

ACTIVITY NO. –9 – Circular motion to a linear motion

Subject	Science
Class	IX
Chapter/Unit	Chapter 8-Motion
Topic	Tangential motion followed by an object after it is released from a uniform circular motion
Time	10 minutes
Nature of Activity	pair work

What will I learn (Learning Outcome)?

To verify that the velocity of an object undergoing uniform circular motion is tangential to the circular path at every point.

Skills: Analyzing and Creating

What I have to do?

To demonstrate through the activity that an object follows a tangential path when released from a uniform circular motion.

What do I require?

A circular plastic tube (Hula Hoop) and a ball .

What do I need to know?

Uniform circular motion can be described as the motion of an object in a circle at a constant speed. As an object moves in a circle, it is constantly changing its direction. At all instances, the object is moving tangential to the circle. A centripetal force is a force that acts on an object to keep it moving along a circular path. The direction of this force is same as the direction of acceleration.

➤ Teacher's Activity

Teacher will :

1. discuss uniform circular motion and the meaning of tangential motion.
2. will explain the steps of the activity.
3. make pairs and ensure that each participant in the pair performs the activity .

How will I proceed?

Students activity

1. A Hula Hoop is taken and placed on the ground.
2. A ball is taken and made to move inside the Hula Hoop in circles.
3. Once it starts moving with uniform speed, the loop is lifted from the ground.
4. The direction of the ball is observed after the loop is lifted.

What have I observed?

S. No	Motion of the ball	Type of motion
1.	Moving in the loop	
2.	Released from the loop	

What have I learnt?

Inside the circular hoop, the ball was moving in apath.

After the hoop is lifted , the ball moves in apath.

What am I curious to learn?

If I stand on a merry-go-round moving in a circular motion and jump out, what motion should be followed after jumping down from merry-go-round and why?

Let me evaluate myself

Q.1. What remains constant in a uniform circular motion?

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Q.2. Give two examples of uniform circular motion?

Q.3. Earth is moving around sun in a nearly circular path. At any instant if the gravitational force of sun is removed, what will be the path of earth? Explain your answer with the help of a diagram.

Q.4. If a bucket filled half with water is made to rotate in a circular motion, the water does not fall out. Why?

Q.5. The direction of centripetal acceleration/force is towards the centre. Then, why doesn't the Earth fall inside the sun?

