complicated.

Complex Machines

Questions

- _____ 1. There are _____ basic simple machines.
 - A. 4
 - B. 6
 - C. 10
 - D. 100

- _____ 2. A complex machine is:
 - A. an electric machine
 - B. a combination of simple machines
 - C. an electronic machine
 - D. the same as a simple machine

- _____ 3. A bicycle is a:
 - A. simple machine
 - B. complex machine
 - C. Rube Goldberg machine
 - D. none of the above

- _____ 4. Rube Goldberg was:
 - A. an engineer
 - B. a writer
 - C. an artist
 - D. all of the above

- _____ 5. A gear is a combination of which two simple machines?
 - A. lever and inclined plane
 - B. wheel and pulley
 - C. wedge and screw
 - D. wheel and wedge



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_____ 6. Rube Goldberg _____ his machines.

- A. manufactured
- B. built
- C. operated
- D. drew

_____ 7. For Rube Goldberg contests today, people:

- A. draw crazy machines
- B. build simple machines
- C. build crazy machines
- D. build machines that go faster

8. Draw your idea for a Rube Goldberg-style machine that puts coins in a bank.



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Simple and Compound Machines

Directions: Cut and paste the boxes at the bottom into the correct columns.

Simple Machines

Compound Machines

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