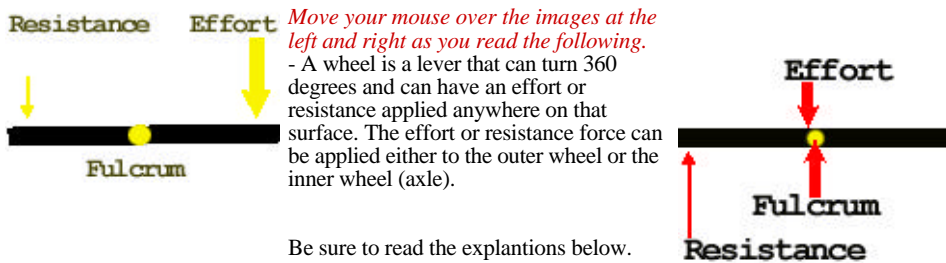




A **wheel and axle** is a lever that rotates in a circle around a center point or fulcrum. The larger wheel (or outside) rotates around the smaller wheel (axle). Bicycle wheels, ferris wheels and gears are all examples of a wheel and axle. Wheels can also have a solid shaft with the center core as the axle such as a screwdriver or drill bit or the log in a log rolling contest.



Why is a wheel a lever? Read on.



Move your mouse over the images at the left and right as you read the following.
- A wheel is a lever that can turn 360 degrees and can have an effort or resistance applied anywhere on that surface. The effort or resistance force can be applied either to the outer wheel or the inner wheel (axle).

Be sure to read the explanations below.

In the first example the resistance is in the mass of the wheel itself, the axle and whatever it might be connected to. The effort force is applied to the outer wheel. Steering wheels and door knob are good examples. Remember EFR?

The second example (on the right) the effort comes from the axle, the fulcrum is the core of the axle and resistance is on the road. (vehicle wheels are this way) Remember FER?

Now list five of your own examples of wheel and axles. You may use the term wheel only 3 times - be creative!

- 1.
- 2.
- 3.
- 4.
- 5.

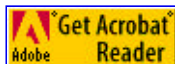
Question 2 - Identify the effort, resistance and fulcrum of two of your examples from above.

- 1.
- 2.

Question 3 - What type of lever is a steering wheel? A bicycle wheel?



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