

8. So, what's it for?

Children carry out a 'squeak hunt' in school and hinges and other squeaky things are oiled; they also observe the use of oil as a fuel.

OBJECTIVES

- To observe oil being used for lubrication and for fuel
- Identify and compare the suitability of a variety of everyday materials for particular uses

RESOURCES

- Cooking oil
- Aluminium foil
- Wooden blocks
- Paper towels
- Small jar (e.g. 50 g jam pot, meat paste jar, Marmite jar)
- Droppers/pipettes
- Metal tins (e.g. travel sweet tins)
- String
- Matches
- Lubricating oil (e.g. '3 in 1' oil)

Note: You may wish to explain to the children that they are using cooking oil for parts of this activity as it is safer and cleaner to use than oils designed specifically for lubrication and as a fuel.

DISCUSSION & CLASS TASK 1

To begin this activity, each child compares rubbing their hands together with and without a few drops of cooking oil.

Children can describe the feeling of each experience. Language such as smooth, slippery, etc. should be encouraged.

"A blindfold helped children focus their thoughts on this task."

Children then explore the effect of oil on other surfaces, by rubbing pieces of different materials together with and without oil between them (foil, tins, wooden blocks, etc.). Individuals can be chosen to do this in front of the class. The class can describe the sounds made, and the individual child can describe what it feels like. They should appreciate that the oil reduces the 'stickiness' of the two surfaces, and reduces the noise made. All the language used can be recorded on a class chart.

CLASS TASK 2

Either as a whole class or in small groups, children are accompanied by an adult around the school on a 'squeak hunt'. Children are challenged to find squeaking doors, gates, box lids, trolley wheels, etc. that can be silenced by adding lubricating oil. They should also find the exact location of the squeak, to reinforce the idea of the rubbing metal parts causing the squeak. The adult then lubricates the appropriate mechanism. Children may also be able to appreciate that oiling joints makes them easier to move.

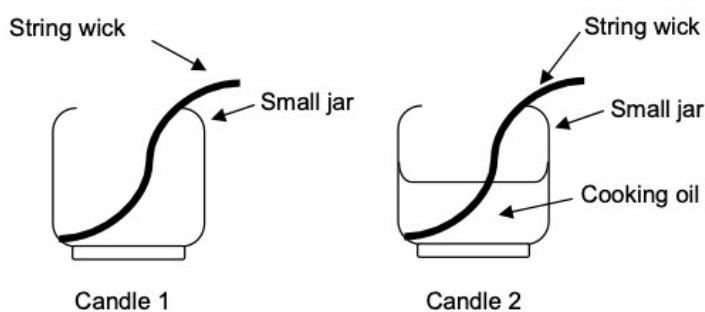
"We found the squeaking things, but didn't have time to oil them. The end of term came too soon, so the caretaker oiled them!"

Note: You may want to make sure there are some squeaking hinges, etc. before embarking on this task! Also, if carrying out the task in groups, each group can be limited to a particular section of the school, to ensure they all find something squeaky.

A class list can be drawn up of all the 'squeaks we made quiet', which is then used to discuss what they all have in common.

CLASS TASK 3

To show that oil can be used as a fuel providing both heat and light, a cooking oil candle can be made, as shown in the diagram below. For candle 2, immerse the string in the oil before resting it in the position shown.



Ask the children what they think will happen when you light both pieces of string. Candle 1 burns out soon after lighting. This shows that it is the oil which is the fuel keeping the candle alight. The cooking oil candle can burn for several hours, but does not smell too pleasant! Odourless lamp oils are available from hardware stores.

Safety note

The candle must be lit by an adult, and children must observe the candle in the presence of an adult. The dangers associated with matches can be discussed.

Discuss the use of oil as a fuel in other situations, e.g. some central-heating systems, paraffin lamps and stoves, cars, buses, lorries, ships and aeroplanes.