

## Exercise 1

## Speaking

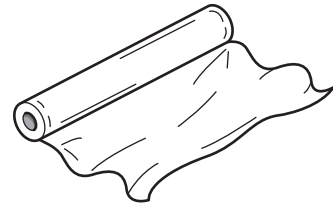
Look at the pictures. Work in groups and discuss the questions.



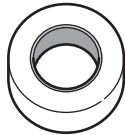
large cooking pot



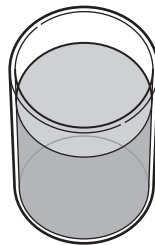
drinking glass



cling film



masking tape



muddy water



a coin

1. What do you think you will make with these items?
2. What do you think the purpose of the experiment is?
3. What do you think the results of the experiment will be?

## Exercise 2

## Vocabulary, grammar &amp; reading

a) Complete these sentences with the words in the box.

clean    condensation    dirt    droplets    evaporate    vapour

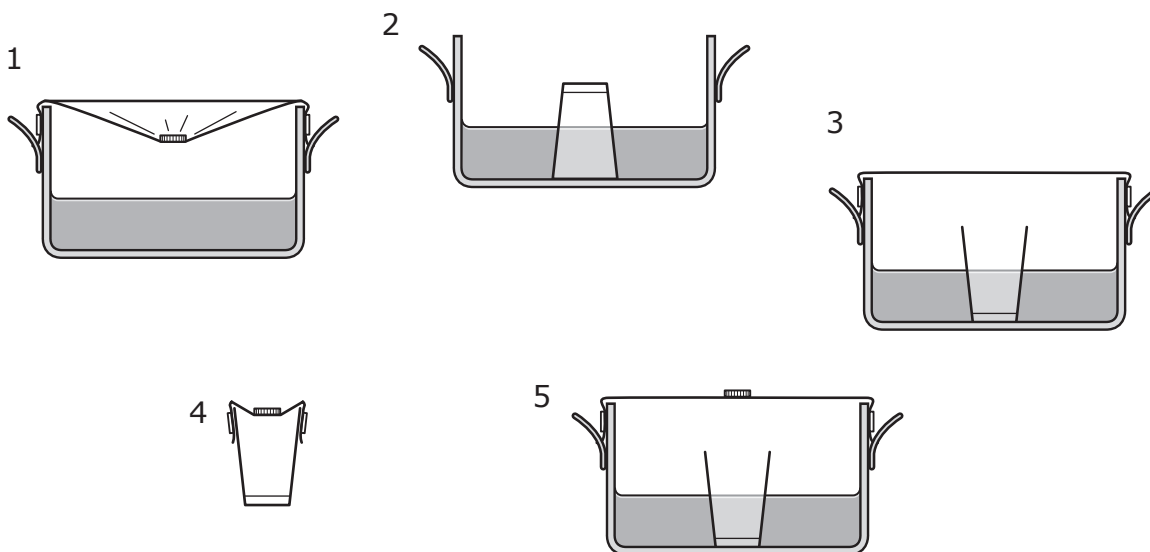
- a. The plastic traps the water \_\_\_\_\_.
- b. The water in the glass is \_\_\_\_\_ and is now okay to drink.
- c. The \_\_\_\_\_ gets left at the bottom of the pot.
- d. The sun causes the water to \_\_\_\_\_.
- e. The water \_\_\_\_\_ fall into the glass.
- f. When the water vapour hits the plastic, the cool plastic causes \_\_\_\_\_.

b) Now put the sentences in the correct order.

## Exercise 3

## Speaking &amp; writing

Look at these pictures. In each one something is wrong. What is it?



## Exercise 4

## Writing, vocabulary &amp; grammar

Now complete this summary with the correct words.

At the start of the experiment we took a (1) \_\_\_\_\_ and poured about 5 cm of muddy (2) \_\_\_\_\_ into the bottom of it. We then placed a drinking (3) \_\_\_\_\_ the right way up in the (4) \_\_\_\_\_ of the pot. We (5) \_\_\_\_\_ the pot with clear plastic food wrap and placed a (6) \_\_\_\_\_ on the plastic so that hung down over the glass. We then put the entire apparatus in direct (7) \_\_\_\_\_.

After about ten minutes or so, little (8) \_\_\_\_\_ of water began to appear on the underside of the plastic. These droplets were caused by condensation after the water had (9) \_\_\_\_\_ because of the heat of the sun and turned into water (10) \_\_\_\_\_. The droplets slid down the plastic and fell into the (11) \_\_\_\_\_. The water in the glass was now (12) \_\_\_\_\_ and all the (13) \_\_\_\_\_ remained in the bottom of the cooking pot.

This experiment showed us how to turn muddy (14) \_\_\_\_\_ into clear, clean water that you could (15) \_\_\_\_\_ if you were thirsty.

**Learning objectives**

Pupils learn how it is possible to use the power of the sun to turn dirty water into clean water and then to think of the practical applications of this.

**Content summary**

Pupils conduct an experiment which shows how muddy water can be turned into clean drinking water using common household objects and the power of the sun.

**Skills**

Reading; speaking; writing

**Grammar**

The language of prediction and hypothesizing i.e. *I think, maybe, I guess it might, It will ...*

Present simple

**Vocabulary**

Words and simple phrases connected to the experiment: *dirt/dirty, mud/muddy, droplets, evaporate, vapour, condensation, hand down, sunlight*

**Time needed**

45–60 minutes

**Age group**

7–14

**Materials needed**

A large cooking pot, a drinking glass with a heavy (thick) bottom, some clear plastic food wrap (used to keep food fresh), strong (masking) tape, some muddy water, a coin about one centimetre in diameter.

## Practicalities

This experiment can be done with only one set of equipment as the main aim is for pupils to think about what happens and why rather than actually construct the apparatus. Therefore, either you could do this or you could get one or two pupils to read out the instructions and one or two to construct the apparatus.

## Procedure

**Note:** This experiment and worksheet differ slightly from the others in this series, so please read the procedure notes carefully.

1. First of all, hand out the worksheet or show the pupils the different materials and ask them to answer the three questions/predict what the experiment might be.
2. Introduce/pre-teach the following vocabulary that pupils will need to understand: *dirt/dirty, mud/muddy, droplets, evaporate, vapour, condensation, hand down, sunlight.*
3. Hand out the experiment sheet and have pupils read out the instructions in class and conduct the experiment.
4. Hand out the worksheet and get the pupils to do exercises 2a, 2b and 3. Encourage the pupils to work in pairs.
5. Check the answers with the class.
6. Next, ask the pupils to complete the summary (exercise 4). If you feel it is too difficult for the pupils, write up the missing words on the board but make sure you don't put them in the correct order.
7. Finally, discuss the final question in the analysis/discussion session. You might want to use the internet at this point.

## Link to everyday life

Point out that in many countries around the world there is a shortage of water and even in countries where there seems to be a lot of water (i.e. it rains a lot) it is sensible to save/ conserve water. So, ask the pupils if they can think of what they could use this experiment for (e.g. taking rain water and making it clean enough to wash the car or give pets drinking water).

## Websites

There are hundreds of websites about water. Use a search engine like Google, type in 'water' and see what comes up. You could give your students project work to look into the issues surrounding water including things like clean water and water shortages.

**Water purifier**  
Adrian Tennant**Exercise 1**

Depends on pupils' ideas.

**Exercise 2a**

- a. vapour
- b. clean
- c. dirt
- d. evaporate
- e. droplets
- f. condensation

**Exercise 2b**

1 d      2 a      3 f      4 e      5 c      6 b

**Exercise 3**

1. There's no glass in the cooking pot.
2. The glass is the wrong way up.
3. There's no coin on (top of) the plastic.
4. There's no cooking pot.
5. The plastic is too tight.

**Exercise 4**

1. (cooking) pot
2. water
3. glass
4. middle/bottom
5. covered
6. coin
7. sunlight
8. droplets/drops
9. evaporated
10. vapour
11. glass
12. clean/clear
13. dirt/mud
14. water
15. drink/use