Measurement and motion

I Word focus

1. Standard units
2. Length
3. Translational motion
4. Rotational motion
5. Periodic motion
6. Non-periodic motion

II KWL
III Concept map
IV Q and A

1. Differentiate between Translational Motion and Rotational Motion, and give one example of each.

   Translational Motion: This is the type of motion where an object moves along a straight or curved path, and all points on the object move in the same direction.
   - Example: A car moving along a straight road.

   Rotational Motion: This is when an object rotates around a fixed point or axis.
   - Example: A spinning top or a rotating wheel.

2. If an object is moving in rotational motion, explain how it can also exhibit translational motion. Provide an example to support your answer.

An object can exhibit both rotational and translational motion at the same time if it is moving along a surface while rotating.
Example: A rolling ball. The ball rotates around its axis (rotational motion) while also moving forward along the ground (translational motion).
Another example is a bicycle wheel: As it spins (rotational motion), it also moves forward (translational motion).

3. Compare and contrast periodic and non-periodic motion. Give two examples of each.

Aspect	Periodic Motion	Non-Periodic Motion
Definition	Motion that repeats itself at regular time intervals.	Motion that does **not** repeat in a regular pattern or at fixed intervals.
Nature of Motion	Predictable, consistent, and follows a set pattern.	Irregular, unpredictable, and does not follow a set pattern.
Examples	1. The swinging of a pendulum. 2. The hands of a clock moving in a circle.	1. A person walking randomly on the street. 2. A car moving in traffic.

4. Imagine you lived 500 years ago—describe a journey using the transport available at that time.

Transportation is a means by which people or goods are taken from one place to another. In ancient times, people travelled on foot from one place to another over land. They used simple boats to travel down waterways, such as rivers. Riding on the backs of animals, such as donkeys, horses, and camels, was a milestone in the history of transport; it helped people travel faster and cover longer distances on land. As trading grew, transportation of goods became important. In the beginning, people carried loads of goods on their backs. Later animals were used to carry the load. The invention of the wheel caused a revolution in transport. Carts with wheels were much easier to pull, and larger loads could be carried faster.

The next revolution in transport came with the invention of the steam engine. With the combination of the steam engine and the wheel, transportation became very efficient. Steam engines were used to power trains on railroads, ships in water and wagons on land. Then came the diesel and petrol engines that led to the development of most of the vehicles that we use for transportation today. Now, in modern times, we have aeroplanes, helicopters, supersonic jets and rockets. We also have electric trains and cars, nuclear powered submarines and aircraft carriers. Engineers and scientists are also working on solar power vehicles. As technology is advancing, the means of transportation is becoming more and more exotic.

5. Numericals