Illuminated Pocket Microscope (pack of 6)

This is a piece of equipment that can be used either inside or out of the classroom to give a more detailed look into what the children are studying. Its size makes it an easy item for children to carry around and carry out their investigations. A microscope is particularly important in science projects.

Creating a School Garden

Creating a school garden is a fun way to learn about the lifecycles of plants and the creatures that are attracted to the garden, which links to the science curriculum. Children will also be able to grow a variety of fruit and vegetables which they could prepare and eat, linking healthy eating and food technology. Through working together in small groups creating a school garden encourages co-operation and citizenship values.

Children's knowledge and understanding of where food comes from, and how it is grown is often very minimal, i.e. that a pea comes from a pod, and this has grown on a plant, or that meat in a plastic wrapped tray was once part of a living animal.

Plants and Creatures

Minibeasts and insects are great creatures to look at through the microscope; children can look at details of different insects and tally certain things about their appearance, for example: how many legs they have or whether they have a hard or soft body. Questions can then be asked about why the insects may have these certain attributes. Results can be presented in a table:

Question	Answer	Explanation
What's the name of the minibeast?		
How many legs does the minibeast have?		
Does the minibeast have a hard or soft body?		
Is the minibeast wet or dry?		
What colour is the minibeast?		
Does the minibeast have wings?		
Does the minibeast have antenna?		
Does the minibeast have hair on its legs?		
Where does the minibeast live?		

This activity could also be extended to looking at pond life and comparing the attributes between insects that live on land and insects that live in water.

The microscope can also be used to look at leaves and their skeletal structure. For older children it could also help them understand the concept of photosynthesis. By looking at leaves through the microscope they can look at the chlorophyll and the pores in the leaf that absorb the light from the sun. The roots and stem of a plant can also be viewed and studied and questions like "What helps a plant perform the process of photosynthesis?" can be answered.

Micro-organisms and bacteria can be explained by giving children a microscope. Once they can view something, it's easier for details about them to be explained. Ask them to identify different types of micro-organisms and describe them. As the teacher, you can then explain different types of micro-organisms and the effect they can have on living things, by raising questions and subjects such as:

- How can you avoid harmful organisms?
- Washing your hands before eating, after preparing food and after using the toilet.
- Covering your mouth when you cough or sneeze.
- Keeping away from other people if you have a disease that is easily spread.
- Not eating food which is not fresh or has not been cooked properly.
- Keeping uncooked meat separate from other foods in the fridge.
- Name some harmful micro-organisms.
- Mould.
- Where can we find bad bacteria?
- Uncooked food.
- What results can this bad bacteria cause?
- Some diseases, like chickenpox.
- Name some helpful micro-organisms.
- Yeast, bacteria that break down dead leaves.

Bacteria breaking down old leaves and fruit and vegetable scraps is a good start to a discussion about compost bins and landfill sites.

- Up to 50% of all household rubbish could be composted so that it doesn't fill-up landfill sites?
- Fruit and vegetable waste can be composted, along with tissues, tea bags and egg shells.
- What could be done with the compost created and how does it help the environment?

Minibeasts can also be added to the concept of recycling:
Banana skins, orange peel and apple cores are common items found in a school dustbin; these can be added to a compost bin heap where they will gradually rot and decompose. This waste food is attractive to insects, worms and bacteria, as they tunnel through the waste and help to break it down further. They also eat some of the material and excrete natural fertilizer. This decomposed organic material is very rich in minerals and nutrients, so when added to soil, it helps feed any plants that are growing in it.

Tip: If you have a school garden, the waste from this is a good start for creating a compost bin; the compost can then be used to help your garden grow next year!

(These facts and more can be found at:
http://www.bbc.co.uk/schools/ks2bitesize/science/revision_bites/micro_organisms4.shtml)