

Sustainability and Community Connections

PRIMARY MODULE 3

Grades 2–5

Overview

Everything you need to introduce students in grades 2–5 to the importance of transit in their communities, the impacts of public transportation on climate change, and rider accessibility. Includes a differentiated lesson plan, example activities, and a supporting PowerPoint and video.





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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. Higher transit ridership leads to:

- ◆ Cleaner air and water
- ◆ Reduced traffic on local roadways
- ◆ Deeper community connections and increased access to 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

Most primary students will ride with others, so the focus of the modules is on helping younger students understand the basic functions of the transit system. For younger students, knowledge of transit systems builds excitement around using transit in their communities, encouraging more household ridership. As students get older, secondary modules shift the focus to independent ridership skills, such as trip planning.

Primary Module 1: Get to Know Metro is an introduction to public transit for grades 2–5. In this module, they will learn about the different kinds of transit in their communities and practice basic ridership skills.

Primary Module 2: Safety and Riding Right focuses on safety considerations relevant to younger students, including identification of safety resources and safe ridership practices.

Primary 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. As they grow into their independence in middle and high school, this context will help them understand why they might want to ride and support public transportation.

Student Outcomes

By the end of Module 3, students in grade 2–3 will:

- ◆ Develop a baseline understanding of what climate change is and how King County is addressing it.
- ◆ Identify a variety of services King County Metro offers our diverse community.
- ◆ Understand a variety of transportation options in their neighborhood as well as advantages and challenges for each.

By the end of Module 3, students in grade 4–5 will do all of the above, plus:

- ◆ Understand some of the global and local impacts of climate change.
- ◆ Deepen their understanding of diverse transportation needs across their community and how King County Metro is addressing these needs equitably.



PLANNING GUIDE

How to Use this Module

This module is designed to be taught in 60–90 minutes with a focus on flexibility for the needs of your classroom. There are additional extension activities for both grades 2–3 and grades 4–5.

There are three primary activities in this module. For grades 2–3, *The Future of Public Transit*, students will learn about a variety of systems Metro transit uses to equitably move community members as well as reduce their impact on our climate. Afterwards, students will design their own form of public transit, including features they think would make a positive impact on their community as well as the environment.

In the primary activity for grades 4–5, *Climate and Your Community*, students will learn about the global and local impacts of climate change. Afterwards, students will practice their research skills to discover ways King County Metro is addressing those impacts.

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 and Module 2: Safety and Riding Right?
- ◆ Do my students ride public transit? Why or why not?
- ◆ What do my students already know about sustainability and climate change?
- ◆ How familiar are my students with the diversity of transportation needs in their communities?



PRIMARY ACTIVITY

Totaling Up Transit

(Introductory, 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 introductory activity is designed for classes most comfortable with simple addition and needing assistance with division or visuals to evaluate math problems. 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 (Introductory, Regular, Advanced)
- ◆ Calculator
- ◆ Optional – Measuring tape

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. Informational video and 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 can have on traffic and our environment. Review the different forms of transit available in the region and discuss the impacts transit can have on the environment and people. Information can be found in the instructor slides or video in Teacher Tools.
2. Students will work through the questions provided on the worksheet. Please provide the class with the developmentally appropriate worksheet for them. Some classes may need additional support, and some will need a calculator to assist them with the math questions. Instructors may choose to complete the worksheet activity as a class to demonstrate the math skills and equations for students.

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 our environment and our community.

Additional Activity

Instructors can help students visualize the space needed on our roads and in our community to accommodate cars. It is recommended to use a large open area for this activity.

1. Have students spread out in a single row at the distance they think they would need if each of them represented their own car on the road. Go around with the measuring tape and help adjust them as needed. The average passenger car is around 15 feet long and 6 feet wide.
 - ◆ Discuss how much space cars take up and why some roads might have more traffic than others. How might reducing cars on the road help reduce traffic?

You can replicate the activity by having students adjust to pretend they are on a two-lane or three-lane road.

- ◆ Discuss how the one-lane road had more traffic but used less space than the two- or three-lane road. How might reducing cars on the road help reduce traffic?
2. Have students pretend to park their cars. Have students line up in their imaginary cars side by side a few rows deep, as if they were in a parking lot. Use the measuring tape to help adjust them as needed. The average parking space is 18 feet long and 9 feet wide.
 - ◆ Discuss where they have seen parking lots. How much space would they need for everyone at their school to have a parking space?
 - ◆ How might parking lots impact a community? Would they rather have a playground or a parking lot?
 - ◆ If we had fewer cars what are some ways we could use spaces like parking lots and parking garages?
 3. Have students pretend to board a 40-foot Metro bus. A 40-foot bus can carry 53–63 people at a time.
 4. Discuss the impact transition from single occupancy vehicles for the whole class to transit. Did the class save space? What other impacts might using transit have?

WORKSHEET

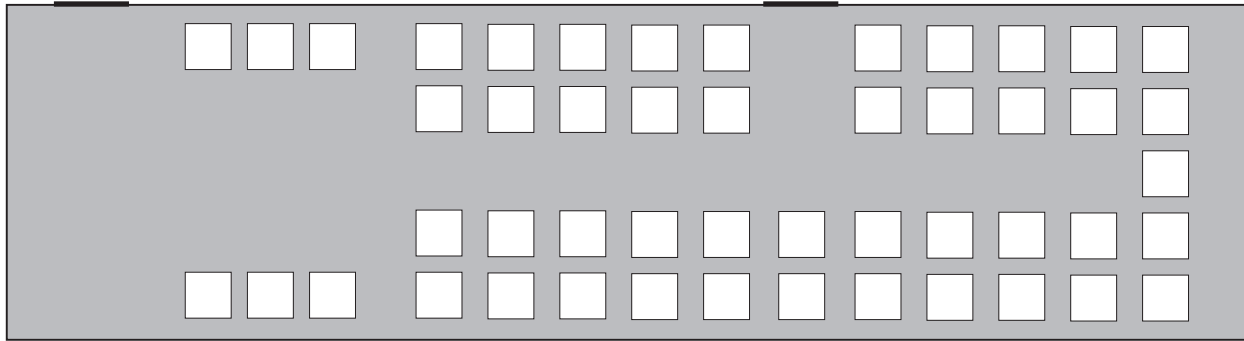
Totaling Up Transit

Introductory

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

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

Fill in the bus below with an X mark to show a classmate on the bus.



3. Did your whole class fit on one 40-foot bus? _____
4. Other than Metro buses what are some other ways we can reduce the number of cars on the roads?

5. Why do you think we want fewer cars driving and parking in our community?

Name: _____

WORKSHEET

Totaling Up Transit

Regular

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

1. How many **people** are in your class? _____ people
2. If every person in your class rode in their own car to school how many **cars** would we need? _____ cars
3. One 40-foot bus can transport 53 people. How many **buses** would we need to transport just your class?
_____ buses (Hint, use your answer for #2 and divide by 53).
4. How many **cars** could we keep off the road if the class all rode transit? _____ cars
5. How many **people** are in your school? _____ people
6. If every person in the school rode in their own car how many **cars** would we need? _____ cars
7. How many **buses** would we need to transport everyone to school? _____ buses
8. How many **cars** could we keep off the road if the whole school rode transit? _____ cars
9. Other than Metro buses what are some other ways we can reduce the number of cars on the roads?

10. Why do you think we want fewer cars driving and parking in our community?

WORKSHEET

Totaling Up Transit

Advanced

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

1. How many **people** are in your class? _____ people
2. 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 releases an average of .89 pounds of carbon dioxide (CO₂) per mile. Driving 10 miles releases 8.9 pounds of CO₂.

3. If the average person in your class travels 6 miles to school and 6 miles home how many pounds of CO₂ would the class release each day if everyone rode in their own car? _____ pounds of CO₂
Hint, use your answer for #2 multiplied by total miles traveled, then multiply that by .89 pounds of CO₂.
4. How many **days** are there in a school year? _____ days
5. How many **pounds** of CO₂ would the class release 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.

6. How many **tons** of CO₂ would the class emit over one school year? _____ tons of CO₂
Hint, use your answer in #5 and divided by 2,000.
7. One electric 40-foot Metro bus can transport 53 people. How many buses would we need to transport just your class? _____ buses
8. 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
9. Other than buses, what are some other ways we can help reduce the number of cars we use?
10. What are some other benefits to using fewer single-passenger cars?

PRIMARY ACTIVITY

The Future of Public Transit

(Grades 2–3, 30–45 minutes)

In this activity, students will learn about a variety of ways Metro supports the communities of King County. Afterwards, students will design their own form of public transit, including features they think would make a positive impact on their communities as well as the environment.

Materials

- ◆ The Future of Public Transit worksheet
- ◆ True/false statements (see below)

Learning Prerequisites

- ◆ Students should be familiar with information from Module 1: Get to Know Metro and Module 2: Safety and Riding Right.
- ◆ Students should understand how transit and alternative forms of transportation can reduce environmental impacts and benefit the community. Informational video and slides can be found in Teacher Tools.

Activity Outline

1. King County Metro offers a variety of systems and accessibility options to help move people in our communities. To explore these, lead the class in a true/false game using the included statements.
 - a. Read each statement aloud for the entire class. Students should respond whether they think the statement is true or false using some form of indication (hand raising, thumbs up vs. thumbs down, move to a true or false side of the classroom).
2. After the true/false game, explain to the class they will imagine what they think the future of public transportation should look like. It is up to the instructor whether students do so in pairs, small groups, or individually.
3. Introduce the activity with any parameters the instructor sees fit.
 - a. For example, should their public transit modifications be grounded in reality, or can students design transportation that uses fairy dust to go to the moon?
4. After parameters and instructions have been communicated, hand out The Future of Public Transit worksheets for students to complete.
5. After students have completed their worksheets, encourage them to share their ideas with the class and discuss. If desired, the class can vote for their favorite transit design or feature.

True/False statements:

- ◆ Metro buses can kneel, or drop lower to the ground, to help people board. [TRUE - the buses can lower themselves closer to the curb to help people board.]
- ◆ Some Metro buses are powered by electricity, which is cleaner for our air than gasoline. [TRUE - The Goal is that by 2035 all Metro buses will be electric.]
- ◆ If you, a student, took a Metro bus today, you would have to pay money. [FALSE - Anyone 18 years and younger can ride transit for free.]
- ◆ Metro does not give discounts to community members with disabilities. [FALSE - Regional Reduced Fare Permits are available for riders with disabilities that qualify under the Medical Eligibility Criteria.]
- ◆ All pets are allowed on Metro buses. [FALSE - Registered service animals are allowed on Metro. Dogs may ride at the discretion of the operator.]
- ◆ If you are eligible for the ADA Paratransit Program you can request rides on Access. [TRUE - The shuttle will take you anywhere a Metro bus, Seattle streetcar or Sound Transit light rail goes at that time and on that day of the week.]
- ◆ King County has a goal of replacing all of their gas-powered buses with electric powered buses. [TRUE - King County hopes to accomplish this by the year 2035.]
- ◆ Most of King County Metro's trolley buses are powered by electricity. [FALSE - All of the trolleys are already electric.]

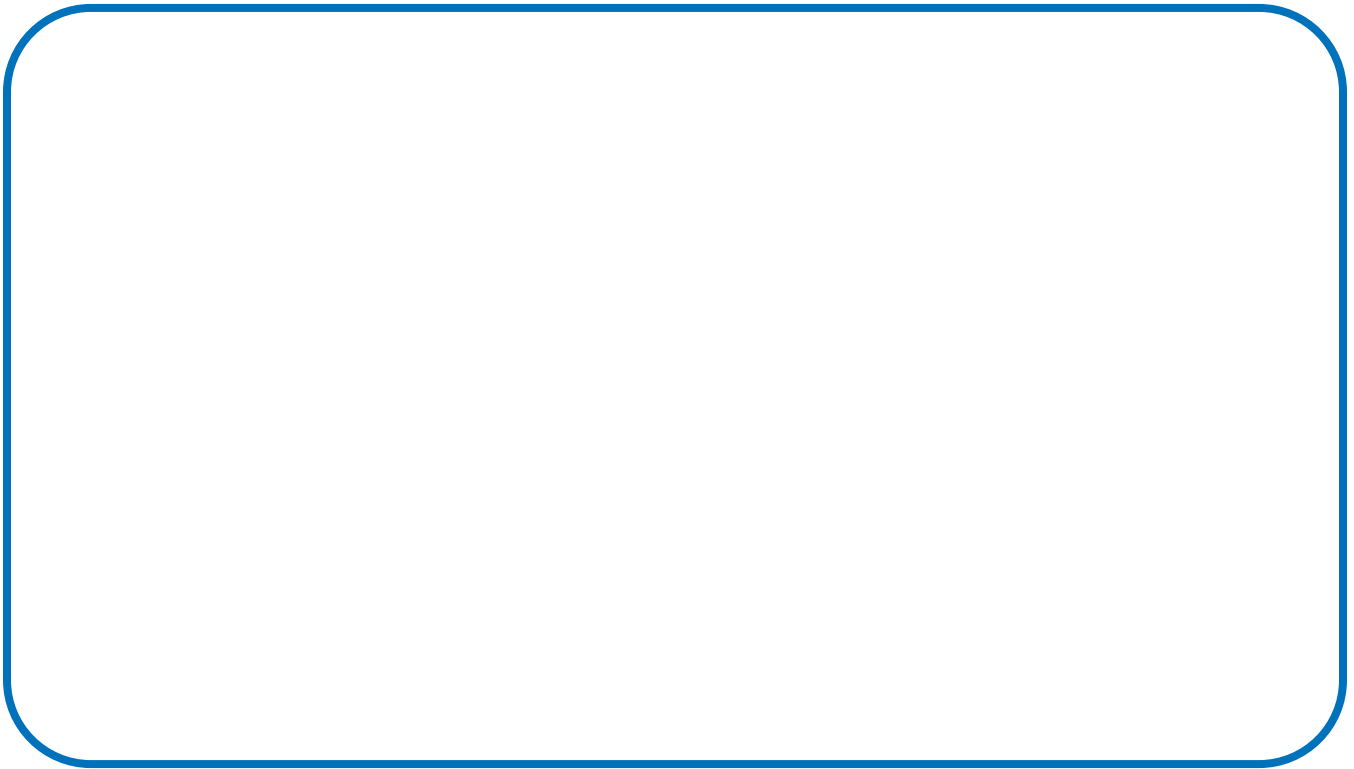


Name: _____

WORKSHEET

The Future of Public Transit

Using what you know about public transit, design the transit system of the future. The transit system you design should address pollution and community access. Draw your transit system in the square and answer the questions below.



1. What does your transit system use as a form of power?

2. Where does your transit system go?

3. How do people access your transit system?

PRIMARY ACTIVITY

Climate and Your Community

(Grades 4–5, 30–45 minutes)

In this activity, students will learn about climate change, the global and local impacts of climate change, and ways King County Metro is addressing this issue.

Materials

- ◆ Metro Module 3 presenter slides or video
- ◆ Internet access (computers or tablets)
- ◆ Climate and Your Community worksheet
- ◆ Climate Change Information worksheet (see Supporting Resources)

Learning Prerequisites

- ◆ Students should be familiar with King County public transit via Module 1: Get to Know Metro and Module 2: Ride Right and Transit Safety.
- ◆ Students should understand school internet-use rules and expectations.

Activity Outline

1. Using the Metro Module 3 presenter slides or video, lead a class discussion regarding climate change. For background information about climate change and King County's climate goals, see the Supporting Resources section of this module.
2. When the discussion is complete, introduce students to the worksheet activity. Students may work together in pairs or individually depending on instructor preference.
 - ◆ If desired, instructors may opt out of the student web search and instead, pass out the What Is Climate Change? information guide found in the Supporting Resources section of this module. This contains all of the information needed to complete the worksheet without using kingcounty.gov.
 - ◆ If using the web-based activity, distribute internet-capable devices and Climate in Your Community worksheets to each student or pair.
 - ◆ Direct students to the kingcounty.gov website.
 - ◆ Using the search bar in the top-right corner of the webpage, students should use their research skills to explore the county website. Their goal is to discover how King County is addressing the issue of climate change and working to reduce their climate impact using Metro systems.
 - ◆ Allow students time to explore the website and answer the questions on the Climate and Your Community worksheet. Answers for the worksheet can be found in the Supporting Resources section of this module.

WORKSHEET

Climate and Your Community

King County is committed to taking action on climate change by reducing greenhouse gas emissions, preparing for climate change impacts, and supporting communities already impacted by climate change.

Using your research skills and the kingcounty.gov website, explore how King County Metro is helping to reduce our community's climate impact and answer the following questions.

1. Fill in the blanks: King County's Strategic Climate Action Plan (SCAP) is making King County more

_____, _____, and _____.

2. What does King County's SCAP goal mean to you?

3. What are three ways King County is addressing climate change?

4. How will the adoption of electric buses help reduce carbon dioxide (CO₂) in our atmosphere?

5. When does King County hope to reach their goal of having a 100% electric bus fleet?

Climate and Your Community (continued)

6. Rank the options below from largest possible climate impact to the smallest. (1 = least, 2 = some, 3 = most)

_____ Riding an electric bus

_____ Riding in a car

_____ Riding a bike/walking

7. Why did you rank the options in question six the way you did?

8. List three questions you still have about climate change.

1. _____
2. _____
3. _____



EXTENSION ACTIVITY

Transit Maze

(Grades 2–3, 15–20 minutes)

In this activity, students will think about a variety of transportation options in their community as well as advantages and challenges for each.




Materials

- ◆ Transit Maze worksheet
- ◆ Class discussion prompts

Learning Prerequisites

- ◆ Students should be familiar with King County public transit via Module 1: Get to Know Metro and Module 2: Safety and Riding Right
- ◆ Students should be familiar with the idea of sustainability and the ways in which Metro can impact the environment and the community.

Activity Outline



1. Engage in a class discussion using the following prompts:
 - ◆ What are different ways you can get from one place to another? (walk/run, bike, personal car, rideshare services, taxi, plane, helicopter, submarine, Metro bus, Link light rail, Metro water taxi, ferry, or boat)
 - ◆ How many types of transportation can you think of in your neighborhood?
 - ◆ How many of you [students] have ever ridden on a Metro bus? Link light rail? Water taxi?
2. Lead a class discussion about the many ways to get from one place to another. These forms of transportation all have individual advantages and challenges. Choosing a mode of transportation depends on where you're going, how fast you want to get there, and how much money you want to spend.
3. Introduce the Transit Maze worksheet. Explain that each image to the left of the maze represents a different form of transportation present in their community that students can use to get to school. Students should complete all three maze paths, each of which ends at school.
 - ◆ Note, in the maze, passing over the () means you are spending money.
 - ◆ Note, in the maze, passing over the () means you're releasing pollutants and greenhouse gases into the air.
 - ◆ Note, in the maze, passing over the () means you use your free youth Orca card.

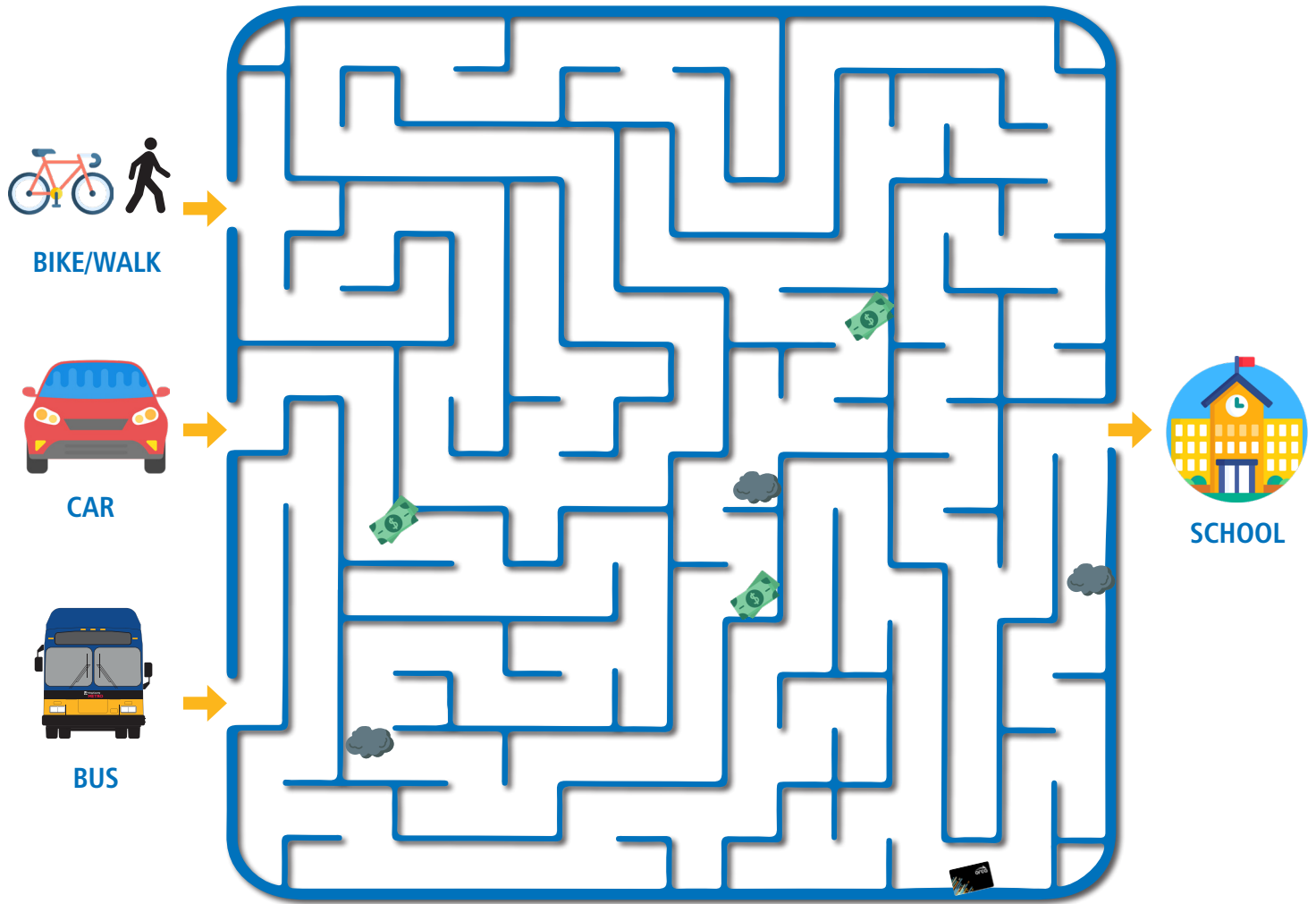
4. Once students have completed the maze, discuss the advantages and challenges of each form of transportation.
- ◆ Metro bus: Took the longest route to get to school, but was faster than a bike and doesn't cost or pollute as much as a car.
 - ◆ Bike/Walk: Took the longest amount of time to get to school, but it was free and emitted no pollution.
 - ◆ Car: Took the shortest amount of time to get to school, but was the most expensive option and emitted the most pollution.



WORKSHEET

Transit Maze

Using the maze below, find a route to school for all three forms of transportation (bike/walk, car, and Metro bus). After completing the maze, notice how much money () it cost you as well as how much air pollution () you created using each form of transportation. Then, answer the questions on the worksheet.



How much did it cost?

_____ 

_____ 

_____  (Free for youth!)

How much air pollution?

_____ 

_____ 

_____ 

Transit Maze (continued)

1. Which form of transportation created the least air pollution?
2. Which form of transportation created the most air pollution?
3. Which form of transportation do you think might be the fastest? Why?
4. Which form of transportation cost the most money?
5. Which form of transportation cost the least amount of money?
6. Which form of transportation would you take to get to school quickly, while not creating too much pollution or spending lots of money?

EXTENSION ACTIVITY

Accessibility Matching Game

(Grades 2–5, 10–15 minutes)

In this activity, students will match each Metro rider to the Metro service that addresses their transit access need.

Materials

- ◆ Accessibility Matching Game worksheet

Learning Prerequisites

- ◆ Students should be familiar with King County public transit via Module 1: Get to Know Metro and Module 2: Safety and Riding Right.
- ◆ Students should be familiar with the idea of accessibility and in which Metro is working to help all community members use transit.

Activity Outline

1. Lead a class discussion about accessibility using the following prompts:
 - ◆ What is accessibility? What does it mean if something is accessible for everyone?
 - ◆ What kinds of access needs do you think Metro should plan for in their public transit?
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.
3. Hand out the Accessibility Matching Game worksheets and allow students time to complete the game.



WORKSHEET

Accessibility Matching Game

Match each Metro rider to the Metro service that addresses their transit access need.



How can I board the bus?



I have a hard time standing on a moving bus. What can I use?



I cannot see where the bus is stopping. How do I know if I'm at my stop?



When I'm on the bus, where should I sit?



I rode my bike to the bus stop. Where can I put my bike when the bus arrives?



I live far away from the city in a suburban neighborhood. Can I still access Metro buses?



I don't have a lot of money to spend. Can I afford to ride Metro transit?



I don't have a smartphone or computer. How can I plan a trip on Metro transit?



My dad doesn't speak English. How can he plan a trip with Metro?



I am trying to reduce the amount of air pollution I create. Is riding Metro a good solution?

Transportation accounts for nearly half of all greenhouse gas emissions in Washington. By taking the bus, carpooling, riding your bike, or walking, you could reduce the amount of air pollution you produce.

If asked to do so, bus drivers will announce stops, intersections, and transfer points to help passengers recognize where they are.

Metro has over 100 bus routes that serve cities and suburbs.

Transit maps are available in person, at bus stops, and on buses, as well as online.

A Metro bus ride is FREE for anyone 18 years or younger, and costs \$2.75 per ride for adults. Discounted fares may be available for adults.

Maps and routes are translated into more than 40 languages.

Priority seating is available for passengers who need to have access to a seat.

All Metro buses have bike racks located on the front of the bus.

Reserved spaces are available for riders who use mobility devices, such as wheelchairs or scooters.

All Metro buses have wheelchair accessible lifts and ramps.

EXTENSION ACTIVITY

Climate Change Coloring



(Grades 2–5, 15–20 minutes)

Edit to In this activity, students will discuss the basics of climate science and color a worksheet to help visualize the role of transit to reduce greenhouse gas emissions.

Materials

- ◆ Climate Change Coloring worksheet
- ◆ Metro Module 3 PowerPoint
- ◆ Classroom projection system

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 the idea of sustainability and climate change.

Activity Outline

1. Using the Metro Module 3 slides or video found in Teacher Tools, ask students what they already know about climate change. Additional information can be found in the Supporting Resources.
2. Ask students what they already know about climate change. After hearing some answers, use PowerPoint slides 5–14 to help lead a brief, high-level discussion about climate change. For background information regarding climate change, please see the Teacher Tools section of this Module.
 - ◆ Slide 5: Climate Change: What do you know?
 - ◆ Slide 6: Climate Change: Weather vs. Climate
 - ◆ Slide 7: Climate Change: What is it?
 - ◆ Slide 8: Climate Change: How does it work?
 - ◆ Slide 9: How does Climate Change impact where you live?
 - ◆ Slide 10: Where do GHG's come from?
 - ◆ Slide 11: Transportation Creates Greenhouse Gases
 - ◆ Slide 12: Transportation Creates Greenhouse Gases
 - ◆ Slide 13: Transportation Creates Greenhouse Gases
 - ◆ Slide 14: Metro and Climate Change
3. After the class discussion is complete, hand each student a Climate Change Coloring worksheet for them to color as they wish.

Name: _____

WORKSHEET

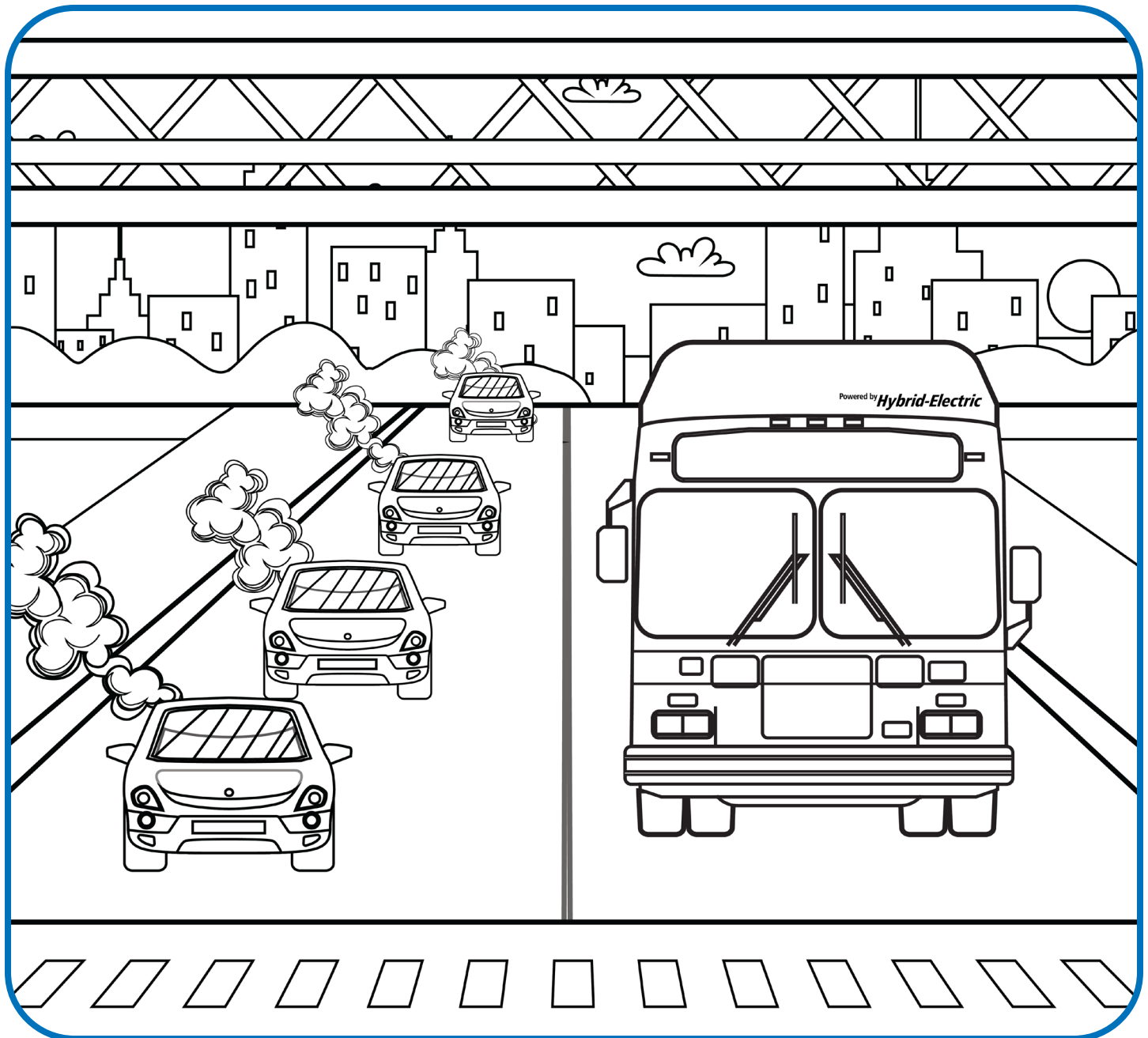
Climate Change Coloring

Take a look around your classroom. Everyone came to school today using some form of transportation.

Do you think it would be better for the environment if everyone drove their own car to school, or if everyone rode on one bus to school? Circle your answer below. After your answer is circled, color the page however you like.

**Driving our own cars
is better for the environment.**

**Riding on the bus together
is better for the environment.**



SUPPORTING RESOURCES

Plan Your Ride Resource Guide



1. Get an ORCA Card

Youth 18 and younger can 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, youth and senior ORCA cards visit myORCA.com



Scan to order ORCA card.

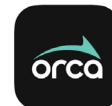
- ◆ **In person:** outlets, vending machines and customer service offices visit myORCA.com/where-to-buy



Scan to find locations to purchase ORCA card.

Phone: 888-988-6722

- ◆ **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.kingcounty.gov/transportation/metro/schedules-and-maps)



Scan to look up transit routes.

- ◆ To plan a trip, go to 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:

- ◆ If you have an ORCA card, have it ready. If you are 18 years old or younger you can also use a student or government ID, or just get on board.
- ◆ 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! If you are 18 or younger and don't have your ORCA card, you can show your ID or if you do not have an ID you may 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 have an ORCA card, have it ready. If you are 18 years old or younger you can also board with your student or government ID, or just get on the train.
- ◆ 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, you may just board the train. If you have one, you may be asked to present an ID to transit employees while on board.



- ◆ Know which direction you need to travel so you can go to the correct platform. (Northgate travels North and Angle Lake 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 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.
- ◆ Tap your ORCA card once you exit the station.

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 metro.kingcounty.gov/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.
- ◆ You can also call **transit police** at 206-296-3311 or call 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 with dark green tops 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. As of September 1, 2022 all youth can take public transit for free thanks to Move Ahead Washington. For more information, visit [FreeYouthTransitPass.com](#). If you do not have an ORCA card, you can show your current school ID, or any other ID that can verify age. If you do not have an ORCA card or ID and are under 19 years of age you can still ride for free.



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.

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/depts/transportation/metro/travel-options/accessible.aspx



- ◆ 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 \$2.75 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: kingcounty.gov/services/environment/climate/our-changing-climate/impacts.aspx.



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.

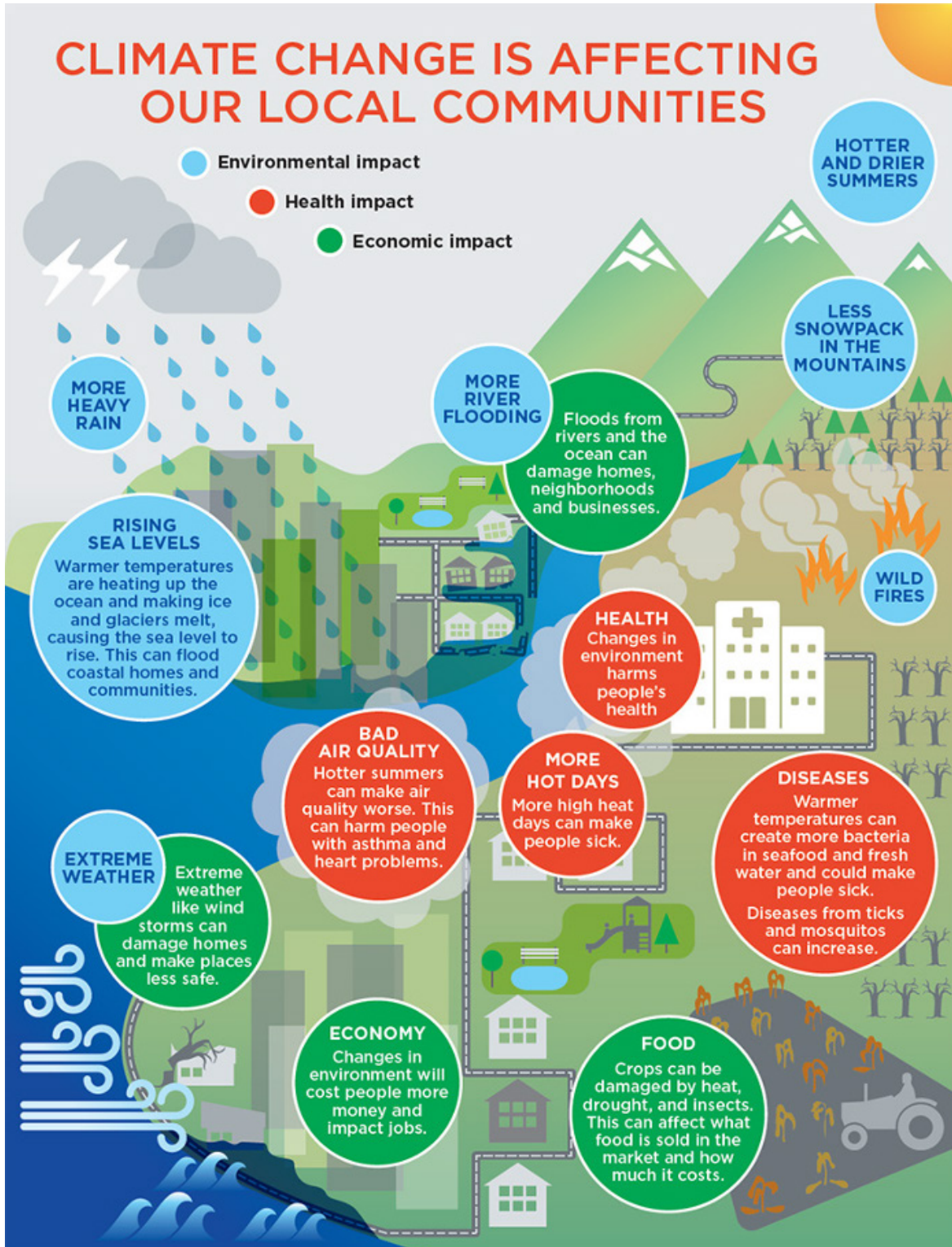
Climate change threatens the health and safety of people, the economy, and environment, both locally and globally. In King County, we are already seeing the impacts of a changing climate including: warming temperatures, warming and acidifying marine waters, rising sea levels, increasing flooding risk,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

In 2015, the top sources of greenhouse gas (GHG) emissions in King County are from (1) fossil fuels used for transportation, and (2) energy used to heat, cool, and power homes and buildings. 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 25 percent by 2020, 50 percent by 2030, and 80 percent by 2050.

For more information on King County's transition to a zero-emissions transit fleet, please visit: kingcounty.gov/depts/transportation/metro/programs-projects/innovation-technology/zero-emission-fleet.aspx.



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.

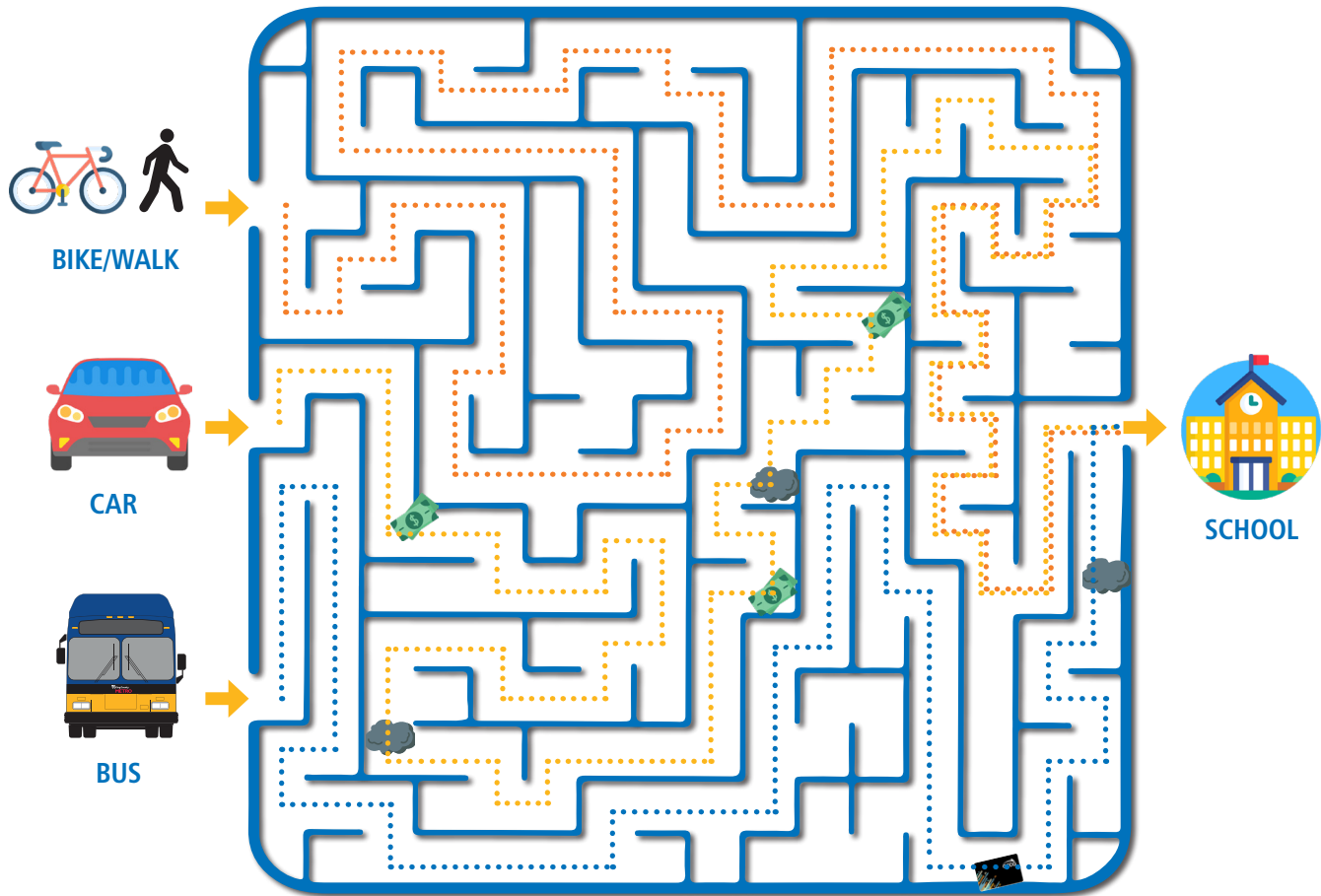
Water taxi: a boat used to transport passengers across waterways.










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

Climate and Your Community

1. Fill in the blanks: King Counties' Strategic Climate Action Plan (SCAP) is making King County more *resilient, sustainable, and equitable*.
2. What does King County's SCAP goal mean to you?
Student answers will vary.
3. What are three ways King County is addressing climate change?
Climate Equity Community Task Force (CECTF), forest carbon program, zero-emission (electric) buses, climate change GIS open data portal (sharing information), Website pages, create the SCAP.
4. How will the adoption of electric busses help reduce carbon dioxide (CO₂) in our atmosphere?
Unlike gas-powered vehicles, electric vehicles produce no exhaust, meaning they release no carbon dioxide into the atmosphere. A zero-emissions fleet benefits the community, riders, and employees by eliminating greenhouse gas emissions and improving the quality of our air.
5. When does King County hope to complete their goal of having a 100% electric bus fleet?
2035
6. Rank the options below from largest possible climate impact to the smallest?
(1 = least, 2 = some, 3 = most)
Student answers may vary.
2 Riding an electric bus 3 Riding in a car 1 Riding a bike/walking
7. Why did you rank question 6 the way you did?
Student answers will vary.
Riding a bike or walking emit no GHG's and require no generated energy. Riding an electric bus emits no GHG's, but uses electric energy. Riding in a car emits GHG's that pollute the air and also requires fossil fuels/gas for energy.

Transit Maze



				
How much did it cost?	0 	3 	1  (Free for youth!)	
How much air pollution?	0 	2 	1 	

Accessibility Matching Game

How can I board the bus?

I have a hard time standing on a moving bus. What can I use?

I cannot see where the bus is stopping. How do I know if I'm at my stop?

When I'm on the bus, where should I sit?

I rode my bike to the bus stop. Where can I put my bike when the bus arrives?

I live far away from the city in a suburban neighborhood. Can I still access Metro buses?

I don't have a lot of money to spend. Can I afford to ride Metro transit?

I don't have a smartphone or computer. How can I plan a trip on Metro transit?

My dad doesn't speak English. How can he plan a trip with Metro?

I am trying to reduce the amount of air pollution I create. Is riding Metro a good solution?

Transportation accounts for nearly half of all greenhouse gas emissions in Washington. By taking the bus, carpooling, riding your bike, or walking, you could reduce the amount of air pollution you produce.

If asked to do so, bus drivers will announce stops, intersections, and transfer points to help passengers recognize where they are.

Metro has over 100 bus routes that serve cities and suburbs.

Transit maps are available in person, at bus stops, and on buses, as well as online.

A Metro bus ride is FREE for anyone 18 years or younger, and costs \$2.75 per ride for adults. Discounted fares may be available for adults.

Maps and routes are translated into more than 40 languages.

Priority seating is available for passengers who need to have access to a seat.

All Metro buses have bike racks located on the front of the bus.

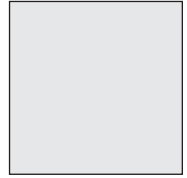
Reserved spaces are available for riders who use mobility devices, such as wheelchairs or scooters.

All Metro buses have wheelchair accessible lifts and ramps.

TEACHER TOOLS

Video and Presentation Slides: Module 3

The QR code to the right will connect you to an informational video and a deck of presentation slides. The information can also be found online at [\(HOLD FOR WEBSITE\)](#). Both sets of materials 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.
- ◆ In Washington State, youth 18 and younger can ride most transit for free! Riders age 13 and older are encouraged to use their Youth ORCA card or show the driver their current high school or middle school student ID. Youth who do not have one of these can still ride for free; just get on board.

Vocabulary

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

Video

The educational video is approximately 6 minutes long and is designed as a supplemental tool to help facilitate class discussions and activities. The goal is to introduce students to King County Metro's sustainability and accessibility goals. This video can be used by itself or in conjunction with the presentation slides for further class discussions.

Instructor notes

The video will offer opportunities to pause for class discussions or actions. Note, the following icons will appear in the order provided when there is an optional pause opportunity:



Class discussion: Ask students why they think transit services are important? How might transit impact a community? How might it impact the environment?



Thought activity: Give students a moment to look out the window or to think about the current weather. If there is time let them share a few of their thoughts.



Class discussion: Ask students if they have ever lived in areas with a different climate than what we have in the Pacific Northwest. What was it like? How would they describe it?



Class discussion: Discuss how Metro's accessibility services help the community. What other accessibility services do students know about?

After watching the video, you may opt to facilitate further class discussions using the Presentation Slides.

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's Code of conduct to help them develop their skills as transit riders. These slides can be used on their own or in conjunction with the video.

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

- ◆ Module One: Get to Know Metro
- ◆ Module Two: Safety and Riding Right
- ◆ Module Three: Sustainability and Community Connections