Full Circle

Your guide to waste prevention, sustainable materials management, and the circular economy

DEPARTMENT OF ECOLOGY
State of Washington

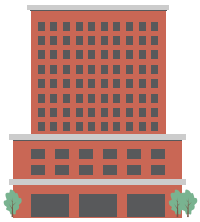
Ecology Est. 1976 Litter Corps

Solid Waste Management in Washington

Each region has its own methods for managing solid waste. This diagram is a general overview of sources, collection methods, and treatment and disposal sites.

Sources

RESIDENTIAL



COMMERCIAL

INDUSTRIAL

Collection

Collect at the curb

TRANSFER STATION

Household hazardous waste

Recycling drop box

Treatment and disposal

GARBAGE
Landfills

GARBAGE
Waste-to-energy facilities

RECYCLABLES
Materials recovery facilities

ORGANICS/YARD WASTE
Composting facilities

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Welcome to Full Circle, an education guide for the Ecology Litter Corps.

Washington state is a national leader in environmental protection and waste management. As an Ecology Litter Corps member, you play an important part in the Department of Ecology's work. Your efforts make our state safer and more sustainable.

This guide introduces you to how Washington manages solid waste. It also explains where your work fits in. You'll learn about sustainable materials management and career paths in the field. As our state's population grows, the need for knowledgeable professionals also grows.

Each part of the guide connects to the next, helping you see how everything works together.

In this guide, you'll discover:

- How Washington manages waste
- Ways to reduce waste and practice a circular economy
- How litter affects public health and the environment
- Job opportunities in sustainable materials management
- Environmental justice efforts in Washington state

We encourage you to bring your experience as an Ecology Litter Corps member to the material in the guide.

> If you are using a screen reader to access this guide, please treat it as a class companion not to be filled out.

TABLE OF CONTENTS

ACKNOWLEDGMENTS: Thank you to the Department of Ecology's litter prevention coordinator, regional administrators, and subject-matter experts who helped create this guide.

Environmental Justice Introduction

OBJECTIVES:

- Define environmental justice
- Explain why environmental justice matters
- Identify ways environmental justice affects Washington state

KEY TERM

Environmental justice: The idea that everyone deserves equal rights to a healthy environment and the power to decide how natural resources and land are used. That way no community faces more harm or enjoys more benefits than any other.

The people of Washington—regardless of income, race, ethnicity, color, or national origin—have a right to live in a healthy environment. Low-income communities, communities of color, and Indigenous people in Washington and across the country often experience the worst effects of pollution and climate change. The Department of Ecology's Office of Equity and Environmental Justice works to reduce pollution and improve health outcomes for all communities.

> **Tip: Use your phone to scan the QR codes in this guide to access resources and complete activities.**

WHAT IS ENVIRONMENTAL JUSTICE?

Environmental justice is defined as the fair treatment and meaningful involvement of all people in the development, implementation, and enforcement of environmental laws, regulations, and policies. That means everyone should have the same degree of protection from environmental and health hazards and equal access to the decision-making process about natural resources and land use. Read the webpage at the QR code to learn more.

A BRIEF HISTORY OF ENVIRONMENTAL JUSTICE

The environmental justice movement has been around since the 1960s. For decades, people have been organizing to protect their families and communities from the effects of pollution and hazardous waste.

Read the environmental justice timeline at the QR code to see how this movement has evolved. Choose three milestones from the timeline and explain why they are noteworthy.

MILESTONE	WHY IS THIS NOTEWORTHY?

WHY ENVIRONMENTAL JUSTICE MATTERS

Washington state studies reflect nationwide findings: People of color and people living on low incomes are exposed to environmental hazards unequally compared to others.

Read the following short sections from the Washington State Environmental Justice Task Force's report:

Disproportionate Environmental Exposures (page 14 of the report)

Where are these places often located: contaminated sites, incinerators, solid waste landfills, and sites that produce regulated hazardous waste?

What are the negative outcomes for communities?

Race/Ethnicity and Environmental Health Disparities (page 15)

Read this section and look at figure 2 on p. 14. How are race/ethnicity and environmental health disparities related?

Where does this data come from?

Life Expectancy and Environmental Health Disparities (page 15)

How are life expectancy and environmental health disparities related?

Poverty and Environmental Health Disparities (page 16)

Read the first two paragraphs in this section and look at figure 4 on p. 16. How are poverty and environmental health disparities related?

ENVIRONMENTAL JUSTICE IN WASHINGTON

Learn about the HEAL Act

The HEAL Act, or the Healthy Environment for All Act, became a law in 2021. It was the first statewide law in Washington to approach environmental justice in a coordinated and collaborative way. Key state agencies, including the Department of Ecology, are working to identify and address environmental health disparities. Read the blog at the QR code to learn more about the HEAL Act.

How does the HEAL Act empower the Department of Ecology?

Find out what's in your neighborhood

The Department of Ecology has a map of contaminated cleanup sites around the state. View the map to find a cleanup site near you. Use a search engine to learn about the site.

Cleanup site name:

Cleanup site location:

Cleanup site description and additional information:

Explore ongoing projects

The Department of Ecology funds environmental justice projects around the state. Scan the QR code for a list of projects. Choose one and use the "+" symbol to expand the text. If the project has a webpage, read that as well. Next, share a summary of the project with your fellow crew members. Be sure to describe the project and explain how it relates to environmental justice.

Tip: If you need more room to write, use the lined pages beginning on page 38 of this guide.

KEY TERM

Environmental health disparities: Differences in health outcomes among different groups due to unequal exposure to environmental hazards. These differences are often linked to factors like income, race, and geography.

SOLID WASTE MANAGEMENT:

What is Solid Waste Management?

OBJECTIVES:

- Describe solid waste management
- Explain where waste goes in Washington

KEY TERM

Garbage: Waste that cannot be recycled or composted. It is typically disposed of in landfills.

Recyclables: Waste that can be used to create new products. This includes paper, cardboard, glass, certain plastics, and metal.

Organics: Waste that decomposes, typically through composting, including food and yard waste.

GET STARTED

Solid waste management (SWM) is the process of collecting, sorting, treating, recycling, and disposing of waste. The SWM system handles many types of materials. The three major categories are garbage, recyclables, and organics.

Brainstorm a list of items you think belong in each category. Make your best guess based on what you already know.

GARBAGE: _____

_____

RECYCLABLES: _____

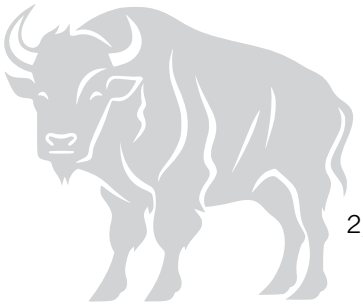
_____

ORGANICS: _____

_____

Now, guess how many tons of waste Washington collects in each category per year. A ton weighs 2,000 pounds.

GARBAGE (in landfills or incinerators):	**RECYCLABLES** (in recycling facilities):	**ORGANICS** (in compost facilities):
_____ tons	_____ tons	_____ tons



A bison can weigh up to 2,000 pounds.

DISCUSS

GARBAGE AND ORGANICS: Look at table 23 on pages 43-44 of the Waste Characterization Study. How many items on your brainstorm list can you find on this list? Note: some items in the table are also recyclables.

_____

_____

_____

_____

RECYCLABLES: Use a search engine to find guidance from your local recycling center. How many of the items on your list can you find?

_____

_____

Did any of the recycling guidance surprise you?

_____

_____

_____

SORT IT OUT

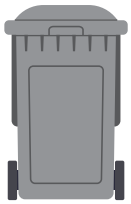
Now that you have an idea of what goes where, sort this list of waste into the three categories.

Some items may not belong in any of the three waste streams to the right. Find which items are considered **household hazardous waste.** Find which items may be recycled through one of Washington's **product stewardship recycling programs**.

Tip: If you aren't sure where to sort an item, use a search engine to find local information. Try searching: "Is (item) (garbage/recycling/compost) if I live in (city/county)?"

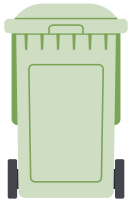
- Cereal box
- Newspaper
- Banana peel
- Coffee grounds
- Broken laptop
- Pizza box
- Paper plate
- Wilted flowers
- Chip bag
- Styrofoam packaging
- Plastic bag
- Plastic blueberry carton
- Old leftovers
- House paint
- Milk carton
- Deck cleaning solution
- Paper napkins
- Diaper
- Car battery
- Plastic water bottle
- Light bulb
- Pasta sauce jar
- Old garden hose
- Hairspray bottle
- Grocery store mailer

GARBAGE



RECYCLABLES

ORGANICS



SO WHERE DOES LITTER FIT INTO ALL OF THIS?

Think of litter as waste out of place. Because litter is not disposed of properly, it can't enter the SWM stream. That's why your work is so important. By cleaning up litter along roads and other public places, you ensure waste ends up where it belongs, not damaging Washington's land, waterways, and communities.

WRAP UP

Each region of Washington handles waste differently. So where, specifically, does your waste go? Using a search engine, type: **"Where does my (garbage/recycling/organic waste) go if I live in (city/county)?"** You may have to visit a few websites on the results page to find the answers.

Learn more about where garbage goes.

WHERE DOES YOUR WASTE GO?

GARBAGE: _____

_____

_____

_____

RECYCLABLES: _____

_____

ORGANICS: _____

_____

This guide is intended to be used as a class companion and not for filling out.

SOLID WASTE MANAGEMENT:

Making It Personal

OBJECTIVES:

- Identify the hierarchy of SWM
- Describe the steps you can take to positively affect Washington's top three priorities

GET STARTED

Washington state has priorities when it comes to managing solid waste. The top three priorities are recycling, safe disposal, and waste reduction.

Brainstorm with a partner to create a working definition for each priority. Write your answers in the space to the right. Do this without the help of online resources.

RECYCLING: _____

SAFE DISPOSAL: _____

WASTE REDUCTION: _____

PREDICT WASHINGTON STATE'S PRIORITIES

Washington state has ranked these priorities. Based on what you know, make your best guess about the order of the state's priorities.

FIRST

SECOND

THIRD

EXPLAIN YOUR RANKINGS

Compare notes with a partner. Are your rankings the same? Explain the thinking behind your choices.

READ

Use the navigation bar at the top of the page to jump between sections. Read the introductory paragraphs of the waste reduction (1 paragraph), recycling and recovery (3 paragraphs), and solid waste disposal (1 paragraph) sections of the Waste in Washington report to learn more about Washington's priorities. How does this compare to your predictions?

TAKE EVERYDAY ACTION

Washington has a plan that includes state and local governments working to meet the state's top priorities. Still, everyday actions by people like you can also add up to make a big difference. In a small group, explore one of these three topics. Then create a brief presentation for your fellow crew members.

1 FOOD WASTE

Food waste is the largest type of organic waste. In landfills, it creates methane, a greenhouse gas that causes climate change. Use the **Use Food Well** page to learn what you can do to reduce food waste and keep it out of landfills.

2 PROPER RECYCLING

Recycling is one way people can reduce the amount of waste in a landfill. It's important that the right items get recycled and don't get contaminated. Explore the **Recycle Right** page to learn the steps of proper recycling.

3 SAFE DISPOSAL

Not all the waste we generate at home is safe to throw away in the garbage bin. Visit the **Household Hazardous Waste** page. Learn more about the household items that are considered hazardous and how to properly dispose of them.

PREPARE FOR YOUR PRESENTATION

You can be as creative as you want with your presentation, but it must answer the following five questions. Make sure each person plays a part in making and giving your presentation. Plan to ask questions at the end of the other groups' presentations. Be prepared to answer questions at the end of yours.

- What is the issue?
- Why does it matter?
- How does it relate to the state's priorities?
- How can everyday actions make a difference?
- What resources are available to learn more?

WRAP UP

The choices you make each day about what to consume, what to reuse or recycle, and what to throw away add up. Based on what you learned from the presentations, what can you do to reduce food waste, recycle properly, and dispose of waste safely? If you can think of other ways to reduce your consumption and waste, list them here.

WAYS TO REDUCE YOUR CONSUMPTION AND WASTE

This guide is intended to be used as a class companion and not for filling out.

SOLID WASTE MANAGEMENT:

Sustainable Materials Management

OBJECTIVES:

- Define sustainable materials management
- Describe two systems of consumption: linear and circular
- Identify the distinct parts of the circular economy

KEY TERM

Sustainable materials management: The practice of using and reusing materials efficiently throughout their life cycles to reduce waste and minimize environmental impact.

GET STARTED

Think about the last thing you threw away. See if you can answer the questions below. You can also make some educated guesses.

What was it?

What was it made of?

Where did the materials come from?

Where was it manufactured?

How did it get from where it was manufactured to you?

How long did you use it?

What did you do with it when you were done with it?

What will happen to it now?

THE CIRCULAR ECONOMY

Watch the "Re-Thinking Progress" and "Basics of the Circular Economy" videos from the Ellen MacArthur Foundation.

As you watch, answer the following questions:

How is our waste system different than the system of the living world?

What are the three parts of a linear approach?

What are the benefits of a more circular approach?

What are the challenges of a more circular approach?

READ

Read the Sustainable Materials Management section of The State Solid and Hazardous Waste Plan (pages 8–10). Use the information there to fill in the blanks on the graphic above.

WRITE

Return to the Get Started section on page 10 of this guide. The item you threw away was likely created for a linear system. What might be different if it were created using the sustainable materials management cycle instead?

DISCUSS

Who is responsible for moving us toward a more circular economy?

The companies that make products

The governments that make laws and regulations

The consumers who make purchasing decisions

NEXTCYCLE WASHINGTON

Washington state is a leader in adopting the sustainable materials management approach to waste management. The state has passed many laws and started many programs to move us all toward a more sustainable future.

One such program is NextCycle Washington. The six-month program was co-designed by public entities, private companies, and community-based organizations. The program helps businesses and projects implement circular economy practices. At the end of the program, NextCycle hosts a pitch competition. Participants pitch their ideas. Winners receive $10,000 grants to grow their business or project.

WATCH

Start with this recap video of the NextCycle 2023 showcase. Then watch the four pitch decks from the showcase winners in 2024. Take notes as you watch. Think about what part of the sustainable materials management cycle each project or business affects.

FURNITURE REPAIR BANK

NATURALLY CONTAINED

RECLAIM PROJECT RECOVERY

REVINO

PREPARE FOR YOUR PRESENTATION

Now that you've seen four of the best NextCycle projects from 2024, get into small groups. Return to the items you all listed in the Get Started section on page 10 as inspiration. Create a project or business that uses the sustainable materials management approach to:

- Better design one of the items
- Reuse or repair one of the items
- Recycle an item to create a new product

You can be as creative as you want, but use these questions as a guide:

What will you call your business or project?

How exactly will it work?

Will you need a physical space? If so, what kind of space (office, warehouse, storefront, etc.)?

How many people will you need to keep your business or project going (volunteers, employees, partner organizations, etc.)?

How will people learn about your business (social media, advertisement, etc.)?

Field Trip

EXPLORE THE WEBSITE

Browse the website of the waste disposal site your crew will visit. Answer the following questions:

Where is the facility located?

What do they do there?

What kinds of jobs are available there?

Do they have any special programs or initiatives? If so, what are they?

SITE VISIT

As a crew, you will visit a waste disposal site like a landfill or transfer station.

K-W-L CHART

As a crew, list what you learned from the website in the "know" column.

Next, write down what you wonder about the site in the "wonder" column. It could be anything.

Finally, write down what you're hoping to learn during the visit in the "learn" column.

Come up with at least two questions to ask your tour guide during the site visit.

KNOW	WONDER	LEARN

REFLECT

What did you enjoy most about the site visit?

What was the most interesting thing you learned during the visit?

What jobs did you see during the site visit?

Which ones looked interesting to you?

What surprised you about the site?

What questions do you still have now that the site visit is over?

SOLID WASTE MANAGEMENT:

Environmental Justice

OBJECTIVES:

- Identify where landfills in Washington are located
- Explain the environmental and health impacts of landfills

Use a search engine to look for the following: "Washington state landfills on fire." Click to read some of the top results. What did you learn? Who is being affected by these fires and how?

WHAT ARE PFAS?

Read this article from the Environmental Working Group, a nonprofit research and advocacy group.

What are PFAS?

Why are they a problem?

What is leachate?

How do PFAS end up in landfills?

What are possible negative effects of PFAS in landfills for the communities nearby?

LANDFILLS AND METHANE GAS

Read this blog from the Department of Ecology.

What is methane? How is it created?

What is Washington doing to address this issue?

LOCATE YOUR LANDFILL

Use this resource to find the Washington state landfill closest to you. Use an online map to look at the landfill and the surrounding area.

How close are houses or neighborhoods to the landfill?

What do you know about the area around the landfill? Is it a nice area? Is it affluent? Who lives there?

A NEW LANDFILL

Now that you know more about landfills and some of the possible negative environmental effects, let's imagine a new landfill were being built where you live.

How would you decide where the landfill should go?

Who would get to have a say in the decision-making process?

Who would have the most power to make the final decision?

How would you make sure everyone's voice was being heard?

RETHINKING WASTE:

Why Recycling Isn't Enough

OBJECTIVES:

- Define the terms greenwashing, wishcycling, and overconsumption
- Explain how these terms overlap with one another

PROS AND CONS OF RECYCLING

Recycling has its benefits. It reduces:

- Raw materials mined or otherwise extracted to make new products
- Waste sent to landfills or incinerators
- Energy use
- Pollution

However, recycling is not without its problems. First, many people believe items are recyclable when they aren't.

Second, even recyclable items are not always recycled; sometimes they end up in landfills or incinerators.

WATCH

Watch the three videos below. As you do, listen for definitions of wishcycling (or wishful recycling), greenwashing, and overconsumption. Use what you learn to create your own working definitions of those terms in the space below.

KEY TERM

Recycling: The process of collecting, processing, and reusing materials like paper, plastic, metal, and glass.

WISHCYCLING

"Is recycling worth it anymore? The truth is complicated."

Wishcycling definition:

What ideas stood out to you?

Did this video change how you think about recycling? Why or why not?

GREENWASHING

"Have you been fooled by greenwashing?"

Greenwashing definition:

What ideas stood out to you?

Did this video change how you think about recycling? Why or why not?

OVERCONSUMPTION

"The clothing waste crisis: How our shopping habits are hurting the planet."

Overconsumption definition:

What ideas stood out to you?

Did this video change how you think about recycling? Why or why not?

WRAP UP

How are wishcycling, greenwashing, and overconsumption related?

This guide is intended to be used as a class companion and not for filling out.

RETHINKING WASTE:

The Other Rs

OBJECTIVES:

- Analyze why recycling is less effective than more upstream interventions
- Determine how both companies and individuals can adopt upstream waste reduction practices

GET STARTED

Think back to sustainable materials management. Remember, that it focuses on a circular model, not a linear model. Why do you think recycling is labeled a "downstream" option based on where it falls in the cycle?

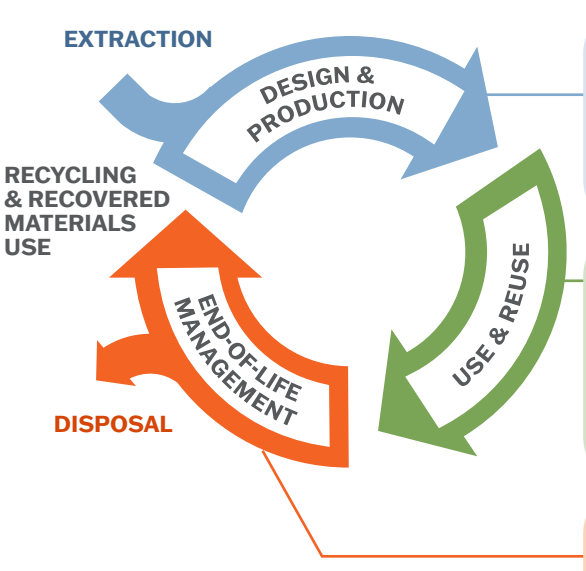
THE R-LADDER

The circular economy has nine methods besides recycling to reduce the environmental impact of a product.

These methods are organized into a hierarchy, called the R-hierarchy or R-ladder.

Methods in the R-hierarchy match specific phases of the sustainable materials management cycle. The methods are organized by how well they minimize waste and conserve resources.

Using this article, name each method. Then list how businesses and consumers can practice each "R."



Greatest Impact

R0 _____
R1 _____
R2 _____
R3 _____
R4 _____
R5 _____
R6 _____
R7 _____
R8 _____
R9 _____

Least Impact

BUSINESSES:

R0 _____
R1 _____
R2 _____
R3 _____
R4 _____
R5 _____
R6 _____
R7 _____
R8 _____
R9 _____

CONSUMERS:

R0 _____
R1 _____
R2 _____
R3 _____
R4 _____
R5 _____
R6 _____
R7 _____
R8 _____
R9 _____

THE REPURPOSE CHALLENGE

1 **LIST**

In pairs, work to generate a list of five items people throw away. These could be large items like electronics or furniture, or smaller items like glass bottles, paper, or clothing.

1. _____
2. _____
3. _____
4. _____
5. _____

2 **SWAP AND REPURPOSE**

Swap your list with another group, so you have a new list of items. Now, think creatively about how you can repurpose (R7) the items into something new. Ideally, all five items would come together to make one new item. If not, repurpose them separately.

1. _____
2. _____
3. _____
4. _____
5. _____

3 **PRESENT**

Share your list of items and present how you repurposed them into one new item or multiple items.

WRAP UP

Keeping in mind that litter is waste out of place, what effects do you think a circular economy would have on litter?

_____

_____

_____

_____

_____

RETHINKING WASTE:

Another R: Responsibility

OBJECTIVES:

- Describe public policy related to recycling or one of the other Rs
- Analyze corporate action on recycling and the circular economy
- Create a personal action plan

PUBLIC POLICIES

Both Washington state and global organizations like the United Nations have created policies to control the amount of plastic, especially single-use plastic, getting produced and moved around the world. Explore the two policies below. Then use a search engine to find a third example.

	DESCRIPTION OF THE POLICY	BENEFITS OF THE POLICY
Washington state's single-use plastic bag ban		
UN ban on export of contaminated plastic waste		
Your example:		

INVESTIGATE CORPORATE ACTION

A report from the Minderoo Foundation found that just 20 companies create more than half of all the single-use plastic waste produced each year. Read more about it in this article.

Many companies have made public commitments to reduce their contributions to the plastic waste problem. Only some are taking real action. Choose three corporations and compare their environmental commitments to their actions.

CORPORATION	COMMITMENTS	ACTIONS

REFLECT

Are corporations doing enough to reduce plastic waste?

What's the difference between what corporations say and do?

What do you think would need to change for more corporations to take stronger environmental action?

CREATE A PERSONAL ACTION PLAN

Much of the responsibility to move toward a more circular economy lies with corporations and governments. Yet, personal action is a powerful way to create immediate change and influence the people in your life to create change, too.

1 PERSONAL WASTE AUDIT
For 24 hours, use a bag or box to collect everything you would normally throw away. What type of waste did you produce most?

TYPE OF WASTE

2 DECIDE ON A SPECIFIC REDUCTION GOAL
Set one actionable goal to reduce your waste based on what you learned from your audit.

SPECIFIC GOAL

3 FIND RESOURCES AND TOOLS
What tools or resources will you need to reach your goal (a reusable bottle or bag, access to a library of things, etc.)?

RESOURCE/TOOL LIST

4 TRACK YOUR PROGRESS
Decide how you will track your progress. Maybe you will use a journal, a note on your phone, a calendar, etc.

PROGRESS TRACKING

5 REFLECT AND ADJUST
In one week, reflect on your progress. What's working? What was challenging? What adjustments can you make to continue improving?

REFLECTION SPACE

Field Trip

SITE VISIT

As a crew, you will visit a recycling facility in your area.

LEARN ABOUT YOUR LOCAL RECYCLING FACILITY

Use a search engine to find a recycling facility in your area. This might be a materials recovery facility (MRF) or something else. If the facility has a webiste, explore the website to see what you can learn before your visit.

K-W-L CHART

As a crew, list what you learned from the website in the “know” column.

Next, write down what you wonder about the facility in the “wonder” column. It could be anything.

Finally, write down what you’re hoping to learn during the visit in the “learn” column.

Come up with at least two questions to ask your tour guide during the site visit.

KNOW	WONDER	LEARN

REFLECT

What did you enjoy most about the site visit?

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What jobs did you see during the site visit?

Which ones looked interesting to you?

What surprised you about the site?

What questions do you still have now that the site visit is over?

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RETHINKING WASTE:

Environmental Justice

OBJECTIVES:

- Explore key concepts around the rise of plastic pollution
- Explain the impact of plastic pollution

WATCH

Watch this video from a series called "All Hail The Planet." As you watch, take notes on the following topics or questions:

PLASTICS LIFE CYCLE:

CANCER ALLEY:

FRACKING:

GLOBAL PLASTICS PRODUCTION:

PLASTICS IN CLOTHING:

MICROPLASTICS:

PLASTICS AND LITTERING:

RECYCLABILITY:

WHAT DOES THE RECYCLING SYMBOL TRULY MEAN?

ALLIANCE TO END PLASTIC WASTE:

CHINA AND PLASTIC WASTE:

WASTE COLONIALISM:

HOW WASTE TRAVELS AROUND THE GLOBE:

DISCUSS

- How did the information in this video affect your thinking on plastic waste?
- What did you find most surprising about this video?
- What questions do you still have?

LITTER PREVENTION:

Litter History, Study, and Taxes

OBJECTIVE:

- Connect past litter prevention and pick-up efforts to today's efforts
- Describe the results of the 2022 Litter Study
- Define Washington's litter tax, including items taxed and revenue uses

GET STARTED

Read this blog to learn about Washington's historical litter prevention and pick-up efforts.

Visit this page to learn about Ecology's latest effort, We Keep WA Litter Free.

REFLECT

Which litter prevention campaigns mentioned in the blog did you like most?

In what ways are these campaigns similar? Different?

What tactics or techniques did they use to spread their message?

In 2022, the Department of Ecology conducted a litter study to understand what was being littered and where. Researchers measured litter at 182 sites. The results created a big-picture look at litter in Washington. One goal of the study was to develop strategies to prevent litter and littering behavior.

Make predictions about the litter study results before you read the focus sheet.

ITEMS COLLECTED
- glass bottles
- cigarette butts
- cardboard
- plastic film
- construction materials
- misc.

How many **POUNDS** of litter/year statewide	
How many **POUNDS** of litter/person	

How many **PIECES** of litter/year statewide	
How many **PIECES** of litter/person	

	ROADWAYS	**INTERCHANGES**	**REST AREAS**	**STATE & COUNTY PARKS**	**LANDS HELD BY DNR & DFW**
	• roads • streets • highways	• on-ramps • off-ramps	• parking lots • tables • restrooms	• parking lots • campsites • trails	• parking lots • campsites • trails
Guess the top item by **POUNDS**					
Guess The Top Item By Number Of **PIECES**					

READ

Now, read through the litter study focus sheet. Update your predictions as you learn the results from the litter study.

Look at the **litter accumulation along roadways** chart on page 3 of the focus sheet. You'll see that on interstates the pounds of litter and number of pieces are both quite high. On urban and arterial roads, pounds are low but pieces are high. What do you make of that?

WRAP UP

The litter tax, which you read about in the blog on the previous page, provides funding for the Ecology Litter Corps. The tax was first implemented in 1971. The tax rate and type of items taxed have not changed since then.

The revenue generated by the litter tax is divided into three uses: 40% on litter pickup and prevention programs and Ecology staff; 40% on waste reduction, recycling, and organics efforts; and 20% on grants to local governments for community clean-up and education programs.

Look at this Department of Revenue webpage to see the 13 categories of products subject to litter tax.

Look back at the section of the litter study focus sheet titled, "How much of Washington's litter is taxable?"

Finally, think about your own experience cleaning up litter as a crew member.

What other things do you notice on the roadside that are not currently covered by the tax?

Should different and/or additional items be added to the litter tax? If so, what should they be and why?

Should the tax rate for manufacturers, wholesalers, and retailers increase? If so, why and by how much?

DID YOU KNOW?

The Washington State Department of Ecology was the first environmental agency established in the United States. Even before the federal Environmental Protection Agency launched, the Department of Ecology served as a model for environmental protection around the country.

The Ecology Youth Corps was one of three founding programs for the Department of Ecology. Through the program's 50-year history, thousands of people have received training and work experience while picking up millions of pounds of litter.

LITTER PREVENTION:

Litter's Long-term Effects

OBJECTIVES:

- Describe the environmental and health impacts of litter
- Identify the decomposition rates of commonly littered items
- Categorize litter into waste streams

The Ecology Litter Corps is one of several litter pick-up programs and partnerships funded by the Department of Ecology. Learn more about the other programs at the QR code above. The Washington's Litter Program section of the webpage will help you get started.

GET STARTED

Litter has negative effects on the environment, communities, and personal health and safety. As a crew member, you see firsthand the harm litter causes. Create a list of all the ways litter negatively affects the world around us.

ENVIRONMENTAL EFFECTS

_____

_____

_____

_____

_____

HUMAN & HEALTH EFFECTS

_____

_____

_____

_____

_____

_____

You, your fellow crew members, and other litter prevention and clean-up efforts make a huge difference—and it gets bigger each year. Take a guess at the total number of hours, pounds of litter, and miles covered in the past year.

HOURS: _____

POUNDS: _____

MILES: _____

Find total hours, pounds, and miles at the link under "Statewide results."

Never doubt that the work you do is important. It is vital to the people, wildlife, land, and waterways of Washington.

You help keep our state beautiful and thriving.

This blog offers a good overview of litter's negative effect on the environment.

This study, "The Spreading of Disorder," shows that when an area is already littered, it increases the likelihood that people will continue to litter there.

DECOMPOSITION TIMELINE

Litter is not created equally. Some items may break down over the course of months or years. Others take centuries or millennia to fully decompose. Work in groups to put these 25 common pieces of waste on a decomposition timeline. The timeline ranges from 1 month to 2,000+ years.

Hint: One of these items takes 1 million years to fully break down. One of these items never fully breaks down.

- Aluminum can
- Battery
- Cardboard
- Cigarette butt
- Cotton fabric
- Disposable diaper
- Fruit peels
- Glass
- Ink cartridges
- Lumber
- Milk carton
- Nylon fabric
- Paper bag
- Paper towels
- Plastic bag
- Plastic bottle
- Plastic bottle cap
- Plastic straw
- Rope
- Rubber bands
- Six-pack holder
- Styrofoam packing peanuts
- Tin can
- Tire
- Vegetables

FUN FACTS

Each of these historic moments correlates to one or more items' decomposition rates.

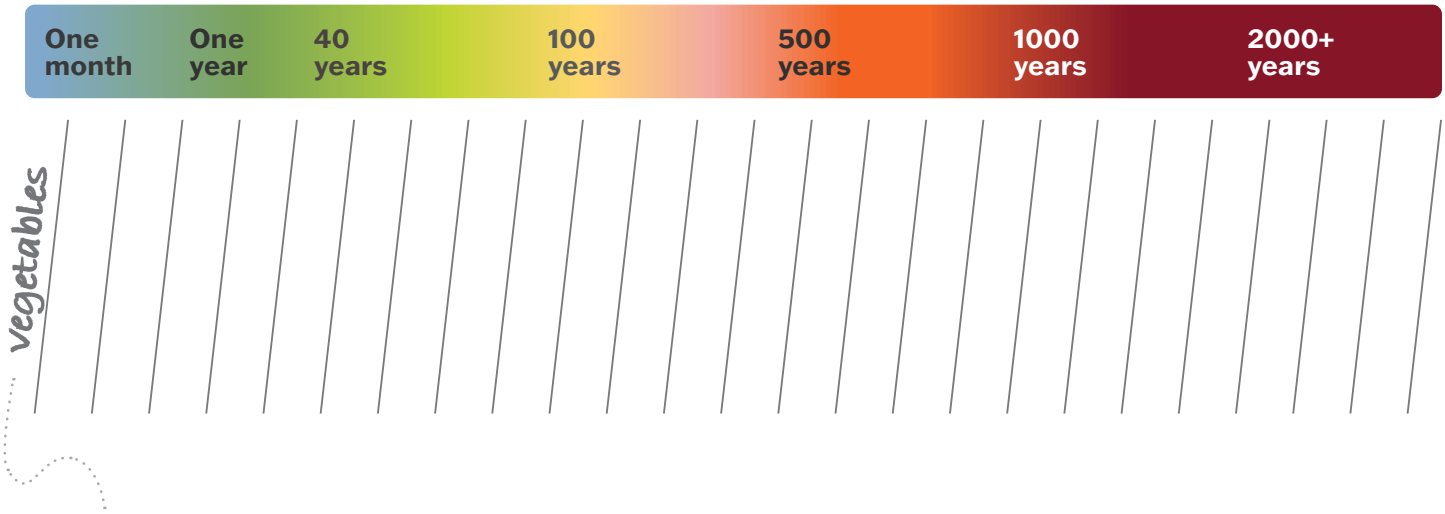
Nearly 40 years ago, the Berlin Wall fell. The wall separated East and West Germany after WWII.

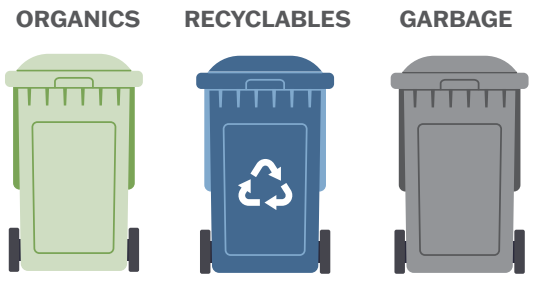
One hundred years ago, the Ford Model-T was one of the first mass-produced cars for sale.

Five hundred years ago, the European Renaissance was flourishing with artists and inventors.

One thousand years ago, the Holy Roman Empire still ruled much of Europe.

Two thousand years ago, the Silk Road connected East Asia to the Mediterranean.





SORT IT OUT

Remind yourself of the waste streams you learned about during the solid waste management unit: garbage, recycling, and organics.

Take the list above and sort items into their proper waste streams. What can be composted? What can be recycled? What needs to be sent to a landfill?

Could any of these items be recycled through one of Washington's product stewardship recycling programs? Would any be considered hazardous waste? If so, find out how to safely dispose of them. Page 7 of this guide has QR codes to helpful websites.

LITTER PREVENTION:

Create Your Own Litter Prevention Campaign

OBJECTIVES:

- Describe the litter prevention efforts of governments, businesses, and communities
- Apply what you know about litter prevention to create an original campaign concept

GET INFORMED

The work you do is essential, and you aren't alone in your efforts to clean up litter in Washington. Governments, businesses, nonprofits, and communities in our state and around the world are working to prevent littering. In small groups, use the QR codes to explore the efforts of either governments, businesses, or nonprofits and communities.

Governments

Explore the other programs funded by the Department of Ecology in the Washington's litter programs section.

Learn about Oregon's bottle bill. It is a legislative approach to reducing the amount of littered plastic bottles and aluminum cans.

Businesses

Read this blog with 11 ways companies can prevent litter through product design or advertising campaigns.

Watch this TED Talk about Litterati, an app that collects littering data. The app uses the data to help companies and governments address littering.

Nonprofits & communities

Read this blog about six creative campaigns to prevent or reduce litter designed by Hubbub, a U.K. nonprofit.

Learn about Zero Waste Washington, an organization working on litter prevention in Washington state.

Learn about Washington CoastSavers, another organization working to address litter in our state.

INFORM OTHERS

Once you've read about the efforts in one of these categories, summarize what you learned to your fellow crew members. That way, everyone knows about the many litter prevention efforts in Washington and beyond.

WHAT A CONCEPT!

You've read about and seen many campaigns designed to prevent or reduce litter. You've seen how governments, businesses, and everyday people are working together to make a difference. You know the scope of the problem, and as a crew member, you have a firsthand view of how it affects Washington's environment and people. Now, it's your turn to develop a litter prevention campaign concept.

The Department of Ecology has two litter prevention campaigns under the We Keep WA Litter Free brand. The first campaign, **Secure Your Load for Safer Roads**, focuses on preventing unintentional litter from unsecured vehicle loads. The second campaign, **Not Littering, Simple as That**, focuses on intentional littering on roadways. Each of these campaigns focuses on changing behaviors using social marketing.

WORK IN PAIRS

Develop a concept for a behavior change campaign. Here are some things you'll want to do to create a strong concept:

BEHAVIOR

Choose a specific behavior to change. For example, you could choose a specific item for people to dispose of properly.

AUDIENCE

Once you've chosen a behavior, you'll need to research who your audience is (by age, gender, income, etc.). Who are you asking to change their behavior?

BENEFIT

Next, connect the behavior change to a benefit or value. Is there a health, economic, social, or emotional benefit? Is the change easy, rewarding, or appealing to your audience?

MESSAGE

Create a message that will appeal to your audience. Combine emotions and logic to motivate behavior change. Don't be afraid to get creative or use humor. Even though litter prevention is a serious topic, your campaign concept doesn't have to be serious.

BARRIERS

Think about any barriers that might stop your audience from changing their behavior. How can you address or overcome those barriers?

PREPARE FOR YOUR PRESENTATION

Now that you have a concept, present it to the rest of the crew. As you prepare for your concept pitch, think of it as a TED Talk rather than a presentation. The goal is to help people see your vision and feel inspired by your idea.

KEY TERM

Social marketing: A marketing approach that uses research, best practice, and theory to influence people to adopt behaviors that benefit themselves, their communities, and the greater social good.

Learn more about social marketing from the Pacific Northwest Social Marketing Association.

Watch this video from Nancy Lee, a prominent social marketing expert.

Watch this TED talk, "The 3 Magic Ingredients of Amazing Presentations," for ideas on how to build a strong pitch presentation.

Field Trip

OUTREACH PREPARATION

Work with your crew supervisor to find an opportunity for you and your fellow crew members to take part in community outreach. The best way to do this is to partner with your local government or a local agency. Ask to volunteer at one of their upcoming events. You may help the host government or agency hand out informational materials or engage with attendees in another way. Before you go, be sure you understand how your crew will contribute to the event. If you will share information about the Department of Ecology's current campaign, **We Keep WA Litter Free**, review the QR codes on page 27 of this guide. They link to the campaigns' webpages.

KEY TERM

Community outreach: Connecting with local people to share information and provide resources, helping to build stronger communities.

OUTREACH REFLECTIONS

What did you enjoy most about community outreach?

What was the most interesting thing you learned during the process?

What surprised you about doing community outreach?

What steps do you think you could take in the future to continue reaching out to people?

LITTER PREVENTION:

Environmental Justice

OBJECTIVES:

- Compare littering in various settings
- Analyze how infrastructure affects littering

Littering is not just an environmental problem; it's an environmental justice problem. The fact is most people don't litter on purpose, but when you examine the communities affected most by litter, they're often urban and lower-income.

BRAINSTORM

One study showed that when people see a place with litter present, they assume crime is higher there. They assume that places with litter are filled with people who are dangerous or who just don't care. That isn't true, though. Take time to brainstorm all the reasons why litter might be more common in urban or lower-income places.

EXPLORE YOUR LOCAL PARKS

Find two parks in your community. Look for one in a higher-income area and one in a lower-income area. As a crew, visit both parks. While you are there, collect the litter you find and see if you can fill out the information below.

DID YOU KNOW?

Seventy-five percent of Washingtonians don't litter. Many people who litter do so accidentally or unintentionally.

PARK 1

Approximate park size

Pieces of litter picked up

Number of trash bins

Number of recycling bins

Number of composting bins

Number of people there

Other amenities (bathrooms, playgrounds, etc.)

PARK 2

Approximate park size

Pieces of litter picked up

Number of trash bins

Number of recycling bins

Number of composting bins

Number of people there

Other amenities (bathrooms, playgrounds, etc.)

REFLECT

What differences did you see between the two parks?

What was located around the park?

Did you see any signs encouraging people to dispose of their litter or keep the park clean? If so, was it available in more than one language?

Was there a connection between the amount of litter and the number of trash bins?

How are public parks funded?

How does this funding affect the quality of the parks in higher- and lower-income areas?

CAREER PATHWAYS:

Personal Career Preferences

OBJECTIVES:

- Explain personal preferences about work
- Describe the soft and hard skills you bring to a job
- Identify questions to ask during an informational interview

KEY TERM

Sustainable materials management: The practice of using and reusing materials efficiently throughout their life cycles to reduce waste and minimize environmental impact.

GET STARTED

Sustainable materials management is a wide field with many job opportunities. To find the right job or career, you must first understand your preferences when it comes to work.

Use the chart below to decide on some of your work preferences. You may find you feel strongly about some items and fall somewhere in the middle on others. That's OK. There are no wrong answers. It's about thinking through what kind of job or career is right for you.

INDOORS	OUTDOORS
HANDS ON	MOSTLY MENTAL
TRADITIONAL 9-5	ALTERNATIVE HOURS
WORKING ALONE	WORKING IN A TEAM
FAST-PACED	SLOW-PACED
VARIETY	STABILITY
FLEXIBILITY	STRUCTURE
CASUAL	FORMAL
SUPPORT	LEADERSHIP
CREATIVE	ANALYTICAL

DESCRIBE YOUR DREAM JOB

Using the selections you made, write a brief description of the type of job that suits you best. If you have a preference that wasn't reflected in the chart, include it in your description.

EXAMPLE:
I prefer a fast-paced job working with my hands in an outdoor environment. Having a team to collaborate with and getting to be creative are important to me.

MOCK INTERVIEWS

Interview one of your fellow crew members. Take time to brainstorm some interview questions. Below are some questions you should plan to ask, but add your own to the list.

- What was your favorite job? Why?
- What do you look for in a job?
- What soft skills do you bring to a job? (Soft skills include strong communication, teamwork, problem solving, etc.)
- What hard skills do you bring to a job? (Hard skills include specific abilities usually acquired through education, training, or practice. For instance, being able to drive a forklift or speaking a second language would both be hard skills.)

Once you have a full list of questions, pair up with someone and take turns interviewing one another.

SO WHERE DOES LITTER FIT INTO ALL OF THIS?

In your role with the Ecology Litter Corps, you are developing and refining knowledge and skills that will appeal to future employers.

Take a few minutes to think about what you are learning through your current job. How might you apply it to a future job?

WRAP UP

Use the information from the Get Started and Mock Interview sections to build a personal profile. You will use this in future lessons.

WHAT I WANT Your career or job must-haves	WHAT I HAVE The skills and experience you bring to a job or career	WHAT I NEED The education or skills you may still need to develop

This guide is intended to be used as a class companion and not for filling out.

CAREER PATHWAYS:

Career Exploration

OBJECTIVES:

- Describe the job/career landscape in sustainable materials management
- Explore a specific job/ career of interest in the field of sustainable materials management
- Navigate job listings

GET STARTED

Sustainable materials management is a growing industry. Take turns reading this blog. It outlines career paths in waste management and some of the roles available from entry level to leadership.

DRAFT A JOBS MAP

By adopting a sustainable materials management approach to solid waste, Washington state has become a national leader in the transition from a linear to a circular economy. If needed, look back at the solid waste management unit for a refresher. As the field grows, new jobs and careers will be open at all levels.

In groups, use the resources at the QR codes (or search for additional resources) to find jobs in the solid waste management (SWM) or sustainable materials management (SMM) fields.

On the next page, map out the public and private jobs you found. Start with the federal or nationwide level and work down to the city or local level.

PUBLIC (GOVERNMENT)	PRIVATE (BUSINESS)
FEDERAL Environmental Protection Agency (EPA)	**NATIONWIDE** Waste Management (WM)
STATE Washington State Department Of Ecology (ECY)	**NATIONWIDE** American Public Works Association (APWA)
COUNTY King County	**NATIONWIDE** Solid Waste Association Of North America (SWANA)
CITY City Of Yakima (Or look up your city or county and search for jobs in SWM or SMM.)	**STATE AND LOCAL** Use a search engine to find the jobs page or staff directory of Washington businesses in the SWM or SMM field.

AS YOU CREATE YOUR MAP, NOTE THREE DETAILS:

1. The job title and organization
2. Where the job fits in either SWM (collections, sorting, treatment, disposal) or SMM (production & design, use & reuse, end-of-life management)
3. What kind of role it is (administrative, operations, communications, research, policy, etc.)

PUBLIC (GOVERNMENT)	PRIVATE (BUSINESS)
FEDERAL	**NATIONWIDE**
STATE	**STATEWIDE**
COUNTY & CITY	**LOCAL**

This guide is intended to be used as a class companion and not for filling out.

CHOOSE A PATHWAY

Consider everything you learned about your work preferences and careers in the SWM and SMM fields. Choose a specific job or career to explore further.

After you've chosen a job that interests you, use the boxes below to collect important information about the role.

As you work, return to the preferences you chose on page 30. Ask yourself: Do the duties, required skills and education, and work environment match with my preferences and strengths? If not, choose a job or career that is a better match for you.

RESPONSIBILITIES

SKILLS AND EXPERIENCE

EDUCATION/CERTIFICATIONS/LICENSES

WORK ENVIRONMENT

WRAP UP

Reflect on the questions below to help you consider how to go from where you are today to the SWM or SMM job or career you chose. Return to page 19 of this guide. Adapt the steps there to create a career action plan for yourself.

WHAT ARE MY NEXT STEPS?

WHO DO I NEED TO TALK TO?

WHAT ARE MY GOALS?

CAREER PATHWAYS:

Host a Job Fair

OBJECTIVES:

- Conduct an informational interview
- Gain insight into local jobs through a building visit, site visit, or job shadowing experience

GET STARTED

When most people think of interviews, they think of being interviewed for a job. But job seekers can also interview people in their desired field to learn more about it. These interviews are called informational interviews. Informational interviews can be a great way to learn from someone who is currently doing the job you're interested in. You can find out if it's a good fit for you.

DEVELOP QUESTIONS

Whether you are the interviewer or the interviewee, you want to be prepared. In this case, you will be the interviewer. Take time to develop a series of questions that will help you cover the following topics:

- Career path and experience
- Day-to-day responsibilities
- Rewards and challenges of the job
- Industry trends and challenges
- Advice for someone entering the field

INTERVIEW YOUR CREW SUPERVISOR

In the first lesson, you practiced your interview skills with mock interviews. Now, as a crew, practice conducting an informational interview with your crew supervisor. Many crew supervisors began their careers at Ecology as crew members themselves. Others have experience working in the private sector. Take turns asking your crew supervisor the questions you developed. Be sure to note their answers and ask follow-up questions.

PREPARE FOR THE JOB FAIR

You and your fellow crew members will work together to host a mini job fair. Using the job or career you explored in the last lesson, create a brief 2-minute presentation explaining the job or career path. Be sure to include information on:

- Key responsibilities
- Required skills and education
- Potential employers and work environments

Prepare to answer questions from your fellow crew members. This is another opportunity to get comfortable with asking and answering interview-style questions.

Field Trip

SITE VISIT

As a crew, you will gain insight into local jobs through a building visit, site visit, or job-shadowing experience.

INFORMATIONAL INTERVIEW

With help from your crew supervisor, reach out to someone working at the Washington State Department of Ecology or in the sustainable materials management field. As a crew, send an email requesting their time for a 20 – 30-minute informational interview. In the email, be sure to:

- Introduce yourselves
- State that, as a crew, you're seeking an informational interview
- Explain why you chose to reach out to them
- Request a meeting and provide some availabilities
- Close with a thank you

When you hear back, schedule and hold the interview as a crew. Take turns asking questions. Use the questions you developed in previous activities to guide the interview. As the conversation progresses, ask follow-up questions on the information they share.

SITE VISIT PREPARATION

In the lead up to your site visit, explore the website of the facility you will tour. Look closely at the career page, if one exists. What jobs can you expect to see at the facility? What questions can you ask the employees there to learn more about how they got where they are? Even if you can't complete a full informational interview, develop 3–5 questions you can ask throughout the visit to learn more about the career opportunities associated with the site.

REFLECT

What did you enjoy most about the site visit?

What was the most interesting thing you learned during the visit?

What jobs did you see during the site visit?

Which ones looked interesting to you?

What surprised you about the site?

What questions do you still have now that the site visit is over?

CAREER PATHWAYS:

Environmental Justice

OBJECTIVES:

- Describe potential careers in the field of environmental justice
- Determine the skills or education necessary to go into the field

EXPLORE THE OFFICE OF ENVIRONMENTAL JUSTICE

The Department of Ecology has an Office of Equity and Environmental Justice. Explore their webpage. Learn about their priorities and current projects. With the help of your crew supervisor and the contact information on the website, reach out to the Office of Equity and Environmental Justice to request an informational interview as a crew.

DEVELOP QUESTIONS

Take time to develop a series of questions that will help you cover the following topics:

- Career path and experience
- Day-to-day responsibilities
- Rewards and challenges of the job
- Industry trends and challenges
- Advice for someone entering the field

THE INFORMATIONAL INTERVIEW

As a crew, take turns asking questions. Be sure to take notes as you listen to the answers.

REFLECT

What did you learn about environmental justice?

What did you learn about jobs or careers in the field?

What, if anything, surprised you about the work being done in the field of environmental justice?

How can you apply what you heard today to your own life or career future?

NOTES

FULL CIRCLE – FACILITATION GUIDE

As the facilitator, you will work to spark curiosity and critical thinking among your crew members as they progress through the guide. The goal is not only to explore Washington's waste management system and crew members' place in it, but also to explore how consumption and waste connect to their lives and the world. Consider this guide a starting point. Use your and your crew's knowledge and experience as well.

The guide, along with the notes that follow, is meant to offer the support and flexibility you need to facilitate in whatever way works best for you and your crew. Unless noted, you can structure activities in many ways—individually, in pairs, in small groups, or as a whole crew. The time parameters outlined here are also suggestions. Activities may take you more or less time depending on how you structure them.

Please note, the QR codes in the guide direct crew members to outside sources of information. We have made every effort to include reliable and durable sources, but if a link is broken, help crew members use a search engine to learn more about the topic. If a crew members does not have a phone, pair them with someone who does or let them use your tablet.

PAGES 4-5

ENVIRONMENTAL JUSTICE PRIMER

(2 HOURS TOTAL)

MATERIALS:
Pens/pencils
Internet access

WHAT IS ENVIRONMENTAL JUSTICE (10 MINUTES)

A BRIEF HISTORY OF ENVIRONMENTAL JUSTICE

(30 MINUTES)

WHY ENVIRONMENTAL JUSTICE MATTERS

(30 MINUTES)

We recommend completing this activity as a whole crew. Have crew members take turns reading the report aloud and answering questions as a group. Use the questions as a starting point to facilitate a group discussion.

ENVIRONMENTAL JUSTICE IN WASHINGTON (50 MINUTES)

In the "Explore ongoing projects" section, crew members will choose one of the six projects currently listed on the webpage (Bellingham, Lower Duwamish, Tacoma, affordable housing, Volkswagen settlement funds, climate change). Ensure each project gets covered, only doubling up once all projects have been covered. Allow time for crew members to share what they learned with the whole group.

PAGES 6-14

UNIT 1 – SOLID WASTE MANAGEMENT

WHAT IS SOLID WASTE MANAGEMENT?

(1 HOUR TOTAL)

MATERIALS:
Pens/pencils
Internet access

GET STARTED (15 MINUTES)

Crew members should complete this activity without the help of online resources. This is about assessing what crew members know or believe to begin with.

You can structure group work a few ways. You can create three groups where each group takes one of the three categories. After some group time, you can bring the crew back together and have each group present their list, so all crew members end up with a complete list. You can also put people into groups of three, where each person takes one category and then they share within their group once they're done.

Use this link and look for the pie chart in the "Solid waste generation" section for the tons of garbage, recyclables, and organics generated.

DISCUSS (15 MINUTES)

The best resource categorizing garbage and organics items also includes recyclables. Help crew members decide which items are considered garbage and organics. Note: The page numbers referenced in the guide are the numbers printed on the document itself.

For recyclables, crew members should search for local guidance. If they can't find any, you can offer this guidance from the City of Spokane.

SORT IT OUT (20 MINUTES)

Turn the sorting activity into a challenge or race to see which team can sort it the fastest and most accurately. What prize can you offer to incentivize working together on the activity?

WRAP UP (10 MINUTES)

MAKING IT PERSONAL
(2 HOURS TOTAL)

MATERIALS:
Pens/pencils
Markers and poster paper OR PowerPoint
Internet access

GET STARTED (40 MINUTES)

If there was a gap between the first lesson in the unit and this lesson, take time to refresh. Ask crew members to recall what they took away from the lesson. Help fill in any gaps in their memories.

Once your crew has completed the ranking activity, ask some groups to share their rankings and rationale. Then, provide the whole crew with the correct order. See by a show of hands which partner teams got the order correct.

TAKE EVERYDAY ACTION
(1 HOUR)

Break crew members into three groups (of hopefully 2-4 people) and assign one of the topics so each gets covered.

Select a format (poster or PowerPoint) based on what resources you have available and where your crew is completing the lesson.

Allot 30-40 minutes for crew members to read about their topic, explore the linked website, and create their presentation. As crew members work, monitor their progress and offer time checks to ensure they finish.

Allot 20-30 minutes for presentations. Give each group 5-7 minutes to share their presentation with the rest of the crew and answer any questions.

WRAP UP (20 MINUTES)

For the wrap-up, this infographic from the EPA may help crew members come up with ideas. It is a large file and may load slowly.

After crew members have some time for personal reflection, bring them together for a whole team discussion.

SUSTAINABLE MATERIALS MANAGEMENT
(4 HOURS TOTAL)

MATERIALS:
Pens/pencils
Markers and poster paper OR PowerPoint
Internet access

GET STARTED (20 MINUTES)

THE CIRCULAR ECONOMY
(1 HOUR 10 MINUTES)

Allot 20 minutes to watch the videos from the Ellen MacArthur Foundation and answer the questions.

Allot 20 minutes to read the Sustainable Materials Management section and complete the graphic.

Allot 10 minutes for the "Write" section.

Allot 20 minutes for the "Discuss" section. If you have time, consider setting this up as a friendly debate where crew members take positions for and against the various players (companies, governments, and individual consumers) being responsible for the move toward a circular economy. Take a crew vote at the end to see who most crew members think should be responsible. If a crew member says all groups should be responsible, talk about that (Hint: It's the right answer. Circular economies take all of us.).

NEXTCYCLE WASHINGTON
(1 HOUR 20 MINUTES)

Watching the NextCycle recap video and four pitch videos should take about 30 minutes.

For the presentation, break crew members into groups of 2-4 people.

Select a format (poster or PowerPoint) based on what resources you have available and where your crew is completing the lesson.

Allot 30 minutes for crew members to brainstorm an idea and create their pitch presentation. As crew members work, monitor their progress and offer time checks to ensure they finish.

Allot 20 minutes for presentations. Give each group 5-7 minutes to share their presentation with the rest of the crew and answer any questions.

FIELD TRIP
(1 HOUR 10 MINUTES)

For this activity, you and your crew will visit a waste disposal site like a landfill or transfer station. You will need to determine when a visit like this works with your schedule. If you need support to set up this visit, please contact your regional litter coordinator.

Allot 20 minutes for crew members to look through the site's website and 20 minutes for the K-W-L chart.

After the visit, give crew members 30 minutes to reflect individually and as a group about the visit using the questions in the guide.

ENVIRONMENTAL JUSTICE EXTENSION
(2 HOURS TOTAL)

MATERIALS:
Pens/pencils
Internet access

WHAT ARE PFAS? (30 MINUTES)

LANDFILLS AND METHANE GAS (30 MINUTES)

LOCATE YOUR LANDFILL
(30 MINUTES)

A NEW LANDFILL (30 MINUTES)

If you have time, these questions could be answered in the form of a role-playing activity. Split crew members into different roles: residents near the proposed site, private landfill owners, local government officials, etc. Act out a community forum where the groups try to make a decision. Ask crew members to consider how their role benefits (or not) from a particular outcome and who among them has the most power.

PAGES 15-21

UNIT 2 – RETHINKING WASTE

WHY RECYCLING ISN'T ENOUGH (1 HOUR TOTAL)

MATERIALS:
Pens/pencils
Internet access

PROS AND CONS OF RECYCLING (50 MINUTES)

Much of this time will be spent watching the three videos. The reflection questions for each video can also be completed as a group discussion.

WRAP UP (10 MINUTES)

THE OTHER RS
(2 HOURS TOTAL)

MATERIALS:
Pens/pencils
Internet access

GET STARTED (10 MINUTES)

To answer the question, recycling is considered a "downstream" option because it intervenes at the very end of a product's life cycle. That means raw materials have already been extracted, products have been manufactured and shipped around the globe, and consumers have already purchased and used the items. Ask your crew: What has a greater impact: recycling a plastic bottle? Or never buying one in the first place because you carry a reusable bottle?

Ask crew members if they can think of any "upstream" alternatives to recycling. They may already be aware of several parts of the R-hierarchy (reuse, repair, repurpose, etc.).

THE R-LADDER (40 MINUTES)

The article crew members will use to complete this activity offers some ideas for what businesses and consumers can do for each of the "Rs," but they will need to fill in some gaps.

THE REPURPOSE CHALLENGE
(1 HOUR)

Allot 15 minutes for step one, 30 minutes for step two, and 15 minutes for step three. This activity works best in pairs, but if you have an odd number of crew members, groups of three work too.

This activity is similar to the Food Network competition "Chopped," where chefs are given seemingly random ingredients to put into a single dish. It's an opportunity for crew members to be creative and have fun. You could even take a crew vote at the end and offer a reward to the pair with the most inventive repurposed item(s).

WRAP UP (10 MINUTES)

The idea with this question is that the move to a more circular economy would reduce waste and consumption overall, which would likely reduce litter as well or make it less toxic to the environment (if, for instance, items were compostable rather than plastic).

ANOTHER R: RESPONSIBILITY

(4 HOURS TOTAL)

MATERIALS:
Pens/pencils
Internet access

PUBLIC POLICIES

(50 MINUTES)

Crew members can choose a local, state, national, or international policy for their example; however, the policy should relate to one of the steps in the R-hierarchy. If there's been some time between this lesson and the previous lessons in this unit, refresh crew members on the steps of the R-hierarchy.

INVESTIGATE CORPORATE ACTION (50 MINUTES)

Some of the corporations responsible for single-use plastic waste are listed in the NPR article linked in the lesson. For a full list of corporations, share this QR code and direct crew members to page 12. They can choose from the list there to complete the activity.

If you have extra time, read and discuss the key findings on pages 10–11 of the report as a crew.

CREATE A PERSONAL ACTION PLAN (50 MINUTES)

This activity requires crew members to do a bit of homework, so a few days prior to doing this activity, ask crew members to complete step one.

After they create their action plans, ask them to follow their plan for one week. Let them know you'll check back in. The following week, discuss as a crew how their plans worked in action.

FIELD TRIP

(1 HOUR 30 MINUTES)

For this activity, you and your crew will visit a recycling facility like a materials recovery facility (MRF). You will need to determine when a visit like this works with your schedule. If you need support to set up this visit, please contact your regional litter coordinator.

To prepare for the visit, allot 40 minutes for crew members to explore the website or any online information they can find about the site.

As a crew, take 20 minutes to complete the K-W-L chart before the site visit.

After the visit, give crew members 30 minutes to reflect individually and as a group about the visit using the questions in the guide.

ENVIRONMENTAL JUSTICE EXTENSION

(1 HOUR TOTAL)

MATERIALS:
Pens/pencils
Internet access

WATCH

Encourage crew members to take notes as they watch the video. The video covers the topics or questions in the order they're listed.

Reserve time after the video for crew members to fill in anything they missed by talking to a partner. Discuss the reflection questions as a whole group.

PAGES 22-29

UNIT 3 – LITTERING

LITTER HISTORY, STUDY, AND TAXES (1 HOUR TOTAL)

MATERIALS:
Pens/pencils
Internet access

GET STARTED (15 MINUTES)

Read the blog out loud, section by section, as a crew.

For the discussion section, many of these campaigns appeal to Washington's natural beauty and people's love of the outdoors to affect change. Some look to activate very specific audiences: hunters, hikers, skiers, etc. Many use humor, even ones that focus on the punitive measures around littering (Litter and It Will Hurt). Guide crew members to notice some of these elements as they will be asked to create a litter prevention concept in future lessons.

LITTER STUDY (25 MINUTES)

The goal of this activity is for crew members to use what they know based on their everyday work to predict the results of the litter study before looking at the focus sheet. The guide provides a list of common items collected, but they can also guess items based on their experience.

Ask crew members to predict how many pounds of litter and pieces of litter are picked up each year statewide. Then ask them what they think that averages out to per person living in Washington.

In the second half of the activity, crew members should guess the top item collected, by pound

and by piece, at each of the collection locations. Let crew members know that DNR stands for Department of Natural Resources and DFW stands for Department of Fish and Wildlife.

For the question in the "Read" section, the assumption is that litter on urban and arterial roadways is likely small and abundant (cigarette butts, plastic film, etc.) while litter on interstates is heavier (construction materials, tires, etc.).

WRAP UP (20 MINUTES)

LITTER'S LONG-TERM EFFECTS (2 HOURS TOTAL)

MATERIALS:
Pens/pencils
Internet access

GET STARTED (20 MINUTES)

DECOMPOSITION TIMELINE
(1 HOUR)

Have crew members work in groups of 2-3 for this activity. Below are the answers to the timeline:

Vegetables – *1 month*
Paper towels – *1 month*
Paper bag – 6 weeks
Cardboard – *2 months*
Milk carton – *3 months*
Cotton fabric – *6 months*
Fruit peels – *6 months*
Rubber bands – *1 year*
Rope – *14 months*
Cigarette butt – *10 years*
Lumber – *15 years*
Nylon fabric – *40 years*
Tin can – *50 years*
Aluminum can – *100 years*
Battery – *100 years*
Plastic straw – *200 years*
Plastic bottle – *450 years*
Six-pack holder – *450 years*
Disposable diaper – *500 years*
Plastic bottle cap – *500 years*
Ink cartridge – *1,000 years*
Plastic bag – *1,000 years*
Tire – *2,000 years*
Glass – *1 million years*
Styrofoam packing peanuts – *Never*

SORT IT OUT (40 MINUTES)

The ink cartridges can be recycled through E-Cycle Washington.

CREATE YOUR OWN PREVENTION CAMPAIGN
(4 HOURS TOTAL)

MATERIALS:
Pens/pencils
Markers and poster paper OR PowerPoint
Internet access

GET INFORMED (40 MINUTES)

Break the crew into groups. You can create three groups where each group takes one of the three categories (governments, businesses, nonprofits & communities). After some group time, you can bring the crew back together and have each group present the resources they reviewed, so all crew members know about each category.

You can also put people into groups of three, where each person takes one category and then shares within their group one they're done. Either way works.

INFORM OTHERS
(20 MINUTES)

How you structure the Get Informed section will affect how you structure this section. Either as a group or in their separate groups, have crew members give a 3-5 minute summary about the resources they explored.

WHAT A CONCEPT! (1 HOUR)

PREPARE FOR YOUR PRESENTATION (1 HOUR)

Crew members should work with their partner to create either a poster or a brief PowerPoint to present their pitch to the rest of the crew.

Allot 30-40 minutes for presentation preparation and 20-30 minutes for the presentations, giving each pair 3-5 minutes to present their pitch to the crew.

FIELD TRIP
(1 HOUR)

The goal of this activity is for your crew to participate in community outreach of some kind. Coordinate with your regional litter coordinator to determine an appropriate opportunity.

ENVIRONMENTAL JUSTICE EXTENSION
(2 HOURS TOTAL)

MATERIALS:
Pens/pencils
Internet access

BRAINSTORM (15 MINUTES)

EXPLORE YOUR LOCAL PARKS
(1 HOUR 30 MINUTES)

This outing may take more or less time depending on where the parks you choose are located.

You may need to support your crew to identify appropriate parks. The goal here is for crew members to recognize that things like funding and infrastructure (like trash cans and signage) play a role in how much litter is present in a public space, and those factors are often affected by the wealth and social and political power of the people living in the area.

REFLECT (15 MINUTES)

To answer the final question in this section, parks are typically (though not always) funded by property taxes. The more affluent the area, the more taxes are collected, and the more money there is to spend on community amenities like parks.

PAGES 30-37

UNIT 4 – CAREER PATHWAYS

PERSONAL CAREER PREFERENCES

(1 HOUR TOTAL)

MATERIALS
Pens/pencils

GET STARTED (15 MINUTES)

MOCK INTERVIEWS
(30 MINUTES)

WRAP UP (15 MINUTES)

CAREER EXPLORATION

(2 HOURS TOTAL)

MATERIALS
Pens/pencils
Internet access

GET STARTED (10 MINUTES)

DRAFT A JOBS MAP
(50 MINUTES)

CHOOSE A PATHWAY
(30 MINUTES)

WRAP UP
(30 MINUTES)

If you have extra time, or this is an area of interest to your crew, help each member adapt the action plan on page 19 to create a career-focused action plan.

HOST A JOB FAIR

(4 HOURS TOTAL)

MATERIALS:
Pens/pencils
Markers and poster paper OR PowerPoint
Internet access

GET STARTED (1 HOUR)

Allot 30 minutes for crew members to develop questions.

Allot 30 minutes for crew members to complete an informational interview with you. This is an opportunity to share your professional experience and coach your crew on the interview process.

For crew members who have experience with interviewing, ask them to share their advice.

PREPARE FOR THE JOB FAIR (1 HOUR)

Allot 30 minutes for crew members to develop their 2-minute presentations on the job or career of their choosing.

Allot 30 minutes for the presentations. You can treat this like a standard presentation, or set it up where crew members present and answer questions one on one, similar to the experience of attending a job fair.

FIELD TRIP
(2 HOURS)

This activity will take some planning on your part and was kept intentionally flexible to accommodate many scenarios.

Work with your regional litter coordinator to determine if your crew can visit a Department of Ecology building, complete a site tour of a facility your crew hasn't seen yet, or participate in job shadowing.

What your crew ends up doing will depend heavily on scheduling and availability.

If needed, modify the questions in this section to better fit what your crew does.

ENVIRONMENTAL JUSTICE EXTENSION

(2 HOURS TOTAL)

MATERIALS:
Pens/pencils
Internet access

EXPLORE THE OFFICE OF ENVIRONMENTAL JUSTICE
(30 MINUTES)

DEVELOP QUESTIONS
(30 MINUTES)

HOST AN INFORMATIONAL INTERVIEW (30 MINUTES)

This activity will take some planning on your part. If you need support to secure time with someone from the Office of Environmental Justice, please contact your regional litter coordinator.

REFLECT (30 MINUTES)

Ecology Litter Corps

ENVIRONMENTAL EDUCATION GUIDE

Washington State Department of Ecology
Solid Waste Management

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