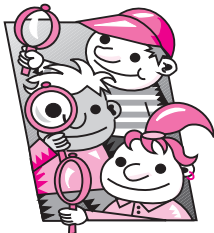




Liquid layers

Today you will practise working in a team.

You will investigate four liquids and try to predict the order of layers that they form.



Team investigation

How can we find out which liquids make layers?

Team equipment

- ◆ newspaper (to cover your work area)
- ◆ 4 containers, each three-quarters full of a different liquid
- ◆ 3 straws
- ◆ 1 empty container
- ◆ 3 coloured pencils (green, red and blue)
- ◆ 3 sheets of paper
- ◆ job badges for director, manager and speaker

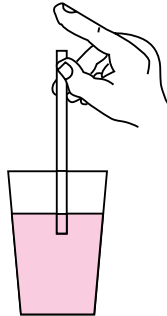


How to find out

- I** Practise using your straw to collect one of the liquids. Remember that while your finger is firmly on the top opening of the straw, any liquid that is in it will stay there. Once you release your finger, the liquid falls out. The amount of liquid taken into the straw depends on how far you put the straw into the liquid.

2 Collect two different liquids in your straw at once.

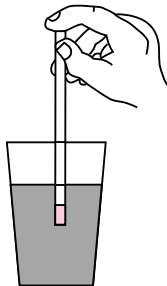
Do this by dipping your straw about 1 centimetre into the blue liquid.



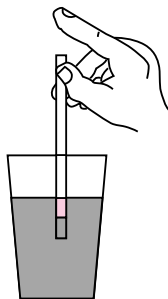
Then place your finger firmly over the top of the straw and remove the straw from the liquid. One centimetre of blue liquid will remain in the straw.



Keep your finger on top of the straw and dip it about 2 centimetres into the red liquid.



Release your finger. One centimetre of red solution will move into the straw, pushing the blue layer up.



Again, put your finger over the top of the straw and remove it from the red solution. You will have a blue layer on a red layer.

When you want to discard the liquid, hold the straw over the empty container and take your finger off the top of the straw. The liquid will drop into the container.

3 Repeat this procedure with different liquids.

Sometimes the two liquids will form layers, like this:



Sometimes they will simply mix together.

When you collect two liquids that form layers, draw the coloured layers on a sheet of paper.

When you collect two liquids that mix, write down the names of the colours and the word 'mixed'.

4 Discuss the following with your team mates:

- ◆ The order in which you collect the liquids is important if you want them to make layers. Which sequence of liquids made layers, and which didn't?
- ◆ Do you agree with your team mates? If not, check it together.
- ◆ Do you think you can make three layers?
- ◆ Which colours do you think would make three layers?

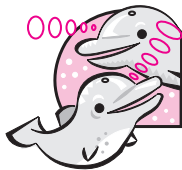
Draw them. (Remember to record them in the order you think they will form.)

5 Now try it. Collect three liquids in the straw. (Remember to place your finger over the top of the straw as you lift it from one solution to the next.)

Do the three liquids mix together, make two layers, or make three layers?

If you make three layers, draw the coloured layers. Make sure you record them in the right order.

Let's talk about it



- 1 Which liquid was always at the top of the colour stacks?
- 2 Which liquid was always at the bottom of the colour stacks?
- 3 Can you order the four liquids from bottom to top?
- 4 At the beginning of the lesson, the liquids all looked the same, but they are not. Apart from their colour, how are they different?
- 5 Which skills did your team perform well?
- 6 Which skills does your team need to practise?