



INTRODUCTION

"If you want to build a ship, then don't drum up people to gather wood, give orders and divide the work. Rather, teach them to yearn for the far and endless sea."

Antoine de Saint-Exupery

INTRODUCTION

The Mountains to Sound Greenway Trust leads and inspires action to conserve and enhance the landscape from Seattle across the Cascade Mountains to Central Washington, ensuring a long-term balance between people and nature.

Since 1991, the Greenway Trust has worked to promote public land acquisitions, connect a regional trail system, teach people about the importance of conserving forests and wildlife, improve recreation access, create new parks and trails and mobilize thousands of volunteers.

A key element of the Greenway plan is preserving forests. **Environmental education activities focus on teaching students the challenge of sustaining a healthy natural environment in balance with the needs of a growing population.**

PROGRAM AVAILABILITY

The Mountains to Sound Greenway Education Program offers five curricula divided into the following components. Each class can receive for each curriculum:

- **Introductory Lesson** taught by classroom teacher
- **In-Class Lesson** taught by a Greenway educator
- **Field Study Trip** taught by a Greenway educator at Tiger Mountain
- **Stewardship Extension** experience led by Greenway staff

The five curricula we offer are:

FORESTS AND FINS (Grades 5 – 8)

Explores the relationship between water, forests and salmon habitat.

FORESTS ON THE EDGE (Grades 5 – 8)

Focuses on forests at the edge of urban areas and the variety of land use goals for such forests.

GREENING UP THE GREENWAY (Grades 5- 10)

Investigates recycling biosolids on forests and farmlands as a way to solve a regional environmental issue.

SAVVY ABOUT SOIL (Grades 5 – 8)

Explores the connection between soil, water and trees.

FOREST ECOSYSTEMS (Grades 4 – 7)

Explores the connections between the parts of a Pacific Northwest forest.

USING THIS ACTIVITY GUIDE

This Activity Guide includes information about the Education Program's philosophy, strategies for teaching, background information on the Greenway and a Glossary and Resource List. Lesson plans that contain student worksheet masters for the classroom and field are included. Since a Greenway Educator brings unique materials to the In-Class Lesson and Field Study Trip, it may be more difficult to replicate the materials for these sessions. Teachers can choose to receive a hard copy of the Activity Guide or view it online at mtsgreenway.org.

SUPPORT FOR THE PROGRAM

To offset the cost of providing our program, we developed the following fee scale for the In-class Lesson and Field Study Trip portion of the Greenway Education Program. These fees are per class. Stewardship events are still provided at no cost to schools. The King County Metro Wheels to Water Programs provides a limited number of buses every year to transport schools with higher than 25% free/reduced lunch to our field trips.

COSTS TO CHARGE SCHOOLS

% FREE/ REDUCED LUNCH	IN- CLASS LESSON	FIELD STUDY TRIP	IN-CLASS & FIELD STUDY TRIP
0-25%	\$100	\$200	\$300
26-50%	\$50	\$150	\$200
51-74%	\$25	\$75	\$100
75-100%	\$0	\$0	\$0

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ALIGNMENT TO WASHINGTON STANDARDS

Each curriculum helps fulfill the state mandate to provide environmental education to students. Each curriculum is aligned to Washington State Essential Academic Learning Requirements in Science (2009 revision), Social Studies, Reading, and Communication. Visit mtsgreenway.org and go to the education link for a complete listing of standards and the Greenway Education Program.

EDUCATIONAL PHILOSOPHY

Research shows that students learn best when they experience environmental education in an active, engaging manner. When taught using a cross-disciplinary approach involving investigation and inquiry, students’ achievement increases in reading, math, communication, social studies and science. Every effort has been made to use best practices to ensure optimal learning for students of both genders, various cultures and diverse learning styles.

LEARNING CYCLE

The foundation for the Greenway Education curriculum involves the following steps:

- 1. Engagement:** Students are given an ‘Essential Question’ or problem to solve.
- 2. Exploration:** Students determine what they know and what they need to know in order to answer the Essential Question. Activities that take place in the classroom offer information to help with this step. In the field, students collect their own data building on prior knowledge obtained in the classroom. Small, cooperative learning groups help facilitate this process.
- 3. Explanation:** Students make recommendations to answer the Essential Question given the information learned or collected. Developing respect for the contributions of other group members is an integral part of this step.
- 4. Extensions:** On the stewardship extension program students have the opportunity to apply the concepts learned in the in-class lesson and field study trip, while doing ecological restoration work in a local natural area. Extension activities held in the classroom allow participants to deepen and expand their understanding of issues and concepts.

5. **Evaluation:** This step occurs throughout each component of each curriculum. By presenting their observations and opinions, writing their ideas or making drawings, students have an opportunity to determine what they have learned. Teachers who observe these activities have an opportunity to notice areas of understanding and gaps in learning.

TEACHING TIPS

Here are some strategies shown to be effective in encouraging students to improve their higher-level thinking skills. Students or teachers can use them during presentations.

1. **Think, Pair, Share:** give individuals a few minutes to think on their own, then discuss with a partner, then open up for class discussion.
2. **Random Responses:** call on students randomly.
3. **Wait Time:** after asking a question, wait for 10 – 20 seconds to call on someone.
4. **Clarification:** after a student has responded to a question, ask the rest of the class who agrees? Can someone else elaborate?
5. **Summarize:** have another student summarize an earlier student's response.
6. **Devil's Advocate:** ask students to defend their reasoning.
7. **Metacognitive Thinking:** ask students to describe how they arrived at their answer.

Here are some hints to promote successful student presentations:

1. Describe and model desired non-verbal behaviors: eye contact, body posture, tone of voice.
2. Set the expectation that all group members will participate.
3. Encourage use of technology available in the classroom.
4. Facilitate good organization: present problem/question or area of study followed by details.
5. Encourage presenters to ask and answer questions from students.

PREPARING STUDENTS/ CHAPERONES FOR OUTDOOR EXPERIENCES

The ideal environmental education experiences occur outdoors. Many people have limited exposure to the natural world and so need preparation in order to feel comfortable learning in the out of doors. Here are some ideas for helping your participants be ready to learn before coming on your Greenway Education field study trip.

1. Bring along extra clothes for rainy or cold conditions. Or, talk with your Greenway Educator to determine what the Greenway can provide for students who need extra clothes.
2. Talk with students before the field study trip about how they will be in an outdoor classroom and the same set of expectations for behaviors apply in the field as in the classroom.
3. Describe the field study trip as a chance to be in a natural environment where they might see animals that live in the forest. It is important to respect the animals by not chasing, throwing things or yelling. Likewise, it is important to respect the forest environment by practicing a "Leave No Trace" ethic. That means, not picking any plants, flowers, moss, lichen or branches. And of course, it means not littering.
4. Bring a backpack with lunch and water. There are pit toilets at Tiger Mountain, but no running water.
5. Distribute chaperone information sheet to adult chaperones coming on the trip. Let them know that this is an active field study trip where Greenway Educators will enlist their help in working with students. We depend on chaperones being able to help students stay focused.

Greenway Educators want participants to learn and ENJOY this chance to walk in a beautiful Northwest forest. Our hope is that they will come away with some new ideas about the landscape they live in as well as an appreciation for the natural world.