



A suggested list of Science equipment

Please note that this is just a suggested list and is not intended to be comprehensive or directive. Not all schools will need all of the materials and many of the items can be used by different classes at different times.

Important safety considerations – please read

“The *Safety, Health and Welfare at Work Act, 1989* regulations apply in primary schools as much as in any workplace. The legislation requires employers to protect their employees, that is teachers, classroom assistants, caretakers, etc., and to extend the same protection to others who may be affected, such as parents helping in the classroom, and, above all, the children.”

This statement is taken from (ISTA) the Irish Science Teachers’ Association’s publication entitled **Be Safe! Health and safety in primary school science**. Before purchasing, storing or working with the materials outlined below it would be useful to ensure your school has a copy of the above publication. It should be brought to the attention of all involved with such materials and further information is available from their website www.ista.ie

Suggestions for purchasing and organising materials

- Conduct an audit of resources already in the school prior to purchasing new materials. Books, CD-ROMs, games and everyday materials should be included in the audit.
- Calculate the number of each piece of equipment based on the largest class in the school.
- When ordering, if items are sold in packs of 5/10 round up rather than down; this will allow extra for breakages, items lost etc.
- To store equipment use stackable, clippy boxes with lids. Ones with transparent bases are useful to enable you to see at a glance what is in the box.
- Don’t use boxes that are too big; it should be possible for two children to carry the boxes easily.
- Organise the equipment into boxes according to strand units and label them clearly. Some strand units use less equipment and can be combined in a box.
- Suggested organization of boxes:
 - Box 1 = Plants and Animals**
 - Box 2 = Light & Sound**
 - Box 3 = Magnetism and Electricity**
 - Box 4 = Heat and Materials (equipment)**
 - Box 5 = Heat and Materials (consumables)***
 - Box 6 = Forces**
- When ordering equipment, consult a selection of catalogues to get the best value. Check that the prices in the catalogue are in euro and whether they are inclusive of VAT or not.
- Pre-assembled kits can appear worthwhile; however they can work out more expensive and may not address your specific school needs
- For contact details of commercial companies please consult the list of equipment suppliers available on www.pcsp.ie

General consumable equipment for each classroom

Consumables are usually items that can be found at home or in the classroom and will need to be replaced from time to time. Other consumables include purchased items such as bulbs, batteries etc. which will also need to be replaced. A portion of science funds should be retained for this purpose.

Many of the consumables will also be necessary during design and make activities

Spread/ butter boxes	Bubble wrap
Clean transparent 'Take-Away-type' food containers	Cotton wool
Kitchen towel	Selection of fabric
Cling-film	Zip-lock freezer bags (large and small)
Aluminium foil	Cardboard
Greaseproof paper	Glue
Newspaper	String
Blu tack or similar	Double sided sticky tape
String	Lolly pop sticks
Selection of containers for design & make activities	

Measuring equipment

The following mathematical equipment will be also useful for work in a number of strand units including Human life and Forces.

Sand timer	Measuring tapes
Stopwatches	Measuring cylinders
Set of masses (weights)	Measuring jugs/beakers
Bathroom scales	Measuring spoons
Kitchen scales	Metre sticks
Force/Newton meters (also called spring balance)	Calibrated syringes

Strand: Living Things
Strand Unit: Plants & Animals

<i>Purchased Equipment</i>	<i>Suggested numbers</i>
Magnifying glasses (for indoor use only)	1 per group of 3 children
Bug viewers or magnispectors	1 per group of 3 children
Pooters	1 per group of 3 children
Bug Dials (for bog/pond work)	1 per group of 3 children
Tree identification key	1 per classroom
Woodland plants identification key	1 per classroom
Garden birds identification key	1 per classroom
Woodland invertebrates identification key	1 per classroom
Other identification keys as appropriate e.g. seashore, grassland plants etc. <i>available from IPCC, In-class Educational & Shaws</i>	1 per classroom
Bird song CD <i>available from IPCC</i>	1 per school
Petri dishes	10 approx.
Insect traps	2/3 per school
<i>Other resources and consumables</i>	
Folder containing 'plant and animal activities' from www.pcsp.ie	
Tree Day Manual <i>available from the Tree Council of Ireland, (01-2849211) www.treecouncil.ie</i>	
Bog bug dials (for pond and bog work) <i>available to download from http://www.ipcc.ie/bicbugdial.pdf</i>	1 per group of 3 children
Bog flower dials (for bog work) <i>available to download from http://www.ipcc.ie/bicplantdial.pdf</i>	1 per group of 3 children
Old metal spoons (<i>collecting minibeasts etc.</i>)	
Empty butter boxes	
Quadrats e.g. hoops or pulled out clothes hangers (<i>see p. 68 Science Teacher Guidelines</i>)	10
Transects e.g. long piece of string attached to 2 bamboo rods (<i>see p. 69 Science Teacher Guidelines</i>)	5
Box of plastic gloves	
Large white fabric or plastic sheet (<i>to examine minibeasts shaken from a branch</i>)	
Food colouring	
Selection of fast growing seeds e.g. cress / grass / mustard	
Containers for planting seeds e.g. milk cartons	
White plastic basins	1 per group of 3 children
Sieves (for river/pond work) <i>inexpensive ones available from € shop</i>	1 per group of 3 children
Clip boards or A4 hard board with big clips	1 per group of 3 children

Strand: Living Things Strand Unit: Myself/Human Life	
<i>Purchased Equipment</i>	<i>Suggested numbers</i>
3D Model of Torso	1 per school
<i>Other resources and consumables</i>	
Folder containing 'human life activities' from www.pcsp.ie	

Strand: Energy and Forces Strand Unit: Light	
<i>Purchased Equipment</i>	<i>Suggested numbers</i>
Torches*	1 per group of 3 children
Plastic mirrors – a selection of flat and curved*	1 per group of 3 children
Prism*	1
Colour filter paper	1 packet
Colour paddles	1 set
Kaleidoscope*	1/2
* these items were included in the STI Science Week pack on 'Light' delivered to schools in November 2003	
<i>Other resources and consumables</i>	
Folder containing 'light activities' from www.pcsp.ie	
STI Science Week pack on 'Light' (delivered to schools Nov 2003)	
Overhead projector	
Shiny objects e.g. spoons, Christmas decorations, bicycle reflector, jewellery, mirror, shiny glitter, pieces of paper	
Bags of different transparent, translucent and opaque materials e.g. card, paper, cling film, sweet wrappers, aluminium foil, greaseproof paper, bubble wrap	
Bubbles	
<i>For refraction activities (5th & 6th classes):</i>	
Old spectacle lenses, straws, pencils, coins	

Strand: Energy and Forces

Strand Unit: Magnetism & Electricity

<i>Purchased Equipment</i>	<i>Suggested numbers</i>
Selection of magnets e.g. bar, horseshoe, ring/disc and magnetic marbles	2/3 per pair
Compasses (<i>store separately from magnets</i>)	1 per pair
Selection of metal discs e.g. silver, bronze, aluminium, steel, tin etc	1 pack
Iron fillings tray/window	1 per school
Type C 1.5V batteries (not rechargeable)	30 approx
Type C single battery holder	20-30 approx
Reel of single core wire	1 per school
Wire strippers/cutters	1/2 per school
2.5V bulbs	1 pack of 50
Bulb holders	20-30 approx
Screwdrivers	1 per pair
Crocodile leads	1/2 packs
Buzzers	10
Motors	10
Motor clips	10
Selection of bulbs 1.5V, 3.5V	As required
Selection of batteries 1.5V – 6V	As required
Type C 1.5V double battery holders	As required
<i>Other resources and consumables</i>	
Folder containing 'magnetism and electricity activities' from www.pcsp.ie	
STI Science Week pack on 'Magnetism' (delivered to schools 2001)	
STI Science Week pack on 'Electricity' (delivered to schools 2002)	
Selection of magnetic and non-magnetic materials e.g. various euro coins, rubber bands, rubbers, paper fasteners, paper clips, aluminium foil, paper, bottle tops	One bag per group of 3
Paper fasteners and paper clips	
Square pieces of cardboard (for extra switches)	
<i>For static electricity activities (1st – 4th classes):</i> Balloons, balloon pump, tissue paper, combs, plastic pen tops, material squares e.g. wool, polyester, cotton, nylon, carpet pieces	

Suggested method of organization for electricity materials

Make up sets (using Ziploc freezer bags or boxes) as follows

- **Set 1:** 1 type C 1.5V battery, 2 pieces of cut wire (bared at each end), and a 2.5V bulb (one set per pair)
- **Set 2:** 1 bulb holder, battery holder, 1 screwdriver, 1 piece of cut wire, cardboard square, 2 paper fasteners and a paper clip (one set per pair)
- **Set 3:** Objects for conductor and insulator activity e.g. various coins, rubber band, eraser, paper, aluminium foil, plastic bottle top, paper clip, metal bottle top etc. (one set per group of four)

Alternatively the contents of Set 1 and Set 2 could be combined and the items used by the children as directed by teacher. For suggested teaching sequence please refer to 'magnetism and electricity activities' for 3rd and 4th class from www.pcsp.ie

Strand: Energy and Forces
Strand Unit: Sound

<i>Purchased Equipment</i>	<i>Suggested numbers</i>
Tuning forks (different frequencies)	2 per school
Slinky	1/2
<i>Other resources and consumables</i>	
Folder containing 'sound activities' from www.pcsp.ie	
A recording of mystery sounds <i>available with some of the English schemes or can be produced by the class</i>	
Rubber bands of various sizes and thickness	
String (various types)	
Sound boxes (Butter boxes) filled with different materials e.g. salt, sugar, shells, rice, marbles etc	
Materials to place into shakers e.g. rice, salt, sugar	
Alarm clock	
Different types of materials e.g. bubble wrap, newspaper, fabric, cotton wool etc	
Tape recorder	
Selection of containers and lids e.g. biscuit tins, butter boxes, shoe box, Pringles containers, bowls (various sizes)	
Guitar strings	
Clothes pegs	
Musical instruments	
Whistles	
Drinking straws (to make straw oboe)	

Strand: Energy and Forces

Strand Unit: Forces

<i>Purchased Equipment</i>	<i>Suggested numbers</i>
Pulleys	
Selection of forcemeters (5 Newton and 10 Newton) <i>also useful for Measures strand in maths</i>	1 per group of 4/5
<i>Weights also useful for Measures strand in maths</i>	
Ramps e.g. blanket strip from electrical suppliers or planks of wood	1 per group of 4/5
Plastic syringes and plastic tubing	
Construction sets e.g. meccano, wheels, pulleys, axle and gears	
Stopwatches	3-4 per school
Springs	
Dowels	5 per group of 4/5
Wood blocks (3x3x10 PAO*) or (3x2x12 PAO*)	1 per group of 4/5
Metal eyes	1 packet
4x1 PAO* in strips with four nails in each	1 per group of 4/5
*PAO = Planed all over	
<i>Other resources and consumables</i>	
Folder containing 'forces' activities' from www.pcsp.ie	
Butter boxes <i>to elevate ramps</i>	
Selection of wheeled toys e.g. (Toy cars)	
Sandpaper <i>to create a rough surface</i>	
Marbles	
Selection of balls (e.g. sponge, table-tennis, rubber etc)	
Balloons	
Spools <i>can be used to make pulleys, wheels, wheel belt system</i>	
Straws	
Washers	
Brass pins	
Basins/Jugs	
Oil, grease, polish, and wax.	
Cylinders e.g. tin of beans, can of coke and/or plastic bottles	
<i>Floating and sinking</i>	
Collection of objects of different sizes/materials/shapes/ weights e.g. corks, wooden blocks, paper clips, lolly sticks, plastic and wooden peg, balloons, Squeeze bottles, plasticine, spoons.	
<i>Push and pull</i>	
Collection of moving things in the classroom e.g. pencil case with zip, bicycle bell, whistle, toys, cars, balloons, yo-yos, rubber bands, balls, sponge, squeeze bottles.	

The strand unit *Heat* and the strand *Materials* use similar equipment and can be stored together

Strand: Energy and Forces	
Strand Unit: Heat	
Strand: Materials	
Strand Units: Properties and characteristics of materials	
Materials and change	
<i>Purchased Equipment</i>	<i>Suggested numbers</i>
Forehead thermometers	5/10
Spirit thermometers	5/10
Standard wall/window thermometers	1 per classroom
LCD thermometer	5/10
Funnels	1 per group of 3
Sieves, plastic, various meshes	1 per group of 3
Filter paper	1 packet
Plastic syringes (for measuring)	1 per group of 3
Measuring jugs	
Measuring scoops/spoons	
Plastic transparent cups	
Foil plates (variety of sizes)	
Plastic droppers	
<i>Other resources and consumables</i>	
Folder containing 'heat activities' from www.pcsp.ie	
Folder containing 'materials activities' from www.pcsp.ie	
Access to a fridge with freezer compartment (for ice-cubes)	
Candles	
Food colourings	
Selection of sugars (e.g. caster, granulated, icing etc)	
Salt	
Vegetable oil	
Sand	
Alka-Seltzer	
Baking powder	
Bread soda	
Flour	
Cornflour	
Pebbles, stones, bricks and rocks	
Vinegar	
Lemon juice	
Corks	
Dyestuffs	
Tea	
Coffee	
Soap and detergents e.g. washing powder, liquid	
Sample of different fabrics and fibres	
Samples of different types of paper (blotting paper, tissue paper, paper towels, waxed paper, greaseproof paper, newsprint)	