Groundwater Research Reading!

Dr. Lauren K. Mansewicz has always loved nature. She liked to solve problems. This led her to Michigan Technological University. There, she studied **Environmental Engineering**. This job mixed her two passions: nature and problem solving.

QUESTIONS:

1. What do you think an Environmental Engineer does?

   _____.

2. Why did Dr. Mansewicz like Environmental Engineering? _____

   _____.



After her time at the university, Lauren worked for a company that helped the environment. However, she wanted to teach. She wanted to share her knowledge with students, so she went back to school. She went to the University of Nevada in Reno for her Master's Degree.

There, she studied **hydrogeology**. Her big goal was to get a PhD (the highest degree!) and become a university teacher.

QUESTIONS:

3. What is hydrogeology?
   a. "*Hydro-* means _____"
   b. "*Geo-* means _____"
   c. "*-ology* means _____"
   d. So "*hydrogeology* means _____

   _____.

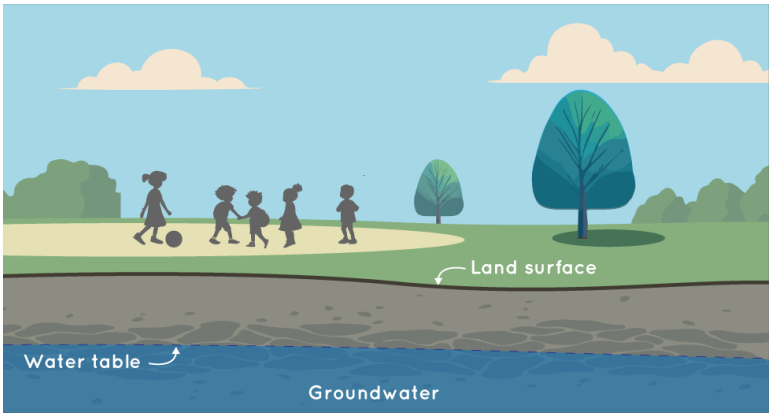
4. Do you know an adult who went back to school? _____ (yes / no)
   a. If so, what did they study? _____.

She went back to Michigan Technological University for her PhD. During this time, she received a special scholarship called the SMART Scholarship. This scholarship connected her with the U.S. Army Engineer Research and Development Center (ERDC). This was a very important step! It led to her important job as a **Research Civil Engineer** in Vicksburg, Mississippi. She works in a group that studies water systems.

QUESTIONS:

5. How did Dr. Mansewicz start working at ERDC?
    a. She found a job there online after her Master's Degree.
    b. A scholarship connected her to ERDC.
    c. ERDC asked her to work for them when she was a student.

At ERDC, Dr. Mansewics uses **computer models** to study groundwater. **Groundwater** is the water under your feet! It is stored underground, and most of the water we use comes from groundwater.





Dr. Mansewics looks at groundwater **quality** (how clean it is) and **quantity** (how much there is). She mostly studies how bad weather (like long **droughts** or heavy **rains**) can change groundwater levels.

For her PhD and her work at ERDC, she uses models to see how very high sea levels affect fresh groundwater on small islands.

QUESTIONS:

6. Summarize the last two paragraphs in one sentence: _____
   _____.
7. How do you think extreme weather affects groundwater? _____
   _____.

She also helps **change tools** for groundwater modeling. This helps to **solve new problems**. For example, she is working on a project to connect a **chemical model with a groundwater model**. This would help us understand how **arsenic** (a harmful substance) moves in the ground in Florida!

She is also connecting a **surface water model** (for rivers and lakes) with a **groundwater model**. This would help us to better understand the risks of floods.

Her work helps to protect important water resources for people!

QUESTIONS:

8. Why are new tools for modeling groundwater necessary? _____
   _____.
9. What happens to our groundwater if surface water changes? _____
   _____.