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Science Enquiry: Supporting the Curriculum

Year	5	Topic	Living things and their habitats

Curriculum objectives

1. Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.
2. Describe the life process of reproduction in some plants and animals.

Classifying

- Classify animals according to their life cycle

Observing over time

- Grow from cuttings and observe whether they grow roots/stem/ leaf/flower.
- Grow from, and harvest, bulbs through the year. (Can be done in conjunction with Year 2.)
- Observe strawberry/spider plants through the year.

Pattern seeking

- Children generate questions such as:
  - Do larger mammals have longer gestation periods?
  - Do larger animals live longer?
  - Do smaller animals lay more eggs?

Comparative/Fair testing

- Not relevant

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Researching

- Generate questions to research the life cycle of a chosen animal: mammal, amphibian, insect, bird e.g. dragon fly, cuckoo, salmon, worm, owl. (Children present what they've learned in different ways: create a model, write a song, write a story, create a PPT, etc.)
- Research how gardeners asexually reproduce plants.

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Science Enquiry: Supporting the Curriculum

Year	5	Topic	Animals, including humans

Curriculum objectives

1. Describe the changes as humans develop to old age.

Classifying

- Not relevant

Observing over time

- Not relevant

Pattern seeking

- Not relevant

Comparative/Fair testing

- Not relevant

Researching

- Develop questions to ask an expert e.g. a health visitor, doctor or nurse. (Questions will need to be filtered by the teacher.)

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Year	5	Topic	Properties and changes of materials

Curriculum objectives

1. Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.
2. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.
3. Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.
4. Demonstrate that dissolving, mixing and changes of state are reversible changes.
5. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.
6. Explain that some changes result in the formation of new materials and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.

Classifying

- Based on the children's own criteria:
  - classify the materials themselves e.g. samples of wood, metal, plastic, etc.
  - after observing what happens when solids are added to liquids, classify materials based on the outcomes.

Observing over time

- Observe rusting with uncoated nails in different liquids. (This can be achieved by removing coating with sandpaper.)

Pattern seeking

- Not relevant

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Comparative/Fair testing
• Which material would be good for a tent? • Which material would be good to make a tea bag from? • Which materials keep things warm/cold? • Which material would be good for a bag for different purposes? • Test solids for solubility. • Compare rates of solubility. • Burn different materials (not plastic or toxic substances).
Researching
• Not relevant

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Science Enquiry: Supporting the Curriculum

Year	5	Topic	Earth and space

Curriculum objectives

1. Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.
2. Describe the movement of the Moon relative to the Earth.
3. Describe the Sun, Earth and Moon as approximately spherical bodies.
4. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.

Classifying

- Not relevant

Observing over time

- Measure shadows throughout the day.

Pattern seeking

- Not relevant

Comparative/Fair testing

- Not relevant

Researching

- Generate questions to research about the Earth and space. (Children present what they've learned in different ways: create a model, write a song, write a story, create a PPT, etc.)

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Year	5	Topic	Forces

Curriculum objectives

1. Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.
2. Identify the effects of air resistance, water resistance and friction that act between moving surfaces.
3. Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

Classifying

- Not relevant

Observing over time

- Not relevant

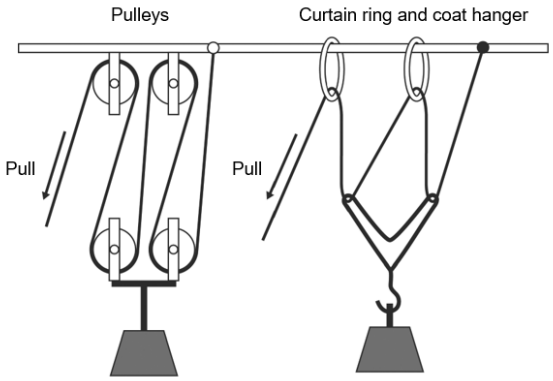
Pattern seeking

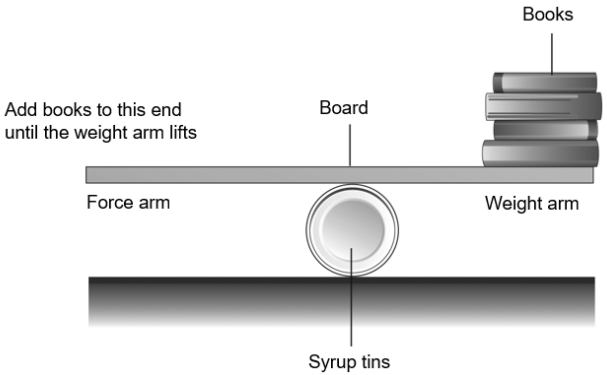
- Not relevant

Comparative/Fair testing

- Compare friction e.g. trainers or weighted match box pulled with forcemeter, balloon rockets, CD hovercraft, balloon cars.
- Compare water resistance e.g. boats in a gutter of water, plasticine in a cylinder of liquid (easier with a more viscous liquid e.g. bubble bath).
- Compare air resistance e.g. spinners, parachutes, sailing boats, straw rockets.

- Compare levers, pulleys and gears – see illustrations.





Researching

- Research Heath Robinson and Rube Goldberg machines. (Children present what they've learned in different ways: create a model, write a song, write a story, create a PPT, etc. This could be cross-curricular with D&T and English biography writing.)