

How to make a model rainwater harvester

Make your own model of a rainwater harvester using the guidelines below. The model can be as big or as small as you like, depending on the materials you have available. Remember that if you are going to demonstrate how it works, it needs to be water resistant!

Materials

The materials are suggestions and any suitable alternatives can be used.

To make the house:

- Cereal box, shoe box or other cardboard box.

To make the roof:

- Corrugated plastic or card.

To make the gutter and piping:

- Large bendy straws.

To make the rainwater tank:

- Plastic bottle or it could be made of modeling clay.

Other materials

Sticky backed plastic
Scissors
Sticky tape
Paint
Instructions
PVA glue

1 Use the shoebox to create the main structure of the house and paint it to add details such as windows and doors. Once painted, cover the house in sticky backed plastic or coat it in PVA glue to make it water resistant.

2 Next you need to prepare your gutter. Cut lengthways along one of the straws all the way to the bend. Do not cut through the bend. Do this again to create a gap where the water can drip from the roof into the straw, like a gutter. Attach another straw with sticky tape to the side where the straw bends. This will create the pipe leading into the rainwater tank. Reinforce the straws with PVA glue or tape to strengthen them.

3 Attach the straws to the top edge of your house structure, creating a gutter. The straw acting as the pipe into the tank should be allowed to hang along the side of the house. You may wish to paint the straws to look like pipes. Add some tape to the open end of the gutter to stop the water from escaping at the wrong end.

4 The roof needs to be corrugated which allows the rainwater to easily be collected in the gutter. Use the corrugated card or plastic to create a sloping roof for the house. Attach it securely to the house structure ensuring that it does not cover the gutter, but is sitting just above it to collect the rainwater. If you are using card, remember to coat it in PVA glue or very carefully use sticky backed plastic to make it water resistant. This can be quite tricky, so be patient and take your time!

5 Finally, you need to make the rainwater collection tank. If your plastic bottle is taller than the house, you will need to cut the bottle. Keep the top end of the bottle and use tape or sticky backed plastic to seal the bottom. Insert the straw along the side of the house into the top of the bottle allowing water to be collected in to it.

6 Now you can test your rainwater harvester. Sprinkle small amounts of water on to the corrugated roof and watch it collect in the tank!

The rainwater harvesting jar

Jars like this one are used to collect rainwater in countries like Rwanda. They give children and their families safe water to drink to keep them healthy.

One jar can supply several households with up to 1,500 litres of filtered rainwater collected from a clean roof and gutter.

The sky's the limit!

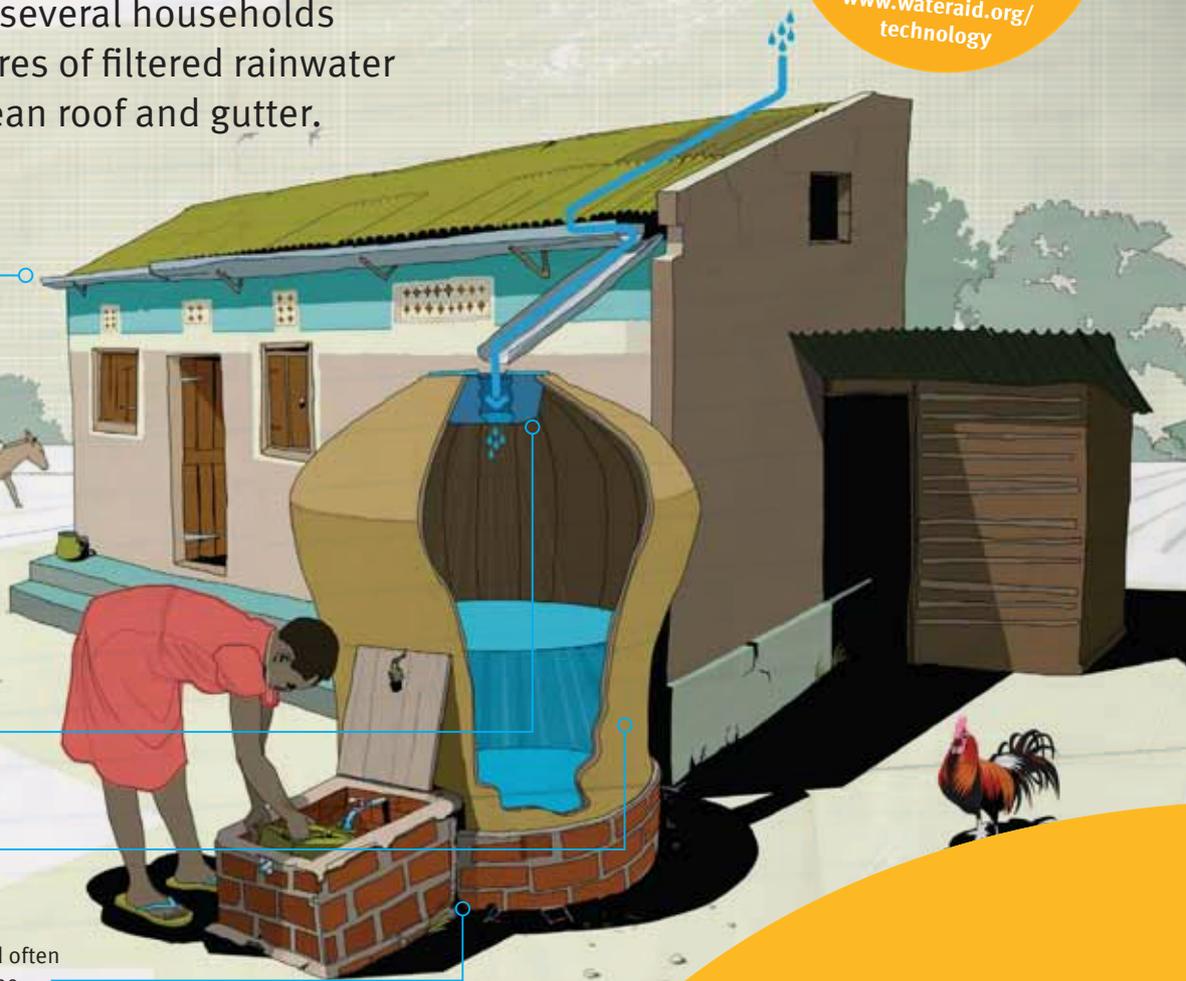
The jar is just one type of rainwater harvesting technology. Find out about all the solutions we use at www.wateraid.org/technology

Rainwater falls onto a clean roof and is channelled along clean guttering

A filter stops any debris entering the jar

The jar is made from cement and lined with plaster

The jar sits on a brick plinth and often has a lockable box containing the tap to prevent someone stealing it



Monique pumps water collected by the rainwater harvesting tank at Juru Primary School, Rwanda

“Before we would get water from the lake. The lake is an hour away and we would go before school. There wasn't enough. But we are clean now and we drink clean water at school. We have learnt to wash our hands after the toilet and to wash our bodies.”



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