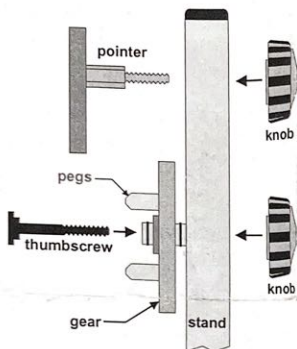




Gears and Levers

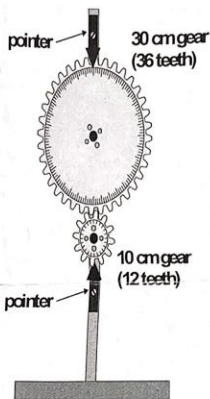
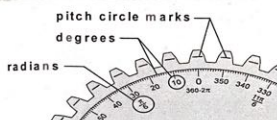
This elegant apparatus provides a thorough introduction to angles, ratios, rotation, torque, and simple machines. The 19 piece set features durable metal bearings and includes hardware, levers, pointers, and four gears with angle markings printed around the perimeter. Multiple sets can be put together to build more complex machines. To make the equipment a more effective learning tool a detailed **Teacher's Guide** is available which includes a set of multi-level, classroom ready **student Activity Guides**. The Activity Guides are suitable for portfolio assessment and provide structured student explorations which integrate math and science concepts.

Setting Up

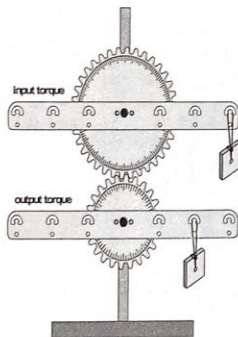


The Gears attach to the Physics Stand with thumbscrews and knobs. There are two sizes of thumbscrews, use the shortest ones for single gears and the longer ones to double gears (or levers) up.

Put the two pointers so that they show the angle for each gear. The pointers also attach with threaded knobs.



The complete set should have 3 short thumbscrews, 3 long thumbscrews, 2 levers, 2 pointers, 5 knobs, and 4 gears.

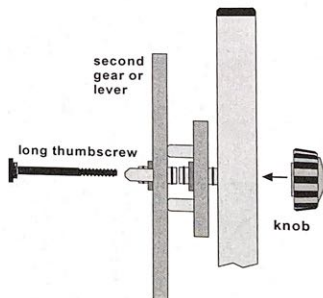


The angle markings allow math concepts such as ratios, degrees, and circles to be taught hands-on.

The Levers can be attached to the gears to demonstrate that the torque transmitted through a gear train is inversely related to the gear ratio.

By combining Gears from two or more sets students can build machines with mechanical advantage of up to 18 to 1.

NOTE: KEEP FINGERS AND OTHER OBJECTS OUT OF THE NIPS WHERE GEARS MESH TOGETHER.



Stacking Two Gears or a Gear and Lever