

Sustainability and Community Connections

SECONDARY MODULE 3

Grades 6–12

Overview

Everything you need to introduce students in grades 6–12 to the importance of transit in their communities, the impacts of public transit on climate change, and rider accessibility. Includes a differentiated lesson plan, example activities, and a supporting PowerPoint.



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METRO**
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INTRODUCTION

About the Curriculum

The primary goal of the King County Metro Youth Mobility Program's classroom modules is to increase youth transit ridership and help students connect with their communities. The Transit Education Classroom Modules are designed to help students feel confident using and engaging with different modes of transit by teaching ridership skills.

Why teach about public transit in the classroom?

By reaching students in schools, King County Metro hopes to build long-term student engagement with transit. More transit ridership leads to:

- ◆ Cleaner air and water
- ◆ Reduced traffic on local roadways
- ◆ Deeper community connections and increased economic, academic, and social opportunities

How does this fit with the other modules?

The Metro Youth Mobility Program classroom education framework builds skills over multiple grade levels and is designed to help students become confident, independent riders by the end of high school. The framework is built around three core themes:

1. What is transit and how do I ride it?
2. Riding transit safely.
3. Climate impacts and community connections.

Secondary students are beginning to have independence to travel to school, jobs, internships, and social events. The focus of the modules is to give them the tools to successfully navigate different forms of public transit and help students feel safer using public transit, leading to long-term increases in ridership.

Secondary Module 1: Get to Know Metro is an introduction to public transit for grades 6–12 students. In this module, they will learn the logistics needed to ride the bus or Link light rail, learn how to read bus and light rail schedules, and practice planning a trip using different tools.

Secondary Module 2: Safety and Riding Right focuses on safety considerations for students traveling alone and in groups. Module 2 will have students identify elements of transit that may make them feel uncomfortable, think about ways to alleviate these feelings, and discuss tools King County Metro has available to encourage respectful riding and report concerns.

Secondary Module 3: Sustainability and Community Connections helps students engage with transit's role in their communities, providing a foundation that will help them develop connections to related topics. This module will connect students to ideas and goals around environmental sustainability, climate change, and access to transit.

Student Outcomes

By the end of Module 3, students in grades 6–8 will:

- ◆ Understand current and potential future impacts of climate change in King County.
- ◆ Connect benefits of public transit to themselves, their community, and the climate.
- ◆ Identify accessibility points for public transit as well as resources to support transit access.

By the end of Module 3, students in grades 9–12 will do all of the above, plus:

- ◆ Develop advocacy skills and recognize how community members may have varying experiences with King County Metro and public transit.



PLANNING GUIDE

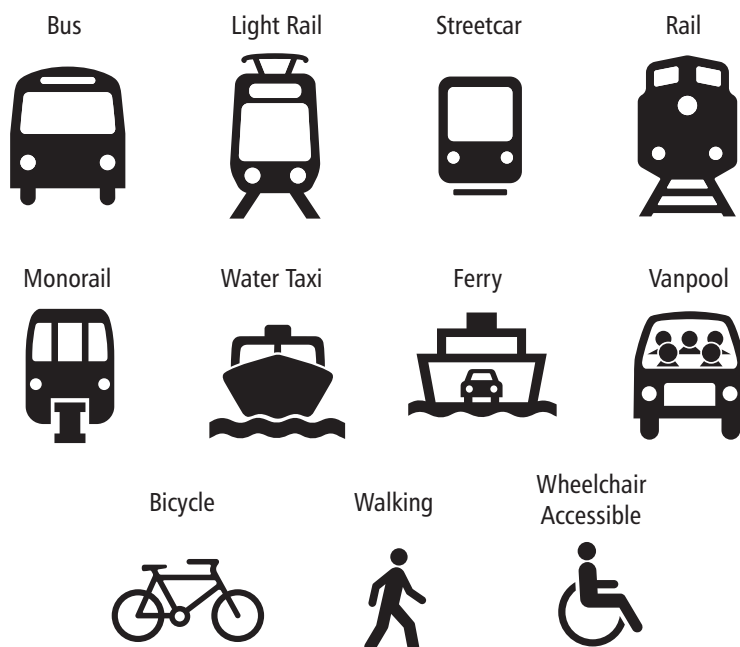
How to Use this Module

This module is designed for two 45-minute classes or one 75-minute class with a focus on flexibility for the needs of your classroom.

In the primary activities for this module, Sustainability and Community Connections, students will utilize information learned throughout this module to describe the benefits of public transit for their communities as well as the impact on climate change. Students will engage with accessibility topics, identify community needs, and be introduced to the concept of advocacy. This module allows students to make connections to public transit and the benefits it can offer their communities and their environment. To help students prepare, there are supporting presentation slides.

Ask the following questions to help you plan your lesson and guide students:

- ◆ How familiar are my students with transit? Did they learn the information from Module 1: Get to Know Metro? Did they learn the information from Module 2: Safety and Riding Right?
- ◆ Are my students familiar with the basic concepts of sustainability and climate change?
- ◆ Are my students familiar with the basic concepts of accessibility and the importance of public transit access in their communities?
- ◆ Are my students able to identify needs in their community? How are my students already taking action or advocating for their community?



PRIMARY ACTIVITY

Totaling Up Transit

(Regular and Advanced, 15–30 minutes)

In this activity, students will learn one of the ways Metro supports sustainability is by providing transportation alternatives. Students will answer questions and use math to help understand how transit can help reduce the number of cars on our roads. Afterward, the class can discuss the possible environmental and community impacts of reducing the number of vehicles driving around on our local roadways.

The regular worksheet is for students comfortable with addition and some more complex math but may need support for division equations. The Advanced worksheet is for classes that can combine critical thinking with math problems. Students may need assistance to convert between different units of measurement.

Materials

- ◆ Totaling Up Transit worksheets (Regular, Advanced)
- ◆ Calculator

Learning Prerequisites

- ◆ Students should be familiar with the information from Module 1: Get to Know Metro and Module 2: Safety and Riding Right.
- ◆ Students should be comfortable with basic addition and be able to use a calculator.
- ◆ Students should understand how transit and alternative forms of transportation can reduce environmental impacts and benefit the community. Slides can be found in Teacher Tools.

Activity Outline

1. King County Metro offers a variety of transit options. This activity will explore the possible impact buses and other forms of alternative transportation can have on traffic and our environment.
2. Students will work through the questions provided on the worksheet(s). They will need a calculator to assist them with the math.
3. After students have completed their worksheets, encourage them to share what impact they think reducing the number of cars on our local roads may have on the environment and their community.
4. For high school or advanced math classes an instructor may choose to assign the first worksheet, which focuses on a class, as an in-class assignment and follow up with the advanced worksheet, which explores the full student body, as a take-home assignment for students.

5. Instructors may choose to share the following equation hints with students.

- ◆ **Question 2** - Hint, use the answer for #1 multiplied by total miles traveled multiplied by .89 pounds of carbon dioxide.
- ◆ **Question 5** - Hint, use the answer in #4 and divide by 2,000 pounds.

Advanced Hints:

- ◆ **Question 2** - Hint, use the answer for #1 multiplied by total miles traveled multiplied by 404 grams and divide that by 453.6 grams/pound of carbon dioxide.
- ◆ **Question 5** - Hint, use the answer in #4 and divide by 2,000 pounds.
- ◆ **Question 8** - Hint, multiply (18 ft multiplied by 9 ft) multiplied by the # of cars in question #2.

Totaling Up Transit

Regular

Transit connects people to places, services, and other community members. Answer the following questions below to better understand the impact buses can have on reducing the number of cars on our local roadways.

1. If every person in your class rode in their own car to school, how many **cars** would we need? _____ cars

According to the Environmental Protection Agency (EPA), the average gasoline car emits an average of .89 pounds of carbon dioxide (CO₂) per mile. Driving 10 miles emits an average of 8.9 pounds of CO₂.

2. If the average person in your class travels 6 miles to school and 6 miles home how many **pounds** of CO₂ would the class emit each day if everyone rode in their own car? _____ pounds of CO₂
3. How many **days** are there in a school year? _____ days
4. How many **pounds** of CO₂ would the whole class emit over one school year? _____ pounds of CO₂

One ton is equal to 2,000 pounds. It can be hard to picture a ton, but one ton equals approximately 400 red bricks or one large adult walrus.

5. How many **tons** of CO₂ would the class emit over one school year? _____ tons of CO₂
6. One electric 40-foot Metro bus can transport 53 people. How many **buses** would we need to transport just your class? _____ buses
7. Metro electric buses do not release CO₂. If half of the people in your class rode an electric bus to school for a year, how many **tons** of CO₂ could we prevent from entering the atmosphere? _____ tons of CO₂
8. Why do you think we want to use fewer single-passenger cars?

Totaling Up Transit

Advanced

Transit connects people to places, services, and other community members. Answer the following questions below to better understand the impact buses can have on reducing the number of cars on our local roadways.

1. If every person in your school rode in their own car to school how many **cars** would we need? _____ cars

According to the Environmental Protection Agency (EPA), the average gasoline car emits an average of 404 grams of carbon dioxide (CO₂) per mile. Driving 10 miles emits 4,040 grams of CO₂. One pound is 453.6 grams. Driving 10 miles emits an average of 8.9 pounds of CO₂.

2. If the average person in your school travels 6 miles to school and 6 miles home, how many **pounds** of CO₂ would the whole school emit each day if everyone rode in their own car? _____ pounds of CO₂
3. How many **days** are there in a school year? _____ days
4. How many **pounds** of CO₂ would the whole school emit over one school year? _____ pounds of CO₂

One ton is equal to 2,000 pounds. It can be hard to picture a ton, but one ton equals approximately 400 red bricks or one large adult walrus.

5. How many **tons** of CO₂ would the whole school emit over one school year? _____ tons of CO₂
6. One 40-foot Metro bus can transport 53 people. How many **buses** would we need to transport everyone at your school? _____ buses
7. Metro electric buses do not release CO₂. If half of the people in the school rode an electric bus to school for a year, how many **tons** of CO₂ could we prevent from entering the atmosphere? _____ tons of CO₂

Cars need somewhere to park. Each car needs an average space of 162 square feet, 18 feet long by 9 feet wide, to park.

8. How much space in **square feet** would we need to park all the cars needed for the whole school? _____ feet²
9. One American football field is 43,560 square feet. How many **football fields** would we need to park all the cars in question 8? _____ football fields.
10. Much of the infrastructure, the built world, is designed for and around cars. What are some ways we could reduce the space needed to drive and park our cars?

Totaling Up Transit (continued)

11. If we reduce the number of cars in our community, what could we use those parking structures and spaces for instead?
12. Other than taking transit, what are some other ways we can help reduce the number of cars we use?
13. What are some positive impacts of using fewer cars?
14. What are some of the possible challenges of shifting to alternative transportation like public transit, bikes, carpooling, and walking?
15. What are some ways we could address the challenges you mentioned in question 14?

PRIMARY ACTIVITY

Consider the Climate

(Grades 6–12, 45–60 minutes)

In this activity, students will learn about climate change, global and local impacts of climate change, and ways they can help reduce their climate impact by using transit. Students will begin by matching data points to facts about climate change and public transit, followed by questions and a discussion regarding actions they could take to minimize their climate impacts.

Materials

- ◆ Consider the Climate worksheet

Learning Prerequisites

- ◆ Students should be familiar with general information from Module 1: Get to Know Metro and Module 2: Safety and Riding Right.
- ◆ Students should be familiar with basic math skills for addition, division, and multiplication.
- ◆ Students should be familiar with the idea of sustainability and climate change.

Activity Outline

1. Ask students what they already know about sustainability and climate science. After hearing some answers, lead a brief, high-level discussion about the process as reflected in the PowerPoint slides. For background information regarding climate change and King County's climate goals, please see the [Supporting Resources](#) section of this module. The instructor may decide to ask some of the following questions of the class.
 - a. What is the connection between carbon emissions and climate change?
 - b. What are some local impacts of climate change in King County?
 - c. How does climate change impact individuals and communities differently?
2. After the discussion, place students in groups of three to four. Hand each student a worksheet and explain that they will work together to complete the first part of the activity by matching facts to data points.
3. Students will discuss within their groups to decide how to match up climate and community data points. Give students 5–10 minutes to complete the climate data matching.
4. After students have made their decisions, review the correct matches as a class or pass out the answer key to each group.

5. Lead a discussion using student answers on a few selected data points. You may decide to ask some of the following questions of the class or student groups.
 - a. Are there any data points you felt confident matching?
 - b. What did you find surprising about these data points?
 - c. Do any of these facts alter your understanding or opinion of public transit and/or climate change?
 - d. What are some local impacts of climate change we may see in King County?
6. After going over the matching activity, students will work in their groups to complete the second part of the activity. Students will identify an action related to Metro and public transit and describe how it impacts both climate change and their community. You may decide to provide students with ideas for the “Your Idea” section from the list below.
 - a. Providing incentives to Metro riders.
 - b. Creating new bus lines or adding bus stops in particular areas.
 - c. Developing new technologies for transit vehicles.
 - d. Expanding the Link light rail lines.
 - e. Ensuring all youth get ORCA cards.
 - f. Educating others about the benefits of public transit.
 - g. Encourage dense, affordable housing near transit.
7. Following the completion of the table, students will answer questions connecting climate and community concepts.



WORKSHEET

Name: _____

Consider the Climate

Match each data point to the fact you believe it represents. Each data point will only be used once. Then, check in with your instructor for the correct answers and consider how these facts may impact your community and the environment.

Data Points				
9,738	150	28	16	148,000,000,000
\$1,000,000	4,800	400	16	62

Fact	My Choice	Correct Answer
A single commuter who switches their commute from a private vehicle to public transit can reduce CO ₂ emissions by _____ pounds in a year.		
In King County from 2007 to 2023, community members reduced their personal emissions by ____%.		
A battery electric bus reduces greenhouse gas emissions by ____%, compared to a diesel bus.		
Public transportation in the United States helped prevent _____ miles of private vehicle travel in 2018.		
Each new battery-electric bus costs over \$____, and requires specialized chargers to "fuel" the buses with electricity.		
King County Metro maintains more than ____ routes including buses, street cars, and water taxis.		
Transportation accounts for ____% of US greenhouse gas emissions, making it the largest contributor.		
Individuals who use public transit regularly save more than \$____ a year.		
In 2018, public transit in the United States saved 63 million metric tons of CO ₂ which is the equivalent of taking _____ coal power plants offline for a year.		
One metric ton of greenhouse gas emissions weighs the same as _____ bricks.		

Consider the Climate (continued)

Complete the boxes below to explain the possible impacts of the different actions on both the climate and the community. For the “Your Idea” boxes, come up with an additional action to improve public transit and explain the potential impacts.

Action/Potential Solution	Impact on Climate	Impact on Community
King County Goal: Use only zero-emission Metro buses in the future.		
King County Goal: Reduce county-wide greenhouse gas emissions 50% by 2030.		
Your Idea:		
Your Idea:		

1. Which of the actions from above (either King County goals or your own ideas) do you believe will best benefit your community?
2. Which of the actions from above (either King County goals or your own ideas) do you believe will best reduce the negative impacts of climate change?
3. How can using public transit positively impact our community and the climate?

PRIMARY ACTIVITY

All Aboard: Community Accessibility

(Grades 6–12, 30–45 minutes)

In this activity, students will use a flow chart to follow questions and answers aligning to three transit scenarios. Within the flow charts, students will identify barriers to accessible transit as well as the resources from Metro that can improve accessibility for community members. In the second part of the activity, students will answer questions about Metro resources that can help and consider actions they could take to advocate for their community's public transit needs.

Materials

- ◆ All Aboard! Community Accessibility worksheet
- ◆ All Aboard! Community Accessibility flow charts

Learning Prerequisites

- ◆ Students should be familiar with general information from Module 1: Get to Know Metro and Module 2: Safety and Riding Right.
- ◆ Students should be comfortable having respectful discussions addressing accessibility, be familiar with different concepts of accessibility, and be able to discuss the needs of people in the community.

Activity Outline

1. Lead a class discussion about accessibility. Information on Metro equity and accessibility can be found within the [Supporting Resources](#) section of this module. Instructors may use some of the following prompts for class discussion:
 - a. What is accessibility? Why is it important for individuals and communities?
 - b. What does it mean if something is accessible for everyone?
 - c. What kinds of access needs do you think Metro should plan for in their public transit?
 - d. Can you identify any access needs for yourself or your community?
2. Explain that King County Metro does their very best to think about the entire community and has many systems in place to be accessible to everyone. You may choose to provide examples from Metro's accessibility and equity information found within the [Supporting Resources](#) section.
3. Explain that students will work through the flow charts to understand barriers that community members may encounter taking public transit as well as learn about Metro resources that can help address these issues.
4. Students will then answer questions relating to the flow charts.
5. Instructors may choose to lead an optional discussion driven by student answers.

All Aboard! Community Accessibility

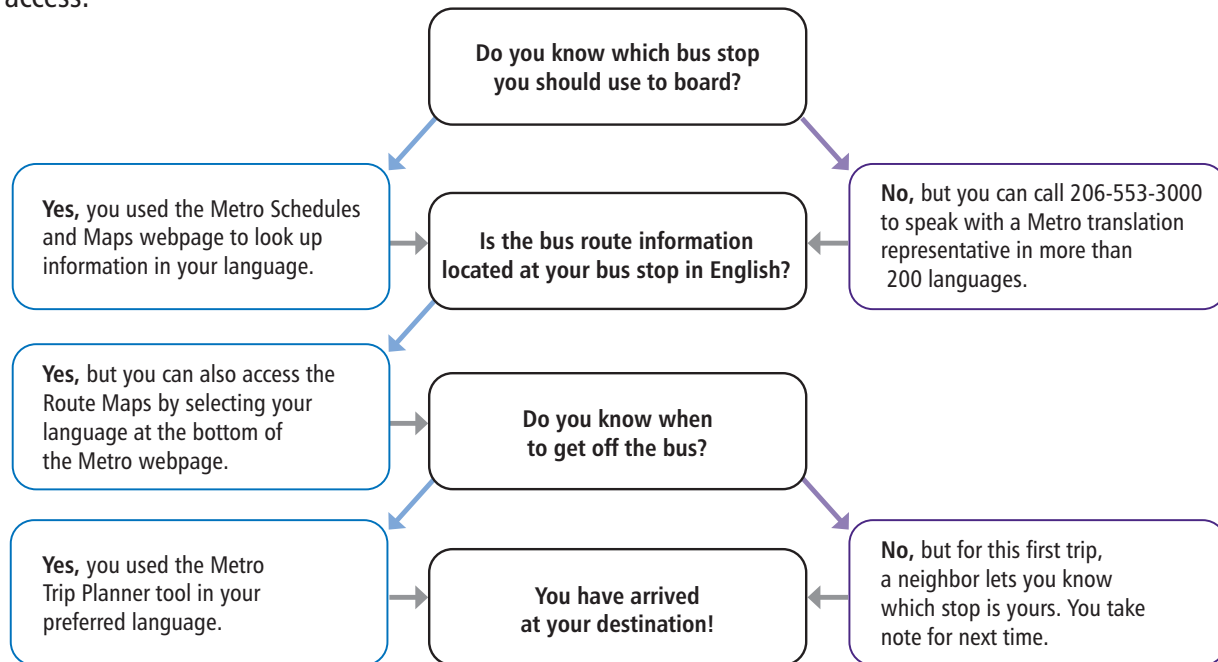
Follow each of the provided Community Accessibility flow charts in bold. When you reach the “Stop and Think” questions, consider how community members may face barriers to accessing public transit and which Metro resources can improve accessibility. Then, answer the questions below.

1. Choose one community member and describe a barrier they encountered. Is there a Metro resource or action they could use to help address this barrier?
2. Choose one Metro resource from the flow charts and explain how it can improve accessibility for people in your community.
3. Who are other people in your community that may encounter barriers to using public transit?

All Aboard! Community Accessibility (continued)

-
-
-
4. What other barriers might community members encounter when accessing public transit? Are there any Metro resources that can help them better access transit services?
5. Did you notice any barriers that Metro has not addressed? What could you do to advocate for change?

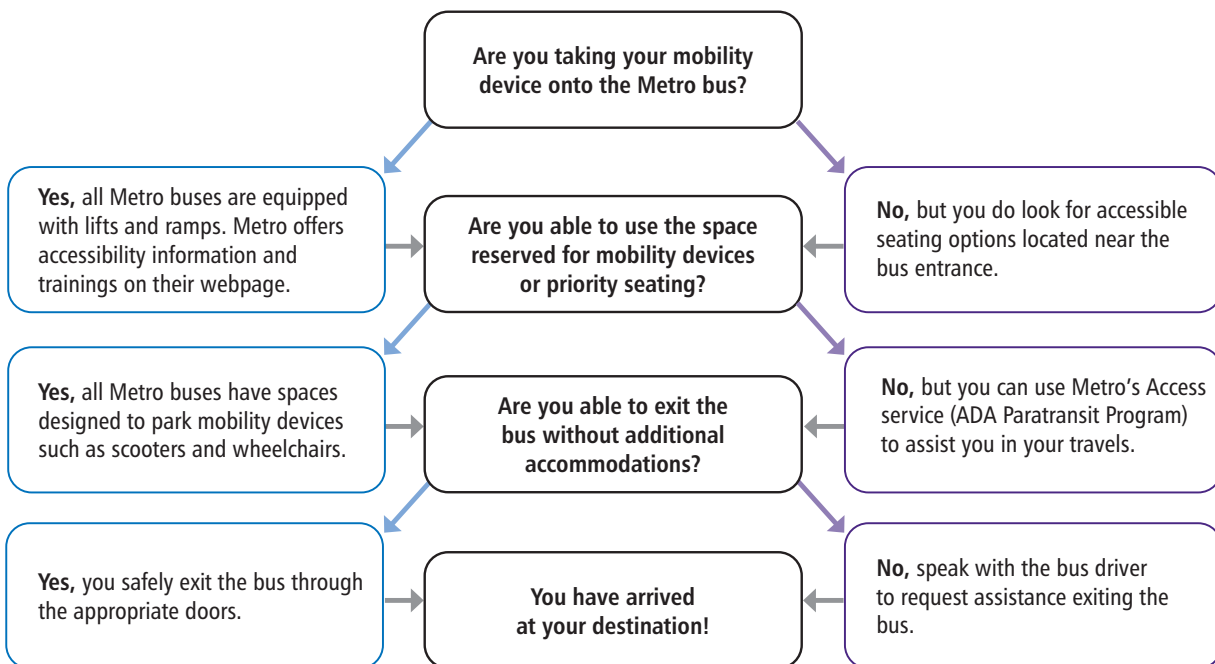
Community Member #1: You are new to the King County area and do not speak English. You need to take a bus to get from your place of work to a community event at the public library. You have your cell phone with internet access.



Stop and Think:

Where has this community member encountered barriers? How might that impact their transit experience?

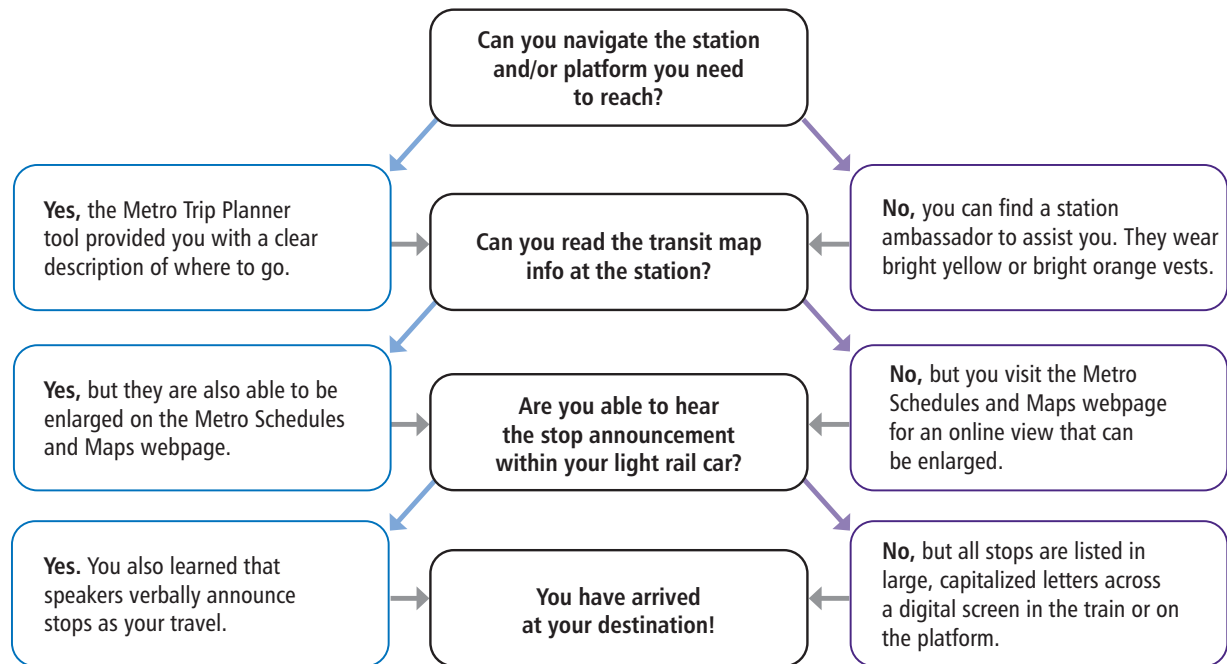
Community Member #2: You are an individual who uses a mobility device (wheelchair, scooter). You need to take a bus to get from your home to meet a friend at the park. You have some experience riding transit.



Stop and Think:

Where has this community member encountered barriers? How might that impact their transit experience?

Community Member #3: You have visual and hearing impairments. You need to take the Link light rail to a doctor's appointment. You have your cell phone with internet.



Stop and Think:

Where has this community member encountered barriers? How might that impact their transit experience?

EXTENSION ACTIVITY

Parking Lot Audit

(Grades 6–12, 30–60 minutes)

In this activity, students will conduct parking lot audits to establish how much space is being used for cars at a given location. This information can be used to facilitate class discussions around the impact cars have on our community and the role transit can have in reducing the number of cars we use. These activities can be conducted in the field or by using satellite imagery with accurate measurement features.

Materials

- ◆ Parking Lot Audit worksheet
- ◆ Measuring tape
- ◆ Clipboard
- ◆ Calculator
- ◆ Optional - access to Google Maps, Google Earth, or similar online tools.

Learning Prerequisites

- ◆ Students should be familiar with the impacts cars and transportation systems have on our community.
- ◆ Students should be familiar with the local impacts of climate change and how public transit may reduce those impacts.

Activity Outline

1. It is recommended that classes or student groups complete the *Totaling Up Transit* activity before conducting the *Parking Lot Audit* activity. This will provide students with the background information they will need for the discussion questions below.
2. Students will either visit a parking lot, as feasible, or use a satellite mapping tool to conduct a remote parking lot audit.
3. Students will record their observations and thoughts on the included worksheet.
4. After students have conducted their audits, have them share their findings and discuss the following questions:
 - ◆ What surprised you most about the *Parking Lot Audit*?
 - ◆ How much space in the parking lot was used by actual cars? Why do you think that might be?
 - ◆ If this space was not needed to park cars, what might it be used for?
 - ◆ What are some ways we could reduce the amount of space we need in our community for cars? What impact might this have on the community?

Parking Lot Audit

Imagine you are a community member advocating for more public spaces. Conduct a parking lot audit using the questions below. If you are conducting your audit in an active parking lot, be mindful of cars and stay alert.

Where is the parking lot?

What day and time did you conduct the audit?

How many parking spaces are there in total?

Measure at least 5 parking spaces to ensure they are all around the same size.

- ◆ How long is the average parking space?
- ◆ How wide is the average space?
- ◆ How many square feet of space is available to park cars?

How many spaces have cars parked in them?

How many spots are accessible for people with disabilities? Are there other types of reserved spots in the lot?

Are there designated spots for electric cars? Do they have charging stations?

Are there racks available at this location? How many bikes can the racks hold?

Is there a sidewalk near this location? Is it accessible to people with mobility devices, such as a wheelchair, scooter, or stroller?

Parking Lot Audit (continued)

Is there a bus stop or Link light rail stop near this location? If yes, what routes stop at or near this location?

Could transit services help reduce parking lot sizes in your area? What would you want to see done with that space?

Survey the cars parked in the parking lot. How many of each style do you see?

_____ 2-door passenger cars	_____ Trucks	_____ Motorcycles	_____ Electric cars
_____ 4-door passenger cars	_____ Vans	_____ Hybrid cars	_____ Other

How might the make and model of a car impact the amount of CO₂ it emits?

EXTENSION ACTIVITY

Climate and Communities Pictionary

(Grades 6–12, 15–30 minutes)

In this activity, students will play rounds of Pictionary, drawing and guessing the benefits of public transit in relation to climate impacts and community needs. Students will be given a phrase to draw while their peers guess the image to collect points. This activity can be done with the whole class or in small groups.

Materials

- ◆ Climate and Communities Pictionary topics
- ◆ Blank paper to draw on (letter size or larger suggested)

Learning Prerequisites

- ◆ Students should be familiar with the ways public transit can benefit communities.
- ◆ Students should be familiar with the local impacts of climate change and how public transit may reduce those impacts.

Activity Outline

1. Lead a short discussion to review the benefits of public transit for communities and the impacts public transit may have on climate change.
2. Explain to students they will be playing a Pictionary-style game where one student will be given a benefit of public transit to depict by drawing on paper while other members of their group will try to guess the benefit.
3. The instructor may decide to split students into groups or play the game with the whole class.
4. Either cut the topics list into strips and have students pull their topic from a bowl or you can use an alternative method such as quietly telling the student what topic they should draw.
5. Groups or individuals may choose to keep score.

Climate and Communities Pictionary Materials - topics

- ◆ Less traffic.
- ◆ Less CO₂ emissions.
- ◆ Helps seniors get to doctor appointments.
- ◆ Save money on gas.
- ◆ More Metro jobs.
- ◆ Helps people get to work.
- ◆ Conserves fossil fuels.
- ◆ Less air pollution.
- ◆ Connects neighborhoods together.
- ◆ Helps people get to school.
- ◆ Helps families get to grocery stores.
- ◆ Helps people get to parks.
- ◆ Most transit is free for youth 18 and younger.
- ◆ Cheaper than driving.
- ◆ No finding or paying for parking.
- ◆ Less need for parking lots.
- ◆ Electric bus fleet.
- ◆ Expanding Link light rail.
- ◆ More bus stops.
- ◆ No need to buy a car.
- ◆ Don't need a driver's license to ride.
- ◆ Time to work or read while traveling.
- ◆ Can meet new people.
- ◆ Helpful for tourists.
- ◆ May reduce travel time.
- ◆ Connects people to businesses.
- ◆ More outdoor time.
- ◆ Access to recreation (concerts, games).
- ◆ Less runoff pollution.
- ◆ Better road safety.
- ◆ Access to trailheads.

EXTENSION ACTIVITY

Connecting Your Community

(Grades 6–12, 30–45 minutes)

In this activity, students will write a letter to King County Metro to advocate for their community's need(s) or write a letter in support of a Metro program that improves public transit accessibility. There are guiding questions for students to answer before writing their letters, students are provided with an optional template. There is also an option for students in grades 9–12 to submit their letters through the Metro webpage.

Materials

- ◆ Connecting Your Community worksheet
- ◆ Blank paper or digital format for letter writing
- ◆ Connecting Your Community letter template

Learning Prerequisites

Students should be familiar with:

- ◆ The ways in which public transportation can benefit communities
- ◆ Local impacts of climate change and how public transportation may reduce those impacts
- ◆ Identifying potential transit needs within respective communities

Activity Outline

1. Explain to students that they will be writing a letter to King County Metro and can choose between two options: write a letter of support for a Metro accessibility resource or program, or write a letter to advocate for a need they identify for their community.
2. Students will be working individually to write their letter. The instructor may choose to group them based on their letter choice.
3. For students in grades 6–8, there are guiding questions to answer before using a template to construct their letter.
4. For Students in grades 9–12, the instructor may also opt to guide students to the Comment Submission page on the King County Metro website. There, students can submit their advocacy letter.
 - a. Comment Submission link:
kingcounty.gov/en/dept/metro select "Contact us" from the menu.

Connecting Your Community

Answer the guiding questions below to help you plan for your community's needs. Then, using the template, write a letter to Metro to advocate for a particular action to improve public transit accessibility in your community, or write a letter of support for a service that Metro already offers. You may draw ideas from the list below.

Community Need	Metro Resources/Programs
Add a bus stop near a grocery store.	King County's Language Access Program.
Request extra buses on crowded routes.	Buses equipped with wheelchair lifts and ramps.
Better lighting at a bus stop.	Riding transit is free for youth 18 and younger.

Guiding Questions

1. What are some barriers people in your community may face accessing public transit? Consider location, language, disability, and other needs.
2. What is an action or service that could help address this issue of accessibility? Is there something Metro is already doing that may help?
3. Who does that action or service benefit? Why is it important for all community members to have equal access to Metro buses and public transit?

(Topic line)

(To whom it may concern:)

(Add your message here.)

(Sincerely,)

(Your name)

EXTENSION ACTIVITY

Alternative Advocacy

(Grades 9–12, 45–60 minutes)

In this activity, students will create a form of alternative advocacy in support of accessible public transit in their community. Students may choose from a poem, art piece, song, or any other creative outlet they choose. Students will use guiding questions to help them shape their final product. This activity could be done in the classroom, as a long-term project, or as a homework assignment.

Materials

- ◆ Alternative Advocacy worksheet

Learning Prerequisites

- ◆ Students should be familiar with the ways in which public transit can benefit communities.
- ◆ Students should be familiar with the local impacts of climate change and how public transit may reduce those impacts.
- ◆ Students should be able to identify potential transit needs within respective communities.

Activity Outline

1. Explain to students that they will be creating a piece of advocacy in support of accessible public transit in their community. The instructor may choose to lead a short discussion about the importance of public transit for communities by incorporating the following questions:
 - a. Why is transit important for communities?
 - b. What would it look like if everybody had access to public transit?
 - c. What are some benefits that public transit brings to your community?
 - d. Are there any ways public transit could further support your community?
2. Hand out the Alternative Advocacy worksheet. Students can work independently or in small groups.
3. Give students time to plan and create.
4. The instructor may opt for students to present their Alternative Advocacy pieces to the class, or do a gallery walk to put them on display.

Alternative Advocacy

Advocacy comes in many different forms. Written letters can be very effective, but movements often have poetry, spoken word, art, music, rap, sculpture, and other alternative ways to advocate for people or support an issue. In this activity, you will create your own form of alternative advocacy to help promote accessible public transit.

Answer the guiding questions below to help you create a piece of alternative advocacy in support of accessible public transit in your community. You may choose to create an art piece, write a song or poem, or come up with another method you think would have effective messaging.

Guiding Questions

1. What form of advocacy will you use? Music, visual art, spoken word?
2. Who is your audience? Who are you trying to mobilize? Who can make a difference?
3. What would your community look like if everyone had access to public transit?

Alternative Advocacy (continued)

4. What locations in your community should be connected to transit? Consider community assets such as parks, hospitals, and libraries.
5. What might **safe** and **comfortable** transit options mean for your community?
6. Why is access to public transit important for all individuals in your community?

SUPPORTING RESOURCES

Plan Your Ride Resource Guide



1. Get an ORCA Card

Youth 18 and younger should sign up online for a Free Youth Transit Pass (Youth ORCA card). Visit [FreeYouthTransitPass.com](https://www.freeyouthtransitpass.com).



If you don't qualify for the Free Youth Transit Pass there are many ways you can purchase an ORCA card:

- ◆ **Online:** for adult and senior ORCA cards, and information about reduced fares, visit [myORCA.com](https://www.myORCA.com)



Scan to order ORCA card.

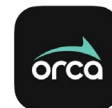
- ◆ **In person:** outlets, vending machines and customer service offices visit [myORCA.com/where-to-buy](https://www.myORCA.com/where-to-buy)

Phone: 888-988-6722



Scan to find locations to purchase ORCA card.

- ◆ **Get the myORCA app:** Manage your account from anywhere 24/7. The app is available on Apple iOS and Google Play Store.



2. Plan Your Trip Tools

- ◆ To look up specific routes, go to [King County Metro schedules and maps](https://www.kingcountymetro.net/schedules-and-maps)



Scan to look up transit routes.

- ◆ To plan a trip, go to [tripplanner.kingcounty.gov](https://www.tripplanner.kingcounty.gov)



Scan to plan a trip.

- ◆ You can also use other apps to plan your trip:



Google Maps



One Bus Away



Transit app

3. Riding the bus

Boarding:

- ◆ Remember to charge your phone before riding transit.
- ◆ If you have an ORCA card, have it ready. Make sure you are at the correct bus stop going in the correct direction.
- ◆ When the bus arrives, it will have its route number or letter and destination displayed on the front and side. Many different routes can come to one bus stop, so be sure to board the correct one!
- ◆ When you enter, there will be an ORCA card reader machine next to the bus driver. Tap your card and board the bus! Using a Youth ORCA card is highly encouraged, but if you are 18 or younger and don't have your card, you can show your ID or just board the bus.
- ◆ If you need to secure your bike to the front of the bus, make sure the driver sees you before using the rack.
- ◆ If you need to access priority seating, it is found near the front doors. If you need assistance with accessible seating, notify the driver.



Exiting:

- ◆ When you want to let the bus driver know your stop is next, pull the yellow stop cable that runs along both sides of the bus by the window, or press a red stop button on a pole.



- ◆ Once the bus comes to a complete stop, you may exit.
- ◆ Exit from the back of the bus when possible. If you need to use the doors by the front of the bus, that is okay too.
- ◆ If you are going to unload a bike from the bike rack at the front of the bus, make sure the driver sees you and knows you are unloading your bike.

4. Riding Link light rail

Boarding:

- ◆ If you are using an ORCA card, find a yellow machine and tap on before entering the station. If you do not have an ORCA card and are 18 years old or younger, you may just board the train.



- ◆ Know which direction you need to travel so you can go to the correct platform. (For the 1 Line, Lynnwood travels North and Federal Way Downtown travels South; for the 2 Line, Downtown Redmond travels North and South Bellevue travels South).
- ◆ Look for signs or listen for overhead announcements that tell you when the next train is arriving.
- ◆ If you have a bike or large luggage, identify the appropriate place in the train car for your items so that they are not in the way of other passengers.
- ◆ If you need to access priority or accessible seating, it is found near the doors.

Exiting:

- ◆ As your stop approaches, make your way towards the doors. The speakers and signs will announce which side of the train the doors will open on.
- ◆ After the train comes to a full stop and the doors open, you may exit.
- ◆ Get off at your station and follow signs for which cross streets the exit leads to.

SUPPORTING RESOURCES

Frequently Asked Questions

For more FAQs, visit FreeYouthTransitPass.com.

Can I bring a bike on the bus or Link light rail?

Yes, you can bring a bike on the bus or the light rail. The bus has spots on the front of the bus for you to secure your bike. Make sure the driver sees you before using the rack. The light rail has spaces inside the train cars to hang your bike so that they are out of the way. To learn more, visit King County Metro [Bikes & Transit](#) or [Sound Transit Bring your bike](#).



Can I eat on the bus or light rail?

No, please refrain from eating on public transit. You may drink from a covered beverage. Drinking alcohol is not permitted. You are permitted to eat outside of light rail stations and while waiting for buses. If you want more information, please read Metro's Code of Conduct at kingcounty.gov/metro/safety.



What do I do if I witness something unsafe on public transit? Who do I tell if I am being harassed?

Bus:

- ◆ If you see or experience a problem, please **tell the driver**. The role of the bus driver is that of a peacekeeper and not an enforcer. However, they can help determine what actions to take.
- ◆ If it's an emergency, call or text 911.
- ◆ In every case make sure you know your **route number, bus number, where your bus is currently, and where on the bus the problem is located**.

Link light rail:

- ◆ If you see or experience a problem on the Link light rail you can **alert security** if you see them on the train or on the platform. Transit security officers wear uniforms labeled "Transit Security".
- ◆ Platforms and trains have emergency intercom buttons that you can use to contact someone. See picture.
- ◆ You can also call or text **Sound Transit Security** at 206-398-5268.
- ◆ When you are reporting a problem, include the car number of the train you are riding in. It is located high on the wall at either end of the car. Include the direction that you are traveling in and your last stop. The text messages and phone line are monitored 24 hours a day.



If I have a disability, what are my additional transit options?

Whether it is taking a bus, planning a trip, or trying out one of our many Rideshare programs, Metro is committed to providing equal access to all its services.

To learn more about your transit options, contact [Accessible Services](#). Please call 206-553-3000 to be connected to a customer representative who can best support your transportation needs.

Transit Instruction is available to individuals with disabilities and seniors. To learn more about this free training service call 206-749-4242 or visit [Transit Instruction](#).

How do I get an ORCA card?

If you are 18 years or younger you qualify for the Free Youth Transit Pass (Youth ORCA card). Tapping a Youth ORCA card is highly encouraged. It allows transit agencies to better understand how many young people are riding transit, including where and when. For more information, visit [FreeYouthTransitPass.com](#). Using a Youth ORCA card is highly encouraged, but if you don't have one with you, you can show your ID or just board.



If you are older than 18, you can go to [myORCA.com](#) to get more information or use the resource guide to help you get an ORCA card.

Can I use my ORCA card and then pass it to someone else who does not have one?

No. To ride for free, each rider 18 and younger must either use their own ORCA card, show their student ID, or just get on board. Adults 19 and older must pay their own fare.

What should I do if I lose my ORCA card?

If you do not have a myORCA.com account, order a new Youth ORCA card for free at [myORCA.com/buy-online](#).

If you have a myORCA.com account, log into your account. In the "My Cards" menu, click "Replace Card", then select the card you wish to replace.

While you are waiting for your new card in the mail, you can still ride for free by showing your student ID or just getting on board.

Can I use my ORCA card on the ferries?

You can use an ORCA card to ride the King County Water Taxi. Please visit the website for more information regarding schedules and routes: [kingcounty.gov/depts/transportation/water-taxi.aspx](#).

Youth 18 and younger also ride for free on Kitsap Transit Fast Ferries and Washington State Ferries as a walk-on passenger. You can use your ORCA card or get a free ticket at a ticket booth. Teenagers driving a vehicle need to pay the fare.



Where can I use my ORCA card to ride for free?

You can use your ORCA card to ride for free on participating ORCA agencies. This includes, but is not limited to, King County Metro, Sound Transit, Community Transit, Everett Transit, Kitsap Transit, Pierce Transit, Seattle Streetcar, the King County Water Taxi, Washington State Ferries, and the Seattle Monorail. To learn more, visit [FreeYouthTransitPass.com](#).



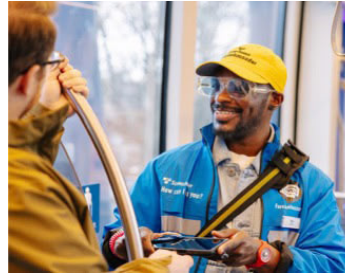
Once you turn 19 years old you can load money or passes onto your ORCA card to pay your transit fares on any of these services.

What kinds of reduced fare options are available for people 19 and older?

Reduced fares are available for some adults and seniors depending on their income, age, and/or disability. Visit the [Reduced Fares webpage](#) for more information.

How does fare enforcement work?

Metro Fare Enforcement Officers or Sound Transit Fare Ambassadors may ask riders for proof of fare payment. Youth 18 and younger ride for free and can present their tapped Youth ORCA card. If they don't have a Youth ORCA card, they may receive information on how to get one. Youth ride for free and will never receive a warning or fine.



SUPPORTING RESOURCES

Transit Accessibility and Equity

Whether it is taking a bus, planning a trip, or trying out one of our many Rideshare programs, Metro is committed to providing equal access to all its services.

We know that disabilities affect each customer's trip in different ways. Contact Metro's customer service office and talk with a customer service representative to get started. King County Metro can help you find the service you need or take a complaint if you feel they are not providing you with equal access.

Wheelchair Safety

kingcounty.gov/depts/transportation/metro/about/safety-security.aspx#wheelchair



- ◆ All Metro buses are equipped with lifts or ramps at the front door.
- ◆ Each bus stop is clearly identified for its accessibility.
- ◆ Alert the driver to deploy the lift or ramp.◆
- ◆ Wheelchair and scooter users have designated areas reserved at the front of the bus.
- ◆ Please allow the driver to secure wheelchairs.
- ◆ Metro's Rider Information Office can help you determine the level of accessibility at a specific stop.
- ◆ Metro's Online Trip Planner lets you plan trips requiring accessible stops.

Metro Accessibility

kingcounty.gov/en/dept/metro/rider-tools/how-to-ride/accessibility-on-buses



- ◆ All Metro buses have wheelchair accessible lifts and ramps.
- ◆ Priority seating is available for passengers who have trouble standing when the bus is in motion.
- ◆ If asked to do so, bus drivers will announce stops, intersections, and transfer points to help passengers recognize where they are.
- ◆ Reserved spaces are available for riders who use mobility devices, such as wheelchairs or scooters.
- ◆ All Metro buses have bike racks located on the front of the bus.
- ◆ A Metro bus ride is FREE for anyone 18 years or younger, and costs \$3 per ride for adults.
- ◆ Transit maps are available in person at bus stops and on buses as well as online.
- ◆ Maps and routes can be translated to more than 40 languages using the King County Language Access Program.

SUPPORTING RESOURCES

What is Climate Change?

For more information, visit: kingcounty.gov/services/environment/climate.aspx.



Climate change is one of the major environmental and economic challenges for our generation and the actions we take today will shape the health, safety, economy, and environment of tomorrow. King County is committed to taking bold action on climate change by reducing greenhouse gas emissions, preparing for climate change impacts, and supporting resilience in communities disproportionately impacted by climate change.

Greenhouse gases (GHG), are heat-trapping gases that naturally occur in the atmosphere and help regulate the temperature of the planet. Without naturally occurring GHGs, Earth's average temperature would be near 0°F (or -18°C) instead of being a much warmer average temperature at 59°F (or 15°C).

Changes in climate are connected to changing concentrations of greenhouse gases (GHGs) in the atmosphere which trap heat and regulate the temperature of the planet. Some of the most important GHGs are carbon dioxide (CO₂), methane (CH₄), and water vapor. Human activities like driving cars, flying planes, and burning fossil fuels such as coal and oil, release excess GHGs into the earth's atmosphere. This imbalance is causing global average temperatures to rise and ocean chemistry to change, resulting in unprecedented changes around the world, including here in King County.

There is evidence that increases in carbon dioxide and other GHGs in the atmosphere are causing the climate to change and 97% of climate scientists have concluded that human activities are the reason for these changes. As a result, climate change is causing more heat waves, more extreme weather events, higher sea levels, major rainfall and storm pattern changes, disappearing glaciers, ocean acidification, and species extinction and range change. These environmental changes directly translate into economic, public health, and safety issues that affect people and communities in a variety of ways.

King County and Climate Change

For more information, visit: <https://kingcounty.gov/en/dept/executive/governance-leadership/climate-office/strategic-climate-action-plan>



Climate action, both to reduce GHG emissions and prepare for the impacts of climate change, is a long-standing and central priority for King County.

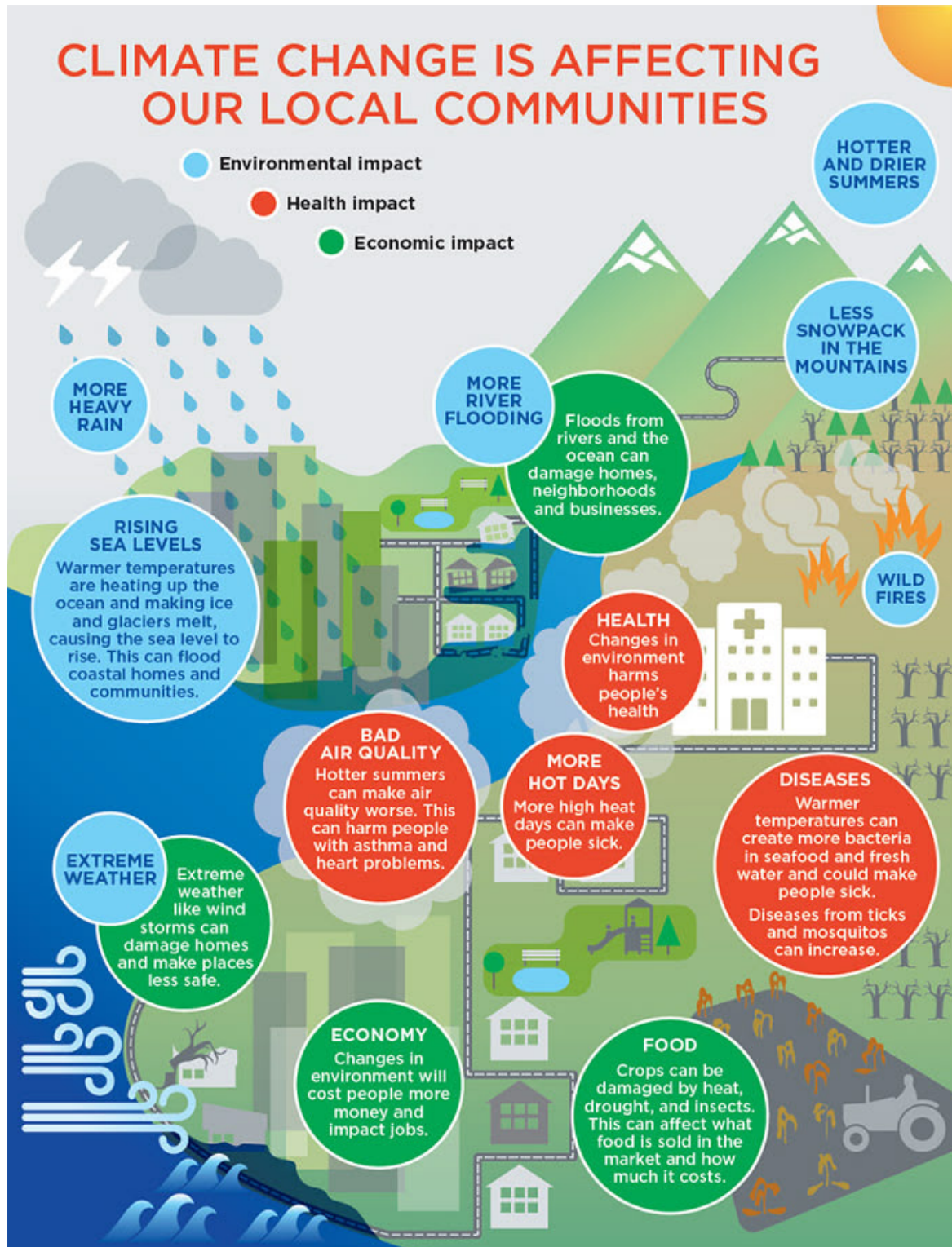
Climate change threatens the health and safety of people, the economy, and environment, both locally and globally. In King County, we are already seeing the impacts of a changing climate including: warming temperatures, warming and acidifying marine waters, rising sea levels, increasing flooding risk, decreasing mountain snowpack, and less water in the summer.

In 2023, the top sources of greenhouse gas (GHG) emissions in King County are from (1) energy used to heat, cool, and power homes and buildings and (2) fossil fuels used for transportation. An additional significant source of GHG emissions is local consumption of goods and services, including the energy needed to produce, transport, use, and dispose of goods and services supporting county residents and businesses.

While people are responsible for creating the climate problem, people also hold the key to the solution of our problem. By making small changes in our everyday actions we can reduce the amount of carbon dioxide (CO₂) that we create and collectively tackle climate change.

King County's overall goal is to reduce county-wide GHG emissions, compared to a 2007 baseline, by 50 percent by 2030, 75 percent by 2040, and 95 to 100 percent by 2050.

For more information on King County's transition to a zero-emissions transit fleet, please visit: <https://kingcounty.gov/en/dept/metro/programs-and-projects/zero-emissions>.



SUPPORTING RESOURCES

Glossary

Accessible: when a place, type of transportation, or event is easy to get to, especially for people who have a disability.

Arrival: when you get to the place you are traveling to.

Atmosphere: the layer of air and gases that surround Earth and extend into space.

Board: to get onto a bus, train, or other form of transportation.

Bus: a large motor vehicle carrying passengers by road, typically on a fixed route.

Bus schedule: a list of times showing when buses will arrive and depart.

Bus stop: a place where a bus regularly stops, usually marked by a sign.

Climate: the weather conditions in a certain area over a long period of time; can include regular seasonal changes.

Climate change: the change in regional and global weather patterns over time.

Code of conduct: a set of rules that members of a business, school, organization, or service follow to make sure everyone is upholding the values of that community.

Crosswalk: an intersection or area of road where pedestrians are encouraged to cross/a signal letting pedestrians know it is their turn to cross the road or intersection.

Departure: leaving a place to go on a trip.

Depot: a place where buses or trains are kept and maintained and from which they leave for service.

Destination: the place to which people travel or send goods.

Electrification: the conversion of a machine or system to the use of electrical power.

Emissions: substances released into the air due to burning or making something.

Fare: the money a passenger on public transportation pays to ride.

Ferry: a boat for carrying passengers, bicycles, and sometimes cars across waterways.

Fossil fuels: energy-rich substances formed from the remains of organisms that lived millions of years ago and have been buried underground; examples include oil, natural gas, and coal.

Global warming: the increase in average global temperatures over time due to burning fossil fuels and releasing buried carbon into the atmosphere.

Greenhouse effect: the increase in air temperature due to the sun's energy getting trapped in the atmosphere.

Greenhouse gas: a gas, such as carbon dioxide or methane, that reflects some of the sun's energy back to earth and causes earth's temperatures to rise.

King County Metro: Metro is the Puget Sound region's largest public transit agency.

Link light rail: a specialized railroad and train cars for moving people within the community.

Operator: a person who operates, or drives, the bus, train, or other public transportation.

ORCA card: a card that can be used to pay fare on many different transit systems, including King County Metro.

Paratransit: specialized vehicles used to transport people with disabilities.

Passenger: a traveler on public transportation other than the driver, or crew.

Pedestrian: a person walking along a road.

Public transit: buses, trains, subways, and other forms of transportation that move people, usually run on fixed routes, and are available to the public.

Route: the path that a bus, train, or other form of transportation follows from one point to another.

Safety: the rules, procedures, and behaviors used to help everyone feel secure and welcome.

Timetable: a list of the times that buses, trains, and other forms of transportation are predicted to arrive at stops along their route.

Transfer: when passengers switch from one transit vehicle or route to another.

Water taxi: a boat used to transport passengers across waterways.

Weather: the day-to-day conditions of the atmosphere that affect a specific place; especially temperature, cloudiness, and rainfall.

TEACHER TOOLS | WORKSHEET ANSWER KEY

Consider the Climate

Fact	Data Point
A single commuter who switches their commute from a private vehicle to public transit can reduce CO ₂ emissions by _____pounds in a year.	4,800
In King County from 2007 to 2019, community members reduced their personal emissions by ____%.	16
A battery electric bus reduces greenhouse gas emissions by ____% compared to a diesel bus.	100
Public transit in the United States helped prevent _____ miles of private vehicle travel in 2018.	148,000,000,000
Each new battery-electric bus costs over \$____, and requires specialized chargers to “fuel” the buses with electricity.	\$1,000,000
King County Metro maintains more than ____ routes including buses, street cars, and water taxis.	150
Transportation accounts for ____% of US greenhouse gas emissions, making it the largest contributor.	28
Individuals who use public transit regularly save more than \$ ____ a year.	9,738
In 2018, public transit in the United States saved 63 million metric tons of CO ₂ which is the equivalent of taking _____ coal power plants offline for a year.	16
One metric ton of greenhouse gas emissions weighs the same as ____ bricks.	400

Sources:

United States Environmental Protection Agency, Fast Facts on Transportation Greenhouse Gases Emissions [epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions](https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions)

Center for Climate and Energy Solutions [c2es.org/content/reducing-your-transportation-footprint/](https://www.c2es.org/content/reducing-your-transportation-footprint/)

US Department of Transportation [transportation.gov/sites/dot.gov/files/2024-07/DOT%20Report%20to%20Congress%20Decarbonizing%20US%20Transportation%20072924%20final.pdf](https://www.transportation.gov/sites/dot.gov/files/2024-07/DOT%20Report%20to%20Congress%20Decarbonizing%20US%20Transportation%20072924%20final.pdf)

Massachusetts Institute of Technology, Climate Portal climate.mit.edu/ask-mit/how-much-ton-carbon-dioxide

King County Strategic Climate Action Plan kingcounty.gov/scap

Presentation Slides: Module 3

The QR code to the right will connect you to a deck of presentation slides. The information can also be found online at kingcounty.gov/metro/transiteducation. It can be used to support the activities and discussions laid out in this module.



Key messages

- ◆ King County Metro is the Puget Sound region's largest public transportation agency. Metro provides bus, paratransit, rideshare, Metro Flex, and water taxi services, and operates Seattle Streetcar, Sound Transit Link light rail, and some Sound Transit Express bus services.
- ◆ Public transit has a positive impact on the environment by reducing greenhouse gas emissions caused by transportation and can help to minimize future impacts of climate change on local communities. Climate change impacts may not be felt equally across King County.
- ◆ Public transit routes help connect community members with a variety of destinations. King County Metro is dedicated to being accessible to all members of the community. Metro provides a variety of services to accommodate the specialized needs of community members and help individuals travel around King County.
- ◆ Public transit offers rewarding career opportunities. Across Metro, dedicated professionals serve in a variety of fields: administration, employee services, engineering, facilities, finance, law, marketing and communications, outreach, project management, safety, transit planning and many more.
- ◆ In Washington State, youth 18 and younger can ride most transit for free! Youth are highly encouraged to use a Youth ORCA card. Youth without a Youth ORCA card can show the driver a student or government ID, or just board.

Vocabulary

- | | | |
|------------------|--------------------------------|------------------|
| ◆ Accessibility | ◆ Environmental sustainability | ◆ Paratransit |
| ◆ Atmosphere | ◆ Fossil fuels | ◆ Public transit |
| ◆ Climate | ◆ Global warming | ◆ Weather |
| ◆ Climate change | ◆ Greenhouse effect | |
| ◆ Emissions | ◆ Greenhouse gases | |

Presentation slides

The slides are designed as a supplemental tool to help facilitate class discussions and activities. The goal is to introduce students to the King County Metro Youth Mobility Program.

Instructor notes

After sharing the slides with your class, you may opt to facilitate further class discussions or use any of the activities included in this module.

After exploring the slides and module activities with your classes you may want to check out the other module packets. There are three modules in total:

- ◆ Module 1: Get to Know Metro
- ◆ Module 2: Safety and Riding Right
- ◆ Module 3: Sustainability and Community Connections