

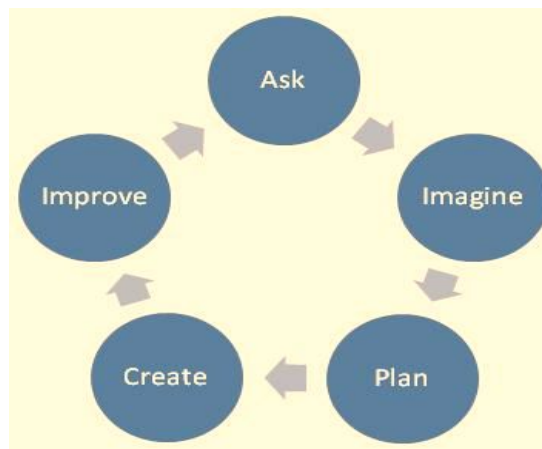
Emmanuel's Dream: Engineering Design Process

Your team of engineers will design and build a device that can help people pull on their socks independently.

				
Paper Clips	Rubber Bands	String	Masking Tape	Pipe Cleaners
				
Construction Paper	Craft Sticks	Safety Pins	Plastic Forks	Binder Clips

- 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 design and build a device that can help people pull on their socks independently? 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 device will look like. Draw a picture of your device 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 device will look like. You can use one of your teammates' ideas or a combination of the teams' ideas. But remember, you must create your device together as a team!
- 5) Draw a picture of your device on your STEM Challenge handout.

Emmanuel's Dream: Buying Time!

You will buy items to make a device that can help people pull on their socks independently. 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
Paper clip	\$0.15		
Rubber band	\$0.15		
Two feet of string	\$0.75		
One foot of masking tape	\$0.50		
Pipe cleaner	\$0.25		
Construction paper	\$0.50		
Craft stick	\$0.25		
Safety pin	\$0.15		
Plastic fork	\$1.00		
Binder clip	\$1.00		
		Total Cost:	

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

Emmanuel's Dream: Test and Improve Your Device

It is finally time to test your device.

- 1) Did your device allow you to pull on one sock independently? Write a sentence or two about why your device did or did not allow you to pull on one sock independently.

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