Transportation Field Research
Grades 3-5

Resources developed by San Mateo County Office of Education's (SMCOE)
Environmental Literacy and Sustainability Initiative (ELSI) • Designed in March 2020, last updated May 2020

Purpose and Overview of Field Research Activity

Field Research is the collection of data and observations. This is REAL science! You will investigate what is going on with an environmental topic in your local context (home, school, or community).

- **What materials do I need for doing field research?** The most important thing you will need is this document outlining the field research activities. It might also be useful to have a clipboard, or pencil/pen, paper or journal if you have them.

- **How long will it take me to do this field research?** Field research tasks may range from 30 minutes → 3 hours depending on the topic and activities. We have broken it up into multiple activities for you.

Background information for this Field Research Task:

Transportation, as an economic sector, accounts for 29% of total greenhouse emissions. Passenger and small vehicles account for nearly half of the emissions in the transportation sector (EPA, 2019). In the Bay Area most people commute by driving personal vehicles which contributes to air pollution, lengthy commute times, and unsafe conditions for students to get to school.

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SECTION I: Transportation Journal

Step 1: Use the transportation journal to track how you move for one week.

Materials: Printed journal OR field journal, pencil, adult help

Directions*:* Students will complete the chart below to track their modes of transportation over one week. Adults can print the chart or students can copy into their journal or onto paper.

Students *should*:

- Take detailed notes
- Include any trips made in vehicles with an adult

Students *should not*:

- Leave the home unattended or without adult permission

Glossary

- Transportation Journal: A record of transportation use over a period of time

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PERSONAL TRANSPORTATION JOURNAL

Mode of Transportation	Icon	Tally # of times used *(Example: I, III, IIII)*
Walking		
Bike		
Car (gas or electric)		
Scooter		
Skateboard		
Rollerskates		
Motorcycle		
Motor Scooter		
Boat		
OTHER:_____		
OTHER:_____		

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Step 2: Reflect on Personal Transportation Journal

------> Discuss your results with an adult or classmate, and write responses on paper/in your field journal.

A) What surprised you about your transportation and what did you find most interesting?

B) What is different about your transportation right now compared to other times of the year?

C) Why is it important to know about transportation?

D) How might you change your own personal modes of transportation moving forward?

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SECTION II: Local Transportation Exploration

Step 1: Use the Local Transportation Walk-Through on the next page to record the different modes of transportation in the nearby area around your home.

Materials: Printed journal *or* field journal and pencil, and adult help if needed.

Directions:

1) Students will find a location in their neighborhood where they can see cars and pedestrians passing by (either just outside the home or at an intersection)
2) Spend 20 minutes in that location, and complete the table (on the next page) to tally the different modes of transportation they observe.
3) These observed modes of transportation can be in use on the road, parked on the side of the road, on sidewalks, in driveways, in parking garages, in parking lots, on bike racks, etc.
4) Adults can print the chart or students can copy it into their journal or on a piece of paper.

Students *should*:

- Take detailed notes.
- Stay on public land or sidewalk when exploring.
- Ask their guardian what boundaries to use for this exploration.

Students *should not*:

- Enter private or restricted areas near their home without permission.
- Leave the home unattended or without adult permission.

Glossary

- Gas-Powered Vehicles: Vehicles that are powered by fossil fuels
- Electric Vehicles: Vehicles that are powered by electricity

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LOCAL TRANSPORTATION WALK-THROUGH

These observations should be made right outside the home or at the nearest traffic intersection

Date & Time of Day 	Describe the Weather 	Did you see multiple people in the same car (carpooling)?
		❏ YES ❏ NO Tally # of carpoolers:

Mode of Transportation	Icon	Tally # of Items *(Example: I, III, IIII)*
Gas-Powered Vehicles		
Electric Vehicles		
Buses & Trains		
Bicycles		
Walkers		
Motorcycle		
“Rollers”: Skateboards, Scooters, Rollerskates		
Other:_____		
TOTAL=		

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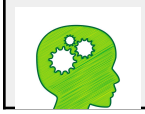

Step 2: Reflection on the Local Transportation Exploration

Journal

➔ Discuss your results with an adult or classmate, and write responses on paper/in your field journal.

A) What was the most frequent or common mode of transportation you saw on your exploration?

B) What was the least frequent or common mode of transportation you saw on your exploration?

C) Why do you think some modes of transportation are more common than others?

D) What obstacles did you face in observing modes of transportation around your home?

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SECTION III: Local Transportation Safe Routes Survey

Step 1: Complete a survey of the transportation routes around your home and identify pedestrian safety infrastructure.

Materials: Printed journal *or* field journal and pencil, and adult help if needed.

Directions: Complete the Local Transportation Routes Survey Worksheet on the next page.

1) Students will walk the area around their home to identify pedestrian safety infrastructure features.
2) Students will draw a diagram of their home and the area around it, including major pedestrian safety infrastructure features.
    a. Major transportation features may include, but are not limited to: sidewalks,crosswalks, stoplights, pedestrian flags, flashing pedestrian lights, nature trails, bike lanes, roads, bus stops, bike racks, stop signs, etc.

2. Print and use the grip paper on the next page to sketch your diagram, or use your journal/a piece of paper.

Students *should*:

- Take detailed notes.
- Ask permission before leaving their home.
- Ask their guardian what areas near their home have restricted access.

Students *should not*:

- Enter private or restricted areas in or near their home without permission.

Glossary

- Active Transportation: Self-propelled, human-powered transit like walking or biking
- Infrastructure: The built landscape including roads, bike lanes, traffic signs and street lights that allow transportation from one place to another

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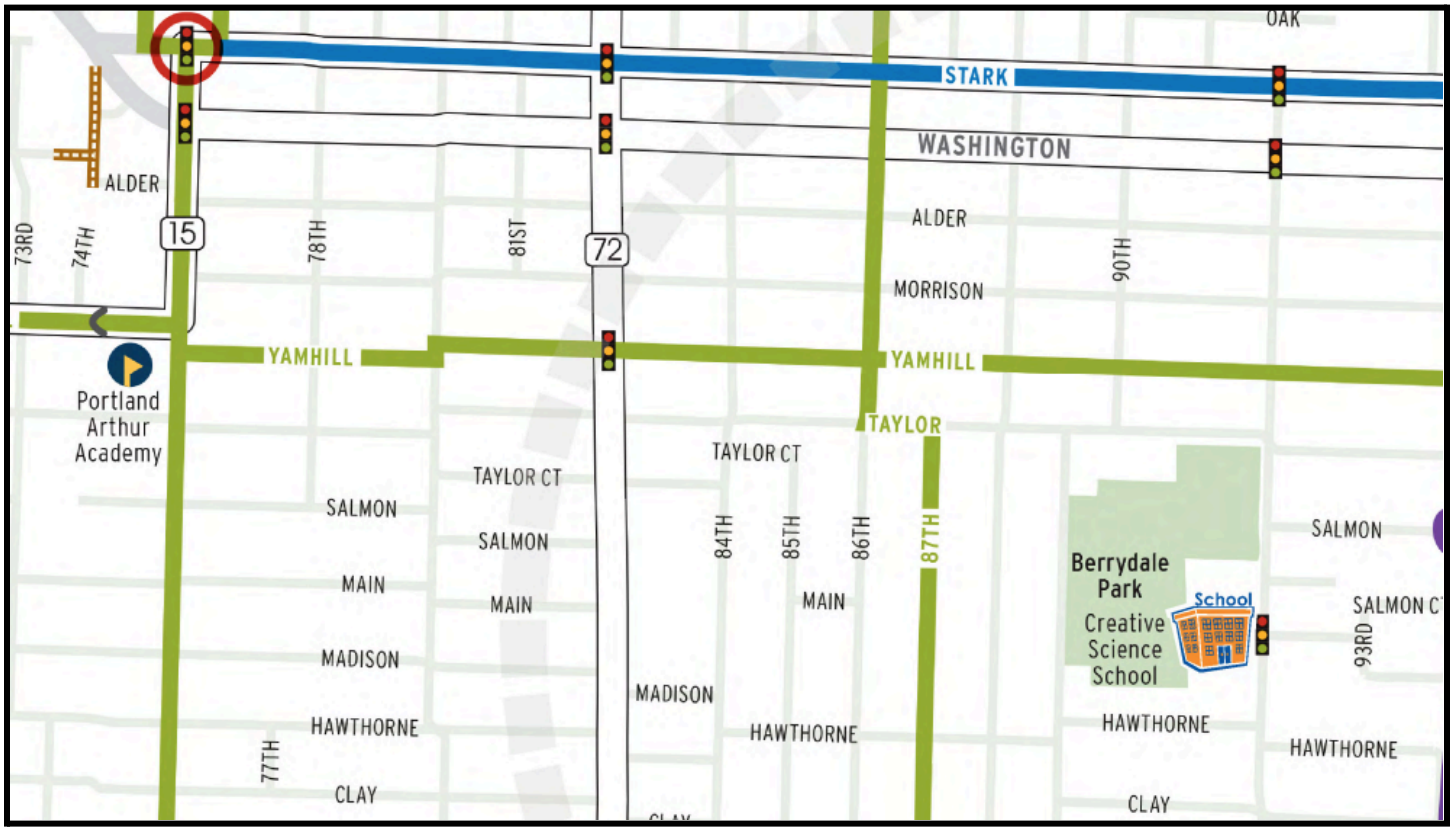
Example Local Transportation Safe Routes Survey Map:



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Local Transportation Safe Routes Survey

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Step 3: Reflect on the Local Transportation Safe Routes Survey

➔ Discuss your results with an adult or classmate, and write responses on paper/in your field journal.

A) What did you notice about pedestrian and bike safety infrastructure around your home?

B) Why is it important to have pedestrian and bike safety infrastructure?

C) What could be improved to make it safer for you to walk or roll around your home?

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You've Completed the Transportation Field Research!

Great job! You've learnt about human and engine powered modes of transportation, completed a personal transportation journal and a home modes of transportation journal. Using safe and human powered methods of transportation are steps we can all take to reduce our ecological footprint and the greenhouse gas emissions that enhance climate change. Discuss the lessons you've learned from this Field Research with the folks in your life and implement solutions into your daily activities to reduce the impact you have on the transportation system. More resources on how to reduce your ecological footprint and greenhouse gas emissions are available on SMCOE's Environmental Literacy and Sustainability Initiative website:

https://sites.google.com/smcoe.org/smcoe-environmental-literacy/resources/green-campus/sustainable-transportation?authuser=0