

Performance Task

8.3 Elastic and Inelastic Collisions 20.

You will need the following:

- balls of different weights
- a ruler or wooden strip
- some books
- a paper cup

Make an inclined plane by resting one end of a ruler on a stack of books. Place a paper cup on the other end. Roll a ball from the top of the ruler so that it hits the paper cup. Measure the displacement of the paper cup due to the collision. Now use increasingly heavier balls for this activity and see how that affects the displacement of the cup. Plot a graph of mass vs. displacement. Now repeat the same activity, but this time, instead of using different balls, change the incline of the ruler by varying the height of the stack of books. This will give you different velocities of the ball. See how this affects the displacement of the paper cup.