A close up of a toy

Description automatically generated

National 5 Assignment

Projectile launch angle Guide Sheet: A

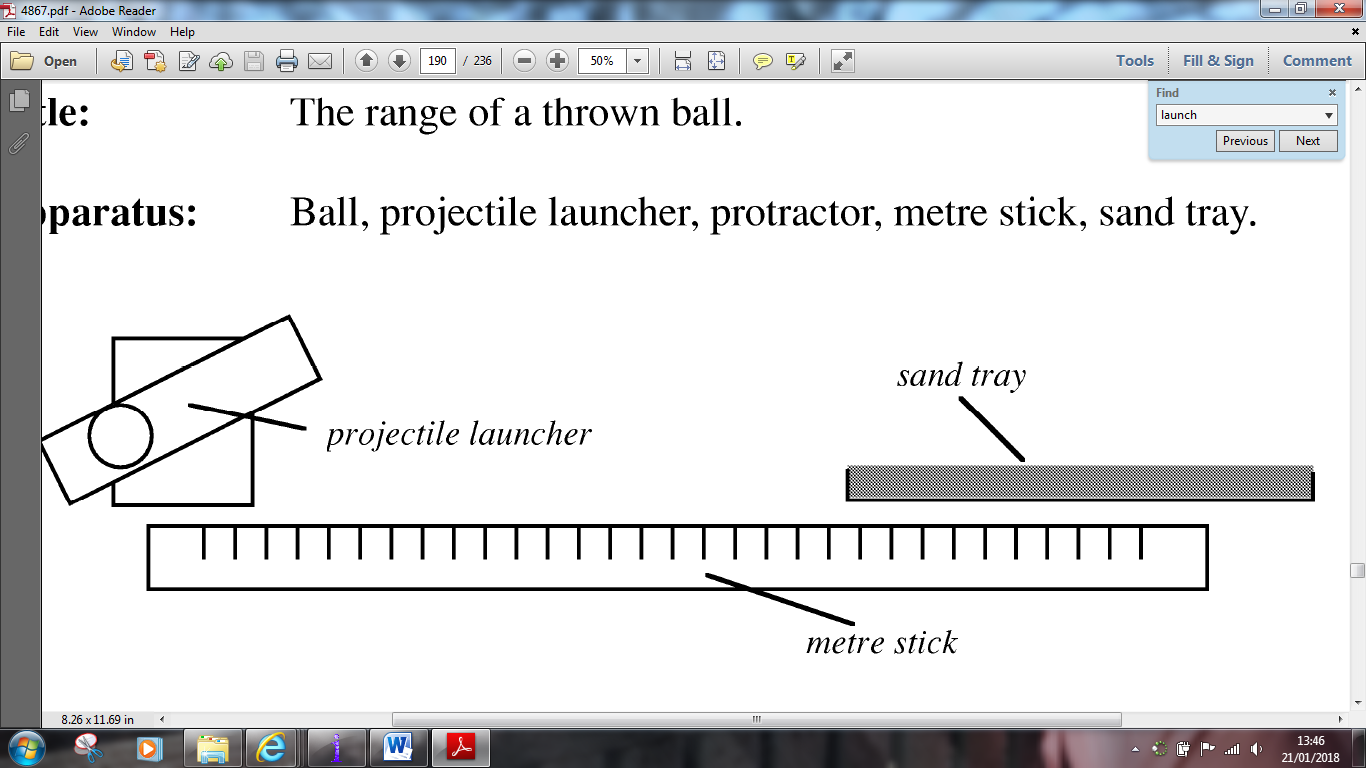
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**Variations of range a projectile with launch angle**

**Equipment**

Ball, projectile launcher, protractor, metre stick or tape measure, sand, tray, or carbon paper.



**Instructions**

* Set up the apparatus as shown in the diagram above.
* Set the projectile launcher to the initial angle to the horizontal
* Fire the ball from the launcher.
* Adjust the position of the sand tray or carbon paper so that the ball lands in the sand or on the carbon paper and leaves a clear mark.
* Fire the ball a second time from the initial angle and repeat the measurement. Record the range and angle.
* Set the projectile launcher to larger angles and measure the range of the ball for each angle.

**Risk Assessment**

* Check that the launch area is free of people who could get hit.
* Ensure no projectile is left unattended where it could become a trip hazard.
* Wear safety goggles as the projectiles are likely to be smaller than the eye socket, and may not always be very well aimed!

**Mrsphysics takes no responsibility for any health and safety. It is the responsibility of the teacher and student to risk assess any practical activity they complete!**

**Sept 2023**