

Design a Water Filter:

Materials you can use:

Basket Style Coffee Filter
Shredded Paper
Cotton Balls
Scrap Fabric
Sand
Sponges
Gravel
Plastic Cups
Funnel



STEP 1: UNDERSTAND

What should a water filter be able to do?

Is a water filter capable of taking the disease out of the water?

STEP 2: EXPLORE

Where in the world would water filters serve a purpose?

Are Water Filters a sustainable fight against the Global Water Crisis?

STEP 3: DEFINE

What are the Design Constraints?

What are the functional requirements?

STEP 4: IDEATE

Sketch your first design idea for a water filter that will create the cleanest water and remove the most contaminants.

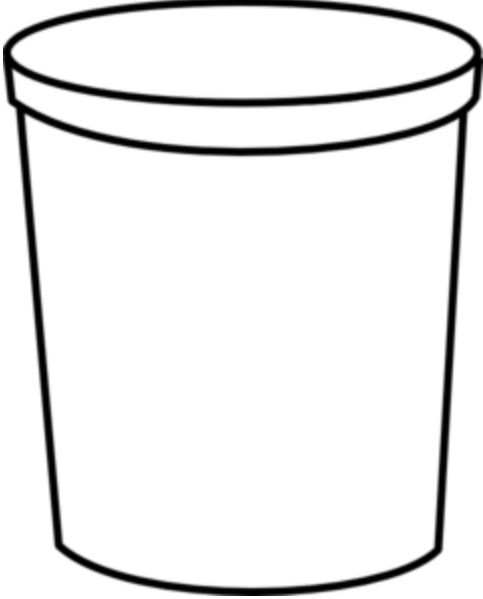
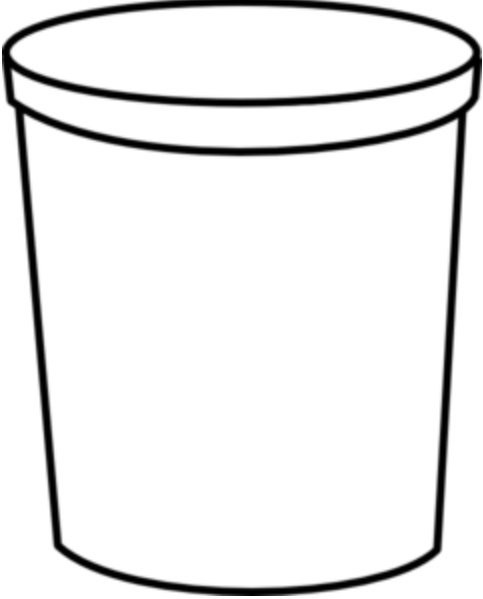
A large, empty rectangular box with a thin black border, intended for sketching a design idea for a water filter. The box is currently blank.

STEP 5: IMPLEMENT

Build your first design

STEP 6: TEST

In this phase you will take notes about what was successful and what failed in your design. You must also describe the water that came through your filter by sketching a before and after image.

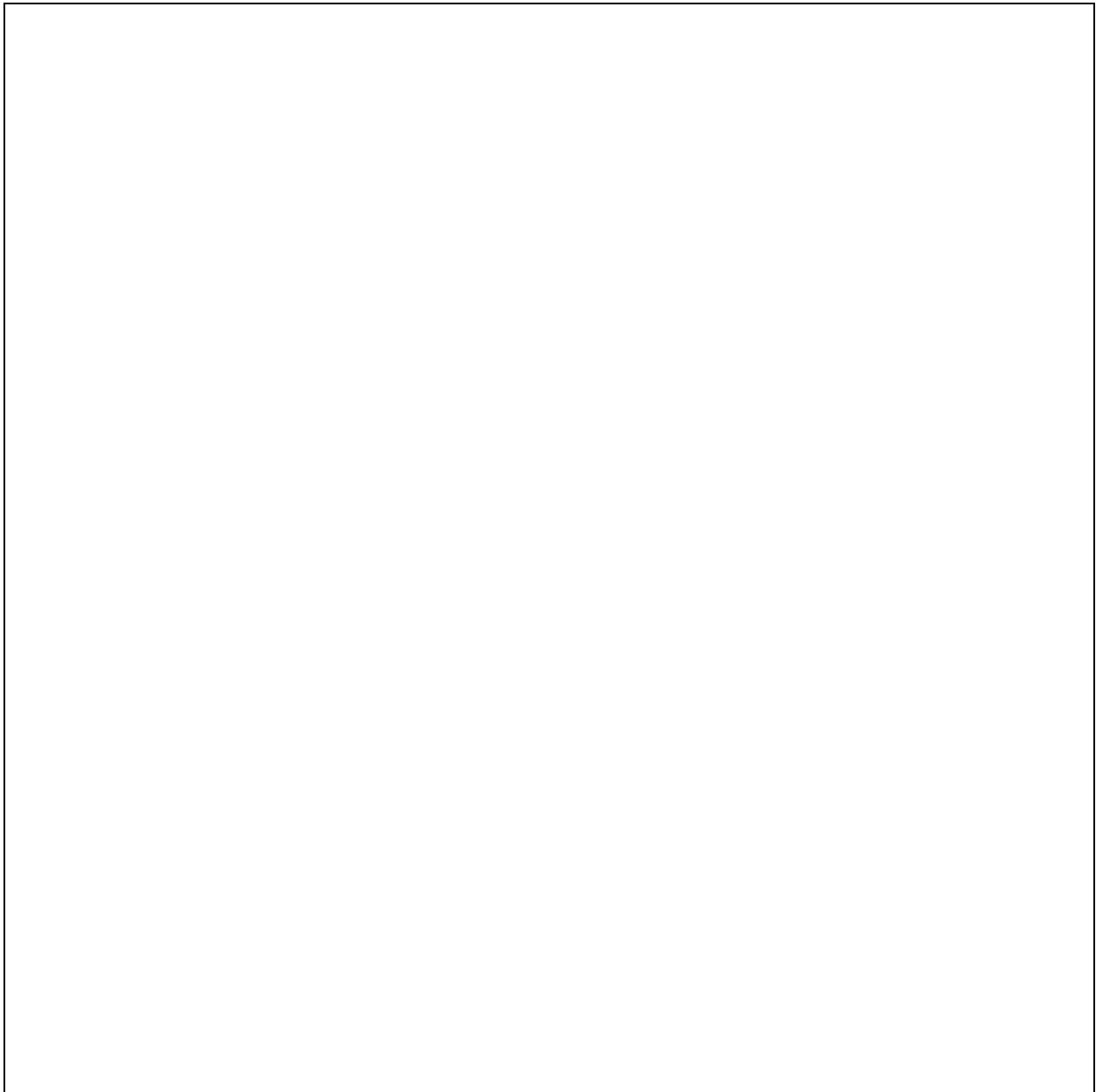
<p>Before:</p> 	<p>After:</p> 
---	---

<p>What was successful in Design One?</p>	<p>What failed in Design One?</p>
--	--

STEP 7: Redesign

What is one thing you are keeping the same? Why?

What is one thing you are changing? Why?



A large, empty rectangular box with a thin black border, occupying the lower half of the page. It is intended for a student to draw or write their response to the questions above.

STEP 8: IMPLEMENT

Build your second design

STEP 9: TEST Design 2

Take notes about what was successful and what failed in your design. You must also describe the water that came through your filter by sketching a before and after image.

<p>Before:</p> 	<p>After:</p> 
---	---

<p>What was successful in Design One?</p>	<p>What failed in Design One?</p>
--	--

STEP 10: Final Redesign

What is one thing you are keeping the same? Why?

What is one thing you are changing? Why?



A large, empty rectangular box with a thin black border, occupying the lower half of the page. It is intended for a student to draw or write their final redesign.

STEP 11: IMPLEMENT

Build your final design

STEP 12: Final TEST Final Design

take notes about what was successful and what failed in your design. You must also describe the water that came through your filter by sketching a before and after image.

<p>Before:</p> 	<p>After:</p> 
---	---

<p>What was successful in Design One?</p>	<p>What failed in Design One?</p>
--	--

STEP 12: Reflect (In this stage take time to reflect on all of the changes you made and the observations that were made- did your final product turn out better)

What were the challenges? What about the materials made this process challenging?

What did you learn about the struggle to collect water in an underdeveloped nation where water filters are scarce and unsustainable?