

### 3. Work and Energy

Class: IV

Subject: Science

#### I. Use the correct word to fill the blanks.

(Ramp, Simple machines, Work, Energy, Pulley)

1. Work is said to be done when a force is acting on it.
2. The ability to do work is Energy.
3. Pulley is a machine made up of wheel and rope.
4. Simple Machines help us to make work easier.
5. An example for inclined plane is Ramp.

#### II. Rearrange the letters and find out the names of the tools.



E D G E W



R L E V E



E W C R S

W	E	D	G	E
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L	E	V	E	R
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S	C	R	E	W
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#### III. Match.

- |                   |   |               |   |   |
|-------------------|---|---------------|---|---|
| 1. Class II lever | - | Drawing water | - | 2 |
| 2. Pulley         | - | Bicycle       | - | 4 |

3. Class I lever - Nut cracker - 1
4. Wheel and axle - Wind - 5
5. Renewable resource - Seesaw - 3

**IV. Classify the things below.**

S.No	Examples	Class of Lever
1	Spade	3 <sup>rd</sup> order lever
2	Seesaw	1 <sup>st</sup> order lever
3	Wheel barrow	2 <sup>nd</sup> order lever
4	Plier	2 <sup>nd</sup> order lever
5	Nail cutter	3 <sup>rd</sup> order lever

**V. Answer the following.**

**1. What is the unit of energy?**

The SI unit of energy is joule.

**2. Name some simple machines.**

Pulley,  
 Wedge,  
 Inclined plane,  
 Screw,  
 Lever,  
 Wheel  
 axle.

**3. What is a first order lever?**

When the fulcrum is between the effort and the load, it is known as Class I lever.

Eg: scissors, pliers, seesaw.

#### 4. Lemon juicer belongs to which type of lever? Why?

i) Class II Lever

ii) When the load is between the effort and the fulcrum, it is known as Class II lever.

Eg: wheel barrow, lemon squeezer, nut cracker.

#### 5. Define work.

An action in which one exerts a force to move an object is known as work.

#### 6. Write any three types of energy.

i) Light Energy

ii) Solar Energy

iii) Electrical Energy

### VI. Identify and mention the types of simple machines.



Wedge



Ramp



Sea Saw



Axle Wheel

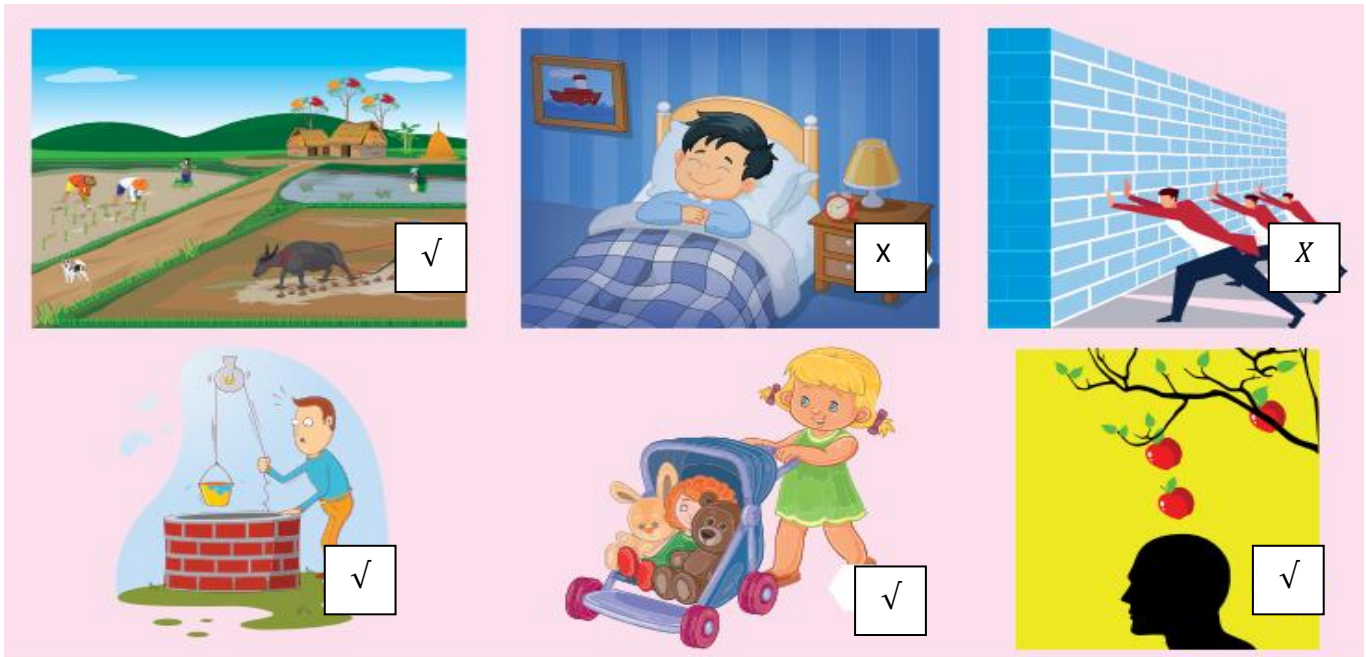


Pulley



Bottle Cap

**VII. Observe the picture and put a tick (✓) if work is done and put a cross (x) if work is not done.**



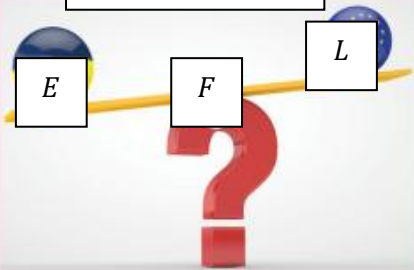
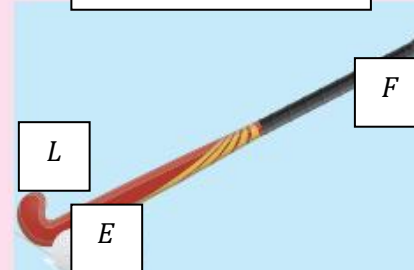
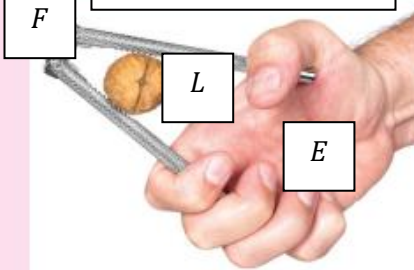
**VIII. Mention whether work is done or not in the following activity.**

S.No	Activity	Work done or not done
1	Pushing the door	Work done
2	Holding a doll	Not done
3	Sitting in a bus	Not done
4	Pushing a wall	Not done
5	Digging soil	Work done

**IX. Complete the table.**

S.No	Types of simple Machine	Example
1	Pulley	Crane
2	Wheel and axle	Bicycle Wheel, Door knob
3	Wedge	Knife
4	Inclined Plane	Wheel Chair
5	Lever	Sea Saw, Plier
6	Screw	Bottle cap.

**X. Name the load, effort and fulcrum.**

CLASS - I LEVER	CLASS - III LEVER	CLASS - II LEVER
		
1. <input type="text" value="Effort"/>	1. <input type="text" value="Load"/>	1. <input type="text" value="Effort"/>
2. <input type="text" value="Fulcrum"/>	2. <input type="text" value="Effort"/>	2. <input type="text" value="Load"/>
3. <input type="text" value="Load"/>	3. <input type="text" value="Fulcrum"/>	3. <input type="text" value="Fulcrum"/>