

About the Activity

Participants investigate friction, strain and impact forces, collecting a range of data, both numerical and visual, in order to document what they have seen. They then use this information to aim to successfully complete a given task in small teams.

Activity Aims

The aim of this activity is to:

- Introduce the Frictions, Strains and Impacts activity and the necessary equipment.
- Allow each participant to collect, record and analyse data.
- Ensure participants work together, supporting and encouraging each other.
- Provide an opportunity for participants to discuss what they have accomplished.

Learning Outcomes

Upon completion of the activity, participants will have:

- Described the forces that affect the speed, direction of travel and shape.
- Understood factors that affect frictional, strain and impact forces.
- Understood why data collection must be fair and consistent.
- Contributed predictions for the outcomes of simple experiments.
- Adjusted variables to improve results of final task, based on results from practise attempts.
- Demonstrated the ability to listen to, understand and act on instructions received.
- Understanding of the importance of teamwork.
- Consolidated and then improved abilities through performance.
- Understood the importance of safety, risk, risk assessment, hazards and rules.
- Contributed to a post activity review led by the instructor identifying what they did well and then suggested ways to improve.

Progression Opportunities

Some participants may also:

- Identify limitations of and improvements to the methods of data collection used.
- Be able to describe situations in which frictional forces are helpful as well as those in which frictional forces resist motion and describe and explain the motion of some familiar objects in terms of several forces acting on them.
- Take the initiative in evaluating their performance and that of the group.

In addition, participants should also have developed in the following:

- Interpersonal Communication
- Teamwork

Associated Vocabulary:

Words relevant to safety e.g. boundaries, hazards, risk assessment, rules.

Words relevant to equipment e.g. friction board, impact tray, ruler, stopwatch.

Words relevant to the activity e.g. air resistance, forces, friction, gravity, impact, impact crater, mass, motion, pulls, pushes, strain, surface area, weight.

Words relevant to teamwork e.g. discussion, instruction, listening, opinion, participation, responsibility, understanding.