

Watershed Models Host Instructions

Thanks so much for hosting Maps and Models today! You are the “guide on the side”, (as opposed to the “sage on the state”), so relax in the rocker and enjoy your time with the 6th graders. The goal at this station is to allow students the time and reinforcement to internalize their watershed position from maps, and visualize the origin and potential solutions for non-point source pollution.

Invite the students to sit on the black benches. Tell them that today is a “Do-It-Yourself” day at Maps and Models, and they may have the opportunity to volunteer to teach their class. Draw their attention to the 4 pink letters taped to their benches, and name the students who are closest to those letters to be your volunteers.

1 = P = Pollution and

B = Buffers = Cooking Up Trouble

2 = K = Karst Groundwater Model = pumps well on groundwater model

3= Watershed Model Tour

Call up “P” and “B” to “Cook Up Trouble”. Put an apron on one, and chef’s hat on the other. P is in charge of adding the pollutants (small quantities, and whisking them into the mixing cup of water). You and B can discuss the origin of these pollutants briefly (See directions for Cooking Up Trouble). When the water is full of all kinds of pollutants, ask B how it might be possible to keep them from all running down the watershed into the river. Allow a moment to answer and then agree that a forested buffer along rivers could do the trick. Ask B to place the sponge with “trees” along the edge of the box top on a slant, with the “river” at the bottom, and press, while you and P help to pour about ¼ cup of polluted water down the boxtop watershed toward the stream. Of course, the buffer will help. B may then show the laminated list of other benefits of buffers.

You can then say that buffers do work, except in cases where karst topography causes the runoff water to drop directly into a sinkhole or cave. Demonstrate by putting a funnel underneath the boxtop. Uh-oh, time to look underground! Ask B and P to help dump the mixing cup in a bucket, and clean the watershed, while you thank them, applaud, and move on to the next “volunteer”, K.

K may come up to the groundwater model, just to turn on the water by pumping a well...It does take a lot of energy to get out groundwater, doesn’t it? Notice where the water table is, and point out that wells often gather water from sand and gravel like this. We are getting water that has been filtered by the soil, and that is moving towards the river underneath a watershed. You might also point out that we have historically used sinkholes to store our garbage, and put a little diluted food coloring into the sinkhole, from some barrel that rusted out long ago. It is just stored in the cave now. Until.....there is a big rain (add a lot of water

into the sinkhole), and oh, dear, where did THAT come from. K pumps the well, and some of the color begins to move toward the well. You can also add some point source color, and see how contaminants move underground, and begin to interact with the cone of depression of the well. Hmm, how would we ensure that things like this don't happen? Let kids suggest.

Move with the group to surround the watershed model case, and point out that there are two communities along the river – one on each side. They both have the same amount of money, and many similar jobs and resources, but they have made different choices about their management.

They may each choose which side of the river they would prefer to live on: Give them a moment to position themselves in their preferred community, and then ask for one reason they made their choice. Each person needs to have a different reason. Ask if the quality of life improves with the quality of water.

Thank the students for their attention, and give them a few minutes to explore the museum on their own before their next station.