



Kidney Filtration Activity

to help us understand the job of the kidneys.

The goal of the Kidney Filtration Activity is to be an interactive, hands-on activity, using materials children can manipulate and explore. This activity supports their learning and understanding about blood, waste the body creates, and how the kidneys work to help clean the body's blood.

In this activity we will be seeing an example of how the kidneys work as a filter to help clean the body's blood. We will be pouring one cup of water with blood and waste through a coffee filter into another cup. This is to show how the kidney cleans the blood by catching, or filtering, the waste inside the blood so the blood can return back to the body clean. So the fluid we see in the 2nd cup after it has passed through the filter shows us the blood that is returning back to the body. And then we can imagine that the waste left in the filter leaves the body in urine.

In addition, this activity has opportunities for repetition and for children to recall information shared, which are both developmentally appropriate strategies that aid in a child's learning experience.

The Kidney Filtration Activity be done for general learning purposes, for children impacted by a diagnosis involving the kidneys or kidney transplant, and/or for children who know someone who is impacted by someone needing medical support for their kidneys.

Definitions

Blood

Blood is a fluid in the body which helps to carry oxygen, nutrients and cells all over the body to help the body and the body parts do their jobs. The blood also gathers some of the body's waste on its journey and brings it to the kidneys to be removed from the body.

Waste of the body

Waste can be anything your body doesn't need to stay healthy. This can include parts of broken down food that our body doesn't need or cells that have broken down and no longer work. waste can be pieces of broken down cells or germs that have been defeated, extra vitamins the body doesn't needs, etc.

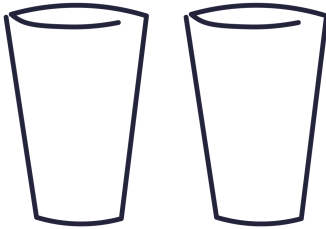
Kidney Filtration

Kidney's have the important job of cleaning the body's blood. They help remove extra fluid and waste from the body, which then exits the body in urine (pee).

Urine (or "Pee")

The collection of the body's waste and extra fluid which the kidney cleans from the body's blood. Urine gathers in the bladder until it is full and exits the body when someone goes to the bathroom.

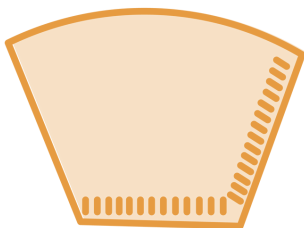
Materials



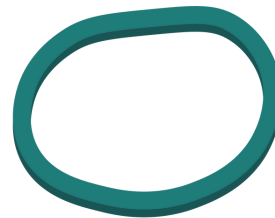
2 clear cups



red food coloring



coffee filter

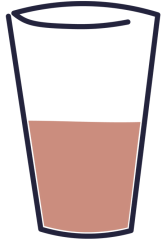


rubberband



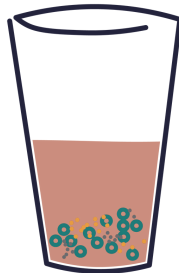
Waste products in blood: can be beads, sand, salt or pepper, coffee grounds, chalk made into powder

Instructions



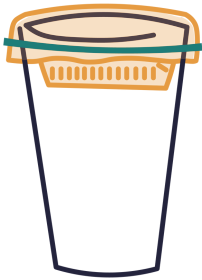
step 1

Fill cup 1 half way with water. Add a couple drops of red food coloring to represent **blood**.



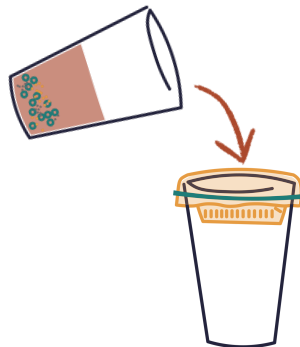
step 2

Add whatever products you have as **waste** (beads, sand, salt, pepper, coffee grounds, chalk, etc.) to the cup with the **blood**. Stir the mixture. Do you see how the blood looks when it also has waste in it?



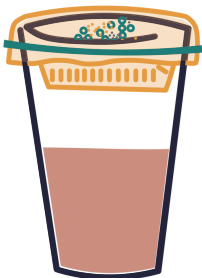
step 3

Secure the coffee filter on top of cup 2 (the empty cup). It might be easiest to make a bowl shape with the coffee filter inside the cup and the remainder of the filter up and over the lip of the cup and wrap the rubber band around the outside of the cup.



step 4

Pour cup 1 with the blood and waste mixture into cup 2 through the filter.



step 5

What do you notice?

Do you see how the waste pieces were collected by the filter, and only the blood entered the 2nd cup? The filter is like the kidneys, as blood travels through the kidneys the waste in the blood is collected and clean blood then exits the kidney. The waste collected in the kidneys then becomes urine (or “pee”) and leaves the body when we go to the bathroom.