Neighborhood Navigators
Grades 6-8

Student Workbook

Name: _____

Date: _____

Grade: _____

Lesson 1

What is Transportation?

Transportation system:

All modes of transportation effectively working together

Transportation Grid

Transportation Mode	What type of energy does it use?	How does it affect the environment (air, water, land)? (maybe a rating scale and students have to rate it?)	How can you stay safe while using this mode?
Airplane	Gas	Gas pollutes the air.	Keep seatbelt on when seated. Follow directions from flight attendants.
Skateboarding	Food energy	Skateboarding doesn't pollute our air/water. Skateboarding does cause some wear and tear on the streets.	You should wear a helmet and elbow/ knee pads.

Lesson 2

Consuming Resources

Define

Renewable:_____

_____

_____

Non-Renewable:_____

_____

_____

A Day in the Life of a Drop of Water

(Source: Expanded from "Birth of a Raindrop", from Keepers of the Earth, by Michael Caduto and Joseph Bruchac)

You are a small drop of water sitting on top of a fresh blade of green grass. It is mid-summer and the sun is shining. You are wondering, "Will I ever become unstuck from this blade of grass?"

A playful summer breeze blows through the meadow, causing your blade of grass to wave back and forth. The sun feels very strong and you feel yourself becoming more and more full of energy. You feel so hot and alive that your insides are rushing around violently. Suddenly the energy is so great that you are lifted right up into the sky! Your body feels a whole new sensation... you are light, dry and flying! Your insides are still moving around furiously. The wind helps to carry you up and over the treetops.

As you rise higher and higher you feel light as a feather. Down below, the meadow that you came from looks like a dot on the Earth. The wind carries you into a dark gray cloud. You hear a loud cry and almost bump into a large, black bird with a white head. Here in the cloud there are millions and millions of other water vapor molecules rushing around and bumping into each other. "Hey, watch it!" you yell, as one of them bumps into you. "Ouch! It's too crowded here!"

You are relieved when you begin to feel that familiar moisture feeling again. As you become wetter, you feel heavier, and you move much more slowly. Soon you become so heavy that you start to fall back to Earth. All around you other raindrops are falling. Lower and lower you sink. In every direction you look, there are raindrops. The whole world seems to be wet.

You look down again and the wet blur is becoming clearer. A long, black highway stretches below you, running beside a large expanse of evergreen forest. You hope to land on the forest! As the end of your fall draws near, you close your eyes, bracing yourself for the impact... SPLAT! OUCH!

Was it the highway asphalt? But your movement doesn't stop. You just move much more slowly. As you open your eyes, you are trickling down the crack of a huge boulder on the edge of the forest. A few other raindrops have stuck onto you and you're all flowing together. More and more drops collide and join your blob, running down the rock. Your speed picks up, and then finally.... ttthump! You all have landed on the soft earth. The impact was more gentle this time but it has broken the blob apart.

Once again you are alone and suddenly it is very dark... oops... one droplet friend has attached to you as you find yourself slowly creeping into a strangely-shaped crevice between two fuzzy particles of soil. You feel yourself being pulled down, down, into crevice after crevice.... like little tunnels in the soil. Slowly twisting, turning, percolating, the musty smell of the soft, damp, cool earth comforts you. The softness is disappearing, though, as you go further down and the soil particles are getting harder and bigger with larger crevices that you flow through not quite so slowly now.

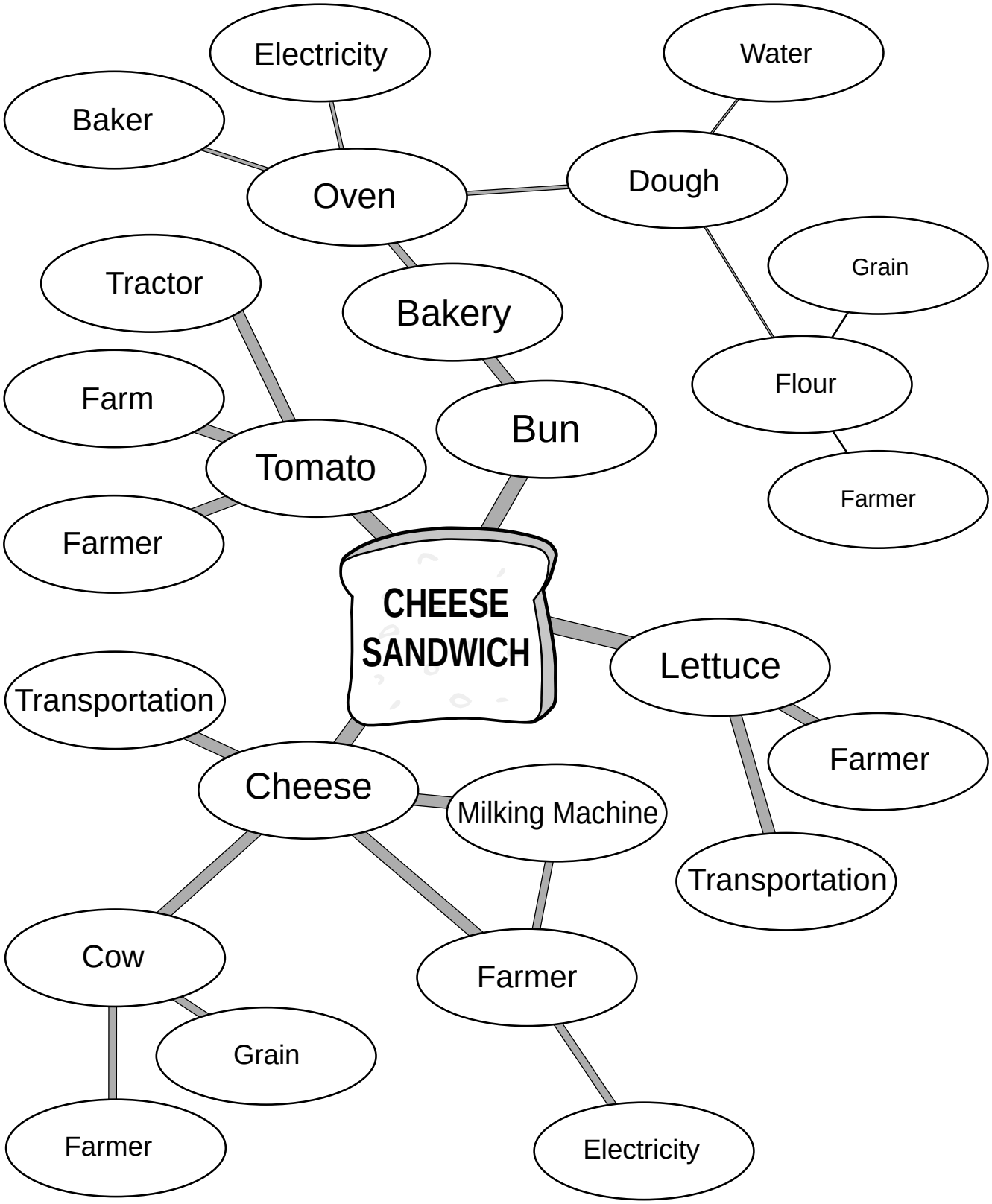
More of your droplet friends join you. You all notice that you now seem to be pulled sideways instead of down. A strange force is somewhere off to your right and you're getting sucked toward it, but you all still have to find your way through the twisting cave-like spaces between the grains of sand and gravel... the force becomes so strong that you get pulled... ffffttt! Splash! Into a huge hole filled with thousands... millions... of your water drop friends... You're all swishing and splashing about... but you can still feel the strange force sucking you... it is much stronger now, and upwards. It is still very, very dark... suddenly you hear a strange echoing sound... all your droplet friends splashing against metal... there is a faint smell of rust now. The force is still pulling you up, when suddenly...

OUCH! Your head hits a hard metal wall and you get pulled sideways again, this time to your left. Faster and faster you travel... OUCH! Your left side hits another metal wall and the force pulls you straight up again. Now you are traveling as fast as you were the last time you saw the light of day... rolling down that boulder on the edge of the forest. But it is still dark and so it is pretty scary to be going so fast and not see where you are going...

Suddenly with a violent jerk you get flipped over and you plunge head first into a blinding light... SPLASH! When the turbulence settles, you turn yourself upright and you see that you're surrounded by your droplet friends, splashing, swishing about in a very clear pool. When you look around, you see these strange flesh-like smudges all around you. The sucking force is gone but you feel yourself and your friends being turned upside down, like you're in a swimming pool that a huge giant is flipping over... and whoosh... it goes completely dark once again. In your last glimpse of light, you were able to see that you were heading straight towards an extremely strange, reddish-pink oval creature with bizarre wart-like bumps all over it. After seeing such a sight, you're glad it's dark again. You're also glad to feel that wherever you are, the pace has slowed way down. Are you in the soil again? Gosh, it seems much warmer than the soil. It's sort of a cozy feeling after all the splashing and cold metal walls and weird sucking forces and strange sights... maybe it's time for a rest.

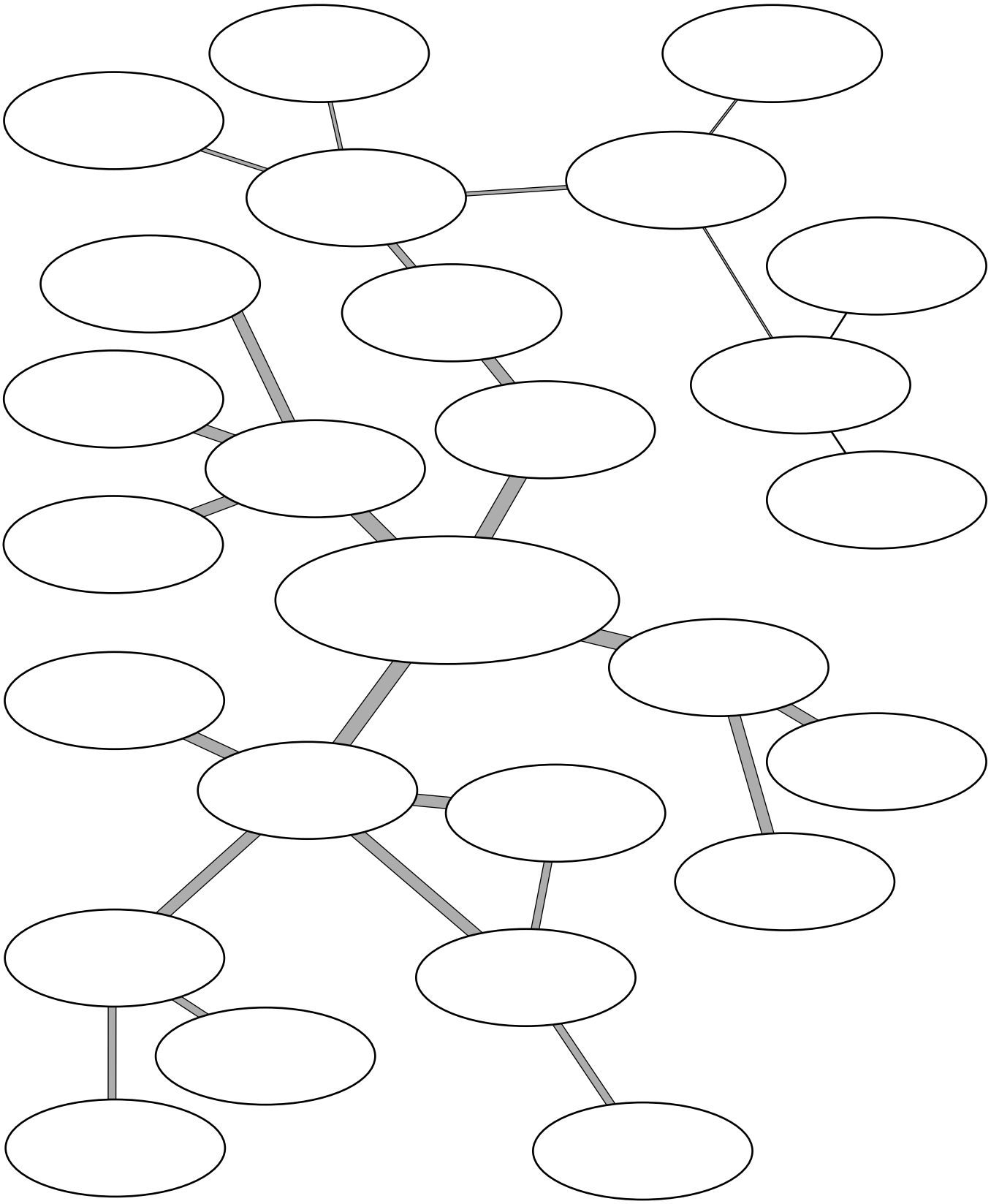
Lesson 2 *continued*

Bubble Map Example (cheese sandwich)



Lesson 2 *continued*

Bubble Map Template



Lesson 3

Community Design

Vocabulary

engineer - a designer or builder
walkability - capable of or suitable for being walked
bikeability - capable of or suitable of being biked

On your walk outside, observe the traffic around your school in order to determine the areas that are safe and unsafe.

What questions could we ask?

Is the student drop-off and pick-up area at school safe? _____

_____

_____

Are there stop signs and slow signs around the school? _____

_____

_____

Are there safe places for students to cross the street? _____

_____

_____

Is the school supporting Walkability? Bikeability? _____

_____

_____

Is it accessible for people with disabilities? _____

_____

_____

This space can be used to draw a map of your walk.

Lesson 3 *continued*

Walkability Checklist

Take a walk and use this checklist to rate your neighborhood's walkability.

Location of walk _____

_____

Rating Scale: 1 awful 2 some 3 problems 4 good 5 very good 6 excellent

1. Did you have room to walk?

☐ Yes ☐ Some problems:

- ☐ Sidewalks or paths started and stopped
- ☐ Sidewalks were broken or cracked
- ☐ Sidewalks were blocked with poles, signs, shrubbery, dumpsters, etc.
- ☐ No sidewalks, paths, or shoulders
- ☐ Too much traffic
- ☐ Something else _____

Locations of problems: _____

Rating: (circle one) _____

1 2 3 4 5 6 _____

2. Was it easy to cross streets?

☐ Yes ☐Some problems:

- ☐ Road was too wide
- ☐ Traffic signals made us wait too long or did not give us enough time to cross
- ☐ Needed striped crosswalks or traffic signals
- ☐ Parked cars blocked our view of traffic
- ☐ Trees or plants blocked our view of traffic
- ☐ Needed curb ramps or ramps needed repair
- ☐ Something else _____

Locations of problems: _____

Rating: (circle one) _____

1 2 3 4 5 6 _____

3. Did drivers behave well?

☐ Yes ☐ Some problems: Drivers...

- ☐ Backed out of driveways without looking
- ☐ Did not yield to people crossing the street
- ☐ Turned into people crossing the street__
- ☐ Drove too fast
- ☐ Sped up to make it through traffic lights or drove through traffic lights?
- ☐ Something else _____

Locations of problems: _____

Rating: (circle one) _____

1 2 3 4 5 6 _____

4. Was it easy to follow safety rules?

Could you and your child...

☐ Yes ☐ No Cross at crosswalks or where you could see and be seen by drivers?

☐ Yes ☐ No Stop and look left, right and then left again before crossing streets?

☐ Yes ☐ No Walk on sidewalks or shoulders facing traffic where there were no sidewalks?

☐ Yes ☐ No Cross with the light?

Locations of problems: _____

Rating: (circle one) _____

1 2 3 4 5 6 _____

5. Was your walk pleasant?

☐ Yes ☐ Some unpleasant things:

- ☐ Needed more grass, flowers, or trees
- ☐ Scary dogs
- ☐ Scary people
- ☐ Not well lighted
- ☐ Dirty, lots of litter or trash
- ☐ Dirty air due to automobile exhaust
- ☐ Something else _____

Locations of problems: _____

Rating: (circle one) _____

1 2 3 4 5 6 _____

How does your neighborhood stack up? Add up your ratings and decide.

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

Total _____

26-30	Celebrate! You have a great neighborhood for walking.
21-25	Celebrate a little. Your neighborhood is pretty good.
16-20	Okay, but it needs work.
11-15	It needs lots of work. You deserve better than that.
5-10	It's a disaster for walking!

Lesson 3 *continued*

A Habitat for Healthy Habits

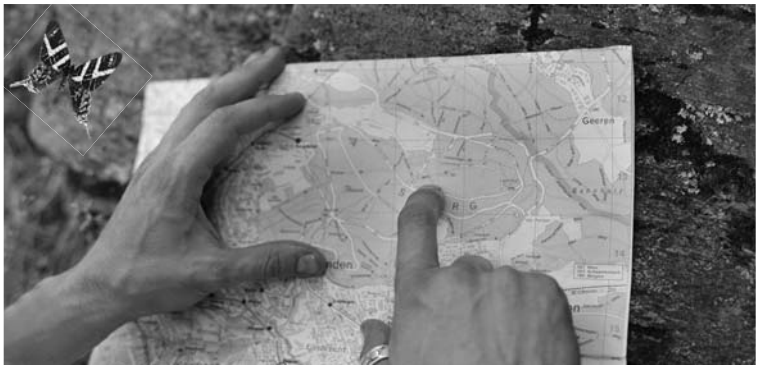
As a member of the student engineering team that has been studying ways to improve the walkability and bikeability of our school neighborhood, you have been invited to join a community group to share what you've learned. This new group is planning a new, safe neighborhood with the following goals:

- ☐ Includes homes, schools and parks
- ☐ Encourages walking, biking and other physical activities
- ☐ Decreases use of cars and gasoline
- ☐ Includes at least three traffic safety features for pedestrians and cyclists"

Create a map of the "perfect neighborhood" that includes all of the above components. Your finished product will demonstrate that you understand the value of physical activity, reducing the impact of motor vehicle traffic on the environment and on traffic flow patterns, and the use of various treatments that influence safe travel methods for pedestrians and bicyclists.

You will be scored using the following performance checklist:

Task	Yes or No
Is there a school, library and or park included in the map?	
Are there roads?	
Are there at least three safety laws recorded?	
Is there is a name of the neighborhood listed?	
Are there people safely crossing the street and walking around the neighborhood?	



Lesson 4:

Habits and Environmental Impact

List 10 habits that you do throughout the day. Habits do not have to be negative. They are positive too, like eating a healthy breakfast every morning.

		Healthy				Unhealthy	Harmful				Really Harmful
	Name of Habit	1	2	3	4	5	1	2	3	4	5
1.											
2.											
3.											
4.											
5.											
6.											
7.											
8.											
9.											
10.											

Lesson 4 *continued*

Habits and Environmental Advocacy Activity

You are to select at least one habit that was identified today. Based on the habit, you are to develop and perform a commercial for a friend, family member, or someone in the community, demonstrating the impact the identified habit has on the environment. You may also want to include impacts the habit may have on your personal health.

You will be scored using the following performance checklist:

Task	Yes or No?
If the habit has a negative impact on the environment or on health, did you state two things people can do to change their behavior?	
If the habit has a positive impact on the environment or on health, did you state two things to continue to encourage the behavior?	
Did you list three reasons why what you are advocating for is a good choice for personal health?	
List three reasons why changing behavior is good for the environment.	
Was the commercial appropriate for a chosen target audience?	

Draft story board for commercial:

Lesson 5 
Writing Invitation

Work in a small group and talk about how the different modes of transportation impact your school's environment and affect the livability for students. Your group is to write a persuasive letter or speech convincing the audience to adopt and implement suggested changes to improve the walkability and bikeability of your school.

Include the following:
- the purpose of the letter or speech;
- three suggested changes and the reasons behind them;
- three ways these changes will have a positive impact on personal health, school safety, natural resources and the environment.

Choose your role, audience and format from the chart below by circling one item in each column and add your ideas under Topic and Strong Verb.

Role	Audience	Format	Topic	Strong Verb
Student engineer	Student leadership	Letter	Make changes to improve walk and/or bike-ability at school	Convince
Student leadership rep	Principal	Speech		
School newspaper reporter/ editor	School board	Editorial		
	City council			

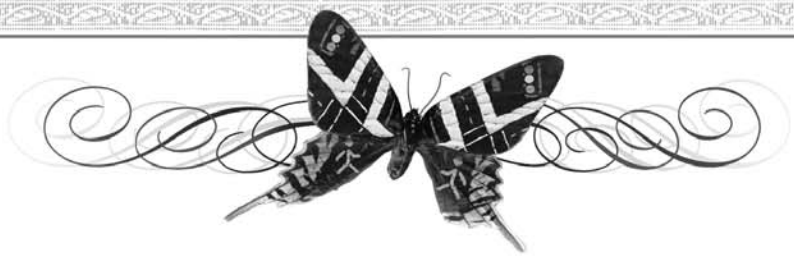
Brainstorm ideas for your writing by completing the chart below:

Suggested changes and the reasons for each	Positive effects on personal health, school safety, natural resources and the environment

Congratulations!

Your hard work makes your community safer and healthier.

Your neighbors thank you and the environment thanks you!



Neighborhood Navigators' Pledge

This is to certify that

I,_____

have successfully completed
the Neighborhood Navigators program.
I have a better understanding of how my travel choices impact the environment.
I will make it a habit to use my knowledge of renewable and non-renewable
resources when making travel plans in the future.

SAFE ROUTES TO SCHOOL

Oregon Safe Routes to School Program

Transportation Safety Division – ODOT

Bicycle Transportation Alliance

funding provided by

U.S. Department of Transportation, Federal Highway Administration (FHWA)

MARCH 2010