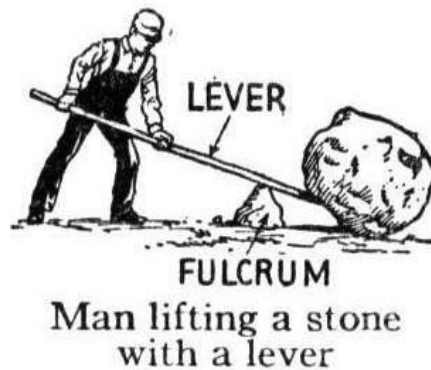


Simple Machines Worksheet

LEVER

Make a lever out of the given materials and explore the relationship of the fulcrum to the load.

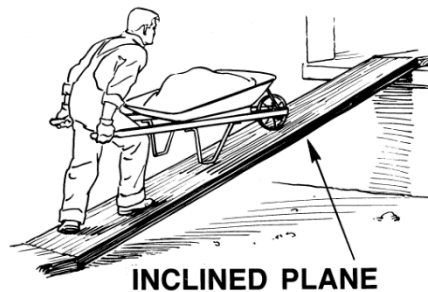


Does the lever make it easier to lift the load?

Move the fulcrum closer to and away from the load. Which is easier to lift?

INCLINED PLANE

Make inclined planes with boards varying the slope of the board. Try leaning the board against objects of different heights. Tie rubber bands around the book. Tie the string to the rubber bands and pull the books up the different inclined planes. Also pull the books straight up without using the inclined planes.



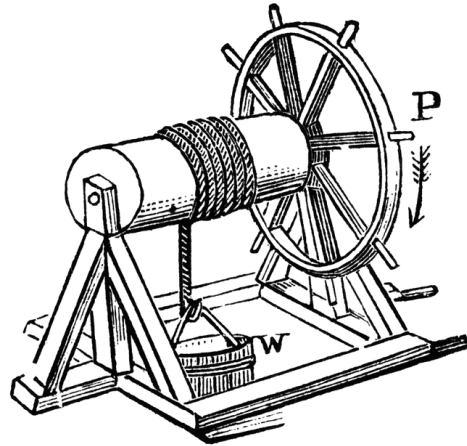
Is it easier to pull the book straight up in the air, or up the inclined plane? Why?

Look at the stretch of the rubber bands during the straight up pull compared to different inclined planes. During which test is the rubber band longer?

What is an example of an inclined plane in your every-day life?

WHEEL & AXLE

Push one car on its side and the other on its wheels. Note the difference in distance traveled.

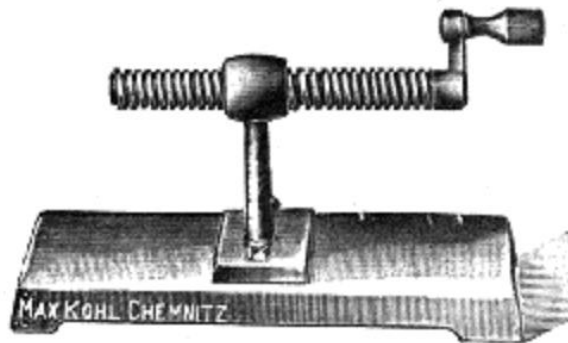


Which car moved easier, the one on its wheels or the one on its side?

If cars did not have wheels, how might they move? Would it be harder this way?

SCREW

Make a screw out of an inclined plane. Cut the paper square diagonally to make an inclined plane. Tape one of the short edges of the triangle to a pencil. Wrap the triangle around the pencil. An inclined plane is part of a screw.



Why is a screw helpful to us?

What do we use screws for in every-day life? (*Hint: look at the sink next time you wash your hands*)

WEDGE

Scissors are made up of two wedges (the blades) and fixed at an axis point. Cut a piece of paper with first a pair of sharp scissors, followed by a pair of dull scissors. Observe how each pair of scissors cuts.



Which scissor is easier to cut with, the sharp or the dull? Why?

How are the cuts different? Is a scissor a simple machine or a compound of two simple machines?

PULLEY

Make a pulley with a sewing spool, string, and a pencil. Use this pulley to lift an object. Compare lifting the object with the pulley and without the pulley.



Compare using the pulley and not using the pulley. Which is easier to lift the load?

Where do we use pulleys in our every-day life? (Hint: ever been in an elevator?)

