



# Water filter challenge

Greetings from Burkina-Faso!

My name is Rasmata and I am nine years old. I love to learn new things, but it is difficult for me to go to school because I need to collect water from the river every day for my family. I walk for miles and I am very tired when I get home.

The water from the river is not clean. My mum boils it to get rid of germs that might make us sick but, we can still see dirt in it. How can we make our water cleaner?

..... **Your challenge**  
**Using the materials provided, make a simple filter that will remove dirt from water.**

## Things to think about .....

- What is a water filter?
- What type of material do you think will work best to remove the dirt?
- Will you need to use more than one material to clean the water?
- How much of each material will you need to make your filter?

## ..... **Make a plan**

Design your water filter in the space opposite. Remember to show where the dirty water will go in and the clean water will come out.

You will use this as your plan when you make your water filter.

Make a note of the quantities of each material you will use.

# Water filter challenge

## Test your ideas .....

Select the materials that you are going to use and using your plan as a guide, begin making your water filter.

Once you are happy with your design test it out by pouring dirty water into it.

**Does your filter work, has it removed dirt from the water?**

Compare your filtered water with the unfiltered water. **Is there any difference?**



It may be easier to compare if you place a piece of white paper behind the water.

## Share your ideas .....

Present your water filter to the group and explain how it works.

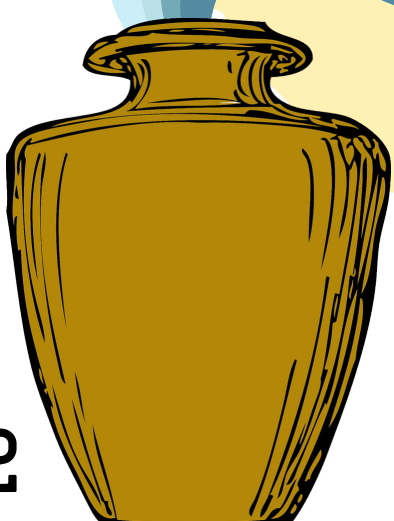
Talk about the materials you chose to use and any changes that you needed to make as you made your filter.

## Discuss .....

If you were to do this activity again what would you do differently?

How could you make your water filter even better?

Do you think Rasmata and her family could use your water filter to make their water cleaner?





# Water filter facilitators notes

## About this activity .....

This activity will enable children to gain an insight into the difficulties that almost 800 million people worldwide have in accessing clean water. Children will design, build and evaluate their own water filter which will allow them to consider the suitability of different materials, understand how filtration works, consider weight and measurement and problem solve.

## Equipment and materials .....

**Measuring jug**

**weighing scales**

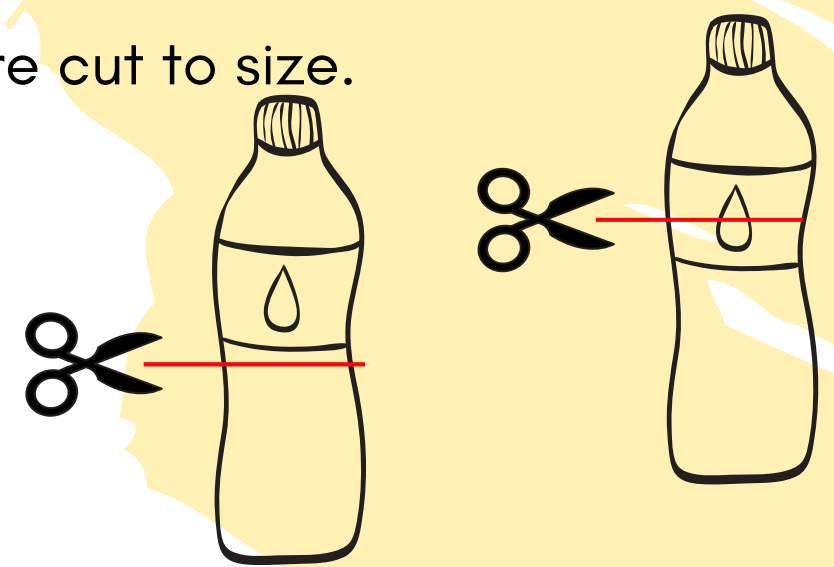
**dirty water**

**potential filtering materials**– these could include stones, gravel, cotton wool, muslin or other fabric, coffee filters. It is important that there is a choice.

**two plastic bottles without lids per experiment**– These should be pre cut to size.

**scissors**

**pencils**



## Advance preparations .....

Collect together enough plastic bottles (you will need two per experiment). Cut them to size.

Gather a variety of materials that can be used for filtering.

Prepare some dirty water. If you have access to a pond or lake use water from this or make your own by mixing dust, grass, sand, a little soil or other natural items.

## Instructions .....

Introduce the topic by reading out the short story. Ask the children how far they need to go at home to get water and if they can imagine having to walk for miles rather than just to the kitchen!

Ask them if they have any ideas about how Rasmata could make her water cleaner.

Read out the challenge.

Ask the children if anyone knows what a water filter is. Has anyone seen one before? Has anyone used one?

Tell the group that they will be making a water filter out of two plastic bottles.

Give out the equipment, materials and worksheets.

Encourage the children to look at the materials and think about what ones would be good for filtering water. Support the children to work out that they will need to layer the materials and place the top part of the bottle into the bottom part so that it will act as a funnel or perhaps they can come up with another way to make a filter, if so this should be encouraged.

Encourage the group to check that they are happy with their design and then test it out by pouring the dirty water into it.

Support the children to present their water filters to the rest of the group. Encourage them to talk about their design along with the decisions they made and if they think their water filter was a success.

Discuss with the group what they would do differently if they were to repeat the activity and what they could do to make their filters even better. Talk about whether the water filters would be practical for Rasmata and her family to use.





# Water filter resources



Image credit- tecnicriss

A traditional rural house in Burkina Faso.



Image credit-Trees For The Future

Some areas in Burkina Faso now have water pumps.





# Water filter resources

Image credit- technicriss



Using river water in Burkina Faso.

Image credit- sayb77



River water in Burkina Faso.