

TEACHER NOTES

Forces at Isle of Wight Steam Railway!



Contextual Summary

This resource is relevant to lower key stage 2 students who are undertaking work on 'Forces' in Year 3. It allows students who visit the Isle of Wight Steam Railway to engage with the scientific aspects of forces within this environment.

Students can explore pushing and pulling aspects of the locomotive and how the carriages are moved around, the effects of pulling and pushing levers in the signal box, as well as their own physical pulling and pushing processing when entering and leaving the train during their visit.

Task Implementation

This task can be introduced to students before their visit to Isle of Wight Steam Railway; it would be particularly useful if they have done some basic work on pulling and pushing forces.

When on site at the railway, students can then complete the questions on the sheet as they move around the venue. This will focus students' attention on the key areas for learning. Alternatively, this resource works well as a follow-up task as the teacher deems appropriate.

Ability Levels

There is one version of this resource intended ideally for mixed ability lower key stage 2 / P4-P5 level. However, the resource can be adapted by teachers for other ability groups or younger students.

Key skills practised in this unit:

- ▶ Exploring the movement of familiar things
- ▶ Identifying that things go faster, slow down, and change direction
- ▶ Understanding that both pushes and pulls are examples of forces
- ▶ Recognising that when things speed up, slow down or change direction, there is a cause

Relationship to Curriculum

The above skills are required to be taught and practised as per the Scottish Curriculum for Excellence and the National Curriculum 2014, for lower key stage 2 SCIENCE.

SUBJECT

Science

UNIT

Physics

OPPORTUNITIES FOR USE

- ✓ Pre-Visit
- ✓ On-Site Activity
- ✓ Post-Visit
- ✗ Peripheral Task



40 - 60 Mins

APPLICABILITY



Lower KS2



P4 - P5

CURRICULUM / SYLLABUS

- ✓ National Curriculum 2014
- ✓ Curriculum for Excellence

Applies to Resource number

101041

Learning Opportunities

Pre-Visit

Students could cover the basics of forces and motion, particularly the pushing, pulling, speed and change of movement aspects, to allow them to engage with the resource at Isle of Wight Steam Railway most effectively.

During the Visit

Completion of Science Lower KS2 Physics / Forces at Isle of Wight Steam Railway resource linked to this document:

Forces at the Railway!

Resource ID: **101041** (mixed ability)

Post Visit

Follow-up tasks could include:

- ▶ Class discussion of all the examples of forces they discovered at Isle of Wight Steam Railway
- ▶ Completion of labelled diagrams, PowerPoint slides, or animations showing these examples
- ▶ Finding other examples of where forces are evident in the everyday world

Enrichment Opportunities

Opportunities exist for the students to also engage with other types of forces that they will learn about in later key stages - for example, friction and gravity, pulleys, etc.

Learning Outcomes

Students will be able to demonstrate an understanding of how familiar things (trains) move and the basic forces involved. They will be able to understand that trains go faster, slow down and change direction. Most students will be able to understand that both pushes and pulls are examples of forces.

See Also...

Other resources at Isle of Wight Steam Railway relevant to this age group include:

101113	English	Review and comment
101192	English	Understanding railway texts
101131	History	Placing railway events in chronological order
101302	History	The past in the present
101161	Maths	Applying simple maths to the railway
101071	Science	The power of steam!

For further details visit www.edudest.info and click:

- ▶ *Resource Finder* - to locate specific resources identified above
- ▶ *Venue Finder* - to learn more about education at this venue
- ▶ *Subject Finder* - to find other relevant Isle of Wight venues

