



**CAREER TREK'S
GUIDE TO
BECOMING A:**



Water Quality Technologist!

A water quality technologist is someone who gathers and analyzes soil, water and air samples to determine contamination level and assess environmental conditions.

You like: working outside and you have an interest in environmental issues

Skills: detail oriented (attention to detail), computer skills, problem solving, critical thinking, and communication



SUPPLIES NEEDED:

- Pitcher of water/dirt (1/3 dirt and 2/3 water). You want the water to be discoloured
- 6 plastic cups (3 with holes pierced at the bottom and 3 without).
- Gravel
- Sand
- Charcoal (OPTIONAL)
- Cotton balls (6-8) or moss
- Spoon
- Paper towel
- Broom & dust pan for cleanup!

You will also need to watch
<https://tinyurl.com/CTwatertech> (1 min)





WELCOME TO YOUR NEW JOB!:

What do you think a Water Quality Technologist does?

- Gather samples to determine contamination levels and assess environmental conditions.
- Help control and prevent pollution by making recommendations and writing reports on their research.

What do you think a wetland is?

*Watch YouTube link on wetlands: <https://tinyurl.com/CTwatertech>

Congratulations! You have been hired as a Water Quality Technologist for Ducks Unlimited and have been collecting water quality sampling data from wetlands. Today, you will be helping out at a local event to educate the public about the importance of wetlands. You will be making filters that emulate wetlands and demonstrate the effects of natural wetland filtration on water quality.



FILTER CONSTRUCTION:

You will be building a filter in the cup with the holes at the bottom.

There are two things that are important in filter design - they **TYPE** of filter material and the **ORDER** of the filter materials.

Think about this when building your filter:

- What do you think would trap the smallest sediment? That material would go at the bottom,
- Which material would trap the largest sediment? Where should that material go?

Be sure to leave at least 3 cm at the top of the cup, so there is room to pour water into the filter.

You can make multiple variations of the filters, to see which works best, use your other two cups with holes in them to make different filters.



FILTER TESTING:

One person holds the cup with the water filter (cup with holes) over a cup without holes.

Second person will **SLOWLY** pour water over the filtration system. Be sure your water is mixed up and sediment hasn't settled at the bottom.

If you created more than one filter, complete test with other filters.

Did your filter do a good job of filtering the water? How come? Which type of filter cleaned the water the best?



Notes for parents: Ideally the top layer would have been gravel, it catches the biggest pieces of matter, next charcoal (if you have), it absorbs odours, next would have been sand, and the final layer would have been the cotton/moss layer, it helps filter out the small particles.



QUESTIONS TO THINK ABOUT:

What is the purpose of this occupation? What do they contribute to their community and are they necessary?

Help control & monitor pollution and give suggestions and recommendations to create a more sustainable, healthy world.

What other occupations could someone do if they were interested in some parts of this occupation but not all?

Biosystems engineer or conservation officer

CAREER TREK ROAD MAP:

Current School Subjects:

Math

Science

English Language Arts

High School Subjects:

English 40S

Math 40S

Biology 40S

Chemistry 40S

Post-Secondary Institutions:

University of Winnipeg - Bachelor of Science in Global Environmental Systems

University of Manitoba - Bachelor of Science in Agroecology



Career Trek is an award-winning not-for-profit organization that provides education and career development programming for young people in realistic settings. Participants are engaged in hands-on learning experiences that are designed to ignite their passion, grow their confidence and increase their understanding of the important role that education and career planning can play in their lives.



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