

Name : Helen McCready

Grade/Course : Grade 9 (age 14) Physics - Effects of forces

Length of Lesson : 30 minutes research and planning in class ; 30 minutes filming at home; 30-40 minutes compilation at school; 10 minutes sharing between groups.

Lesson Summary :

The students will be put into groups of 7

They will be told to research the effects of forces and to list them.

Then they must choose and agree on one effect so each person in the group has one on which to work.

Each student must make a short video clip showing an example of a force and its effect in action. (The video will be made at home using items from home)

The video should have **simple** text communicating

- The direction of the force using an arrow
- The object causing the force (eg hand or elastic band)
- The effect of the force.

The next lesson will involve the members of the group compiling their videos together into a presentation.

Watching the group presentations as a class will follow along with discussion.

The students will answer a short quiz using google forms to demonstrate that they have learnt about and understand concepts.

Lesson Objective

The students will find out about and engage with the effects of forces and start to experience and think about forces in everyday life.

They will have a chance to consider the effectiveness of others representations.

They will have practice in considering and annotating forces and their directions as well as what is causing them. This is particularly important later in Grade 11 when studying Newton's Laws.

Resources/Technology - Teacher

- Computer with speakers and data projector for sharing projects with classes
- Internet access to prepare, present and collect results from google forms quiz

Resources/Technology - Students

- I pads with cameras for filming
- Google classroom for collaboration and possible sharing of presentations
- Internet connectivity for research and collaborative sharing and google classroom and google forms quiz
- Suitable app for adding text and arrows to movies (eg Touch Cast video App)
- Suitable app for collating group members' movies (Suggest Book Creator App)

Intended Curriculum Learning Outcomes

Learn about Effects of Forces

Instructional Activities (10-15 min)

The teacher will briefly introduce the concept of a force as a push or a pull and discuss the unit in forces are measured (Newtons).

The steps and instructions for the activity will be explained and time allowed for questions

Students will :

15-20 minutes during class:

Research and list effects of forces and decide who is going to investigate which effect.

They will discuss how they may demonstrate these effects

30 minutes at home:

Make video and annotate

30 minutes in class:

Put together presentation.

Learner Assessment

The students will show their projects to the rest of the class and discuss their effectiveness. The assessment of knowing about effects of forces will be done using short quiz designed using google forms.

