

CLASS-2 LEVERS

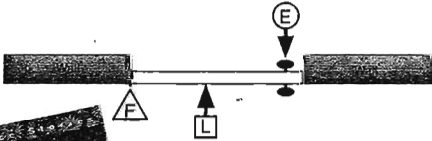
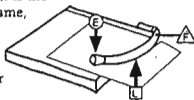
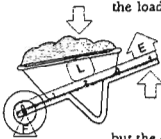
Lever arms can be arranged in different ways to do different kinds of work. A class-2 lever has its fulcrum at one end of a lever arm. The load is between the fulcrum and the effort. With this kind of lever, the direction of effort is not changed. Pushing up on the class-2 lever arm pushes up on the load. Pushing down on the lever arm pushes down on the load. To gain a mechanical advantage, the load is placed closer to the fulcrum than to the effort. The class-2 lever always reduces effort.

A wheelbarrow is a class-2 lever. The wheel is the fulcrum, and the effort is applied to the handles. The load sits close to the fulcrum. With a wheelbarrow, it takes less effort to lift a heavy load, but the cost is distance. Effort is exerted over a greater distance than the distance the load is lifted.

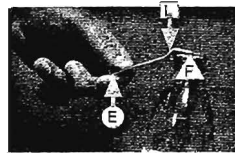
A paper cutter is another class-2 lever. In this case, the lever arm is a blade, and the paper's resistance to being cut is the load. The paper is placed between the fulcrum and the effort. Effort applied to the handle puts pressure on the paper.

A door is also a class-2 lever. The fulcrum is the place where the door is joined to the door frame, and the effort is applied to the doorknob. What would happen if the doorknob was placed in the center of the door instead of at the outside edge? Would the door be easier or more difficult to open? What would happen if the doorknob was moved even closer to the fulcrum?

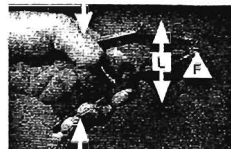
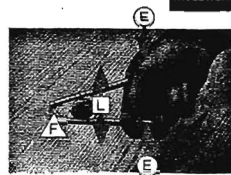
Standard 5 6d, 57c



A door is also a class-2 lever.

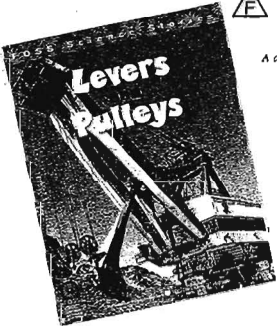
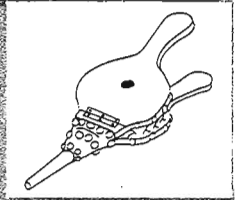


A bottle opener is a class-2 lever. The resistance of the bottle cap is the load.



A nutcracker and a garlic press are examples of double class-2 levers.

The Bellows



Where are the fulcrum, load and effort in a class 2 lever system? (you can draw)

Name 3 items in your home that are class 2 levers.

parent signature

Our goal is to identify and understand the class 2 lever.

bob