AIM: To demonstrate the effect of an angle of launch on range of projectile.

MATERIALS REQUIRED: Projectile launcher, Clamp, steel & aluminium ball with hole.

DESCRIPTION:

Projectile launcher is used for exploring the projectile motion and trajectories. A steel ball placed in the launch barrel can be projected for different launch velocities and launch angles. With a release latch that can be adjusted and locked in any desired setting, Supplied with two drilled balls, attached protractor and plumb bob for determination of angle of inclination. Includes a clamp to fasten the apparatus to a table top.

THEORY:

Effect of launch angle on range: There is a change in range of project file when the angle of launch is changed. A project file achieves its maximum range when it is launched at an angle of 45˚.

PROCEDURE:

1. Take the projectile launcher and mount the steel ball properly so that you can bring variation in the angle of launch.
2. While mounting the steel ball in the projectile launcher, the axis of the launcher should pass through the centre of the circle graduated in degrees.
3. The projectile launcher is fired at different angles between 0˚ and 90˚ and corresponding ranges achieved are noted down in the table.

Sr.No.	Angle of launch	Range achieved
1.	15˚	
2.	30˚	
3.	45˚	
4.	60˚	
5.	75˚	
6.	90˚	

RESULT:

This result shows that there is a change in the range when the angle of launch is changed.

PRECAUTION:

1. All the measurements should be taken very carefully.