

5. Muddy water



2 hours

Improving the clarity of 'muddy' water by filtration.

OBJECTIVES

- To distinguish between an object and the material from which it is made
- To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock
- To describe the simple physical properties of a variety of everyday materials
- To compare and group together a variety of everyday materials on the basis of their simple physical properties
- To use their observations and ideas to suggest answers to questions

RESOURCES

(Per group of 4 children unless otherwise stated)

- Sample of 'muddy water' containing;
- 1 litre water
- 3-4 leaves
- 3-4 teaspoons gravel/small stones
- 3-4 teaspoons sand
- 3-4 teaspoons garden soil (see safety note)
- Range of sieves and colanders, e.g. tea-strainers, flour sieves, tights, fishing nets, cotton-wool, paper towels, etc.
- Funnel
- Large jugs
- Plastic apron/old shirt (per child)
- Magnifiers (optional)
- [Activity sheets 14, 15](#) made into prompt cards and/or
- [Activity sheet 16](#) (per child)

The teacher could present this activity in a similar manner to 'Mr Wilson' in the storybook, or could play the role of an inspector from the Water Authority who visits the school. The inspector brings the water samples and asks the class to do something about the muddy water that is in the reservoir (or 'lake') where our water comes from.

This activity requires a similar solution to the sand/rice task that the children have carried out. It can be left open-ended to assess whether the children can use the investigative approach independently. The teacher provides the children with the necessary resources and asks the group to try and clean the water.

INTRODUCING THE ACTIVITY

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- What can you see in the water?
- How is the water different from the things in the water?
- How might the things in the box/on the display help you?

If direction is required, the teacher asks the children to try and work out what the mixture is made up of. They are asked to think of the differences between the sand, compost, stones and leaves in the mixture, and how the box of resources could be used to sort these out from the water. They can be asked which of the resources have got holes in which could be used as a sieve (they should hold the paper towels or tights up to the light).

N.B. The finer filters such as the paper towels take 30 minutes or more to separate the compost out. The children can be asked to draw or write about their test whilst waiting for the filtering to finish.

Children might think of allowing the mixture to settle for 10-15 minutes and then decanting the contents. This will remove a lot of the solids before filtration is required.

More able children may be able to set up series of 2-3 filters, to filter large stones and leaves first and fine compost last.

The children in the different groups then compare the clarity of their water samples, by holding them up to the light to see if there are any particles in suspension, or any sediment at the bottom. They can also observe their 'clean' water using magnifiers such as hand lenses, bug boxes or microscopes.

The teacher could resume the role of the Water Inspector to 'judge' the water samples and possibly choose the group that has produced the clearest water for special mention.