

# GCSE Double Award Science Physics

## Unit 7 Prescribed Practical

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### Technician/Teacher Notes

The technician/teacher notes outlines the apparatus required and key points to consider for Double Award Science, Physics Unit 7 prescribed practicals (Booklet A).

Please note that it is the responsibility of the centre to ensure that all risk assessments are carried out before practical work is demonstrated or carried out by learners.



## Practical P1

### Motion on an inclined runway

#### Apparatus

- Wooden ramp about 120 cm long
- Blocks of wood from about 5 cm high to about 15 cm high
- Metre stick – to measure height of block and distance on runway
- Pencil
- Stopwatch
- Marble

#### Technician Notes

Scotia moulding (3 cm) is ideal for this experiment.

However, it is also possible to use 2 metre rules joined with tape to form a V-shaped runway.

## Practical P2

### The extension of a spring

#### Apparatus

- Safety spectacles – one pair for each learner
- Helical spring
- Retort stand, boss-head and clamp
- G-clamp to clamp iron stand to bench
- Mass hanger and slotted masses up to about 500 grams
- Ruler

#### Technician Notes

Helical springs (2 cm,  $30 \text{ Nm}^{-1}$ ) from leading suppliers are ideal, inexpensive and expendable.

## Practical P3

### The Principle of Moments

#### Apparatus

- Retort stand, boss-head and clamp
- G-clamp to clamp iron stand to bench
- 2 mass hangers and slotted masses up to about 600 grams
- Uniform wooden metre rule
- Fine string

## Practical P4

### The personal power of a student

#### Apparatus

- Access to a flight of stairs (best, but not essential, if this is of around 20 steps or more)
- Bathroom (or newton) scales to measure the mass of a student
- Metre stick or 30 cm ruler
- Stopwatch or stopcock or timer

## Practical P5

### Refraction of light in a glass block

#### Apparatus

- Rectangular glass block
- Ray box
- Low voltage power supply (PSU)
- 2 low voltage leads to connect ray box to PSU
- A4 plain white paper
- Pencil
- Ruler
- Protractor

## Practical P6

### Ohm's law

#### Apparatus

- Low voltage power supply unit (PSU)
- Rheostat
- Ammeter
- Voltmeter
- Connecting leads
- Resistance wire
- Switch

#### Technician Notes

Resistance wire – 28 swg nichrome wire has a resistance of around  $10 \Omega \text{m}^{-1}$  and is ideal. It is available in different lengths according to the needs of the centre.

## Appendix

Centres are required to conduct their own Health and Safety Risk Assessments before doing practical work with students. References are made in practicals P2 and P3 to safety issues relevant to those activities. However, comprehensive details about Health and Safety and how to carry out a risk assessment can be obtained from CLEAPSS (Consortium of Local Educational Authorities for the Provision of Science Services).

CLEAPSS is an advisory service providing support in science and technology for a consortium of local authorities and their schools, including establishments for pupils with special needs. Their services cover health and safety, risk assessment, sources and use of chemicals, living organisms and equipment.

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