Questions

1. Where is the water stored underground?

   Groundwater is found beneath the land surfaces, filling the crevices and pore spaces between particles of rock and soil.

2. How do porosity and permeability differ?

   Porosity is the soil's ability to store water in the empty pore spaces of the soil particles. Permeability refers to the soil's ability to allow water to pass through.

3. Which soil layer in the model has the greatest porosity? The greatest permeability? Explain.

   Gravel has the greatest porosity and permeability, followed by coarse sand and fine sand. Gravel has the most empty pore space available between particles. These spaces allow more water to be stored and to permeate through than do the smaller spaces in coarse or fine sand.

4. How is water purified in nature as it passes through rocks, gravel, dirt, charcoal or other soil types beneath the surface of the earth?

   Water in nature is purified as it passes through layers of rocks, gravel, charcoal and other soil types, trapping and in some cases absorbing the water contaminants.

5. What would be most effective in purifying polluted water - an aquifer composed of fine sand, coarse sand or gravel?

   An aquifer composed of fine sand would be the most effective in purifying polluted water, since its tight pore space would be capable of trapping the most contaminants.

6. Describe the movement of water through the hydrologic cycle. What paths does precipitation follow once it has fallen on land? What would happen if the hydrologic cycle stopped? cycle stopped?

   Water that falls to the earth in the form of rain, snow, sleet, or hail percolates through the ground to replenish aquifers under the ground. Precipitation that doesn't permeate through the soil creates runoff that travels over the ground's surface and discharges into ponds, lakes and rivers. As the water in ponds, lakes, and rivers evaporates, it travels into the air and becomes part of the clouds. It then falls back on the ground as precipitation, over and over again, in a never-ending cycle. Without this process, life on earth would not be possible, as life on earth depends on a continuous source of water.