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Batch: A3

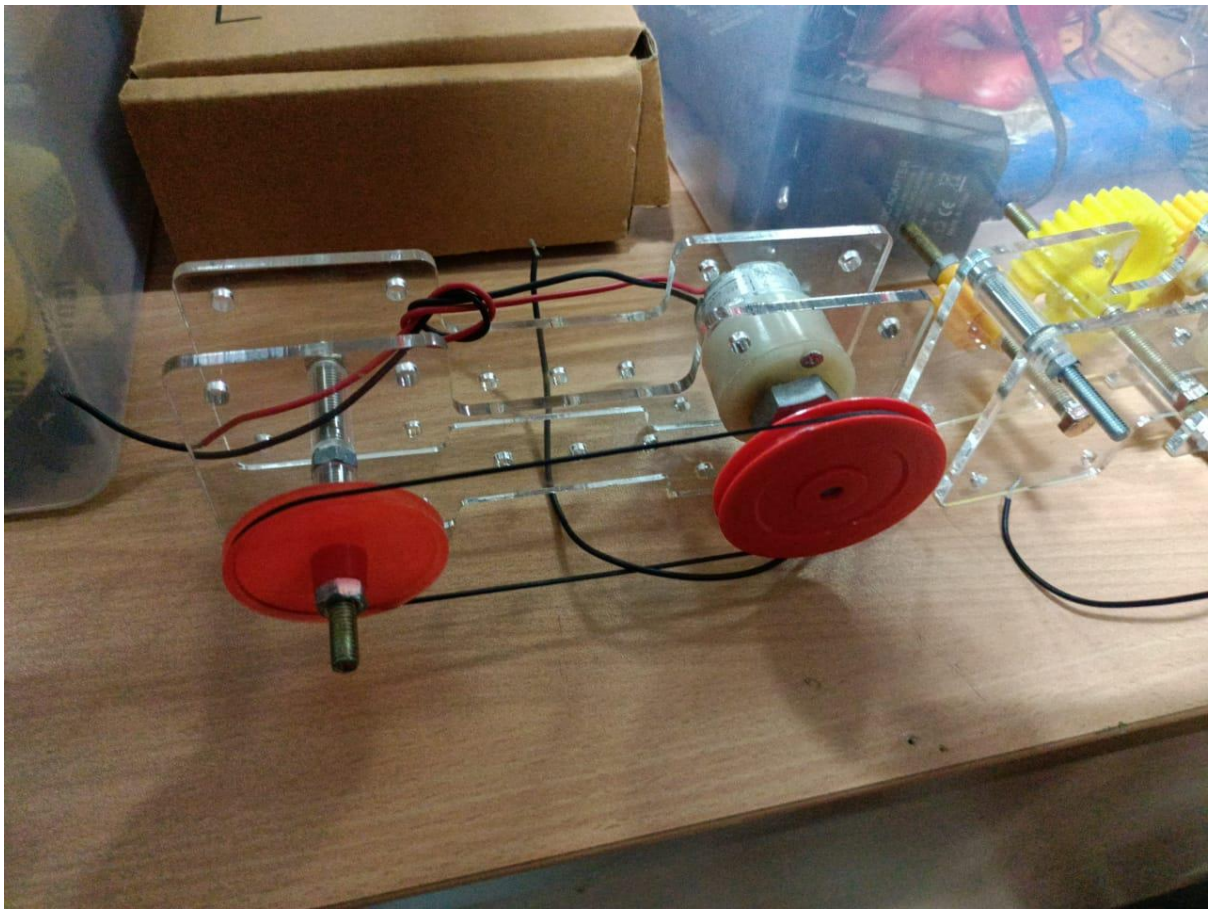
Pulley system

Need: Pulley system is made up of wheels and belts, which help in transmitting power from one point to other. The power is transferred to the pulley with the help of a motor, which can be of various speeds, and transferred through the pulley to the other wheel with the help of the belt. Hence, carrying the power from the input shaft to the output shaft. By using wheels of different sizes and combinations we can alter the output power to be as we wish.

Activity:

Assemble a pulley system and calculate the velocity of the output gear.

Images:



Calculations:

Let, the driver wheel be P_1 and driven wheel be P_2.

Diameters of the wheels are-

$D_1 = 4.7$ cm $D_2 = 5.7$ cm

Hence, the circumference of the wheels are-

$C_1 = 14.758$ cm $C_2 = 17.898$ cm

The velocity of the motor is-

$N_1 = 14.33$ RPM

$N_1/N_2 = C_2/C_1$

$N_2 = N_1 * C_1/C_2$

$N_2 = 11.82$ RPM