

## KWL Chart

Know	Want to Know	Learned
Water goes through different stages to get clean	How much pollution can a filter get out of the water?	I learned that it takes time designing and some failures to get water un-polluted.
It has to go through processes to take out small bugs, sand, dirt, and bacteria	How big does a filter have to be?	I learned that you need to filter the water over and over.
Woodchips can separate water and pollution	Can a dam filter water?	Water will get cleaned, but you won't always get all of it back.
Water goes through different filters and then goes to the Mississippi River	What does polluted water feel like?	Many things can absorb pollution.
Water filtration gets all the gross icky stuff that no one wants to drink out of the water so people will drink it	What does it take to filter water?	We filtered twice, in real life I think they would do more.
A filter is like what some people have in their pool to help keep it clean	How much does it cost?	I learned that not all filtration works the same.
My fish tank has a filter and I have to clean it every week. I saw the gunk it in so I know that the filters catches all that gunk that was in the water.	Is it dangerous?	The activated charcoal is a good filter.
Filtration takes the bad stuff out of the water.	How well does it work?	Many things can be filters.
Salt water is not drinking water.	How can we tell how clean the water is?	pH is very complicated.
A filter stops dirt in its tracks; it purifies water.	How long does it take?	It takes many times to make the dirty water clean water.
	Where does all the bacteria go?	I learned that water is filthier than I thought.
	What materials do we need?	Ours worked well because we had lots of layers and hardly any empty space.

### Investigating Water Quality Problems and Issues

	<i>Riparia's River</i>	Utility Official Calls for Water-Quality Regulation	Mussel 'backpacks' Help University of Iowa Researchers Study Water Quality	Farmers Engaged in Water Quality Initiative
What is the problem?				
What is the issue?				
Who are the players?  What are their points of view?				
How can this problem/issue be solved?				



Name \_\_\_\_\_

## Water Filtration KWL

What do you already know?	What do you wonder about?	What did you learn?

Draw the filtration device you plan to build:

Explain what happened with your water filtration device. What would you change if you did this again?

### Think It, Design It, Test It, Refine It Rubric

	<b>3</b>  Stongly Evident	<b>2</b>  Evident	<b>1</b>  Somewhat Evident
<b>Individual Design</b>	The student drew, labeled, and explained his/her own water filtration device.	The student drew and labeled his/her own water filtration device, but was unable to explain it.	The student drew his/her own water filtration device, but did not label or explain it.
<b>Group Design</b>	The student negotiated with a partner to mutually decide on a design for the water filtration device.	The pair decided on one design or the other, but did not negotiate.	The pair could not decide on a design.
<b>Building the Device</b>	The pair was able to successfully build their water filtration device.	The pair built a water filtration device, but required assistance from others.	The pair was unable to build a water filtration device.
<b>Testing the Device</b>	The pair was able to successfully test their water filtration device.	The pair required help to test their water filtration device.	The pair was unable to test their water filtration device.
<b>Revising the Device</b>	The pair made revisions to their water filtration device based on their first experience and could explain why.	The pair made revisions to their water filtration device, but could not explain why.	The pair did not make revisions to their first water filtration device.
<b>Drawing Conclusions</b>	The student was able to draw at least three conclusions about the experience.	The student was able to draw two conclusions about the experience.	The student was able to draw one conclusion about the experience.