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CLASS- 5 SUBJECT- EVS

Based On NCERT

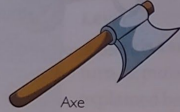
Date - 28/12/2020

Chapter - 11

Simple Machines

Wedge

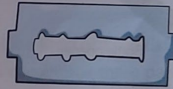
When two inclined planes are placed together, a sharp edge is formed called a **wedge**. Wedge is used to cut or slice objects, for example, axe, knife, blade, edges of a razor, a needle, a sickle, etc.



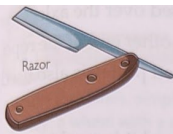
Axe



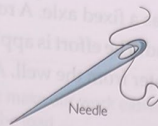
Knife



Blade



Razor



Needle



Sickle

Different kinds of wedge

Wheel and Axle

Wheel is one of the oldest and important inventions of the man. Wheel and axle consist of a large **wheel** connected to a small rod called the **axle**. The wheel rotates around the axle, for example, steering wheel of a car, bicycle pedal, sewing machines, grinder, egg beater, potter's wheel, etc.



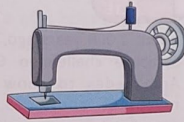
Steering Wheel



Bicycle pedal



Egg beater



Sewing machine



Potter's wheel

Wheel and axle

A wheel with teeth cut on its outer rim is called a **gear**. When the teeth of two gears get meshed together, one gear turns the other. Each of the gear is attached to a shaft, one supplies the effort and the other moves the load. Thus, a pair of gears does the same job that of a wheel and axle. Gears are found in almost all machines.



Different kinds of gears

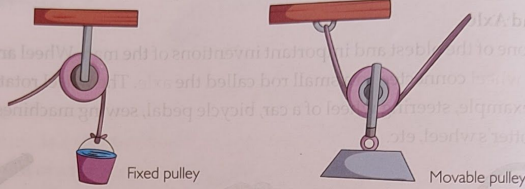
Pulley

A **pulley** consists of a wheel with a grooved rim. This rim holds a rope or a chain or a belt in position. The wheel rotates around an axle. A pulley together with a chain or a rope is used to lift heavy objects.

There are two kinds of pulleys: fixed pulley and movable pulley

Fixed pulley: This type of pulley has a fixed axle. A rope is passed over the axle. One end of the rope is attached to the load. The effort is applied at the other end of the rope. The fixed pulley is used to draw water from the well. A small fixed pulley is also used on a flagpole to hoist a flag.

Movable pulley: This type of pulley has a free or movable axle and it is used to carry heavy loads.



Pulleys are good for moving objects to reach places. They also make the work of moving loads much easier.

Screw

A **screw** is a kind of simple machine that is used to hold things tightly with a strong grip. It is a kind of an inclined plane wrapped around a cylinder in the form of a spiral. Jack screw (screwjack) is used to lift cars and trucks when the tyres of these vehicles get punctured. Some other examples of screws are jar lids, clamps, wrenches, etc.

Fact Kit

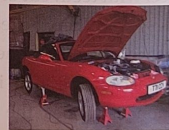
About 2,000 years ago, King Hieron of Syracuse challenged Greek scientist Archimedes to show what simple machines could do. Archimedes accepted the challenge. He built a system of pulleys and lifted a ship out of a sea on to the land without any outside support.



Wood Screw



Wrench



Lifting a car with a jack screw

A. Answer the following questions .

1. How does the screwjack help in making work easier ?
2. How does a small wedge help spilt a big log of wood ?

Jyoti