

Careers in Clean Water Lesson

Description: Keeping waterways healthy within an urban environment is critical work, yet extremely challenging. From engineers to educators to electricians, it takes many types of jobs and skills to make it happen. This lesson will highlight the wide variety of careers available within wastewater treatment, including ones that are less obvious. The goal is to open more career possibilities and help students realize there's a place for them in government and environmental work.

Audience: Written for high school age but can be adapted for older/younger ages

Time: 45-50 minutes

Materials: Each student needs an online or printed copy of "career preferences" (see worksheet (see below) as well as a PDF of the Career Cards

PowerPoint Slides and Information:

1 – Title Slide/Introduction

- Introduce yourself: name, pronouns, job title and a brief overview of how you got into this job
- Encourage audience participation by answering or asking questions (verbally or chat box), and turning videos on when presenter is not sharing the screen.
- Remind students to have the two documents ready that we provided.

"Thinking about your career can feel exciting and overwhelming at the same time - there are so many options! Like any decision, it's important to know about ALL the options so you can feel empowered to make the right choice that works best for you. The purpose of this lesson is to:

1) help you determine your strengths and values when it comes to choosing a career path

2) highlight some careers that support keeping water clean in our region, and perhaps you will discover some intriguing options you didn't know existed!"

[Slides 2-8: Wastewater overview - skip if need be]

2 – (Faucet running) General water use

"We all need water and use it for many purposes at home."

Ask audience: *"What are some ways you've used water today?"* (Respond to answers accordingly)

3 – Wastewater definition

"We use water in a lot of ways, and most of that water goes down drains and toilets and becomes 'wastewater'. (click)

Wastewater includes the water used in showers, sinks, washing machines, dishwashers and of course toilets. All of that water is combined into one pipe below where you live and is now considered wastewater or sewage, because there is a lot of other stuff in it besides water. And there is a



government agency and a whole lot of people now responsible for managing that dirty water for you – the King County Wastewater Treatment Division.”

4 – Water use (Gallon jug)

“There’s a reason why it takes hundreds of people to manage this water – let’s talk about our water use in the United States. How many gallons of water does one person use each day in the U.S.?”
(acknowledge answers)

5 – Water use (U.S.)

“The answer is 100 gallons/day on average. That’s a LOT of water. And that’s just the amount for residential water use – not considering the water that’s used to make our clothing or grow our food; just the water that comes out of our taps and toilets. We’re one of the largest water users in the world.”

6 – Service Area Map

“Because we use so much water, we need 3 large treatment plants to handle all the cleaning for this region. This is the service area for the King County Wastewater Treatment Division. There are 17 cities in this area and about 1.7 million people. 400 miles of pipes

click Point out their local treatment plant and tell them the amounts each treatment plant is cleaning.

“Knowing a little more about this large regional system that needs to function properly and constantly clean millions of gallons of water, you can begin to understand why we would need to have so many employees and all different types of jobs.”

7 – We’re all connected to Puget Sound

“It’s important to reflect on the fact that our water use at home and what we choose to put down drains has a direct impact on the Puget Sound. This is because most of the wastewater is sent to the Puget Sound after it’s cleaned. The common goal of the folks who work in the Wastewater Treatment Division is to protect the health of Puget Sound and the communities of people that live in our region.”

8 – It takes a village...

“It takes a lot of people and jobs to keep this system running - 650! Here are some of them pictured at West Point treatment plant.”

9 –What jobs come to mind when....

“You’ve probably heard the term ‘green jobs’ or ‘environmental jobs’. What kinds of jobs do you think of when you hear these terms? You can enter your ideas into the chat box or unmute yourself to share.”

Acknowledge answers.

“The purpose of this lesson is to help you realize there are many jobs that are directly related to protecting the environment, especially when it comes to water careers.

click *Thinking about what you know about wastewater and the system we have in place to move and clean wastewater, what kinds of jobs do you think this field requires? Please share your ideas.”*

Acknowledge answers.

10 – Wastewater careers

There are A LOT of different types of jobs in the King County Wastewater Treatment Division.

Explain what the employees are doing in these two photos:

Photo of Environmental monitoring specialist: *“Yes, this employee working in a green space is doing work for the wastewater treatment division! When we have to do construction projects that will impact sensitive environmental areas like streams or wetlands, we have a team of people who make sure these areas are as good or better than we found them after the project is completed. This is a picture taken in **Coal Creek Park**. There’s a sewer pipe that runs under the creek and it needs some repairs. It’s part of a much larger project that is happening right now! This employee is surveying and monitoring the native plants at the site before construction starts.”*

Photo of Asset manager: *“If you love to organize items, you could be good at this job! This employee is part of our asset management team. We have over 50,000 pieces of equipment that are extremely important to operate our system, and we need to keep track of them – what do we have, when do they need routine maintenance, how much do they cost, etc. We have to catalogue everything and create a maintenance schedule to prevent equipment from failing – super important!”*

(click)

“Here are some other types of jobs we have in wastewater treatment (read them). We will be learning more about these jobs soon.

(click)

“What’s the appeal? (Explain benefits listed)

- *Everyone is working towards on common, critical goal – protecting public health and clean water.*
- *King County pays their employees really well...*
- *...and they offer generous health, vacation, and retirement benefits. This helps employees have a healthy work/life balance.*
- *Job security! The wastewater treatment division is funded by water bills, so as long as people keep flushing toilets and using water, the employees won’t lose their jobs – stable funding source.”*

11 – Know Yourself: what do you prefer?

“When considering which career is a good fit for you, it’s important to know what environments and tasks excite you and work best for you. In a minute, it’ll be time to do an activity in which you’ll reflect on what your preferences are between different options that relate to work environments. All the answers will be on a spectrum and you might have a strong preference for one option over another, or you might enjoy both and land in the middle.

Click

Let's practice using a fun example: when you reach for a snack, do you tend to reach for something sweet, savory, or both? Go ahead and answer in the chat box!" [respond to answers]

12 – Career Preference Activity

"Now you will need the Career Preferences worksheet. We'll go through these questions together, one at a time. These self-reflection questions will guide you to investigate careers that protect clean water and could be a good fit for you. On your worksheet you will see that there are three boxes under each question. If you like both options, you can select the middle box for your answer."

13 – What's your passion?

"Consider which subjects interest you the most at school and in your free time: English, social studies, political science OR biology, chemistry, physics and math? Or do you like both equally?"

14 – Hands on or hands off?

"Do you prefer working with your hands (such as using tools) and being physically active when learning and working, or do you prefer working behind a computer and writing, drawing or planning projects? If you like a combination of the two you can choose the middle option."

15 – What's your comfort zone?

"Is being outside or inside more of your comfort zone? Or do you like to mix it up?"

16 – How do you like to spend your time?

"Do you prefer to spend your time working with other people or working independently or some of both throughout the day?"

17 – Change: stressful or exciting?

"Do you thrive having variety in your work tasks or do you prefer having predictable tasks?"

18 – Night owl? Early bird? Neither?

"Which work schedule would work best for you? One that changes (shifts or some evening/weekend work) or a standard 8am-5pm Monday through Friday?"

19 – Breakdown of preferences

"Take a minute and tally how many responses you have on the left, middle and the right columns of your worksheet."

Next, highlight which preferences are the most important to you.

At the bottom of your worksheet, take a look at the jobs that fit with the majority of your preferences and pay close attention to your highlighted preferences – give those more weight.

We have career cards that correspond with each of these careers. I'm going to review two careers and then give you some time to look at other careers of interest on your own device."

20 – Get an inside perspective

Watch video starting at 0:43 about Industrial Maintenance Mechanic job

21- Community Relations Specialist

Orient audience to what is included in each career card: starting with middle (job title, quote and photo), then right (work environment & salary), then left sections (job description, education/experience, skills and typical workday). Then expand on what this specific career offers.

22 – Check out more career cards!

Instruct audience to spend the next 7-10 minutes (flexible depending on time left) looking at careers cards that fit their preferences on their own devices.

23 – Reflection

Ask audience to share their reflections (unmuting ideally but chat box okay) about the following questions, one at a time:

- Which of these jobs interest you the most and why?
- What surprised you about the careers you've learned about today?
- What are next steps you can think of to find out more about careers that interest you (whether they are wastewater jobs or not)?

24 – Next Steps

Share next steps we recommend:

- *“Sign up for classes that are relevant to a subject you want to explore so you can learn about it in more depth*
- *Research training programs and/or college majors and which schools offer these to set yourself up for success*
- *Seek out career events (to learn about careers and organizations you could work for) and internships (to get a sense of what a certain kind of career and work environment is like). Meeting professionals in these contexts can even help you get your first internship or entry level position.*
- *Ask for an informational interview with a professional in a career that interests you so you can ask about what they like and dislike about their job, why a typical day is like for them and anything else you'd like to know.”*

25 – WTD Careers in Clean Water events

If teaching to a high school audience, you can mention the career events WTD hosts each spring as an interactive opportunity to meet in small groups with professionals in different careers they've learned about today!

26 – Questions?

Time for audience questions and before saying goodbye. You can provide your contact information if comfortable.

What jobs are a good fit for you?

The following questions are designed to get you thinking about what kinds of working conditions would best suit you. Once you have a better idea of what work environment you prefer, you will be able to tell which jobs are a good fit. No answer is the right answer, and it is okay to like both choices equally!

Which do you prefer? Mark your preference – left, both (middle), or right for each category.

1. English, Social Studies, Political Science <input type="checkbox"/>	<input type="checkbox"/>	Math, Physics, Science <input type="checkbox"/>
2. Hands-on work, being active <input type="checkbox"/>	<input type="checkbox"/>	Working with computers, drawings, plans <input type="checkbox"/>
3. Working outside <input type="checkbox"/>	<input type="checkbox"/>	Working inside <input type="checkbox"/>
4. Working with people <input type="checkbox"/>	<input type="checkbox"/>	Working independently <input type="checkbox"/>
5. Variety: different tasks each day <input type="checkbox"/>	<input type="checkbox"/>	Stability: similar tasks each day <input type="checkbox"/>
6. Changing work schedule <input type="checkbox"/>	<input type="checkbox"/>	Standard work schedule: 8am-5pm <input type="checkbox"/>

Notice where the majority of your preferences fall, then look at these suggestions:

Majority Left Side

Communications Relations Specialist
 Construction Manager
 Education Specialist
 Facilities Maintenance Technician

Majority in the Middle

Project Manager
 Treatment Plant Operator
 Industrial Maintenance Mechanic
 Industrial Wastewater Inspector
 Sustainability Project Manager
 Industrial Electrician

Majority Right Side

Engineer – multiple types
 Laboratory specialist
 Environmental Planner
 Financial Specialist
 GIS Analyst