

# TEACHER NOTES

## Science: Physics

### Forces

### Contextual Summary

This resource is for students in upper key stage 2 and relates to the 'Forces' part of the Science National Curriculum.

This on-site task focuses on the effects of air resistance, water resistance and friction, which act between moving surfaces.

The task involves learning about the types of forces experienced whilst taking part in the various activities available at Robin Hill.

Tasks are designed to appeal to students in upper key stage 2.

### Task Implementation

This is an on-site resource that is designed to be completed during the trip to Robin Hill.

Students will complete a worksheet that relates different types of forces to the park rides and activity areas. Students will need to identify the types of forces they are seeing around them.

Ideally, teachers will have introduced students to the effects of air resistance, water resistance and friction prior to the trip. After their visit students can practise their 'Working Scientifically' skills by carrying out a practical investigation into ways of reducing friction.

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### Ability Levels

This resource is suitable for students in upper key stage 2.

There are 2 variants of the resource: one resource for lower ability students and one resource for higher ability students.

Teachers could adapt the content for students' needs by simplifying instructions where appropriate, or adding more complex tasks.

### Key skills practised in this unit:

- ▶ Identifying acting forces that affect movement
- ▶ Working scientifically.

### Relationship to Curriculum

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



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#### SUBJECT

Science: Physics

#### UNIT

Forces

#### OPPORTUNITIES FOR USE

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



Peripheral Task

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#### CURRICULUM / SYLLABUS

- ✓ National Curriculum 2014
- ✓ Curriculum for Excellence

Applies to Resources numbered:

1 0 5 0 8 1  
1 0 5 0 8 2

## Learning Opportunities

### Pre-Visit

- ▶ Students should be introduced to the effects of air resistance, water resistance and friction prior to the trip.

### During the Visit

- ▶ Students complete the Science resource/s linked to this document: *Motion & Force at Robin Hill!*

Resource ID: **105081** (KS2U low ability) **105082** (KS2U mid/high ability)

- ▶ Students work individually, in pairs, or small groups, to identify acting forces accurately.

### Post-Visit

After their visit students can practise their 'Working Scientifically' skills by carrying out a practical investigation into the effects of air resistance and water resistance and friction. This resource is available to use as material for the Hill Pill Slides.

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## Enrichment Opportunities

- ▶ Students use first hand observations to enhance their learning.
- ▶ Opportunities exist for students to identify the types and effects of forces including air and water resistance and friction.

## Learning Outcomes

- ✓ Students will learn to identify the effects of friction acting between moving surfaces.
- ✓ They will identify the effects of air resistance and water resistance.
- ✓ Students will practise working scientifically by identifying variables and drawing conclusions.

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