

## Introduction

The Passport bridging activity is intended to show a clear progression from Year 6 to Year 7. These investigations are one part of the Science Passport unit. They fill pages 8, 9, 10, and 11 of the Science Passport. The activities should be accessible to a wide range of abilities.

## Running the main Science Passport activity

This requires copies of the passport document to be made. It is a twelve-page document that is intended to be printed double sided. Pages 1 and 12 have 2 and 11 on their reverse, 3 and 10 have 4 and 9 on the reverse and 5 and 8 have 6 and 7 on their reverse. This is how the main pdf files are set up on the CDROM. There is a colour copy of the pdf files and a more black and white copier friendly file as well. There are coloured 'skills' stickers to go on the Science Passport (page 5). These have a 'Visas' pdf file for producing them on labels stationery. In addition to the main document there are several alternative bridging activities that may be used for pages 8 to 11 of the Science Passport

## Requirements (per group)

### Environment

#### Year 6

There are several environmental fieldwork activities for the pupils to carry out.

Which are done depends on the local habitats round the school.

Here is a complete list of the equipment that MAY be needed. Primary School colleagues may need to borrow some of this from local secondary schools.

- light meter or light probe
- thermometer (preferably digital) or temperature probe
- sound level meter
- wet and dry bulb thermometers
- pH paper
- oxygen meter or probe
- Secchi disc (see teachers' notes)
- plastic pots for pitfall traps (see teachers' notes)
- Tulgren funnel or the like (see teachers' notes)
- pooters (see teachers' notes)
- pond dipping trays (see teachers' notes)
- dipping and kick sampling nets
- spoons

#### Year 7

- set of laminated 'Plant and animal adaptations' cards

### Safety

Handling small animals, washing hands after fieldwork.

Mammals must not be collected.

### Solutions

#### Year 6

- thermometers – alcohol in glass
- apparatus for measuring volumes of water
- timers
- commercial jelly cubes
- possibly samples of sugar and/or salt or other soluble solids of different grain size

## Year 7

- top pan balance accurate to 0.1g or better
- measuring cylinders
- a substances that gives a change in solubility at different temperatures such as potassium nitrate
- test tubes
- heating bath: beaker, tripod, gauze, bunsen, heat proof mat.
- clamp and stand
- thermometer – long 0 to 100°C, alcohol in glass.

### Data for solubility curve for potassium nitrate crystals

Temperature (°C)	Amount of potassium nitrate that will dissolve in 100g of water (g/100g water)	Amount of potassium nitrate that will dissolve in 10 cm <sup>3</sup> of water in a test tube.
20	30	3.0
27	40	4.0
30	44	
34	50	5.0
40	60	6.0
45	70	7.0
50	80	8.0
54	90	9.0
58	100	10.0
60	104	
62	110	11.0

## Safety

### Year 6

Heating hazard with hot water – use water from a kettle or sterile water boiler as jelly may be eaten.

### Year 7

Potassium nitrate - oxidising agent, keep away from combustible materials, dispose of in large volumes of running water.

Low risk as used in a solution or wet crystals.

Heating hazard - wear eye protection at all times

## Golden ratio

### Year 6

- pupils' photos (smiling full face, preferably taken with a digital camera)
- rulers (transparent if possible)
- callipers (if available)
- calculators
- photos of adults (members of staff, parents, preferably digital)
- photos of 'beautiful or attractive people' copied or clipped from magazines

### Year 7

- photos of buildings from the golden era of Ancient Greece, local and school buildings
- rulers (transparent if possible)
- callipers (if available)
- calculators

## Safety

Low level hazards