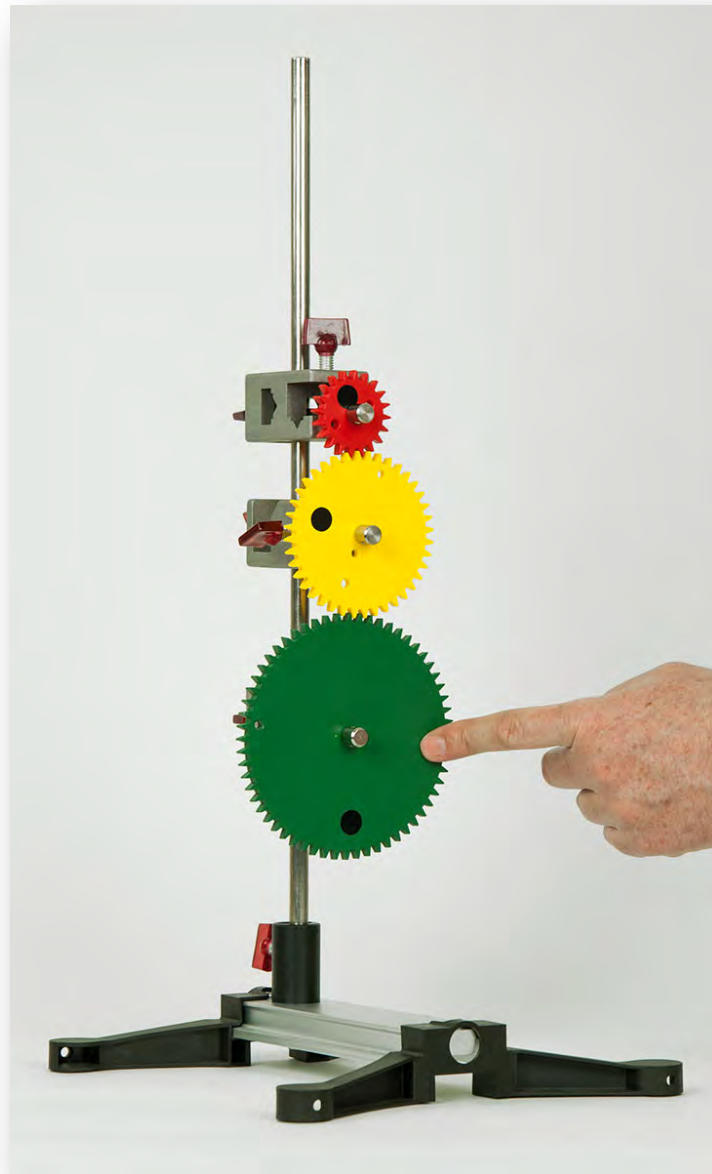




Material

Item-no.	Qty.	Description
DS090-3K	1	Claw base "Sepp", 260 x 220 mm
P7240-1G	1	Support rod, round, L=500 mm, D=10 mm
DS095-3K	3	Bosshead cross-pattern, demo 03
DS204-2L	3	Bearing pin with clamp insert
DM211-20	1	Gear with 20 teeth, red, D=44 mm
DM211-40	1	Gear with 40 teeth, yellow, D=84 mm
DM211-60	1	Gear with 60 teeth, green, D=124 mm
DS402-2N	1	Crank pin, L=50 mm

Purpose

To demonstrate the mode of operation of the gear transmission, direction of rotation and speed of rotation.

Preparation



Insert the 500 mm support rod into the sliding saddle of the claw base; afterwards mount the 3 bosshead at different heights (12 cm distance in between) on the support rod.

Mount the three gears with the help of the bearing pin with clamp insert at those bossheads.

The black marking dots of the gears should be in a vertical line.

Move the bossheads together so that the teeth reach into each other; afterwards screw the crank pin to the bottom gear.

Experiment

Set the bottom gear slowly into motion; observe the direction of rotation and the number of turns.

Result

If the large gear (60 teeth) makes one full turn (T), the middle gear does one and a half turn while the small gear does three full turns in the same time.

$$T : T : T = G : G : G$$

(T ... Turns, G.. amount of teeth on the gear)



The middle gear turns in the opposite direction while the upper gear turns in the same direction again.

Note

Large forces can be transmitted with gears, the teeth prevent slipping.

A bicycle transmission (gearshift) has gears however they do not mesh directly but are connected by a chain (similar to a drive belt).