





All the Water in the World: Engineering Design Process

Your team of engineers will build a water filter to remove harmful pollutants/contaminants from water. The materials you can use to build your water filter are pictured below.

					
Tooth Picks	Rubber Bands	String	Cups	Beads	Marbles

1) Notice that the word Ask is in one of the circles in Figure 1. Ask yourself: What materials would I like to use to build a water filter? Write these materials on your STEM Challenge handout.

2) Notice that the word Imagine is in one of the circles in Figure 1. Imagine what your water filter will look like. Draw a picture of your water filter on your STEM Challenge handout.

Figure 1: Engineering Design Process



3) It is time to share your ideas with your team! Put on your listening ears and, one at a time, share your ideas!

4) Notice that the word Plan is in one of the circles in Figure 1. Plan what your water filter will look like. You can use one of your teammates' ideas or a combination of the team's ideas. But remember, you must create your water filter together as a team!

5) Draw a picture of your water filter on your STEM Challenge handout.

All the Water in the World: Buying Time!

It is time for you to purchase the materials for the water filter your team will build! You have \$4.00 to spend. The items and their prices are shown below.

Material	Cost per one item	Number of items your team would like to purchase	Total cost of the items your team would like to purchase
One bead	\$0.05		
One cup	\$0.25		
One marble	\$0.10		
One rubber band	\$0.15		
Two feet of string	\$0.75		
One tooth pick	\$0.01		
Total Cost:			

Show your work here or on the back of this handout:

All the Water in the World: Test and Improve Your Water Filter

It is finally time to test your water filter.

- 1) Did your water filter remove harmful pollutants/contaminants from the water? Write a sentence or two about why your water filter did or did not remove harmful pollutants/contaminants from the water.

- 2) Write a sentence or two about how you will improve your water filter.
