



When People Get Together, Things Get Done

Equipo Verde



A Watershed Restoration and Leadership Program for Latino Students

The pilot phase of this program was made possible through the generous support of the Intel Foundation and the Ford Family Foundation.

www.solv.org | 800.333.SOLV

Welcome!

Welcome to the *Equipo Verde* program. We are excited to partner with you on this significant project that will benefit schools, students and your community.

About SOLV:

SOLV is a non-profit 501(c)(3) organization that brings together government agencies, businesses and citizen volunteers in programs and projects to enhance the livability of Oregon. Established in 1969 by Governor Tom McCall and other community leaders, SOLV annually provides resources to more than 250 Oregon communities, focusing on cleanup, beautification and enhancement projects.

SOLV's Mission:

"SOLV builds community through volunteer action, to preserve this treasure called Oregon."

SOLV's Goals:

- Provide volunteer opportunities and resources for Oregonians to contribute to the livability of their communities.
- Assist targeted Oregon communities towards environmental and economic health through volunteerism.
- Educate Oregon youth about SOLV's mission and increase youth involvement in programs.
- Recognize individuals and groups in Oregon who are fulfilling SOLV's mission.

The *Equipo Verde* Curriculum Guide offers leaders:

- Three units, focusing on watershed restoration skills, youth engagement, and leadership skills. Each unit provides specific instructional goals with presentations and group activities designed to help the students develop knowledge, skills and motivation to be more effective leaders, and to learn more about future educational and career options;
- Twenty-four lessons of approximately 1-2 hours in duration, each addressing watershed education topics;
- Intentional alignment to Content standards, the six Career-Related Learning Standards, and Essential Skills required by the Oregon Department of Education.

Curriculum Layout:

Each lesson lists:

1. Summary of the lesson
2. Content Standards and Essential Skills that are addressed
3. Learning & Service Outcomes
4. Materials needed
5. Service-learning activities
6. Reflection
7. Demonstration & Celebration

ASSESSMENT: Stream Walk / Caminando al Rio

Content Areas: Science, Math

Summary:

This lesson is designed to let students freely explore the site and take notice of what is happening. Teachers and leaders should help guide students through their exploration of the site, but mostly they should encourage students to freely observe on their own. A class discussion should follow this activity. The teacher/leader might want to take pictures to show during the class discussion. Students will also learn about their work styles in order to work better as teammates.

Oregon Department of Education Standards Alignments:

Academic Content Standards	
Science	<p>Life Science: Diversity/Interdependence: Understand the relationships among living things and between living things and their environments.</p> <p>Earth and Space Science: The Dynamic Earth: Understand the properties and limited availability of the materials which make up the Earth.</p> <p>Scientific Inquiry: Forming the Question/Hypothesis Formulate and express scientific questions or hypotheses to be investigated.</p> <p>SC.CM.SI.01 Based on observations and scientific concepts, ask questions or form hypotheses that can be answered or tested through scientific investigation.</p>

Career-Related Learning Standards	
Personal Management	<p>CS.PM.01 Identify tasks that need to be done and initiate action to complete the tasks.</p> <p>CS.PM.04 Maintain regular attendance and be on time.</p>
Problem Solving	<p>CS.PS.01 Identify problems and locate information that may lead to solutions.</p>
Communication	<p>CS.CM.02 Listen attentively and summarize key elements of verbal and non-verbal communication.</p>
Employment Foundations	<p>CS.EF.02 Select, apply, and maintain tools and technologies appropriate for the workplace</p> <p>CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation.</p> <p>CS.EF.07 Explain and follow health and safety practices in the work environment.</p>

Essential Skills	
Think critically and analytically	
Demonstrate civic and community engagement	
Demonstrate career-related learning standards: personal management, problem solving, communication	

Learning & Service Objectives:

- Students will recognize their individual work style preferences and what they bring to the team;
- Students will understand how interdependence can add value to the process of work.
- Students will observe features and characteristics of the stream restoration site.
- Students will use all senses to gather information for an initial assessment of the site.
- Students will be introduced to the restoration site that they will be working on throughout their time in the program.

Materials Needed:

For this activity most supplies are optional and are just meant to give students some resources to help them explore.

- Measuring tape
- Instructor Stream Walk Questionnaire
- Densitometer
- Aerial photo of site
- *Effective Teams* student handout
- *Shapes Activity* and four laminated shape pages (provided)
- *Student Reflection for Shapes Activity* student handout
- Plant ID information
- Shovels
- Gloves
- Digital Camera

Service-Learning Activities:

1. Ask students to walk around the entire site and make observations about what they see around them. If the site is large you might want to mark off a smaller section of the site. What do they see, hear and smell?
2. After they have had time to observe on their own, walk amongst the students and direct their observations by using the Instructor Stream Walk Questionnaire and the following guiding questions to ensure that students will have information to share in classroom discussion.
 - Pick up a handful of dirt or kick the ground with your boot. How does it feel, and smell?
 - In your back yard or nearby park is there more or less sunlight that you can see?
 - Are the plants the same type or is there a variety of different plants?
 - What kinds of animals do you think live here and what would they eat?
 - How do you think this land might have been used? By whom?
 - What aspects of this site might have been affected by humans? Why do you think that?
3. Have students share interesting finds and observations with others around them.
4. Ask if there is anyone interested in taking pictures of the group's observations to share during the class discussion. Instructor will also need to take photos of specific areas to use for class discussion – such as shaded/non-shaded, erosion and wildlife signs – if students do not.
5. Distribute the *Effective Teams* student handout for students to read and complete.
6. Guide students through the *Shapes Activity*:
7. Place laminated shape cards on the ground in a circle about 3 feet apart. Ask students to go stand next to the shape that they feel most attracted to. Ask each “shape group” to choose a reporter.
8. Ask students standing by each shape to tell one another what attracted them to that particular shape.
9. Ask the reporters from each “shape group” to share a summary of the main reasons each chose the particular shape.
10. Read *What the shapes reveal about you* (below), and allow time for comments afterwards. You may give students the option of changing which shape they identify the most with.
11. Ask students to complete the *Student Reflection for Shapes Activity*.

What the shapes reveal about you . . .

Triangles: These are the broad-based, intellectual persons in society...the deep thinkers. They are the organizers, the ones who send out surveys. “I love it,” they say; “please put it in writing,” and “Can we afford to do this?” These are the people who analyze and add structure to whatever they do.

Squares: These are the reliable people... the solid citizens. They always do what is required of them. They carry the responsibilities of any commitment and do the work of society. They say, “*It’s a tough job, and it has to be done... and it’s up to me to do it.*”

Z’s: The Z’s are the creative ones... the idea people. Z’s love change. They are the dreamers. “*Why not?*” they say. Z’s always come up with new ideas and new ways of doing things, but often leave it to the squares to carry them out. They dream more than the triangles think is practical.

Circles: A circle stands for peace... harmony... security. You will notice that there are no rough edges on a circle. Circles keep things running smoothly... they don’t rock the boat. They like calm days and quiet waters.

Any project needs all four “shapes” as participants:

- If we were all **triangles**, we would all be so busy charting the course that we might never get around to “leaving port.”
- A group made up entirely of **squares**, would be continually loading the cargo and acting as the crew—but who would chart the course, set the sails, and dream the dreams?
- If we were all **Z’s**, we would certainly be moving, but would probably have a hard time staying on course. We would sail off in whatever direction, so far and so fast, that we might never reach a harbor or connect with anyone!
- If everyone were a **circle**, we wouldn’t be going very far. Without wind, a direction to follow or a crew, we would be bobbing on the still surface, enjoying the placid calm.

Effective Teams

Name: _____ Date: _____

In this unit you'll be putting several of the skills that you've been building as a leader into practice as you hone your skills working on a team to implement your service-learning project. Here is a little background information and some questions to guide your work:

Effective team members need the following three basic skills¹:

Communication and Negotiation - Team members need the ability to state ideas or questions clearly, listen to others attentively, and to resolve disagreements in a non-confrontational manner.

Analytic and Creative Skills - Team members need to evaluate information and propose creative solutions.

Organization - The team needs to be able to track and complete all its tasks on time. Tensions can often arise if deadlines are missed.

As you work with others in teams to implement your service-learning project, it will help to know your preferred working style, so that you realize you have a unique way of completing tasks, as do your teammates. Take a minute to complete the following Preferred Work Style questions:

Preferred Work Style²

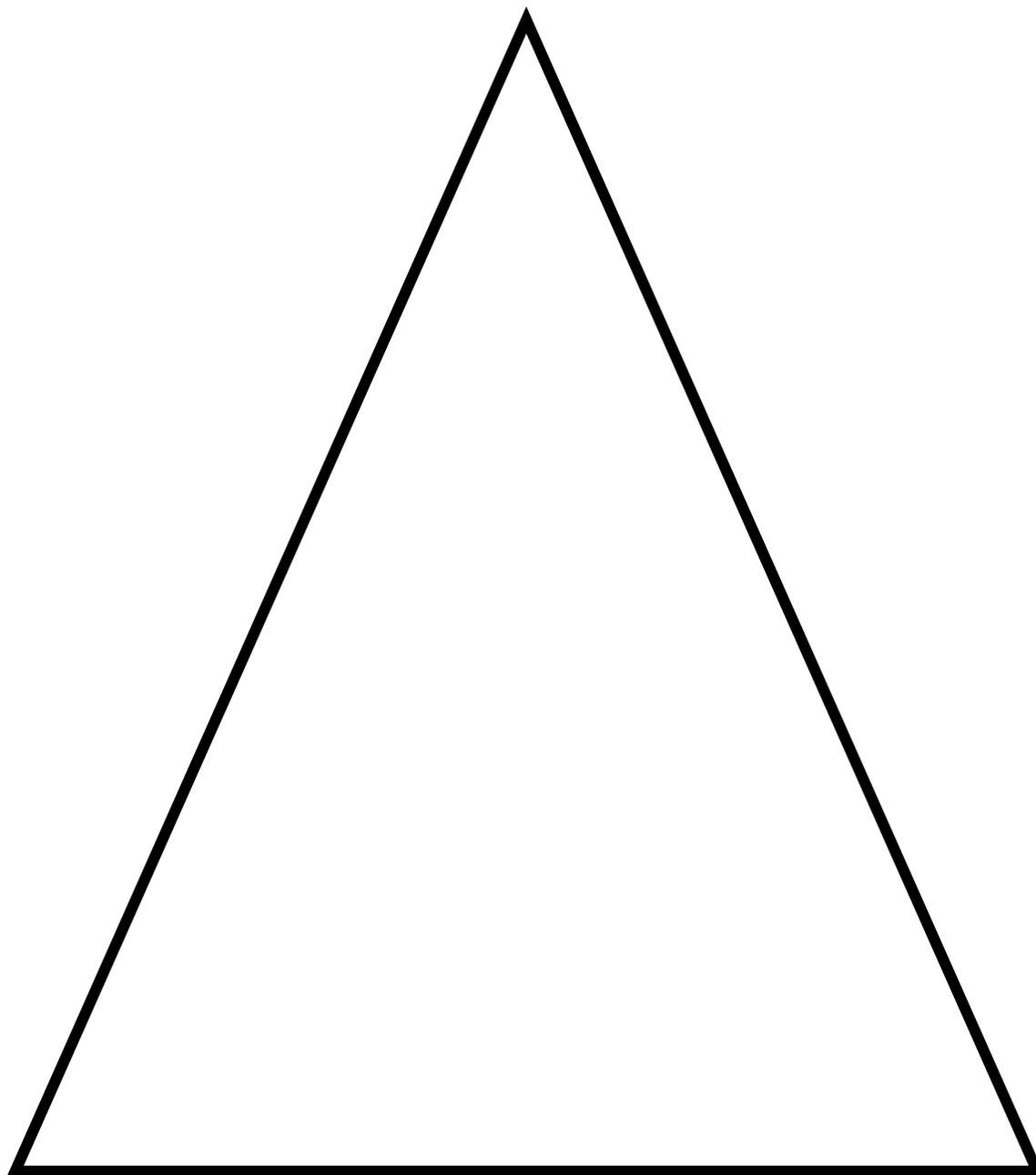
Circle the number on each line where you see yourself; try to resist choosing the middle and take a stand! If your answer is closer to the choice on the left of the number choices, you should circle the number "3" near the left if it is a strong preference, "2" if it is less strong, "1" if it's moving toward a balance of the answer on the left and the right, and so on.

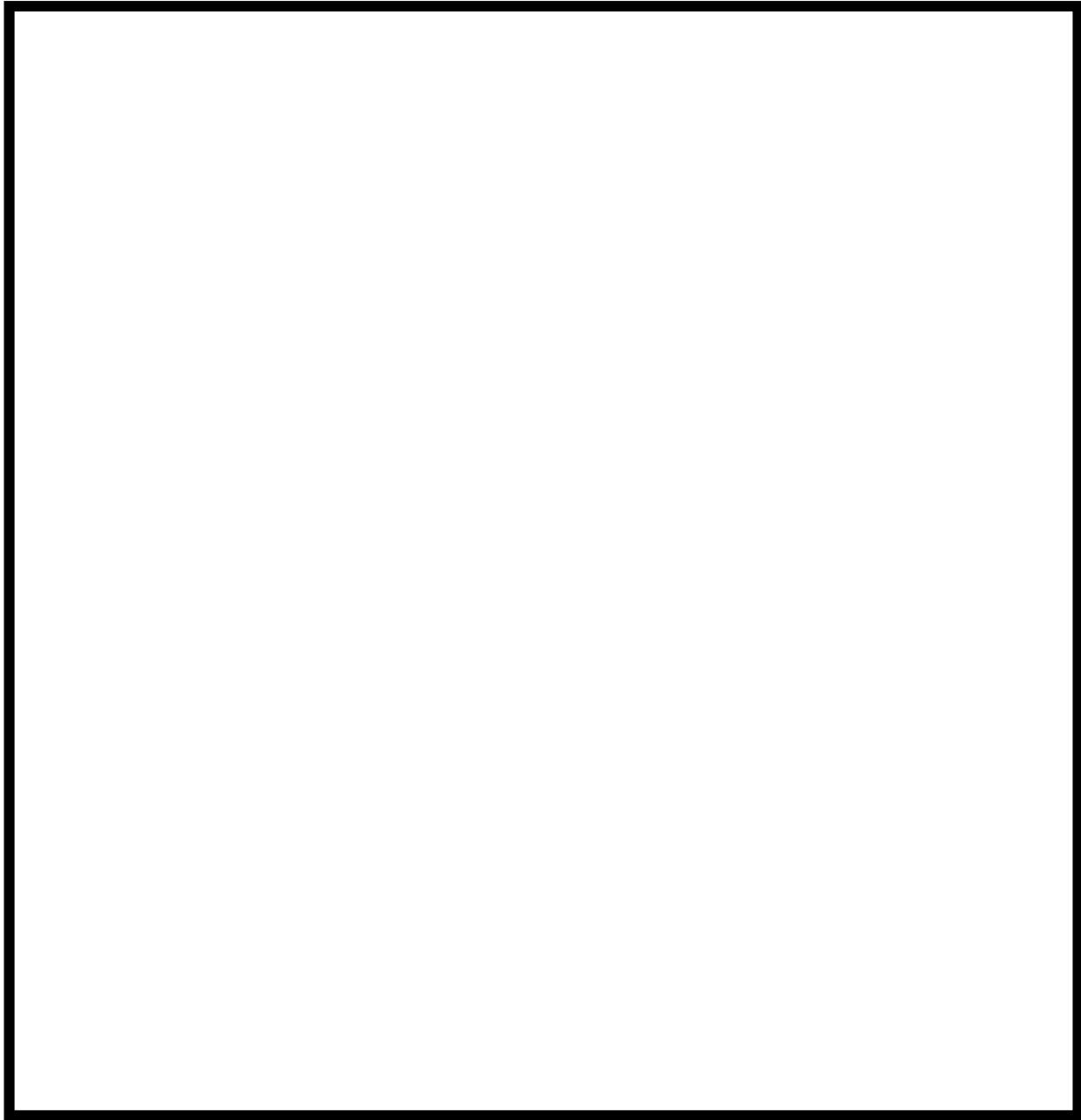
Where your answers fall on the line may help you select teams with a good balance of working styles.

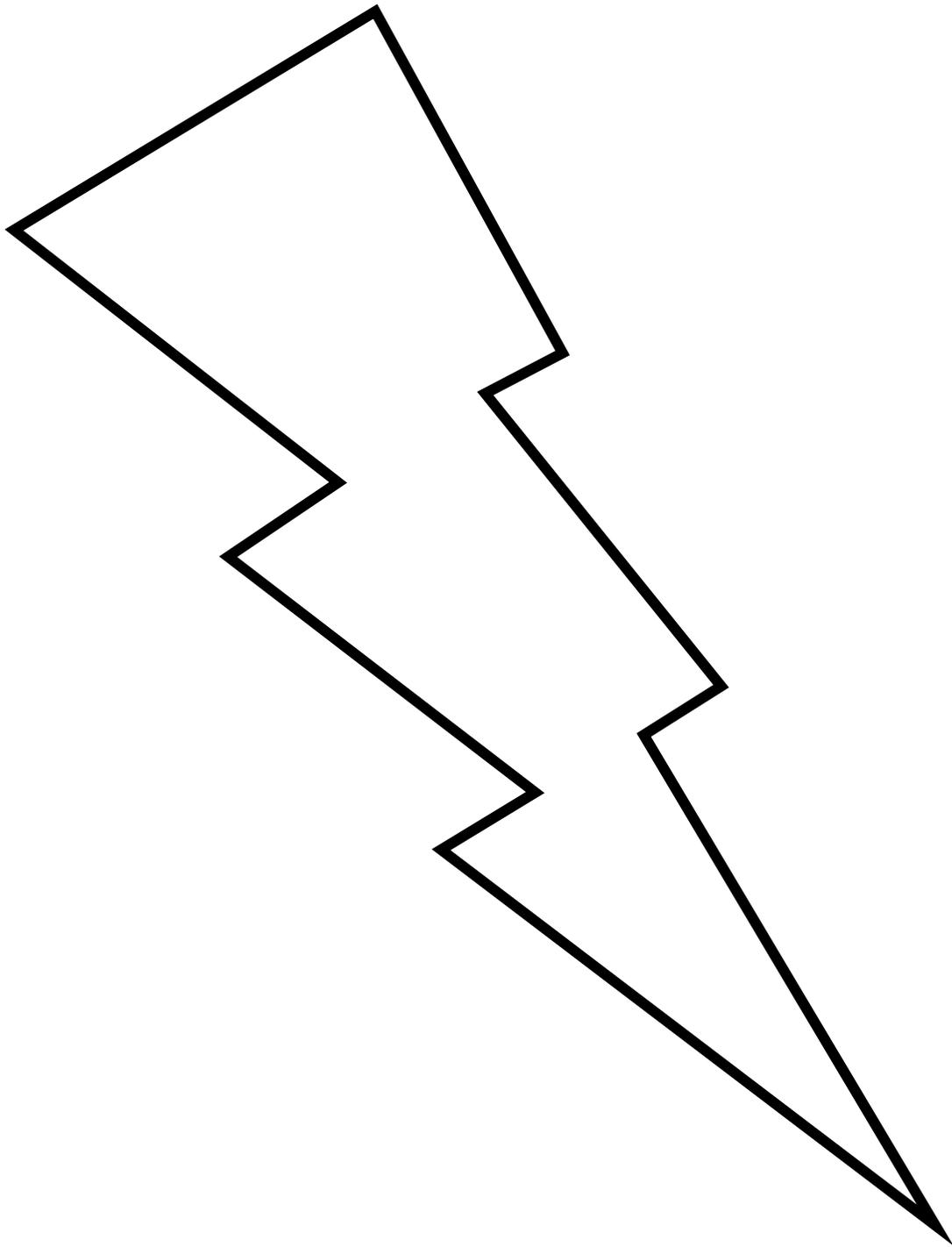
1. Do you prefer working independently (alone) – 3 2 1 0 1 2 3 – or working on a team?
2. Do you prefer working with ideas and data mostly – 3 2 1 0 1 2 3 – or with people?
3. Are you more practical, and enjoy dealing with concrete problems – 3 2 1 0 1 2 3 – or more complex, and enjoy working with theoretical ones?
4. Do you prefer a more structured work environment – 3 2 1 0 1 2 3 – or a changing flexible one?
5. Do you prefer project oriented work with deadlines – 3 2 1 0 1 2 3 – or more relaxed work with open ended results?
6. Do you typically play it safe – 3 2 1 0 1 2 3 – or take risks?

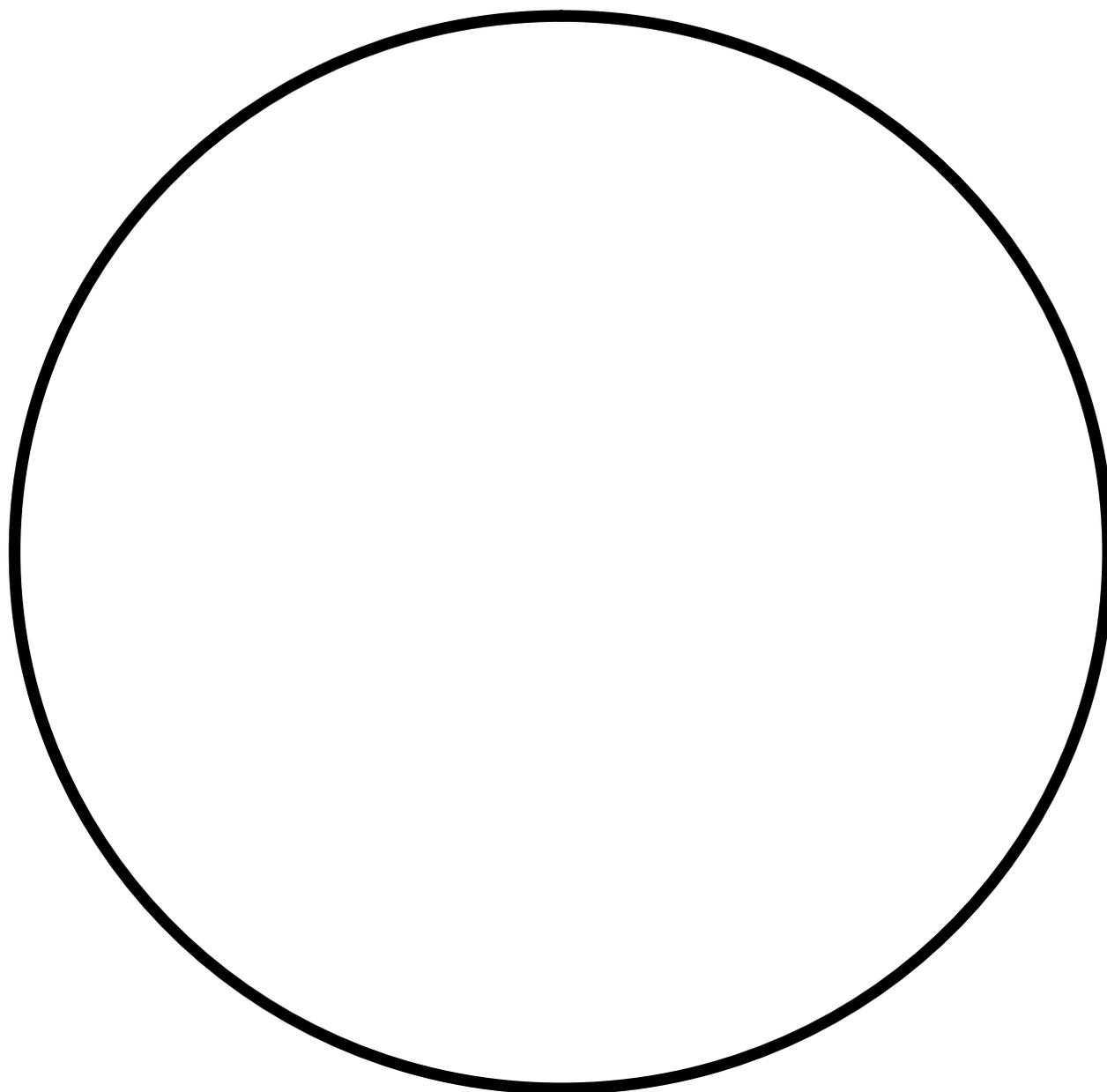
¹ Adapted from Verzuh, Eric (1999) *The Fast Forward MBA in Project Management*. New York: John Wiley and Sons.
<http://tlt.its.psu.edu/suggestions/teams/about/teamskills.html>

² Adapted from the Career Development Center. <http://www.stanford.edu/dept/CDC/graphics/pdfs/prefer.pdf>









Student Reflection for Shapes Activity

Name: _____ Date: _____

What have I learned about my working style?

How might this new knowledge affect how I respond to others as a leader or team member?

How can working effectively as a team help a group accomplish its goals? What happens when certain members of a team do *not* contribute? Frame your answers in terms of the different *styles* everyone exhibits when working on a team, and in terms of different *ideas* team members contribute during an activity or exercise.

“The strength of the team is each individual member...the strength of each member is the team.”

-Phil Jackson, NBA Coach

Riparian Corridor Inventory Checklist

Directions: Observe the area carefully and describe what you see directly and indirectly for each item listed below. Be as specific as possible.

Large trees

Erosion

Root wads

Shade

Overhanging trees

Open areas

Understory vegetation

Wildflowers

Insect signs

Bird signs

Animal Signs

Land Uses

Flooding Signs

Debris in trees

Human Impacts

Other:

Assessment Watershed Basics / Elementos de la Cuenca

Content Areas: Science, English Language Arts

Summary:

This classroom lesson follows the initial site visit where students completed the *Stream Walk* activity. Students will look over pictures the group took and discuss their observations about the site. The instructor will guide the conversation to explain and help interpret what the students observed. During the discussion, students will create their own watershed diagram to get a broader view of a watershed and its function.

Learning & Service Objectives:

- Students will discuss aspects of stream and watershed health they observed on their first site visit.
- Students will gain a general understanding of what a watershed is and how it functions properly
- Students will share their observations about the restoration site and gain a basic understanding of the “why” of the project.

Materials Needed:

- Photos from *Stream Walk* inserted into a PowerPoint presentation (prior to class)
- Aerial photos of site
- One sheet of white computer paper for each student
- Permanent and water-soluble markers in many colors
- Spray bottle with water
- Poster of instructions (what should be drawn in permanent pen, and what should be in water-soluble ink)

Service-Learning Activities:

1. For the classroom discussion, create a PowerPoint presentation based on pictures taken from the *Stream Walk* activity. When developing the slide show, group pictures by similar function/problem at the site and explain each function or problem as you go. The PowerPoint should include the following:
 - Explanation of the Equipo Verde program and its goals
 - Explanation of program partners and their goals
 - Introduction to the topic, “What is a watershed?”
 - What makes a site healthy?
 - Introduction to the difference between native and non-native plants
2. Before you define the concept of “what is a watershed” during the presentation, begin the following watershed activity:
 - Ask students to lightly crumple their paper, but not into a tight ball; it just needs to be slightly bent and folded in a few places.
 - Explain what a watershed is – ridge-top to ridge-top – and explain that their piece of paper is their own small watershed.
 - Have the students use a permanent marker to draw in where a stream might flow and where water might gather. Also use the permanent marker to draw trees and buildings.

- Have students use water-soluble markers to add all other components of their community – roads, farms, parking lots, pastures, etc.
 - Once students have their watershed drawn, it is time for it to “rain”. With the spray bottle, go around the room and “rain” on each watershed. Ask the students to notice what is happening to their sheet of paper. Where is the water heading? What does it look like? Why does it look that way?
3. What happened with their watersheds and in the real world? What are some ways to prevent this from happening?
 4. When you return to your presentation refer back to what students learned about the concept of a watershed and use the activity to illustrate your points.
 5. Use the following guiding questions and the photos that you and the students have taken in order to generate the rest of the discussion:

Temperature:

- Did you feel hot when you stood there?
- Was there much shade over the stream?
- How do you think that might affect fish and organisms in the stream?

Bank Stability:

- Could you walk down to the river?
- Was the bank too steep?
- Was the soil slipping beneath you?

Flood and Flow:

- What do you think happens when there is a flood at this site?
- Where would the excess water go?
- What do you think the site will look like in the fall or winter?

Wildlife:

- Did you see any signs of wildlife?
- What do you think might live at this site?

Water Quality:

- Did anyone feel the water?
- Did anyone smell it?
- Did anyone drink it?! ☺
- Where does the water in your faucets at home come from?
- What did the water look like? Clear? Muddy?

Human Impact:

- How have humans affected this site?
- What can be done to address the effects of their actions?

Biodiversity:

- Did you see a lot of different plants or mostly the same?
- What about the types of trees?
- What about the different heights of plants at the site?

Reflection:

- What are some of the things you do every day that could affect the health of the watershed you live in? What could you do to help reduce your impact?
- AFTER THE ACTIVITY: If you were going to visit a relative (your grandmother or your aunt, for example) and you wanted to tell them about what you did today, which one picture would you bring with you? What would it show? Why do you think that picture might mean something to your family member? What is one picture that you wish would have been taken, but was not? Why did you select that picture?
- Based on our discussion, do you think our site is healthy?
- Where could we make improvements? What do you think we might need to do?

Demonstration and Celebration:

Reserve time at the end of the lesson to show the photos taken by the rest of the students. As you look through the photos not featured in the PowerPoint slides, ask the students to point out things they recently learned in each picture.

Let students enjoy looking at the photos they took. Tell students that towards the end of the semester, they will be demonstrating what they have learned in this class by developing their own PowerPoint to present to a conference, or a group of other students and adults. Ask students to begin to think about which photos might be good to include; as students choose the photos, ask them to think about what they might say about the selected photos.

Oregon Department of Education Standards Alignments:

Academic Content Standards	
Science	<p>Life Science: Diversity/Interdependence: Understand the relationships among living things and between living things and their environments. SC.CM.LS.03 Describe and analyze the effect of species, including humans, on an ecosystem.</p> <p>Scientific Inquiry: Forming the Question/Hypothesis: Formulate and express scientific questions or hypotheses to be investigated. SC.CM.SI.01 Based on observations and scientific concepts, ask questions or form hypotheses that can be answered or tested through scientific investigation.</p>
English Language Arts	<p>Reading: Decoding and Word Recognition: EL.CM.RE.01 Read at an independent and instructional reading level appropriate to grade level.</p> <p>Reading: Listen to and Read Informational and Narrative Text EL.CM.RE.02 Listen to, read, and understand a wide variety of informational and narrative text, including classic and contemporary literature, poetry, magazines, newspapers, reference materials, and online information.</p>

Career-Related Learning Standards	
Personal Management	CS.PM.04 Maintain regular attendance and be on time.
Problem Solving	CS.PS.01 Identify problems and locate information that may lead to solutions. CS.PS.04 Select and explain a proposed solution and course of action.
Communication	CS.CM.01 Locate, process, and convey information using traditional and technological tools. CS.CM.02 Listen attentively and summarize key elements of verbal and non-verbal communication.
Employment Foundations	CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation. CS.EF.07 Explain and follow health and safety practices in the work environment.

Essential Skills	
Demonstrate civic and community engagement	Think critically and analytically
Demonstrate personal management and teamwork skills	

ASSESSMENT: Native & Invasive Plant Activity /Actividad con Plantas Indígenas

Content Areas: Science, English Language Arts

Summary:

The plant community at a site can determine the relative health of the site. This can direct managers as to which species thrive and can then be used in the restoration of the site. In this activity, students learn how to identify native plants and how to determine the direction of restoration. Students will break into groups to identify one plant per group and then describe their plant to the whole group. The whole group will then walk the site together to look at plant communities.

Learning & Service Objectives:

- Students will explore their restoration site to determine the current plant community.
- Students will gain a general understanding of how to identify native plants and why native plants are beneficial for a site.
- Students will identify and inventory what plant species (both native and invasive) live and thrive at the site. Natives that are doing well are generally chosen to plant as part of the restoration process.

Materials Needed:

- Native plant identification booklets
- Notebooks/handouts with a list of native plants to track relative abundance

Service-Learning Activities:

1. Introduce the days goals to students (i.e. learn how to ID plants)
2. Discuss with students the steps it takes to ID something – how you tell it apart from something else (characteristics, difference between like things, etc).
3. Explain that in the scientific world dichotomous keys are often used. Explain what this key is and that we will be making a simple one today.
4. Have each student throw one shoe in the middle of the group.
5. Lead students through a process where they can ID whose shoe is whose by making a dichotomous key. Use characteristics such as color, type, markings, etc.
6. Once this activity is complete lead a discussion on characteristics – start with what was seen in the shoes and move on to what is seen in plants (i.e. thorns, needles, height, etc). Use the plant diagram to explain what to look for. Students will need to look at more than just the picture to determine what species of plant they are trying to identify. Ask students what parts of the plant will be helpful in determining the species of the plant: for example, the shape of the leaf, the color of the bark and branch structure.
7. Explain to the students that they will be using plant identification booklets to determine what species of plants are on the site.
8. Have students break into groups and ID one plant on their own and then gather as a group and try to ID those plants – the small group that worked on that plant should lead the discussion.
9. Walk amongst them to help answer questions. If any group finishes early give students another plant to identify, or have multiple groups work together on plants that are difficult to identify.
10. Once all groups are finished, have each group present its findings and how students came to that conclusion.

11. Review the difference between native and non-native species and how native plants are beneficial to the site.
12. With the remaining time, walk the site as a whole group and name the plants that are on site. Discuss why certain plants might grow in one part of the site and not in others.
13. While walking the site, briefly review the topic of biodiversity and its importance to a healthy site. Have students observe both the diversity of plant species and the different plant layers on the site.
14. Take note of the plant communities and relative abundance of each species. Help students interpret their findings and also share insight as to what species might have existed at the site before human impacts.

Reflection:

BEFORE PLANT ACTIVITY: Have you ever ridden a bicycle? How is it different from a motorcycle? What clues do you look for, to tell someone about the differences? If you were going to go for a ride, why would it be important to be able to tell the difference between the two? Why would it matter? Suppose you met someone who had never seen a bicycle; how would you describe what it looks like, feels like, sounds like?

AFTER PLANT ACTIVITY: Do you recognize any plants on this site that are also at your school or home? Based on what you have learned today, do you think the plants at your school or home are native or non-native? Why? Imagine the future: what might this site look like in five to ten years if the invasive species are not removed?

Demonstration and Celebration:

Create a native and non-native plant guide designed for elementary students; then make arrangements to share this guide with young students in a nearby school. Include lots of photos, graphics and visuals to help the elementary students begin to notice the difference between native and invasive species.

Oregon Department of Education Standards Alignments:

Academic Content Standards	
Science	<p>Life Science: Diversity/Interdependence Understand the relationships among living things and between living things and their environments. SC.CM.LS.03 Describe and analyze the effect of species, including humans, on an ecosystem. Describe and analyze diversity of species, natural selection, and adaptations.</p> <p>Scientific Inquiry: Forming the Question/Hypothesis Formulate and express scientific questions or hypotheses to be investigated. SC.CM.SI.01 Based on observations and scientific concepts, ask questions or form hypotheses that can be answered or tested through scientific investigation. SC.CM.SI.02 Design a scientific investigation that provides sufficient data to answer a question or test a hypothesis. SC.CM.SI.03 Collect, organize, and display sufficient data to facilitate scientific analysis and interpretation.</p>
English Language Arts	<p>Reading: Decoding and Word Recognition EL.CM.RE.01 Read at an independent and instructional reading level appropriate to grade level.</p> <p>Reading: Listen to and Read Informational and Narrative Text EL.CM.RE.02 Listen to, read, and understand a wide variety of informational and narrative text, including classic and contemporary literature, poetry, magazines, newspapers,</p>

	reference materials, and online information. Speaking EL.CM.SL.05 Analyze the occasion and the interests of the audience, and choose effective verbal techniques and language. EL.CM.SL.06 Use appropriate grammar.
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Career-Related Learning Standards	
Personal Management	CS.PM.04 Maintain regular attendance and be on time.
Communication	CS.CM.01 Locate, process, and convey information using traditional and technological tools. CS.CM.04 Read technical/instructional materials for information and apply to specific tasks.
Employment Foundations	CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation. CS.EF.07 Explain and follow health and safety practices in the work environment.

Essential Skills	
Read and interpret a variety of texts	Think critically and analytically
Demonstrate civic and community engagement	Write for a variety of purposes
Demonstrate career-related learning standards: personal management, employment foundations, and communication	

ASSESSMENT: Site Planning and Restoration Techniques

Viaje del Sitio para Restauración

Content Alignments: Science, English Language Arts, Technology

Summary:

Students will gain an understanding of the restoration process and then, by using what they have learned on the site, and from the sample site tour, will begin to conceptualize a plan for their own site.

Ground rules, or norms, are important for any group seeking to work together on difficult issues over time. They may be added to, or condensed, as the group progresses. Starting with basic ground rules builds trust, clarifies group expectations of one another, and establishes points of “reflection” to see how the group is doing regarding the process.

Learning & Service Objectives:

- Students will make inferences about what is being done at the sample restoration site and compare it to what will need to be done at their site.
- Students will conceptualize a plan for their site.
- Students will make a plan of what work they will complete at their site.
- Students will develop a set of ground rules or operating norms in order to facilitate clear communication;
- Students will recognize that norms ensure that group members can express their ideas freely and democratically.

Materials Needed:

- Pictures from the site tour
- Pictures from the stream walk
- Laptop with projector if needed
- GPS maps of the site from previous lesson (if available)
- Map of site
- Site Planning and Proposal narrative
- Pencil and paper for each student
- White board and dry-erase markers
- Forming Ground Rules student handout

Service-Learning Activities:

*Effective communication within a group most often is the direct result of establishing a set of ground rules that govern individual behavior, facilitate the work of the group and enable the group to accomplish its task. Students will be asked to think about working on a project together, and to develop ground rules appropriate to the **tasks** to be done, the **processes** to be followed, and the **norms** that will define how group members will interact with one another.*

1. Ask students to reflect on why they think ground rules are necessary.
2. Share with the group your own set of criteria for working with others. Suggested criteria items might include:
 - a. To ensure that all individuals have the opportunity to contribute;
 - b. To increase productivity and effectiveness;
 - c. To facilitate the achievement of group goals.
3. Be sure each student has a pencil and paper, to record his/her brainstorming.

4. Distribute the student handout, Forming Ground Rules. Review the guiding questions in the table with students, and then begin the activity by asking each to brainstorm independently a list of tasks, processes, and norms that are needed in order to work productively in a group or team.
5. Going around the circle, ask each student to present one thing from his/her written list to the group. Record all suggestions on the white board.
6. Review the list together, and ask for any clarifications needed. One person may not understand what another person has listed, or may interpret the language differently.
7. If the list contains more than ten ground rules, ask students if some of them could be combined. Be sure to check with the “author” of each item on the list before combining it; it is more important that everyone feel that his/her needs have been honored.
8. Ask if everyone can agree to the listed ground rules. If anyone dislikes or doesn’t want to comply with one of them, review and discuss that ground rule.
9. Ask if any one of the ground rules might be hard for the group to follow. Highlight these, and prompt the group for suggestions to adjust the rule to make it more manageable, if appropriate.
10. Have each student write down the adopted ground rules, as indicated on the handout; ask them to save this copy to use as a guide to effective teamwork during their project development.

Site Planning & Restoration Techniques:

1. Explain that today the group is going to pull together all the information they have been gathering over the last few weeks and make a plan for what the group will do at the restoration site. Use compile photos and maps from previous discussions to help students create a plan.
2. Introduce the “Habitat Restoration” activity.
3. Using the “Habitat Restoration” cards, have students work in pairs to put the restoration process in order. Once students have arranged their cards, ask the students to share what order they put their cards in.
4. Begin with the “pick a site” and “visit the site” cards. If the site was selected by the instructor, explain why their site was chosen. If the students assisted with the selection, review why they chose that site. Also discuss what they have already done in regards to the site visit and review.
5. Explain and discuss the remaining steps:
 - a. Pick a site
 - b. Visit the site and do a site review
 - c. Make a proposal
 - d. Do the work – planting events
 - e. Maintenance of the site – to be done later in the year
6. Tell the students that today they will be working on the “make a proposal” step.
7. With the following guiding questions, discuss the restoration issues that needed to be addressed at the sample restoration site and then ask students what the restoration issues are on their site.
 - a. Did you see any plants on this site that we saw on our site?
 - b. What plants were growing well on their site? Do you think they would grow well on ours?
 - c. How is this creek similar to our site?
 - d. With the following guiding questions, discuss how the presenter’s group addressed the problems on their site and ask what we can do to address ours.
 - e. What problems can you see at this site? Do we have those same ones on our site?
 - f. How did the presenter’s group handle the problems at their site? Do you think we can use those techniques on ours?
 - g. Did the partner group make any mistakes? How can we avoid those on our site?

8. Explain to the students what the site partner is looking for in their restoration work and what expectations the partner might have. For example, number of plants in the ground, maintenance activities and priorities.
9. While referring to the “make a proposal” and “do the work” cards, list out the proposal, goals and plans for the rest of their restoration project.
 - a. What is needed to complete the project?
 - b. What kind of site preparation needs to be done before we can begin work? Invasive removal? Bank re-sloping?
 - c. What areas do we need to work on first? Second? Refer to photos and GPS maps.
 - d. What plants will work best in what areas? Can we shade the site? Refer back to what the partner wants done.
10. In order to get the work done, we need to recruit volunteers for our community events. How can we go about recruiting? For example, telling friends and family, MySpace site online, flyers and presentations, getting help from community partners such as SOLV.
11. The next step is to plan out a schedule on the calendar. Look at the calendar of when the group meets and of community events. Based on that schedule, record what days they will be working on site planning, preparation, outreach and event planning.
12. Based on the site partner, size of planting area and number of potential volunteers recruited, determine the number of plants they'll need to order and plant. They will need an average of 10 to 15 plants per volunteer for one planting event.
13. If there is time left, have students work in pairs on the *Site Planning and Proposal* narrative. Have one student write in English and one in Spanish. If they are unable to finish, have them complete it during the site preparation activity.

Reflection:

Have you considered a career in the field of science or environmental education? Has your work with watershed restoration given you any ideas about pursuing secondary education in the field of science or environmental education?

Allow students time to complete the *Demonstration and Celebration* item from Lesson 3: Create a native and non-native plant guide designed for elementary students; then make arrangements to share this guide with young students in a nearby school. Include lots of photos, graphics and visuals to help the elementary students begin to notice the difference between native and invasive species.

Demonstration and Celebration:

Students are able to demonstrate their knowledge of the restoration process by compiling information from site visits, community partners and research.

Oregon Department of Education Standards Alignments:

Academic Content Standards	
Science	<p>Life Science: Diversity/Interdependence Understand the relationships among living things and between living things and their environments. SC.CM.LS.03 Describe and analyze the effect of species, including humans, on an ecosystem.</p> <p>Scientific Inquiry: Forming the Question/Hypothesis Formulate and express scientific questions or hypotheses to be investigated. SC.CM.SI.01 Based on observations and scientific concepts, ask questions or form hypotheses that can be answered or tested through scientific investigation.</p>
English	<p>Writing: Planning, Evaluation, and Revision EL.CM.WR.01 Use a variety of strategies to prepare for writing, such as brainstorming,</p>

Language Arts	<p>making lists, mapping, outlining, grouping related ideas, using graphic organizers, and taking notes. EL.CM.WR.03 Identify audience and purpose. EL.CM.WR.04 Choose the form of writing that best suits the intended purpose-personal letter, letter to the editor, review, form, report, or narrative. EL.CM.WR.12 Use precise language, action verbs, sensory details, and appropriate modifiers.</p> <p>Spelling EL.CM.WR.14 Produce writing that shows accurate spelling.</p> <p>Grammar EL.CM.WR.17 Demonstrate an understanding of proper English usage, including the consistent use of verb tenses and forms.</p> <p>Punctuation EL.CM.WR.18 Use conventions of punctuation correctly, including semicolons, colons, ellipses, hyphens and dashes.</p> <p>Capitalization EL.CM.WR.19 Use correct capitalization.</p> <p>Listening EL.CM.SL.11 Follow complex verbal instructions that include technical vocabulary and processes.</p>
Technology	<p>TG.01 Select and use technology to enhance learning and problem solving. TG.05 Design, prepare, and present unique works using technology to communicate information and ideas.</p>

Career-Related Learning Standards	
Personal Management	<p>CS.PM.01 Identify tasks that need to be done and initiate action to complete the tasks. CS.PM.02 Plan, organize, and complete projects and assigned tasks on time, meeting agreed upon standards of quality. CS.PM.04 Maintain regular attendance and be on time. CS.PM.05 Maintain appropriate interactions with colleagues.</p>
Problem Solving	<p>CS.PS.01 Identify problems and locate information that may lead to solutions. CS.PS.02 Identify alternatives to solve problems. CS.PS.03 Assess the consequences of the alternatives. CS.PS.04 Select and explain a proposed solution and course of action. CS.PS.05 Develop a plan to implement the selected course of action.</p>
Communication	<p>CS.CM.01 Locate, process, and convey information using traditional and technological tools. CS.CM.02 Listen attentively and summarize key elements of verbal and non-verbal communication. CS.CM.04 Read technical/instructional materials for information and apply to specific tasks. CS.CM.05 Write instructions, technical reports, and business communications clearly and accurately.</p>
Career Development	<p>CS.CD.01 Assess personal characteristics related to education and career goals.</p>
Teamwork	<p>CS.TW.02 Demonstrate skills that improve team effectiveness (e.g., negotiation, compromise, consensus building, conflict management, shared decision-making and goal-setting).</p>
Employment Foundations	<p>CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation. CS.EF.07 Explain and follow health and safety practices in the work environment.</p>

Essential Skills	
Read and interpret a variety of texts	Use technology
Write for a variety of purposes	Think critically and analytically

Apply mathematics in a variety of settings	Demonstrate civic and community engagement
Demonstrate career-related learning standards: personal management, problem solving, communication, employment foundations, and career development.	

Forming Ground Rules³

Name: _____ Date: _____

*Establishing ground rules builds trust and helps clarify expectations for any group preparing to work together over time. Starting with basic ground rules brings everyone to a common understanding of the **tasks** to be done, the **processes** to be followed, and the **norms** that will define how group members will interact with one another.*

Use the following questions to help you develop your own list of ground rules, and write them on your paper. Try to include at least one or two items from each of these categories:

Tasks	Processes	Norms
<ul style="list-style-type: none">• What will the team be expected to do, or produce?• What might each member of the team bring to the table?• How will tasks be assigned?	<ul style="list-style-type: none">• What are the standards for meeting attendance and participation?• What roles need to be filled, and how will they be assigned?• How will the group gather data and feedback?• How will team members be held accountable?	<ul style="list-style-type: none">• How will we make decisions?• How will we problem-solve?• How will we handle conflicts?• How does the team define “appropriate” or “respectful” behavior?• How, and when, will we communicate with one another?

Once your group has agreed upon a common set of ground rules, write them here:

As you progress through your project, it is a good idea to check in periodically to see whether you may need to add to, or adjust, your ground rules.

³ This activity was developed using guidelines established by the Office of Human Resources, University of Minnesota: *Setting Team Ground Rules*. <http://www1.umn.edu/ohr/toolkit/workgroup/forming/rules.html>

ASSESSMENT: Site Preparation Activity

Content Alignments: Science

Summary:

Part of the planning process for restoration is determining what needs to be done with the site before plants can be planted. Based on the needs of the site and partner, students will work to prepare the area where they will be planting.

Learning & Service Objectives:

- Students will learn what type of work needs to be done on a site in order to plant for restoration.
- Students will prepare the site for planting.

Materials Needed:

- Gloves
- Tools for removal of non-native plants
- Plant field guides
- Mulch, fabric, cuttings, etc. (if needed)

Service-Learning Activities:

1. Review with students the goals of the planting portion of the restoration process. Talk about the goals of each community partner such as site manager, SOLV and Equipo Verde. What does each party want in regards to planting the site?
2. Remind students that before we can begin planting, there are things that need to be done to the site in preparation. For example, mulching, laying down fabric and removing blackberries.
3. Why do we need to do this sort of preparation?
4. What would happen if we didn't prepare the site?
5. Based on what was discussed in the Site Planning class, what do we need to do for prep?
6. Once the group has reviewed the preparation plan, show students the proper techniques and have them begin. Work with them to ensure quality control.

Reflection:

Why is it important for us to do this work? How will it benefit the community? Who else will it benefit?

Demonstration and Celebration:

Students are able to demonstrate their knowledge of the restoration process by setting up the site plan and preparing the site based on knowledge gained from their local watershed council contact or water resources manager (or someone who has undertaken watershed restoration).

Students can celebrate a successful site plan once their plan has been approved by the local expert or group leader, and may include the graphic of the site plan as a visual reference in their final presentation.

Academic Content Standards

Science

Life Science: Diversity/Interdependence

Understand the relationships among living things and between living things and their environments.

SC.CM.LS.03 Describe and analyze the effect of species, including humans, on an ecosystem.

Career-Related Learning Standards

Personal Management

CS.PM.01 Identify tasks that need to be done and initiate action to complete the tasks.

CS.PM.02 Plan, organize, and complete projects and assigned tasks on time, meeting agreed upon standards of quality.

CS.PM.04 Maintain regular attendance and be on time.

CS.PM.05 Maintain appropriate interactions with colleagues.

Problem Solving

CS.PS.01 Identify problems and locate information that may lead to solutions.

CS.PS.02 Identify alternatives to solve problems.

CS.PS.03 Assess the consequences of the alternatives.

CS.PS.04 Select and explain a proposed solution and course of action.

CS.PS.05 Develop a plan to implement the selected course of action.

CS.PS.06 Assess results and take corrective action.

Communication

CS.CM.02 Listen attentively and summarize key elements of verbal and non-verbal communication.

CS.CM.03 Give and receive feedback in a positive manner.

Teamwork

CS.TW.02 Demonstrate skills that improve team effectiveness (e.g., negotiation, compromise, consensus building, conflict management, shared decision-making and goal-setting).

Employment Foundations

CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation.

CS.EF.07 Explain and follow health and safety practices in the work environment.

Essential Skills

Write for a variety of purposes

Think critically and analytically

Apply mathematics in a variety of settings

Demonstrate civic and community engagement

Demonstrate career-related learning standards: personal management, problem solving, communication, employment foundations, and teamwork.

ASSESSMENT: Nursery Tour

Content Alignments: Science, English Language Arts

Summary:

Students will tour the nursery where they will be getting their plant material. The nursery employee will talk to the students about how they propagate, raise the native plants and about which plants would be best suited for their restoration site. Students will also learn about career option in nurseries.

Learning & Service Objectives:

- Students will gain an understanding of how native plants are propagated and cared for.
- Students will learn what plants are best suited for which section of their site.
- Students will meet a professional in the nursery field and explore career possibilities.
- Students will begin the selection process regarding which species of plants they will use at their restoration site.

Materials Needed:

- Nursery professional
- Clipboards and pens for notes

Service-Learning Activities:

1. Contact a local plant nursery. If you need assistance finding a nursery with native plants, contact your local watershed council, water resources manager or other group that is currently undertaking restoration to find out where they obtain their plant material.
2. Talk with the speaker of the tour about what you would like to see discussed with the students including plant info and career information.
3. Discuss with students before the tour why they are visiting the nursery and what to expect.
4. Have the students prepare 2 questions each that they want to ask the speaker about careers in nurseries or related fields.
5. Have the students take notes on what the presenter speaks about for a classroom discussion following the tour.
6. Have the presenter talk to the students about the nursery process: how they propagate and raise the plants, how they pick which species to grow, how they decide what specific plants go to a specific site, how they maintain inventory, etc.
7. If the presenter knows the students' site have s/he discuss which plants would be most successful at their site.
8. After the tour, ask students a few questions related to the nursery:
 - Do you see any plants here that are also at our site?
 - How many sites like ours do you think this nursery could supply?
 - Why do you think it's important to get plant stock from the same watershed?

Reflection:

Does a job as a nursery professional sound interesting to you? Is it something that you might want to pursue as a career? If so, seek assistance to set up a job shadow or visitation day for more information about the career.

Different plants thrive or fail in nature depending on their suitability in a particular environment. Compare this to humans when they are placed in a new environment that they may or may not be suited

for. Plants and humans can adapt to their environment. Can you relate an experience when you or someone you know has had to adapt to their environment? Was it a positive experience?

Demonstration and Celebration:

Students are able to demonstrate their knowledge of plant suitability for particular environments by selecting plants that will succeed if planted at their site.

Oregon Department of Education Standards Alignments:

Academic Content Standards	
Science	<p>Life Science: Organisms Understand the characteristics, structure, and functions of organisms.</p> <p>Life Science: Diversity/Interdependence Understand the relationships among living things and between living things and their environments.</p>
English Language Arts	<p>Listening EL.CM.SL.II Follow complex verbal instructions that include technical vocabulary and processes.</p>

Career-Related Learning Standards	
Personal Management	<p>CS.PM.04 Maintain regular attendance and be on time.</p> <p>CS.PM.05 Maintain appropriate interactions with colleagues.</p>
Communication	<p>CS.CM.01 Locate, process, and convey information using traditional and technological tools.</p> <p>CS.CM.02 Listen attentively and summarize key elements of verbal and non-verbal communication.</p>
Career Development	<p>CS.CD.01 Assess personal characteristics related to education and career goals.</p>
Employment Foundations	<p>CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation.</p> <p>CS.EF.07 Explain and follow health and safety practices in the work environment.</p>

Essential Skills	
Write for a variety of purposes	Think critically and analytically
Demonstrate civic and community engagement	
Demonstrate career-related learning standards: Personal Management, Career Development, Employment Foundations, and Communication	

ASSESSMENT: Planting Plan Classroom Discussion

Content Alignments: Science

Summary:

Planting will be one of the most important steps of the restoration work that the students will be doing on the site. During this discussion, students will create a planting plan that will help guide their restoration work for upcoming community events.

This teambuilding activity can help a group understand the assets and challenges they possess when working as a team. It can also serve as a useful lesson to teach about material limitations and working under timelines.

Learning & Service Objectives:

- Students will plan how many and which plant species to plant at their restoration site.
- Students will take into account the community partner's plans, their own observations and the time and dollar budget to plan out the project.
- Students will create a site planting plan as a step in the restoration process.
- Students will engage in an activity that involves creativity, decision-making and leadership;
- Students will take on leadership roles to create a team-based project;
- Students will gain team-building experience through hands-on problem-solving;
- Students will complete a team project with limited resources;
- Students will adhere to time-constraints under pressure.

Materials Needed:

For each team:

- 3 sheets of chart paper
- 4 full-size paper plates (stiff, not flimsy)
- 4 paper cups
- 4 regular drinking straws
- Masking tape
- 1 pair of scissors
- Paper and pencils for planning purposes (not to be used in the tower itself)
- *Student Reflection for Tower Builder Activity* student handout
- Map of planting site
- GPS information from previous lesson (if available)
- Plant list from nursery
- Calculator

Service-Learning Activities:

This activity is "resource intensive", so make sure to plan ahead and provide all necessary items.

Teams should be 3-5 students each. Ideally, teams will reflect the variety of work style preferences.

1. Let students know they will be building a three-dimensional free-standing tower using only the materials provided by the leader. Remind them that they can use their conflict resolution skills if problems occur during the exercise.
2. Let students know that they must adhere to the following criteria:

- ✓ The tower must be at least five feet tall and;
 - ✓ The tower must be able to withstand a moderate breeze.
3. Read out loud the following guidelines:
- Your group has 12 minutes to plan, 8 minutes to build, and 10 minutes to debrief the exercise;
 - You cannot touch any of the materials during the planning phase and;
 - Your tower must stand free of any outside support (i.e., it cannot be attached to the floor, ceiling, wall, a team member or any other item).
- A. Plan (12 minutes): Choose a team leader, a timekeeper, and a recorder; as a team, plan how to build the tower.
- The team leader will guide the team's efforts and make final decisions
 - The time keeper will make sure the team adheres to the time limits
 - The recorder will write down/draw all the plans for the tower, and keep track of decisions made and any notes regarding teamwork functioning for the debrief portion of the exercise
- B. Build (8 minutes): When you are given the signal, construct a free standing tower.
- C. Debrief (10 minutes) Conduct a team assessment of the exercise using the *Student Reflection for the Tower Builder Activity*.

Planting Plan

1. In order to plant within a site, we need to create a plan. Was the planning section of the tower builder activity helpful? What would have happened if you had not planned? Why do you think making a planting plan is important to the restoration process? What would have happened if we didn't make a plan?
2. Before making a plan as to where the plants will be placed and what type of plants to purchase, review what we are trying to accomplish with the restoration project and why. The following are some examples:
 - Shade
 - Bank stability
 - Increased biodiversity
 - Water quality
3. Begin creating a plan with a discussion about what types of plants might be best to use for the site. Help formulate students' ideas based on the information they learned from the nursery tour. For example, which plants were in stock, which ones would grow best at the site and what sort of plant diversity the partner is looking for.
4. Make a list of the plants that the students think should be planted at the site.
5. Remind students about the number of plants needed for the total restoration project. Have students figure out how many different species of plants they want to order first, and then based on their numbers, have them calculate the number of plants for each species that needs to be ordered.
 - Look at the calendar of planned community events to help determine the date you will need plants delivered or picked up at the nursery for each event.
6. Let students know that the next time they meet they will begin the planting process and learn how to plant at the site.

Reflection:

Our ancestors used local plants in their everyday lives for a variety of uses. Choose one or more of the plants that your group has selected for your site. Do some background research then write a brief paragraph explaining what this plant could be used for, other than watershed restoration (e.g., food, medicine, art, building materials, etc.).

Demonstration and Celebration:

Students are able to demonstrate their knowledge of plant species and plant diversity by selecting particular plants for use at their chosen site.

Oregon Department of Education Standards Alignments:

Academic Content Standards	
Science	Life Science: Diversity/Interdependence Understand the relationships among living things and between living things and their environments. Describe and analyze diversity of species, natural selection, and adaptations.

Career-Related Learning Standards	
Personal Management	CS.PM.01 Identify tasks that need to be done and initiate action to complete the tasks. CS.PM.02 Plan, organize, and complete projects and assigned tasks on time, meeting agreed upon standards of quality. CS.PM.03 Take responsibility for decisions and actions and anticipate consequences of decisions and actions. CS.PM.04 Maintain regular attendance and be on time. CS.PM.05 Maintain appropriate interactions with colleagues.
Problem Solving	CS.PS.01 Identify problems and locate information that may lead to solutions. CS.PS.02 Identify alternatives to solve problems. CS.PS.03 Assess the consequences of the alternatives. CS.PS.04 Select and explain a proposed solution and course of action. CS.PS.05 Develop a plan to implement the selected course of action. CS.PS.06 Assess results and take corrective action.
Teamwork	CS.TW.01 Identify different types of teams and roles within each type of team; describe why each role is important to effective teamwork. CS.TW.02 Demonstrate skills that improve team effectiveness (e.g., negotiation, compromise, consensus building, conflict management, shared decision-making and goal-setting).
Communication	CS.CM.01 Locate, process, and convey information using traditional and technological tools. CS.CM.02 Listen attentively and summarize key elements of verbal and non-verbal communication CS.CM.03 Give and receive feedback in a positive manner. CS.CM.04 Read technical/instructional materials for information and apply to specific tasks.
Employment Foundations	CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation. CS.EF.07 Explain and follow health and safety practices in the work environment.

Essential Skills	
Read and interpret a variety of texts	Use technology (if researching with a computer)
Write for a variety of purposes (some students)	Speak and present publicly
Apply mathematics in a variety of settings	Think critically and analytically
Demonstrate career-related learning standards: Personal management, Communication, Problem Solving, Employment Foundations, and Teamwork	

Student Reflection for Tower Builder Activity

Name: _____ Date: _____

Each team will use the following guidelines to evaluate how well they met each of the following “dimensions of success”, and what they might have done differently.

1. Results

- Completion of task
- Achievement of goal

2. Process

- How the work gets done
- How the work is designed and managed
- How the work is evaluated and monitored

3. Relationships

- How was your experience working with the people in your group?
- How did people feel about their involvement with and contributions to this activity?
- How did your team balance the three dimensions of success during the exercise?
- Did you complete the task but neglect relationships?
- Was everyone in your group involved?
- Did the process work for you, or did you sacrifice results so that everyone felt good about the group and the exercise?
- Which of the three dimensions listed above was the most important for your team?
- How does this experience relate to working on our service-learning project as a team?

Restoration: Planting Activity

Content Alignment: Science

Summary:

Students will begin the planting stage of the restoration process. They will learn how to correctly plant in order to teach others during the community events.

It is important for students to model leadership behaviors in situations that resemble their service-learning project implementation. They need an opportunity to rehearse their leadership roles and practice the techniques or skills that will allow them to successfully carry-out a project in their community.

Learning & Service Objectives:

- Students will examine the attributes of a youth leader;
- Students will identify their personal talents and skills;
- Students will teach or share a skill with their classmates.
- Students will learn how to properly plant native species and get practice before they lead volunteers using these techniques.
- Students will plant a small portion of the restoration site.

Materials Needed:

- *Oregon Business* article about youth leader, Nancy Serna
- *My Leadership Skills and Talents* exercise handout
- Gloves
- Water
- Shovels
- Native plants
- Rakes

Service-Learning Activities:

Leadership

1. Have the students read the *Oregon Business* article about youth leader, Nancy Serna. Ask them for comments, and ask them if Nancy reminds them of anyone in their own community or at school. List the leadership characteristics students think Nancy possesses; it may help to have students underline the action words or verbs in the article with a highlighter, such as *works, translator, volunteering, organizes*, etc.
2. Ask the students to read the *My Leadership Skills and Talents* handout and choose a skill they would like to teach to their classmates, or demonstrate to them. Allow time for all students to briefly teach or share their skill or talent. Students may share their skill or talent and not necessarily try and teach it to others if it is something difficult but they should demonstrate this skill with some type of brief presentation.

Planting:

3. Explain to students that they will be learning the techniques of how to plant, and then practicing. During the community events, students will be explaining and demonstrating the planting techniques to volunteers.

4. To start your planting demonstration and show the students the proper planting technique for restoration. **Note: this technique is for the Willamette Valley. Proper planting techniques might vary in your area.**
 - Dig your hole: The holes should be at least as deep as the container the plant is in, and at least twice as wide. Save the dirt you dig out.
 - Take your plant out of its container: tip the plant upside down and gently loosen it. If it does not come out easily, squeeze the sides of the container until the plant comes out.
 - Loosen the roots: it is important that the plant roots point downwards. Be sure to gently loosen and uncurl roots.
 - Place the plant in the ground: make sure the root collar is at ground level and that the roots are spread out.
 - Add soil: one person should hold the plant upright while the other fills in the hole. Once the hole is filled, make sure to firmly pat down the soil with your fist or foot. Add more soil if you see that the area around the plant is bowl shaped.
5. Have students work in pairs to complete the planting. Each student should plant at least 2-3 plants for practice.
6. As students are planting, have them practice explaining the directions to their partner in Spanish and English.
7. Ask students how they would teach different people how to plant. For example, would you teach a twelve year old the same way you would teach a 40 year old? How is it different?

Reflection:

Has anyone ever planted before? If so, did you use the same or different techniques? Was planting more difficult than you thought?

Ask students to think about how they would teach others to do this in Spanish. Are there particular words in Spanish that they need to look up if they are unfamiliar with specialized vocabulary?

Demonstration and Celebration:

Students are able to demonstrate their knowledge of the proper technique to plant a plant and then teach others. Students can celebrate their accomplishment after they see the person/s they taught how to plant, successfully planting on their own.

Oregon Department of Education Standards Alignments:

Academic Content Standards	
Science	<p>Earth and Space Science: The Dynamic Earth</p> <p>Understand and correctly use essential principles, organizations, concepts, terminology, and notations from a field of science. (Standard D.1)</p> <p>Use information, skills, and investigative processes employed in a field of science. (Standard D.2)</p> <p>Additional Common Curriculum Goals: Unifying Concepts and Processes</p> <p>Understand that any collection of things that have an influence on one another can be thought of as a system (i.e., soil, plant parts, sunlight exposure, water, etc.)</p>

Career-Related Learning Standards	
Personal Management	<p>CS.PM.01 Identify tasks that need to be done and initiate action to complete the tasks.</p> <p>CS.PM.02 Plan, organize, and complete projects and assigned tasks on time, meeting agreed upon standards of quality.</p> <p>CS.PM.04 Maintain regular attendance and be on time.</p> <p>CS.PM.05 Maintain appropriate interactions with colleagues.</p>

Communication	CS.CM.01 Locate, process, and convey information using traditional and technological tools. CS.CM.02 Listen attentively and summarize key elements of verbal and non-verbal communication. CS.CM.06 Speak clearly, accurately and in a manner appropriate for the intended audience when giving oral instructions, technical reports and business communications.
Teamwork	CS.TW.01 Identify different types of teams and roles within each type of team; describe why each role is important to effective teamwork. CS.TW.02 Demonstrate skills that improve team effectiveness (e.g., negotiation, compromise, consensus building, conflict management, shared decision-making and goal-setting).
Employment Foundations	CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation. CS.EF.07 Explain and follow health and safety practices in the work environment.

Essential Skills	
Speak and present publicly	Think critically and analytically
Read and interpret a variety of texts	
Demonstrate career-related learning standards: Personal management, Employment Foundations, Teamwork and Communication.	



Madison High School senior Nancy Serna

NANCY SERNA YOUTH IN PHILANTHROPY

Know first that she is only 17. Then that this oldest of six children works weekends at her cousin's restaurant, comes home each night after school to help with housework and siblings, and acts as full-time translator for her parents, a homemaker and a landscaper who brought their family to Oregon from Mexico. Remember all that to truly appreciate how remarkable this quiet Madison High School senior from Northeast Portland must be to find 400 hours a year to volunteer. As a freshman, all she did was study. "I felt bored, and that it was pointless," says Nancy Serna. "Volunteering really fulfills me. I grew a lot. I became responsible. It made me capable of seeing other points of view." Since she was a 15-year-old sophomore, she has devoted hundreds of hours volunteering for MEChA, a Hispanic student organization that organizes food and clothing drives for migrant workers and day laborers. She also mentors Latino youths at Gregory Heights Middle School as part of the Oregon Leadership Institute; works with her school's chapter of the Community 101 program, which teaches students leadership, service and philanthropy; and helps *Promotores de Salud*, which focuses on solving health issues in the Hispanic community. "It makes me feel good, like I am helping in some way," Nancy says. As she nears graduation, she hopes for a career in health care, perhaps as a dental hygienist. Her mother, Carmen, is her inspiration. "She has always been there for me," says Nancy. As she describes what makes Nancy so very special, Carmen looks intently at her eldest and speaks at length to her in Spanish as they sit next to one another in their kitchen. Nancy listens, her mother's words softly covering her. Nancy then turns to translate, condensing a mother's boundless love and hope for her daughter into something a stranger could understand: "It is because I'm interested in education," she says, simply, and there is no misunderstanding.

My Leadership Inventory

Name: _____ Date: _____

You are a unique individual. You may wonder why we are calling you a leader, when you may not see yourself as one. After you identify your own skills and talents, you may begin seeing that you too have things you can teach or share with others.

In this activity you will list skills and talents you feel you possess, and then you will choose one of these and teach your classmates *how* to do something that you already know how to do, or simply *share* your talent or skill with them if it is something that is too difficult to teach or to do in a classroom setting.

The following list will help to get your thinking started, but feel free to be creative and really search inside yourself to see what you can share with others.

Sample Skills and Talents:

1. Artistic (pottery, photography, drawing, etc.)
2. Mechanical (fixing bikes, computers, cars, machines, appliances, etc.)
3. Musical (singing/dancing/playing an instrument)
4. Academic (excellent ability to memorize, speak a foreign language, mathematical, etc.)
5. Computer software/games
6. Gardening/landscaping
7. Creative (making things from recyclable materials or found objects, making up a new way to do something, problem solving skills, etc.)
8. Listening and speaking (Are you a good listener? Do people ask to look at your notes from a class lecture? Are you on the debate team, or do you love getting up in front of people to give speeches?)
9. Working with children (Are you nurturing, patient, etc.?)
10. Leading/delegating (Do you take charge in a situation when no one is stepping up to direct? Do you give people assignments or tasks in a group setting when others are hesitant to do so?)
11. Organizing/planning
12. Cooking/baking/sewing/knitting
13. Athletics/sports/games

What do you feel you can do really well that you can teach to your classmates or share with them? If you're stuck, ask your parents, friends or your teacher. Sometimes others can see talents and skills in you that you do not see yourself. List them below in preparation for your assignment.

My Skills and Talents:

"Adults underestimate youth and their ability to do good in society, but I think kids are the ones who are going to change the world."

-Craig Kielburger, 15-year old founder of Free the Children

Restoration: Event and Outreach Planning

Content Alignments: English Language Arts, Technology

Summary:

Students will gain an understanding of how a successful community event is organized. They will discuss why people tend to volunteer and how they can help volunteers have a positive experience. Students will then create a plan on how to complete outreach to their community and create outreach materials using culturally appropriate language.

Learning & Service Objectives:

- Students will gain understanding of how an event day will be organized.
- Students will discuss how to complete outreach to their community.
- Students will create an outreach plan complete with collateral materials and talking points.
- Students will make plans regarding how to complete outreach to recruit an adequate number of volunteers for the community planting events.

Materials Needed:

- Chart-pack paper for brainstorming
- Markers for brainstorming
- Access to at least three computers
- Access to copy machine (or plan to get copied flyers to students)

Service-Learning Activities:

1. Begin with a review of the planting activity that the group completed at the restoration site.
2. Explain about the upcoming three community events and how the students will be involved:
 - During the first community event, the instructor will lead the event and the students will observe;
 - During the second event, the instructor will lead with student assistance and have students take on more of a leadership role;
 - During the third event, the students will be expected to lead the project themselves.
3. Explain the various aspects of the event process.
 - Plan a project
 - Recruit volunteers to help with project
 - Gather supplies needed for project
 - Prepare the site for event
 - During the event: greet volunteers, give an introduction talk, explain what work needs to be done and do the work, thank the volunteers for the help and clean up afterwards.
 - Debrief of event
 - Plan new event
4. Discuss and brainstorm about how to recruit the volunteers that we need to help us out at the site:
 - What a volunteer is
 - Why people volunteer
 - What obstacles there might be to volunteering
 - What do people get out of volunteering?
 - Who we might want volunteering at our site
 - What would be something you would volunteer for?

- Who would be concerned with what we are doing?
- How can we let people know why they should be concerned?
- What are some things we can do as event planners to overcome obstacles?

Outreach Planning

From the previous discussion, use the following questions to talk about how to reach the communities you discussed with the “why people volunteer” and “What sort of volunteers do we want on site?”

5. Before you can create an outreach plan, students need to decide what time of day the event will be held. For example, morning or afternoon. What time of day would most volunteers want to come out? What is too early or too late in the day? Is there a time that would work best for the partner?
6. How do you find out about things going on in your school or community? For example, football games, parties, church activities?
7. How could we draw people’s attention to our volunteer event?
8. The Latino community generally completes outreach by word of mouth, while the Anglo community generally completes outreach with printed materials. Because we are working with both cultures, outreach materials will have to be created to meet each of these needs.
9. Create talking points for the students to discuss with their peers and families (e.g., a sample script for them to follow to recruit volunteers and discuss the event)
10. Create a flyer to have students pass out to teachers, at school (library, news bulletin board, student center, school clubs, etc.), and to community members, community leaders and various organizations (e.g., Centro Cultural, banks, stores, etc.):
 - Discuss the language to use (i.e., Spanish or English or both)
 - Discuss what information will need to be in the talking points (script) and on the flyer
 - Discuss what might catch people’s attention and attract them to the event
 - What information do people need up front about the volunteer activity/event?
11. Make a plan regarding how students will spread the word about the event and the flyers.
 - Who will target which groups?
 - How many people should they talk to/give a flyer to?
 - Who are the groups SOLV or Tech Wizards should work with besides those that the students will be talking to?
 - How early should they start volunteer recruitment and why?
 - It’s important that students share who they have done outreach to, so groups like SOLV will not be contacting constituents twice.

Reflection:

Students construct meaning in many different ways. For this reflection activity, give students a choice regarding the way they would prefer to communicate to others about their event and outreach experience:

- A. Read a brief paragraph or poem they’ve written regarding the event and outreach experience
- B. Classify the groups targeted for outreach to improve the process
- C. Draw a diagram or an illustration to visually depict the groups you want to recruit for the event
- D. Compose a rhythm, melody or tune to use during the outreach/recruitment process
- E. Create a 3-D model to illustrate the outreach/recruitment process, possibly including targeted geographic areas

- F. Lead a debrief with peers regarding the outreach/recruitment process, making sure to elicit feedback from everyone regarding ways to make the process more successful
- G. For those that prefer to work alone, have them reflect on the experience without working with the group, but have student share their reflection with the Equipo Verde group leader using a medium of their choice (written reflection, spoken, etc.)

Demonstration and Celebration:

Students are able to demonstrate their knowledge of the outreach process by participating in targeted outreach activities and successfully recruiting volunteers from the Latino and Anglo communities. Students can celebrate this success by tracking the number of volunteers recruited for each event, using a numbered visual to show how many volunteers have agreed to take part (e.g., the classic thermometer with red line increasing as numbers of volunteers increase).

Oregon Department of Education Standards Alignments:

Academic Content Standards	
English Language Arts	<p>Writing: Planning, Evaluation, and Revision EL.CM.WR.01 Use a variety of strategies to prepare for writing, such as brainstorming, making lists, mapping, outlining, grouping related ideas, using graphic organizers, and taking notes. EL.CM.WR.03 Identify audience and purpose. EL.CM.WR.04 Choose the form of writing that best suits the intended purpose-personal letter, letter to the editor, review, form, report, or narrative. EL.CM.WR.12 Use precise language, action verbs, sensory details, and appropriate modifiers.</p> <p>Spelling EL.CM.WR.14 Produce writing that shows accurate spelling.</p> <p>Grammar EL.CM.WR.17 Demonstrate an understanding of proper English usage, including the consistent use of verb tenses and forms.</p> <p>Punctuation EL.CM.WR.18 Use conventions of punctuation correctly, including semicolons, colons, ellipses, hyphens and dashes.</p> <p>Capitalization EL.CM.WR.19 Use correct capitalization.</p> <p>Listening EL.CM.SL.II Follow complex verbal instructions that include technical vocabulary and processes.</p>
Technology	TG.01 Demonstrate proficiency in the use of technological tools and devices.

Career-Related Learning Standards	
Personal Management	<p>CS.PM.01 Identify tasks that need to be done and initiate action to complete the tasks. CS.PM.02 Plan, organize, and complete projects and assigned tasks on time, meeting agreed upon standards of quality. CS.PM.03 Take responsibility for decisions and actions and anticipate consequences of decisions and actions. CS.PM.04 Maintain regular attendance and be on time. CS.PM.05 Maintain appropriate interactions with colleagues.</p>
Communication	<p>CS.CM.01 Locate, process, and convey information using traditional and technological tools. CS.CM.02 Listen attentively and summarize key elements of verbal and non-verbal communication. CS.CM.06 Speak clearly, accurately and in a manner appropriate for the intended audience when giving oral instructions, technical reports and business communications</p>

	(optional for some during reflection activity).
Teamwork	CS.TW.01 Identify different types of teams and roles within each type of team; describe why each role is important to effective teamwork. CS.TW.02 Demonstrate skills that improve team effectiveness (e.g., negotiation, compromise, consensus building, conflict management, shared decision-making and goal-setting).
Employment Foundations	CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation. CS.EF.07 Explain and follow health and safety practices in the work environment.

Essential Skills	
Write for a variety of purposes (optional depending upon which reflection activity the students choose)	Demonstrate civic and community engagement
Speak and present publicly (optional depending upon which reflection activity the students choose)	
Apply mathematics in a variety of settings (optional depending upon which reflection activity the students choose)	
Demonstrate career-related learning standards: Personal management, Communication, Employment Foundations, and Teamwork	

Restoration: Bioengineering–Live Stake Collection and Preparation

Content Alignments: Mathematics, Science

Summary:

Bioengineering is a restoration technique that is used in the place of more traditional hard engineering. By using live plant material in the form of live stakes, fascine bundles or brush layers, site managers can restore proper functioning condition in their restoration sites. Students often enjoy working with live stakes because it is a fun and new way to add plant material to a site and stabilize banks.

Learning & Service Objectives:

- Students will learn how to properly collect materials to use in bioengineering.
- Students will learn the concept of bioengineering.
- Students will collect and prepare material for bioengineering at the restoration site.

Materials Needed:

- Live cutting samples
- Gloves
- Water and bucket if needed
- Loppers
- Hand pruners
- Hack saw

Service-Learning Activities:

1. Explain the concept of bioengineering with live cuttings to students. Explain where and why the technique is used.
 - Live staking is the placement of woody plant and tree cuttings to grow and stabilize the stream bank by the formation of roots and aboveground brush.
 - Staking helps dry out a wet, unstable bank and allows it to become more stable.
 - Effective, low cost method for bank stabilization.
2. Find plants at your restoration site or a site nearby. Be sure to stay within the watershed to collect your cuttings.
3. Direct students how to take cuttings
 - not more than 1/3 of plant
 - thicker cuttings better
 - long and straight work best
 - be sure not to damage the bark
4. Once you have collected an adequate amount of cuttings, take them to a central area to prepare them
 - cut to 3-4 foot lengths
 - cut top ends flat
 - cut bottom ends at an angle
 - cut off smaller branches and leaves
5. Leave cuttings angle side down in creek or bucket of water on site for installation at the next meeting

Reflection:

While helping to restore the wetlands at your site, you are also satisfying requirements in school. How was this method of learning (i.e., hands-on, learning by doing) similar to other activities you've participated in at school? Do you prefer this method of learning to traditional book learning? Why or why not?

The National Audubon Society⁴ lists the following regarding the importance of protecting our wetlands: “Among the most important ecosystems on Earth, the wet ecosystems of bogs, freshwater marshes, prairie potholes, forested swamps, and salt-water estuaries provide critical nesting, rearing, feeding, and stop-over habitat for bird and other wildlife populations in watersheds across the nation. Wetlands are essential to estuary, river, and watershed health, trapping sediments and cleaning polluted waters, preventing floods, recharging groundwater aquifers, and protecting shorelines.” Brainstorm* with your group ways in which wetland health is intimately tied to human health (*group leader, have a student or yourself list the items given during this brainstorm for use later during the culminating celebration).

Demonstration and Celebration:

Students are able to demonstrate their knowledge of bioengineering and the restoration process by correctly preparing live plant materials for staking at their site, and can celebrate their success by including comments regarding the importance of watershed health (to humans, animal and plant life and the planet) in their final presentation. These comments will be recorded by a student or the group leader during the reflection activity brainstorm.

Oregon Department of Education Standards Alignments:

Academic Content Standards	
Mathematics	Computation and Estimation Compute fluently and make reasonable estimates.
Science	Life Science: Diversity/Interdependence SC.CM.LS.03.03 Explain how the balance of resources will change with the introduction or loss of a new species within an ecosystem. Earth and Space Science: The Dynamic Earth Understand and correctly use essential principles, organizations, concepts, terminology, and notations from a field of science (Standard D.1) Use information, skills, and investigative processes employed in a field of science (Standard D.2)

Career-Related Learning Standards	
Personal Management	CS.PM.01 Identify tasks that need to be done and initiate action to complete the tasks. CS.PM.02 Plan, organize, and complete projects and assigned tasks on time, meeting agreed upon standards of quality. CS.PM.04 Maintain regular attendance and be on time. CS.PM.05 Maintain appropriate interactions with colleagues.
Communication	CS.CM.01 Locate, process, and convey information using traditional and technological tools.
Teamwork	CS.TW.01 Identify different types of teams and roles within each type of team; describe why each role is important to effective teamwork. CS.TW.02 Demonstrate skills that improve team effectiveness (e.g., negotiation, compromise, consensus building, conflict management, shared decision-making and goal-setting).
Employment Foundations	CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation. CS.EF.07 Explain and follow health and safety practices in the work environment.

Essential Skills

⁴ The National Audubon Society’s Wetlands Campaign:
<http://www.audubon.org/campaign/wetland/ecosystem.html>

Apply mathematics in a variety of settings

Think critically and analytically

Demonstrate career-related learning standards: Personal Management, Communication, Employment Foundations, and Teamwork.

Restoration: Bioengineering–Live Stake Installation

Content Alignments: Science, Mathematics

Summary:

Bioengineering is a restoration technique that is used in the place of more traditional hard engineering. By using live plant material in the form of live stakes, fascine bundles or brush layers, site managers can restore proper functioning condition in their restoration sites. Students often enjoy working with live stakes because it is a fun and new way to add plant material to a site and stabilize banks.

Learning & Service Objectives:

- Students will learn and put into practice the concept of bioengineering.
- Students will utilize bioengineering techniques to install live stakes at the restoration site.

Materials Needed:

- Gloves
- Water
- Live cuttings from last session’s activity
- Plant protectors/caging material
- Loppers
- Hand pruners
- Rubber mallets
- Dibble Sticks
- Boots or waders

Service Learning Activities:

1. Review the concept of bioengineering using live cuttings with students.
2. Walk the site to find areas where the bank is eroding or might erode at high water.
3. Have students plan out where and what species they would like to plant. Have them consider spacing. Random placement or in rows? How large will the plant become? Do you think some might die out? Does the planting need to be dense or sparse?
4. Direct students how to install cuttings.
 - Stakes should be planted so that at least half their length is in the soil.
 - The angled cut end should be planted in the ground.
5. If cuttings are in a vulnerable area, have students install plant protectors or caging to protect the cuttings from rodents or weeds.

Reflection:

You are protecting vulnerable live cuttings from natural hazards such as animals and weeds. Now that you are getting to know the watershed better, how many ways can you think of to protect other areas of this site from humans, animals and invasive plants?

Bird species nest, feed, and rest in wetlands. As our wetlands have been destroyed, bird populations have slowly declined. The work you are doing to restore this wetland plays a huge role in helping to protect wildlife. This is like a domino effect (one event sets off a chain of other events). Once the bird population begins to increase at this site, what will some of the resulting effects be?

Demonstration and Celebration:

Students are able to demonstrate their knowledge of bioengineering and the restoration process by correctly staking live plant materials at their site, and can celebrate their success by analyzing the impact their actions will have on the ecosystem. Students can ask themselves, “How will my actions make a difference in the wetlands, and ultimately to the planet?”

Oregon Department of Education Standards Alignments:

Academic Content Standards	
Science	<p>Life Science: Diversity/Interdependence SC.CM.LS.03.03 Explain how the balance of resources will change with the introduction or loss of a new species within an ecosystem.</p> <p>Earth and Space Science: The Dynamic Earth Understand and correctly use essential principles, organizations, concepts, terminology, and notations from a field of science (Standard D.1) Use information, skills, and investigative processes employed in a field of science (Standard D.2)</p>
Mathematics	<p>Computation and Estimation Compute fluently and make reasonable estimates.</p>

Career-Related Learning Standards	
Personal Management	<p>CS.PM.01 Identify tasks that need to be done and initiate action to complete the tasks.</p> <p>CS.PM.02 Plan, organize, and complete projects and assigned tasks on time, meeting agreed upon standards of quality.</p> <p>CS.PM.03 Take responsibility for decisions and actions and anticipate consequences of decisions and actions.</p> <p>CS.PM.04 Maintain regular attendance and be on time.</p> <p>CS.PM.05 Maintain appropriate interactions with colleagues.</p>
Communication	CS.CM.01 Locate, process, and convey information using traditional and technological tools.
Problem Solving	CS.PS.05 Develop a plan to implement the selected course of action.
Teamwork	CS.TW.02 Demonstrate skills that improve team effectiveness (e.g., negotiation, compromise, consensus building, conflict management, shared decision-making and goal-setting).
Employment Foundations	<p>CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation.</p> <p>CS.EF.07 Explain and follow health and safety practices in the work environment.</p>

Essential Skills	
Think critically and analytically	
Demonstrate career-related learning standards: Personal Management, Communication, Problem Solving, Employment Foundations, and Teamwork.	

Restoration: Event Debrief and Planning

Content Alignments: English Language Arts

Summary:

Students will discuss and review their community event. They will talk about what went well and what needs to be changed for next time. They will then come up with an amended outreach plan on how to make improvement for the next event.

Learning & Service Objectives:

- Students will discuss the previous week's community event.
- Students will plan for the next community event.
- Students will write letters to local businesses requesting in-kind donations.
- Students will discuss how to make improvements and how they will complete outreach for the next event.

Materials Needed:

- Chart-pack paper for brainstorming
- Chart pack paper with previous outreach thoughts
- Markers for brainstorming
- Access to at least two computers and projector if needed.

Service-Learning Activities:

1. Begin by congratulating students on the community event. Ask them to share what took place during the day with students who might have missed the day.
2. Lead a discussion with the students about what they thought went well and what they think needs to be done differently for next time, using a Plus Delta Chart⁵
3. Discuss the leadership aspect of the event. Were students comfortable speaking? What needs to be done before they present at the next event?
4. Discuss how they completed outreach for the last event. Have students talk about their recruitment techniques and if those techniques were or were not successful. If more volunteers are needed next time, what are some new ways they can encourage people to participate? What would encourage you to come out on a Saturday morning?
5. Write the amended plan up on chart pack paper and have the group make any additional changes they think need to be made.
6. Based on their amended plan, discuss how they will do outreach for the next event. For example, what steps need to be completed now and who will do what and by when.
7. Write a sample e-mail to a group of individuals the students would like to invite. Use chart pack paper or laptop with projector to write what the students suggest as they say it.
8. On chart pack paper or laptop with projector, write a generic in-kind letter to local businesses, with input and wording from students, to request snacks and coffee for the next event. After the class, type up the letter and send it to businesses the students had suggested.

⁵ The Plus Delta Chart provides feedback on a specific topic being addressed. It is a simple chart with two columns. One side is the Plus side on which participants list what they felt worked well (draw a plus sign at the top of this column). The other side is the Delta side on which they write the things that need to improve (draw a triangle at the top of this column).

9. With any remaining time, have students practice the introduction for the community presentation in Spanish and English.

Personal Reflection:

Imagine yourself as a cartoonist for a movie entitled, ‘How I Saved the Planet’. Use a storyboard format (panels on which a sequence of sketches depict the significant changes of action and scene, as for a movie) to demonstrate your involvement in the restoration process. If you do not like to draw, pair up with someone who does and you can create the text while they illustrate your ideas.

Demonstration and Celebration:

Students are able to demonstrate their knowledge of the restoration process by planning their next community event and successfully delivering their message regarding what was accomplished and what impact it had on the community. Students may want to celebrate by getting the word out to the community regarding their restoration efforts by issuing a press release in both English and Spanish.

Oregon Department of Education Standards Alignments:

Academic Content Standards	
English Language Arts	<p>Writing: Planning, Evaluation and Revision</p> <p>EL.CM.WR.01 Use a variety of strategies to prepare for writing, such as brainstorming, making lists, mapping, outlining, grouping related ideas, using graphic organizers, and taking notes.</p> <p>EL.CM.WR.02 Discuss ideas for writing with classmates, teachers, and other writers, and develop drafts alone and collaboratively.</p> <p>EL.CM.WR.03 Identify audience and purpose</p> <p>EL.CM.WR.06 Focus on a central idea, excluding loosely related, extraneous, and repetitious information.</p> <p>EL.CM.WR.11 Create an organizational structure that logically and effectively presents information using transitional elements that unify paragraphs and the work as a whole.</p> <p>EL.CM.WR.12 Use precise language, action verbs, sensory details, and appropriate modifiers.</p> <p>EL.CM.WR.13 Demonstrate an understanding of sentence construction- including parallel structure and subordination- to achieve clarity of meaning, vary sentence types, and enhance flow and rhythm.</p> <p>Listening</p> <p>EL.CM.SL.10 Formulate judgments about ideas under discussion, and support those judgments with convincing evidence.</p>

Career-Related Learning Standards	
Personal Management	<p>CS.PM.01 Identify tasks that need to be done and initiate action to complete the tasks.</p> <p>CS.PM.02 Plan, organize, and complete projects and assigned tasks on time, meeting agreed upon standards of quality.</p> <p>CS.PM.04 Maintain regular attendance and be on time.</p> <p>CS.PM.05 Maintain appropriate interactions with colleagues.</p>
Communication	<p>CS.CM.01 Locate, process, and convey information using traditional and technological tools.</p> <p>CS.CM.02 Listen attentively and summarize key elements of verbal and non-verbal communication.</p> <p>CS.CM.03 Give and receive feedback in a positive manner.</p> <p>CS.CM.05 Write instructions, technical reports, and business communications clearly and accurately.</p>
Teamwork	<p>CS.TW.02 Demonstrate skills that improve team effectiveness (e.g., negotiation,</p>

	compromise, consensus building, conflict management, shared decision-making and goal-setting).
Employment Foundations	CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation. CS.EF.07 Explain and follow health and safety practices in the work environment.

Essential Skills	
Read and interpret a variety of texts	Demonstrate civic and community engagement
Write for a variety of purposes	
Demonstrate career-related learning standards: Personal Management, Communication, Employment Foundations, and Teamwork.	

Restoration: Community Event Site Prep

Content Alignments: Science, English Language Arts

Summary:

This lesson demonstrates the importance of open and clear communication. Communication skills will be essential to students as they work in close collaboration with community adults on their service-learning projects.

In order for a community event to run smoothly it must be set up before the volunteers arrive at the site. The best way SOLV has found to set up an event is to place each plant where it needs to be placed. Students will need to identify each plant and understand its needs (e.g., soil type and spacing from other plants) and then place that plant in an appropriate place within the planting area. There will be other things that need to be set up or prepared (such as spreading mulch prior to plant placement), depending on other activities that will take place on the event day. Students will use any extra time to practice translating and giving the event introductory talk.

Learning & Service Objectives:

- Students will learn what plants grow best under what conditions, in communities, and placement in those communities and conditions.
- Students will estimate proper plant spacing.
- Students will reinforce their knowledge of native plant identification.
- Students will practice giving the event introductory talk and their planting demonstration.
- Students will conceptualize the day of the event and help plan how to make the event run smoothly.
- Students will set up the restoration site for the community event that will take place that weekend.
- Students will practice listening and speaking skills and understand how precise language and effective communication skills enhance understanding.

Materials Needed:

- One 5 x 8 index card with an abstract design (squiggles, etc.) for one person in each pair
- One blank index card and a pen for the other person in the pair
- Effective Communication Student Reflection handout
- Gloves
- Water
- Rakes and pitch forks (for spreading mulch)
- Fabric (if needed)
- Other tools/items that may be specific to the work being done
- Native plants
- Printed introductory talk
- Tape measures
- Flags (if needed)
- Calculators
- GPS maps/information
- Clipboards and pens
- Chart-pack paper and markers (if there will be a place to set up)

Service-Learning Activities:

***In Advance:** Prepare a set of index cards (one set for each pair of students or participants) by sketching a design or line drawing on the card. If possible, try to have community advisors as part of this activity, and pair a youth with an adult partner.*

1. Pair the participants.
2. One person in each pair will have an index card with a design drawn on the card. Explain that the person with the design may not show the card to his/her partner until the activity is finished.
3. The other person in the pair will have a blank index card and a pencil.
4. Ask each pair to sit back-to-back.
5. The person with the designed card will have up to 3 minutes to describe the design in as much detail as possible, without identifying or naming the actual design (e.g., “draw a star”). As s/he describes the design, the person with the blank card will draw what s/he believes the design looks like. The person with the blank card and pencil may not speak at all during the activity.
6. After the allotted time is complete, partners share their results.
7. Ask students to complete the *Effective Communication Student Reflection* handout

Planting

In Advance: Arrange for plants to be delivered to the site by the time students arrive to work. Depending on site needs, partner goals and students plans take the necessary steps to set up the site. For example,

- A. If mulch needs to be spread, have all students work on the first area. After mulch is spread, discuss:
 - What types of plants you will be working with?
 - What types of requirements might each plant have? For example, specific soil type and space placement. Why do we need to make sure we give each plant a certain amount of space?
- B. If there are more planting areas, split the group up to work on spreading mulch in those areas.
 1. Based on the goals of the community partner, discuss how the site will be set up and the number of plants involved. For example, place them in rows, circles or clumps?
 - What does the site partner want?
 - How many plants of which type should be in each planting area?
 - Determine with the students how to set up the site for plant spacing.

The following is an example of how students in Forest Grove set up their site: The site partner wanted students to plant in laid out circles with a certain radius. Students then had to determine how many circles were needed for the number of plants the partner wanted per circle, and for the entire project. Students then used flags to mark out circles. They first determined the center of the circle and then used measuring tapes to mark the perimeter. Students had to make sure circles would not overlap each other and that they would fit in the boundaries of the site itself.

2. If possible, have a student draw out the layout of the planting area and where the plants need to be. Use the GPS information or other maps of the area to help with more visuals.
3. Once students have figured out where the plants are to be placed using tape measures and calculators (if needed), have them place the individual plants or flags where they need to be.
4. With remaining time, explain their role and your expectations of them during the event. Walk through the timeline of the event, including what time they need to arrive the day of.
5. Have students practice the introductory talk in both languages. Give them tips on how to work with the community during the event to ensure that work is being completed properly and volunteers have a positive experience.
6. Verbally walk through the rest of the event day and talk through scenarios that may occur and how students might handle them.
 - Talk about how to talk with volunteers about the work they are doing and how to think volunteers at the end of the event.

- What kinds of things might go wrong at the event? How can you use what you know to make sure these types of things don't happen, or so that you can fix issues that may arise? For example, people might not plant correctly, safety concerns, etc.
- How might you explain what needs to be done and why we are doing what we are doing, in Spanish? Do you need help translating key terms?

Reflection:

When deciding how to set up the site and where to plant, did you have an equal say in the final decision? Did your group offer you an equal opportunity to express your ideas regarding site set-up? Was your voice heard? How can you use listening and concise language skills to ensure that everyone's voice is heard?

Demonstration and Celebration:

Students are able to demonstrate their knowledge of site and event preparation by helping to improve the process each time they are involved in an event. They can celebrate their successful event/s during the debrief process, and congratulate themselves for their accomplishments. It will be important to share their lessons learned during their final, culminating event.

Oregon Department of Education Standards Alignments:

Academic Content Standards	
Science	<p>Life Science: Diversity/Interdependence SC.CM.LS.03.02 Explain how humans and other species can impact an ecosystem. SC.CM.LS.03.03 Explain how the balance of resources will change with the introduction or loss of a new species within an ecosystem.</p> <p>Earth and Space Science: The Dynamic Earth Understand and correctly use essential principles, organizations, concepts, terminology, and notations from a field of science. (Standard D.1) Use information, skills, and investigative processes employed in a field of science. (Standard D.2)</p>
English Language Arts	<p>Speaking EL.CM.SL.02 Choose appropriate techniques for developing the introduction and conclusion (e.g., by using literary quotations, anecdotes, references to authoritative sources). EL.CM.SL.03 Choose logical patterns of organization (e.g., chronological, topical, cause-and-effect) to inform and to persuade, by seeking agreement or action, or uniting audiences behind a common belief or cause. EL.CM.SL.05 Analyze the occasion and the interests of the audience, and choose effective verbal techniques and language. EL.CM.SL.06 Use appropriate grammar. EL.CM.SL.07 Use props, visual aids, graphs and/or electronic media to enhance the appeal and accuracy of rehearsed presentations. EL.CM.SL.08 Produce concise notes for extemporaneous speaking. EL.CM.SL.09 Analyze the occasion and the interests of the audience, and choose effective verbal and non-verbal techniques, such as volume, expression, rate, gestures, and eye contact for presentations.</p>

Career-Related Learning Standards	
Personal Management	<p>CS.PM.01 Identify tasks that need to be done and initiate action to complete the tasks. CS.PM.02 Plan, organize, and complete projects and assigned tasks on time, meeting agreed upon standards of quality. CS.PM.03 Take responsibility for decisions and actions and anticipate consequences of decisions and actions. CS.PM.04 Maintain regular attendance and be on time. CS.PM.05 Maintain appropriate interactions with colleagues.</p>
Communication	<p>CS.CM.01 Locate, process, and convey information using traditional and technological tools.</p>

	<p>CS.CM.02 Listen attentively and summarize key elements of verbal and non-verbal communication.</p> <p>CS.CM.03 Give and receive feedback in a positive manner.</p> <p>CS.CM.05 Write instructions, technical reports, and business communications clearly and accurately.</p> <p>CS.CM.06 Speak clearly, accurately and in a manner appropriate for the intended audience when giving oral instructions, technical reports and business communications.</p>
Teamwork	CS.TW.02 Demonstrate skills that improve team effectiveness (e.g., negotiation, compromise, consensus building, conflict management, shared decision-making and goal-setting).
Employment Foundations	<p>CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation.</p> <p>CS.EF.07 Explain and follow health and safety practices in the work environment.</p>

Essential Skills	
Write for a variety of purposes	Demonstrate civic and community engagement
Speak and present publicly	Think critically and analytically
Demonstrate career-related learning standards: Personal Management, Communication, Employment Foundations, and Teamwork.	

Effective Communication Student Reflection

Name: _____ Date: _____

1. What did you learn about effective communication from these activities?

2. *If you were the one holding the designed card:*
How did it feel to describe the design to someone who was not giving feedback or asking the clarifying questions?

3. What did you learn about using specific language to describe more clearly what you meant?

4. *If you were the one drawing the design:*
On a scale of 1 (*high*) to 5 (*low*), how would you rate your skills as a listener? Why?

5. How might the experience you had in the *Back-to-Back Exercise* affect your participation in a project team? What will you need to do to make sure that your communication is effective?

Restoration: Community Event Leadership

Content Alignments: Science, English Language Arts

Summary:

For a community event to be successful it is important to have good leadership. Students will provide that leadership at a community event. They will give the introductory talk to the group describing what will be done and why it is important. They will discuss safety issues with volunteers and also give a planting demonstration using proper planting techniques. Students will then circulate through the volunteers monitoring their performance and ensuring their safety and use of proper planting techniques. Students will then thank the volunteers and debrief the event.

Learning & Service Objectives:

- Students will lead the community in a restoration event.
- Students will give an introduction, safety and planting demonstration talk.
- Students will monitor the work of volunteers and give feedback on volunteer performance.
- Students will lead the community event with assistance from their team leader.

Materials Needed:

- Gloves
- Water
- Tools
- Native plants
- Printed introductory talk
- Mulch and soil for planting (if needed)
- Other event supplies provided by partners

Service-Learning Activities:

1. Pick up food/beverages that were donated for the event.
2. Before the students arrive, gather tools and materials, food/beverages and prepare registration table.
3. Have students meet at the site about a half an hour early to help get ready for the event.
4. Before volunteers arrive, have students practice with each other on what will be said and review how to register volunteers.
5. If time, review and practice planting. Discuss how they would work with a volunteer if they are planting improperly and how they would instruct them to plant correctly.
6. Have students greet volunteers as they arrive and assist with volunteers registration.
7. When it is time, the group leader will call the volunteer group together and give a short introductory talk introducing students.
8. Students will then give an introductory talk and a safety talk in Spanish and English. After the introduction, have them lead the volunteers to the work site and give the planting demonstration. If they are planting in different areas or have multiple tasks, have the students break volunteers up into different working groups after the planting demonstration.
9. Start the work!
10. During the event, students will be in charge of quality control while volunteers are working. For example, walking among the volunteers to make sure they are planting correctly or being safe.
11. After the event, have students thank volunteers for their hard work.
12. Debrief with students about how the event went. What did you enjoy most about the day?
13. If they have time, have students help you clean up and put tools away.

Reflection:

By working with community members to restore your local wetlands, you are satisfying some of the requirements needed for graduation. One of these areas asks for you to demonstrate that you have

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engaged with the community and participated in activities relating to citizenship. How has your work with community members, and particularly any neighbors, family and friends you've worked with, strengthened your sense of community involvement and civic pride? How have your actions impacted your community in a positive way? Does your work on these community events make you want to stay involved in community activities, and perhaps join local organizations now or in the near future?

Demonstration and Celebration:

Students are able to demonstrate their knowledge of leading an event by guiding community volunteers to successfully help restore a local wetlands area. They can celebrate their success during the event debrief, and share their experiences during the final, culminating activity.

Oregon Department of Education Standards Alignments:

Academic Content Standards	
Science	<p>Life Science: Diversity/Interdependence SC.CM.LS.03.02 Explain how humans and other species can impact an ecosystem. SC.CM.LS.03.03 Explain how the balance of resources will change with the introduction or loss of a new species within an ecosystem.</p> <p>Earth and Space Science: The Dynamic Earth Understand and correctly use essential principles, organizations, concepts, terminology, and notations from a field of science. (Standard D.1) Use information, skills, and investigative processes employed in a field of science. (Standard D.2)</p>
English Language Arts	<p>Speaking EL.CM.SL.06 Use appropriate grammar. EL.CM.SL.07 Use props, visual aids, graphs and/or electronic media to enhance the appeal and accuracy of rehearsed presentations. EL.CM.SL.09 Analyze the occasion and the interests of the audience, and choose effective verbal and non-verbal techniques, such as volume, expression, rate, gestures, and eye contact for presentations.</p>

Career-Related Learning Standards	
Personal Management	<p>CS.PM.01 Identify tasks that need to be done and initiate action to complete the tasks. CS.PM.02 Plan, organize, and complete projects and assigned tasks on time, meeting agreed upon standards of quality. CS.PM.03 Take responsibility for decisions and actions and anticipate consequences of decisions and actions. CS.PM.04 Maintain regular attendance and be on time. CS.PM.05 Maintain appropriate interactions with colleagues.</p>
Communication	<p>CS.CM.01 Locate, process, and convey information using traditional and technological tools. CS.CM.03 Give and receive feedback in a positive manner. CS.CM.06 Speak clearly, accurately and in a manner appropriate for the intended audience when giving oral instructions, technical reports and business communications.</p>
Teamwork	<p>CS.TW.02 Demonstrate skills that improve team effectiveness (e.g., negotiation, compromise, consensus building, conflict management, shared decision-making and goal-setting).</p>
Employment Foundations	<p>CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation. CS.EF.07 Explain and follow health and safety practices in the work environment.</p>

Essential Skills	
Speak and present publicly	Demonstrate civic and community engagement
Demonstrate career-related learning standards: Personal Management, Communication, Employment Foundations, and Teamwork.	

Monitoring: Water Quality Testing

Content Alignments: Science, English Language Arts, Mathematics, Technology

Summary:

Students will analyze the water quality at the restoration site. They will learn what water quality levels a healthy body of water would have and then compare their results to that. If possible multiple sites throughout the watershed should be tested and then compared to the student's site.

Learning & Service Objectives:

- Students will be able to correctly collect water samples. They will learn how to properly use the equipment, access the riverbank and analyze the samples
- By noting what vegetation is present on site, decisions will be able to be made about what plant species to bring in for restoration.
- From data collected, students will be able to draw conclusions regarding water quality and the need for restoration
- Students will take measurements for the restoration site to analyze over the length of restoration activities. This information will be used to determine the scope of restoration as well as the success of the project upon completion and for later years of maintenance and monitoring

Materials Needed:

- Test kits for the tests you which to complete
- Data sheets for each student
- Writing Utensil

Service Learning Activities:

Water Quality Testing

Testing might include sampling for the following:

- **Temperature** is a measure of the intensity of heat, or how hot a system is. Heat has direct affects on plants and animals, as well as, many of the physical, biological, and chemical characteristics of a stream.
- **Dissolved oxygen (DO)** is the amount of oxygen gas dissolved in liquid water. Most aquatic organisms require this for respiration.
- **pH** is a measure of how acidic or basic a solution is. Aquatic organisms can be very sensitive to high or low pH values, especially less than 6.5 or greater than 8.5. The reproductive portion of the growth cycle is particularly sensitive. Adult organisms may continue to live, but young will not be produced. Water can contain solids, which are either suspended or dissolved. Suspended solids, such as soil particles or algae, can cause the water to become murky or turbid.
- **Turbidity**, which is caused by suspended solids, is a water quality concern because it blocks light needed for photosynthesis, reduces visibility for visual feeders and smothers fish and amphibian eggs.
- **Conductivity** is a measure of how well water can conduct an electrical current. Conductivity can be a useful measurement to complement other water quality monitoring.

Reflection:

Review that the water you are testing today is part of a system. Brainstorm where this water comes from and where it is going. What could this water be used for (drinking, irrigation, wildlife, recreation...)? Write this up. Then go through the whole system and assign possible jobs that could be related to that part of the system. Have each student pick one job and list the skills they think a person would need to do that job.

Demonstration and Celebration:

Have each student present the watershed job they picked and the list of skills they developed.

Oregon Department of Education Standards Alignments:

Academic Content Standards	
Science	Life Science: Diversity/Interdependence Understand the relationships among living things and between living things and their environments. SC.CM.LS.03 Describe and analyze the effect of species, including humans, on an ecosystem SC.CM.LS.03.02 Explain how humans and other species can impact an ecosystem. SC.CM.LS.03.03 Explain how the balance of resources will change with the introduction or loss of a new species within an ecosystem.
Language Arts	Reading: Find, understand, and use specific information in a variety of texts across the subject areas to perform a task. EL.CM.RE.15 Read directions; procedures; and technical directions
Mathematics	Measurement Understand measurable attributes of objects and the units, systems, and processes of measurement. MA.CM.ME.01 Determine the appropriate units, scales, and tools for problem situations involving measurement.
Technology	TG.01 Demonstrate proficiency in the use of technological tools and devices.

Career-Related Learning Standards	
Personal Management	CS.PM.01 Identify tasks that need to be done and initiate action to complete the tasks. CS.PM.02 Plan, organize, and complete projects and assigned tasks on time, meeting agreed upon standards of quality. CS.PM.04 Maintain regular attendance and be on time. CS.PM.05 Maintain appropriate interactions with colleagues.
Communication	CS.CM.01 Locate, process, and convey information using traditional and technological tools. CS.CM.04 Read technical/instructional materials for information and apply to specific tasks.
Employment Foundations	CS.EF.02 Select, apply, and maintain tools and technologies appropriate for the workplace CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation. CS.EF.07 Explain and follow health and safety practices in the work environment.
Teamwork	CS.TW.02 Demonstrate skills that improve team effectiveness (e.g., negotiation, compromise, consensus building, conflict management, shared decision-making and goal-setting).

Essential Skills

Read and interpret a variety of texts
Write for a variety of purposes
Think critically and analytically
Demonstrate career-related learning standards: Personal Management, Communication, Employment Foundations and Teamwork.

Monitoring: Macroinvertebrates

Content Alignments: Science, English Language Arts, Mathematics

Summary:

These organisms are typically used for assessments because they have various life spans (ranging from 1 to 3 years) so they show effects of short- and long-term pollution events. They also reflect the conditions of their local environment since they do not migrate over large distances. Additionally they are affected by physical, chemical, and biological conditions of the stream and therefore may show the impacts of habitat loss not detected by traditional water quality assessments. Finally they are a critical part of the stream's food web. Students will learn why these organisms are important and how to properly sample for them and then analyze their results. This activity needs to be done at a stream channel students can access; large rivers will not work. Instructors should find a site that is about the restoration site in the watershed and help students draw the conclusion about connections between this alternate sample site and the restoration site they work on.

Learning & Service Objectives:

- Students will learn how to collect and identify macroinvertebrates
- Students will learn how to analyze water quality based on their findings
- Students will make inferences about the health of a tributary to the main channel (if work takes place on a sample stream that is smaller and up-watershed of their restoration site)
- The results that the students find will be used to determine the health of the restoration site and incorporated into a restoration plan. This information will also be used to gauge success of the project upon completion and for later years of maintenance and monitoring

Materials Needed:

- Kick net and any sample tools you can acquire
- Ice cube trays
- Large white tubs
- Tweezers
- Datasheets
- Waterproof boots
- Photocopied pictures of a different macroinvertebrates to show as examples
- Dichotomous key for macroinvertebrates

Service Learning Activities:

1. Explain to students why we look at macroinvertebrates in regards to stream health
2. Explain and demonstrate how to identify macroinvertebrates.
3. Explain and demonstrate how to properly sample for macros; careful to be as non-disruptive to the creek as possible and also in attaining a non-contaminated quality sample.
4. Have each student try using the kick net and other sampling tools

In small groups:

5. What are other indicators of problems? What is an indicator that you hurt yourself? What is an indicator that you are late to class? Why is it important to be aware of indicators? How can this awareness help you in other parts of your life?
6. Each student group should be given a white tub to collect their samples.
7. Help the students pull out and ID the macros they have found. Have them place like species on one section of an ice cube tray
8. Help each group fill out the data sheets
9. Come back together as a group and talk about your findings

10. If the activity takes place outside the primary restoration site, discuss how this creek impacts the site you regularly work on.

Reflection:

If we pay attention we can see how what we do affects where we live. If some factory, or business, or town, was dumping something in the water that was washing downstream and making us sick, we could follow that pollutant back to its source and identify the culprit. That would be the point source. But with polluted runoff, also called nonpoint source pollution, the problem is coming from many sources, mostly in tiny amounts. The source cannot be identified. It would be like finding a single soap bubble in the stream and tracing it back to the bottle of liquid that washed into the water upstream. Since we cannot follow the pollutant upstream, we must remove it before the water carries it downstream.

Typical nonpoint source pollution from homes include: improperly disposed of trash, fertilizer and sprays applied to gardens, oil, antifreeze, paint, and household cleaners. How could you reduce the amount of nonpoint source pollution from your home? What are some easy steps you could take?

Demonstration and Celebration:

Share information about nonpoint source pollution with your family and friends. See if you can change one thing at your home to reduce possible pollution.

Oregon Department of Education Standards Alignments:

Academic Content Standards	
Science	Life Science: Diversity/Interdependence Understand the relationships among living things and between living things and their environments. SC.CM.LS.03 Describe and analyze the effect of species, including humans, on an ecosystem SC.CM.LS.03.02 Explain how humans and other species can impact an ecosystem. SC.CM.LS.03.03 Explain how the balance of resources will change with the introduction or loss of a new species within an ecosystem.
English Language Arts	Reading: Find, understand, and use specific information in a variety of texts across the subject areas to perform a task. EL.CM.RE.15 Read directions; procedures; and technical directions
Mathematics	Measurement Understand measurable attributes of objects and the units, systems, and processes of measurement. MA.CM.ME.01 Determine the appropriate units, scales, and tools for problem situations involving measurement.

Career-Related Learning Standards	
Personal Management	CS.PM.01 Identify tasks that need to be done and initiate action to complete the tasks. CS.PM.02 Plan, organize, and complete projects and assigned tasks on time, meeting agreed upon standards of quality. CS.PM.04 Maintain regular attendance and be on time. CS.PM.05 Maintain appropriate interactions with colleagues.
Communication	CS.CM.01 Locate, process, and convey information using traditional and technological tools. CS.CM.04 Read technical/instructional materials for information and apply to specific tasks.

Employment Foundations	CS.EF.02 Select, apply, and maintain tools and technologies appropriate for the workplace CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation. CS.EF.07 Explain and follow health and safety practices in the work environment.
Teamwork	CS.TW.02 Demonstrate skills that improve team effectiveness (e.g., negotiation, compromise, consensus building, conflict management, shared decision –making and goal-setting).

Essential Skills
Read and interpret a variety of texts
Write for a variety of purposes
Think critically and analytically
Demonstrate career-related learning standards: Personal Management, Communication, Employment Foundations and Teamwork.

Monitoring: Stream Measurements

Content Alignments: Mathematics

Summary:

Students will study the important of stream channel structure. The physical structures (rock, plants, soil, etc) in and around a stream or river provide a home, or habitat, for a wide variety of fish and wildlife species. Students will study Stream habitat quality by measuring specific aspects of the channel and surrounding riparian area that are critical for fish (and other aquatic life, such as macroinvertebrates). This activity needs to be done at a stream channel students can access; large rivers will not work. Instructors should find a site that is about the restoration site in the watershed and help students draw the conclusion about connections between this alternate sample site and the restoration site they work on.

Learning & Service Objectives:

- Students will learn how to take stream measurements using meter sticks, tape measures and equations
- Students will analyze the function of the stream channel
- Students will make inferences about the health of a tributary to the main channel (if work takes place on a sample stream that is smaller and up-watershed of their restoration site)
- Channel characteristics will determine the need for and type of restoration that will take place on the site.
- If study takes place off site, the information gathered about the larger watershed can also help guide restoration on the site itself.

Materials Needed:

- Measuring tapes
- Meter sticks
- Datasheets
- Orange (to measure velocity)
- stopwatch

Service Learning Activities:

1. Describe what Streamflow is and how it can be used to place other water quality measures into context.
2. Select the stream reach where the flow will be measured. Ideally, the reach will be:
 - a. Fairly straight,
 - b. At least 6 inches deep,
 - c. Not contain an area of slow water such as a pool, and
 - d. Flowing within a single channel.
3. To measure velocity:
 - a. Locate 2 points four feet apart and mark both the upstream and downstream points with a flag, stick or other indicator.
 - b. Float an orange between the two points, recording the time it takes it to drift between the two points.
 - c. Repeat the process 3 times and record the average velocity
 - d. Calculate the number of feet traveled per second by dividing the average time in seconds by the distance traveled.
4. Describe the difference between stream velocity and stream discharge.
5. To measure discharge:
 - a. Use the measuring tape to determine and record the width of the stream at 3 different equidistant transects. Add the measurements together and divide by 3 to determine the average stream width.

- b. Use the meter stick to determine and record the depth of the stream at 5 equidistant spots as you move across the stream at each transect. Add together the measurements from each transect and divide by 6 (this accounts for the stream bank). After you have done each transect average all 3 transects to find your average depth.
- c. The final variable will be the roughness coefficient which depends on the makeup of the stream bed.
- d. Use the following equation to find the stream discharge in cubic feet per second (cfs).

$$\text{Steamflow (cfs)} = W \times D \times V \times RC$$

W=Average Width (Ft)

D = Average Depth

RC = Roughness coefficient smooth sandy bottom = 0.9, rough rocky bottom = 0.8

V = Average Surface velocity (ft/sec)

Reflection:

Just like we need to analyze and plan the structure of a stream for habitat that animals thrive in, we need to do the same for humans. Does anyone know what land-use planning is? How is land-use planning like the stream assessment and planning we did today? What do the plants and animals around this stream need to be healthy? What do humans need in their habitat to be healthy? Who is responsible for doing that planning? What does a land-use planner do?

Demonstration and Celebration:

Students will demonstrate their knowledge of how the velocity and size of a stream affects its restoration by the plants and methods they choose to use in the restoration process of their own site.

Oregon Department of Education Standards Alignments:

Academic Content Standards	
Science	Life Science: Diversity/Interdependence Understand the relationships among living things and between living things and their environments. SC.CM.LS.03 Describe and analyze the effect of species, including humans, on an ecosystem SC.CM.LS.03.02 Explain how humans and other species can impact an ecosystem.
English Language Arts	Reading: Find, understand, and use specific information in a variety of texts across the subject areas to perform a task. EL.CM.RE.15 Read directions; procedures; and technical directions
Mathematics	Measurement Understand measurable attributes of objects and the units, systems, and processes of measurement. MA.CM.ME.01 Determine the appropriate units, scales, and tools for problem situations involving measurement. MA.CM.ME.02 Solve problems involving unit conversions (e.g., mile per hour to feet per second) given the unit equivalencies. Mathematical Problem Solving Accurately solve problems that arise in mathematics and other contexts MA.CM.PS.05 Accurately solve problems using mathematics

Career-Related Learning Standards	
Personal Management	CS.PM.01 Identify tasks that need to be done and initiate action to complete the tasks. CS.PM.02 Plan, organize, and complete projects and assigned tasks on time, meeting

	<p>agreed upon standards of quality.</p> <p>CS.PM.04 Maintain regular attendance and be on time.</p> <p>CS.PM.05 Maintain appropriate interactions with colleagues.</p>
Communication	<p>CS.CM.01 Locate, process, and convey information using traditional and technological tools.</p> <p>CS.CM.04 Read technical/instructional materials for information and apply to specific tasks.</p>
Employment Foundations	<p>CS.EF.02 Select, apply, and maintain tools and technologies appropriate for the workplace</p> <p>CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation.</p> <p>CS.EF.07 Explain and follow health and safety practices in the work environment.</p>
Teamwork	<p>CS.TW.02 Demonstrate skills that improve team effectiveness (e.g., negotiation, compromise, consensus building, conflict management, shared decision –making and goal-setting).</p>

Essential Skills
Read and interpret a variety of texts
Write for a variety of purposes
Think critically and analytically
Demonstrate career-related learning standards: Personal Management, Communication, Employment Foundations, and Teamwork.

Monitoring: Vegetation Monitoring

Content Alignment: Science, English Language Arts, Mathematics

Summary:

Students will monitor vegetation growth at a restoration site. Students will use their knowledge of native plants gained in earlier lessons to measure and record the changes in vegetation plots over time. Students will learn to effectively use tools such as measuring tapes, compasses, and scientific tracking forms to assist a restoration agency in tracking progress at their site.

Learning & Service Objectives:

- Students will understand the relationships among living things and between living things and their environments.
- Students will learn to find, understand, and use specific information to perform a task.
- Students will understand measurable attributes of objects and the units, systems, and processes of measurement.
- The purpose of vegetation monitoring is to get a sense of how successful a restoration project has been, with respect to tree damage, survivorship and invasive plant eradication. Vegetation monitoring, depending on the site, may include establishing plots. Generally these plots will already be established and the monitoring includes gathering information from the plots.
- To collect general information about each plot, including soil type, shade cover, and invasive species present. This portion of plot monitoring includes filling out the top half of the Vegetation Plot Form data sheet. Students will fill out a separate sheet for each plot located on the site.

Materials Needed:

The equipment you will need for vegetation monitoring:

- Clipboard and writing utensil
- Mapping form, Benchmark Form, Vegetation Plot Form, and Site Form
- Compass
- Plant identification book
- Meter stick and measuring tape
- Calipers
- 3 meter length of string
- Small shovel
- Extra plant ID tags

Service Learning Activities:

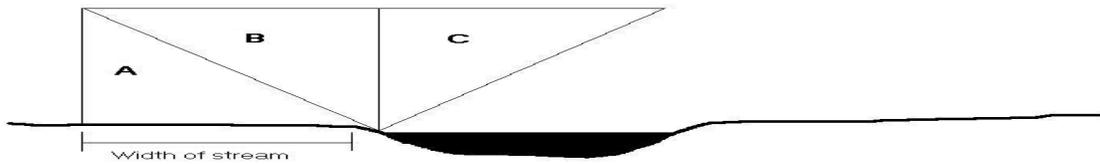
1. Explain what vegetation monitoring is and why it is done.
2. Demonstrate to students the proper use of a compass and what it is used for.
3. Explain the process you will go through to monitor plots.
4. Follow the directions below to find and monitor each plot.

Finding the Plot:

Different restoration groups use different techniques for setting up and finding plots on each restoration site. Speak with a representative of the group you are working with to determine their process for locating plots. Follow directions provided by the restoration group to locate each plot.

General Plot Information:

1. *Site name:* Fill out the Site Name, as indicated on the Mapping Form. This is often the name of the creek, park, or property owner.
2. *Volunteer Names:* Under Volunteer Names please put your name(s) down, so if questions arise, the proper people can be contacted.
3. *Plot #:* Indicate the plot # for this site, and the total number of plots on the site. This information is provided on the wooden stake or rebar in the center of the plot. If a stake is missing, use the benchmarks and bearing indicated on the Benchmark Form. Looking for tagged plants will help you determine where the center of the plot should be.
4. *Radius:* The radius of most plots will be 3 meters unless otherwise indicated. In general, a minimum of 5% of the total area of the site is recommended for monitoring, and the plots will be within the restoration project area.
5. *Plot is on which bank?* To determine on which bank you are located, look downstream. To your left is the Left Bank and to your right is the Right Bank.
6. *Shade available to plants in plot:* Indicate the amount of shade available to plants within the plot. Very tall grass or shrubs that provide shade to small trees or shrub are considered Estimate if necessary.
 - **PARTIAL** shade: Shade that covers a portion of the plot or for only a portion of the day.
 - **FULL** shade: Plot is shaded completely during most times of the day.
7. *Slope facing:* Disregard this question if the plot is on fairly flat ground. The bank usually slopes toward the stream, but not always. Face downhill and take a compass bearing straight ahead. The direction in which the slope is facing provides a fairly good indicator of how much sun the plot receives.
8. *Soil type:* Dig up small soil sample 6 inches below the surface. Soil type/texture is the relative proportion of three dominant inorganic materials: sand, silt, and clay.
9. *Ground cover:* Ground cover consists of vegetation such as grasses, horsetails, rushes, sedges and clovers. Determine the percentage of ground that is covered by such vegetation. If there is no exposed soil in the entire plot, the ground cover is 100% (non-native species should be included in this measure). Use the provided “Percent cover” table in the Appendix to help you estimate this percentage. List the most abundant dominant species, to the least abundant. If you cannot identify a species, simply describe it.
10. *Invasive species coverage:* Indicate which, if any, invasive non-native plant species are present in the plot. Use the list on the general site form, which indicates the most common invasive plants that occur on sites. Circle the appropriate percentage of plot that is covered by this species. Measure and note the average height of these plants. Follow these steps for each invasive species within the plot. Include additional notes if you think they will be helpful. For example, if ivy is starting to grow onto some of the young trees, make note of this, so the proper maintenance can be implemented to ensure the native plants’ survival.
11. *Shade or Cover Over the Stream:* Walk from the plot center along a line perpendicular to the stream until you reach the stream. Use the diagram below to indicate which of the 3 zones in which the vegetation is growing. If vegetation exists in section “A”, “B” and/or “C” circle one, two or all of them.



12. Fill in Vegetation monitoring form for each plot. Using the 3-meter string, tie one end to the stake so you can use the string to measure out your plot area. Take note of where in the circle you start your data collection to ensure that you do not repeat measurements.

Plant Measurement:

The main table is located in the bottom portion of the Vegetation Plot Form. Each row of the table is for a different species. There are **eight cells** in each row, which correspond to the individual plants of that particular species. For each row, you will be able to tally information for 8 separate plants. If you have more than 8 individuals for a species type, simply create a second row for these plants.

Important! If you find a tree that is not tagged, it was either newly planted OR a new recruit (naturally seeded from the plants on site). Place a tag on the tree/shrub with the date on it, to indicate to the next monitor that it is not new to them. Identify it if you can. If you can't, tag it anyway and make a note on your data sheet.

For the column marked **New Plants**, use “N” to indicate that it was naturally recruited and “P” if it was planted.

1. *Species:* Use either the common name of the plant, if you know it, or the code that is indicated on the tag. Use the species list in the Appendix if needed.
2. *Number:* Tally the number of individuals per species within the plot. Use a second row on the table if there are more than 8.
3. *Health Class (H/S/D):* Indicate whether the plant is healthy, stressed or dead.

(H)—Healthy: The plant will generally have green leaves or needles and shows signs of growth (new shoots at the end of branches that are bright in color; in autumn the color will be more subtle). If the plant is healthy, simply mark it as such and continue to step 5 for that plant

(S)—Stressed: Plant has a significant portion (greater than 30%) of its leaves and shoots that are brown, yellow, orange. The plant may exhibit signs of being eaten by insects, mice or deer. It is helpful to make specific notes if you indicate a plant as stressed. Continue to Step 4 and use the general damage code to indicate the stressor, if known.

Note: All plants experience leaf death and get eaten. It is only of concern when approximately 30% or more of the leaves are affected (on conifers, needles are considered their “leaves”). Most of the cedars planted by Team Up are stressed to a degree because they grow better in shaded conditions. They turn yellow and then orange if in direct sunlight. Look at the underside of the plant to see if it is green. Look at the branch tips for signs of growth.

(D)—Dead: No leaves or dry brown/orange leaves only, stems are hard and dry, and/or buds are dry. Also, you can perform a quick cambium scratch test. The cambium is the layer of live tissue within a plant, which is located underneath the bark. Near the base of the plant, simply scratch away a small section of bark with a fingernail. If the tissue is green, the plant is still alive. If it is brown/gray or crumbly, the plant is either stressed or dead, depending on the other indicators found.

4. *Damage code:* Use the “Seedling Damage Codes” in the Appendix to indicate what type of damage has occurred to each plant (leave this blank if the plant is healthy or dead).
5. *Height:* If a plant has several stems, measure the tallest one. This is more typical of shrubs than trees. As you measure, round to the nearest centimeter. If the plant is leaning, do not straighten it, measure it as it is. Make a note that the plant is a “leaner”, either in the comments section or damage code section. Measure the plant’s vertical height straight up/perpendicular from the ground.
6. *Caliper Width:* **Do this step only for trees. Continue to Step 7 for shrubs and sword ferns.** With the calipers, measure the diameter of the tree’s stem or trunk at a point 15 cm. from the ground, round your measurements to the nearest millimeter.
7. *New Plants:* If you come across a plant that is not tagged, it is considered new and is marked as such in this column. Use “N” for naturally recruited, and “P” for planted.
8. *Comments:* This section can be used for anything that may not be adequately recorded in the other sections. If you classified a plant as stressed and none of the descriptors applied, provide an explanation here. If the soil type, moisture, elevation or shading for that plant is different than the rest of the plot, indicate that as well. Look to see if a plant was planted correctly and if its roots are covered up.
9. Repeat these steps for each plot, on a separate data sheet.

Reflection:

Tragedy of the Commons. The tragedy being the notion that any resource that is open to everyone – such as the air or parts of the ocean – will eventually be destroyed because everyone can use the resource but no one is responsible for preserving it. When people are not compelled to preserve resources for the welfare for future generations, the Tragedy of the Commons occurs.

Have students sit in a circle of 4-6 people. In the middle of the table put a dish (this represents the lake) containing 16 goldfish (use candy or crackers for fish).

1. Read to the students: Each one of you represents the head of a family that is starving. In order for your family to survive, you must catch enough fish for them to eat. The only food source is a small local lake which can hold up to 16 fish. Once a year you will get a chance to fish and each time you fish you may take 0, 1, 2, 3, or 4 fish from the lake. It is your choice how many fish you take, however, if you only take one fish, your family will starve. If you take more than 2 fish, you can sell them for a profit. The fish in your lake will reproduce once a year. Keep the fish that you “catch” in front of you.
3. Tell students that they are not allowed to talk or communicate while fishing
2. At the end of each year, you the leader, must go around to each table and add more fish to the lake when they reproduce. Simply double the number of fish remaining in the dish each year. If any family has starved then they obviously cannot fish the next year.
4. Have the student fish for 5 years. You should probably control each round telling them when to start and stop. The activity works better when you control each round. Each student should record the number of fish in the bowl at the beginning of each round, the number of fish they took, and the total caught each year by the group.
5. After the first game have students individually answer questions 1 and 2 in the discussion questions.
6. The students have still been unable to talk to each other during fishing so now you begin game #2; reminding them not to communicate with each other.

7. When you are done have the students answer the discussion questions.
8. Debrief the questions as a group.

Demonstration and Celebration:

Students will be able to demonstrate their knowledge of the entire riparian process by their interactions and questions in the following lessons on workplace tours and educational presentations.

Oregon Department of Education Standards Alignments:

Academic Content Standards	
Science	Life Science: Diversity/Interdependence Understand the relationships among living things and between living things and their environments. SC.CM.LS.03 Describe and analyze the effect of species, including humans, on an ecosystem SC.CM.LS.03.02 Explain how humans and other species can impact an ecosystem. SC.CM.LS.03.03 Explain how the balance of resources will change with the introduction or loss of a new species within an ecosystem.
English Language Arts	Reading: Find, understand, and use specific information in a variety of texts across the subject areas to perform a task. EL.CM.RE.15 Read directions; procedures; and technical directions
Mathematics	Measurement Understand measurable attributes of objects and the units, systems, and processes of measurement. MA.CM.ME.01 Determine the appropriate units, scales, and tools for problem situations involving measurement.

Career-Related Learning Standards	
Personal Management	CS.PM.01 Identify tasks that need to be done and initiate action to complete the tasks. CS.PM.02 Plan, organize, and complete projects and assigned tasks on time, meeting agreed upon standards of quality. CS.PM.04 Maintain regular attendance and be on time. CS.PM.05 Maintain appropriate interactions with colleagues.
Communication	CS.CM.01 Locate, process, and convey information using traditional and technological tools. CS.CM.04 Read technical/instructional materials for information and apply to specific tasks.
Employment Foundations	CS.EF.02 Select, apply, and maintain tools and technologies appropriate for the workplace CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation. CS.EF.07 Explain and follow health and safety practices in the work environment.
Teamwork	CS.TW.02 Demonstrate skills that improve team effectiveness (e.g., negotiation, compromise, consensus building, conflict management, shared decision -making and goal-setting).

Essential Skills
Read and interpret a variety of texts
Write for a variety of purposes
Think critically and analytically
Demonstrate career-related learning standards: Personal Management, Communication, Employment Foundations and Teamwork.

Tragedy of the Commons Reflection Activity

FISH DATA TABLE: 1st game

Year	# of fish in the lake (after reproduction)	# of fish caught per person	# of fish caught per year (by everyone)
1			
2			
3			
4			
5			
Total			

1. Did anyone in your group take too many fish? How did that make you feel? Did everyone try to take as many as possible? Why or Why not? Does society reward those with the “most”?

2. Did anyone sacrifice the # of fish, for the good of the community? Does society reward that type of person?

FISH DATA TABLE: 2nd game

Year	# of fish in the lake (after reproduction)	# of fish caught per person	# of fish caught per year (by everyone)
1			
2			
3			
4			
5			
Total			

3. In Game two... **did** your strategy change? Does it make a difference to know what the rewards are?

4. Is it possible to maximize the number of fish caught/person AND the number of fish remaining in the pond at **the same time**? Why or Why not?

5. What are some **natural resources** that are **common** resources?

6. What can people do to use these resources most wisely?

Laboratory Tour

Content Alignments: Science, English Language Arts

Summary:

Students will tour a local water quality lab to see how professional labs and agencies conduct their research. Students will learn about careers in environmental sciences.

Learning & Service Objectives:

- Students will see the scientific process in action and be able to ask questions of scientific professionals about their jobs, how they complete them, why it is important and how their research is used and applied.
- Students will learn to listen critically and respond appropriately.
- Seeing a working lab in action will help students understand why their work on the restoration site is important.

Materials Needed:

- Clipboards/notebooks to take notes
- Career Keno sheet for each student

Service Learning Activities:

1. Share the Career Keno worksheet with students, read directions, and allow time for students to circulate and get their sheet signed (approximately 10 minutes).
2. Have students fill out the Career Keno Reflection Sheet
3. Discuss Career Keno Reflection Sheet, and ask students to share their answers to question number three.
4. Contact a local water quality control lab for a tour
5. Before the tour go over with students proper behavior in a professional setting as well as why they are taking the tour
6. Discuss some questions that they might have before the tour and help them look for the answers during the tour
7. After the tour reflect on what was done and allow students to ask questions

Reflection:

What surprised you about the presentation? What is one thing you learned today that you did not know before? Review your Career Keno sheets and name two things from the sheet that you saw demonstrated in the lab tour?

Demonstration and Celebration:

Students can demonstrate the skills/interests that they identified in this lesson to identify and explore other career paths.

Oregon Department of Education Standards Alignments:

Academic Content Standards	
Science	Life Science: Diversity/Interdependence Understand the relationships among living things and between living things and their environments. SC.CM.LS.03 Describe and analyze the effect of species, including humans, on an ecosystem.
English	Speaking and listening: Listening

Language Arts	<p>Listen critically and respond appropriately across the subject areas. EL.CM.SL.10 Formulate judgments about ideas under discussion, and support those judgments with convincing evidence.</p> <p>Speaking and listening: Analysis Evaluate the significance and accuracy of information and ideas presented in oral, visual, and multimedia communications across the subject areas. EL.CM.SL.12 Evaluate the clarity, quality, and effectiveness of a speaker's important points, arguments, evidence, organization of ideas, delivery, diction, and syntax. EL.CM.SL.13 Identify and analyze the types of arguments used by the speaker, including argument by causation, analogy, authority, emotion, and logic. EL.CM.SL.17 Analyze how language and delivery affect the mood and tone of the oral communication and make an impact on the audience.</p>
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Career-Related Learning Standards	
Personal Management	CS.PM.04 Maintain regular attendance and be on time. CS.PM.05 Maintain appropriate interactions with colleagues.
Communication	CS.CM.01 Locate, process, and convey information using traditional and technological tools.
Employment Foundations	CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation. CS.EF.07 Explain and follow health and safety practices in the work environment.
Career Development	CS.CD.01 Assess personal characteristics related to education and career goals. CS.CD.02 Research and analyze career and educational information.

Essential Skills

Think critically and analytically
Demonstrate career-related learning standards: Personal Management, Communication, and Employment Foundations, and Career Development.

Career Keno Activity Sheet

Name: _____ Date: _____

The objective is to get as many squares signed as possible by as many different people as possible during the time period allotted. For example, when you have found a person who has obtained a food handler's certificate, have them sign that square.

Participated in 4-H, FFA, or enjoys working with animals _____	Has visited or lived in a state other than Oregon _____	Loves to express themselves through various art forms _____	Loves reading fiction, poetry, or nonfiction _____	Is fascinated by the solar system and space _____
Favorite subject in school is math _____	Has obtained a food handler's card _____	Likes to organize things _____	Loves to debate issues or argue a point _____	Enjoys learning about other cultures and countries _____
Knows what they want to do after high school _____	Always wanted to be a fire-fighter, police officer or EMT _____	Values being on time to things _____	Likes to build things from wood or metal _____	Would be happy living in a tent _____
Spends more than two hours a day on the computer _____	Knows how to manage/budget money and has a checkbook _____	Feels comfortable in any kind of crowd-likes to meet new people _____	Loves to read every chance they get _____	Parents have talked to them about future careers _____
Has held a steady job for more than two months _____	Plays a musical instrument or is part of a band _____	Enjoys working with small children _____	Likes to do community service projects _____	Loves to work on cars or engines _____

Career Keno Reflection Sheet

Name: _____ Date: _____

1. What are some interesting things that you found out about other students?

2. Who has experience or information that you would like to hear more about?

3. Look back at each box on the *Career Keno Sheet*. Can you identify at least one possible job that is related to each box? Write these in the boxes.

4. Are you interested in exploring any of these careers? If not, what are you interested in?

“Success is not the key to happiness. Happiness is the key to success. If you love what you are doing, you will be successful.”

-Albert Schweitzer, Humanitarian

Community Presentation Prep

Preparación para la Presentación con la Comunidad

Content Alignment: Language Arts, Technology

Summary:

Students will be asked to present their work to community partners. This lesson will have them prepare that presentation. By presenting their work, students will be able to look comprehensively at what they have accomplished, celebrate their achievements and teach others about stream restoration.

Learning & Service Objectives:

- Students will discuss and prepare a community presentation regarding the program.
- Students will organize information and photos that should go into the presentation.
- Students will create a presentation using technology.
- Students will practice delivering the presentation
- Students will create and practice a presentation to deliver to a community partner.

Materials Needed:

- Chart-pack paper for brainstorming
- Paper and pencils to map out presentation plan
- Markers for brainstorming
- Access to at least two computers
- CD of digital pictures from previous meetings
- Access to Internet or CD of logos or graphics that might need to be used
- Equipo Verde calendar (for visual cues)
- Activity cards from Project Planning activity (for visual cues)

Service-Learning Activities:

1. Begin with a discussion regarding why we need to present our work to others. For example, to celebrate our accomplishments, satisfying the CRLS requirement for graduation, thank partners and funding issues.
2. Discuss what groups/people might be present at the presentation. Why is important to know your audience before you plan your presentation?
3. Has anyone ever created or given a presentation before? Does anyone know what makes a good presentation? Lead a discussion and brainstorm on chart-pack paper regarding what pieces of information and structure is needed to create a good presentation.
 - Talk about what might make for an interesting and engaging presentation.
 - What information do we have already and what we might have to construct or find.
 - Why are you involved with this program?
 - Create brief outline regarding what you have learned from Equipo Verde? What factors would you change regarding this experience?
 - What does stream restoration have to do with you? With your community?
 - Can you provide a definition of Equipo Verde?
 - How, why and what kinds of work did we do for our project? What was the process you went through? Judge the value of the impact with your efforts made in the community.
 - What do we hope we will accomplish with our work? What are the goals of the project?
 - Who did we need help from and why? How effective were these partnerships? Why did we need our partners to accomplish our goals of the program?

4. Be prepared to have a discussion about why Equipo Verde was created, as well as why stream restoration is important.
5. What were some of the challenges with the program and how things might be improved in the future? Talk about next steps.
6. Now that we have the information for our presentation, we need to create an outline. Talk about what is an effective order for a good presentation. As they begin creating an outline, review the order of activities that took place in the field by using the activity cards.
7. Once the students have a plan of what the structure of the presentation will look like, have them divide in two groups. One group will write the script in English and the other in Spanish. All work together to write the script so that they are both consistent.
8. After they complete their scripts, have each group create a PowerPoint presentation that includes the outline with photos, maps and text.
9. Decide who is going to present the different sections of the presentation and have them begin practicing.

Reflection:

Knowledge is power. Now that you're aware of what impact humans can have on a watershed or a stream, will you change any of your behavior? Will you speak up if you see a friend or family member doing something that will negatively impact a local stream or watershed? Will you become an eco-advocate? You can have a positive influence with your actions, and your voice.

Demonstration and Celebration:

Students are able to demonstrate their knowledge of the restoration process by designing a presentation that includes important elements to consider when taking direct action in a watershed or alongside a stream, as well as the impact these activities have on our ecosystem. Students can celebrate their accomplishments by building in a component of the presentation designed to thank participants, and let others know how they've grown and changed as a result of their involvement in the restoration process.

Oregon Department of Education Standards Alignments:

Academic Content Standards	
English Language Arts	Listening EL.CM.SL.11 Follow complex verbal instructions that include technical vocabulary and processes. Speaking EL.CM.SL.02 Choose appropriate techniques for developing the introduction and conclusion (e.g., by using literary quotations, anecdotes, references to authoritative sources). EL.CM.SL.03 Choose logical patterns of organization (e.g., chronological, topical, cause-and-effect) to inform and to persuade, by seeking agreement or action, or uniting audiences behind a common belief or cause. EL.CM.SL.05 Analyze the occasion and the interests of the audience, and choose effective verbal techniques and language. EL.CM.SL.06 Use appropriate grammar. EL.CM.SL.07 Use props, visual aids, graphs and/or electronic media to enhance the appeal and accuracy of rehearsed presentations. EL.CM.SL.08 Produce concise notes for extemporaneous speaking. EL.CM.SL.09 Analyze the occasion and the interests of the audience, and choose effective verbal and non-verbal techniques, such as volume, expression, rate, gestures, and eye contact for presentations.
Technology	TG.01 Demonstrate proficiency in the use of technological tools and devices. TG.05 Design, prepare, and present unique works using technology to communicate information and ideas. TG.06 Extend communication and collaboration with peers, experts, and other audiences using telecommunications.

Career-Related Learning Standards	
Personal Management	CS.PM.01 Identify tasks that need to be done and initiate action to complete the tasks. CS.PM.02 Plan, organize, and complete projects and assigned tasks on time, meeting agreed upon standards of quality.
Problem Solving	CS.PS.05 Develop a plan to implement the selected course of action.
Communication	CS.CM.01 Locate, process, and convey information using traditional and technological tools. CS.CM.02 Listen attentively and summarize key elements of verbal and non-verbal communication. CS.CM.03 Give and receive feedback in a positive manner. CS.CM.05 Write instructions, technical reports, and business communications clearly and accurately. CS.CM.06 Speak clearly, accurately and in a manner appropriate for the intended audience when giving oral instructions, technical reports and business communications.
Employment Foundations	CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation. CS.EF.07 Explain and follow health and safety practices in the work environment.
Teamwork	CS.TW.02 Demonstrate skills that improve team effectiveness (e.g., negotiation, compromise, consensus building, conflict management, shared decision –making and goal-setting).

Essential Skills
Write for a variety of purposes
Speak and present publicly
Demonstrate civic and community engagement
Use technology
Demonstrate career-related learning standards: Personal Management, Communication, Employment Foundations, and Teamwork.

Monitoring: Photo Point Monitoring

Content Alignments: Science, English Language Arts, Mathematics, Technology

Summary:

Students will establish or complete photo point monitoring at a restoration site. Students will become familiar with using digital cameras, compasses, and measuring devices to produce photos to determine changes in the restoration site over time.

Learning & Service Objectives:

- Students will understand the need for effective site monitoring
- Students will be able to use a compass to create photo points
- Students will understand how to replicate photos based on benchmarks and compass bearings
- To establish permanent locations where photographs can be taken in order to monitor the site.

Materials Needed:

- Data sheets
 - Permanent Record data sheet
 - Laminated Photo Identification label (if using one)
 - Photo log
- Disposable camera (or digital camera)
- Compass
- Dry erase marker and cloth
- Clipboard
- Wooden stakes (optional)
- Brightly colored spray paint to mark the stakes (optional)
- Mallet (optional)

Service Learning Activities:

1. On the first page of the Permanent Record data sheet, fill out the following sections:
 - site name
 - directions to the site
 - description of the project
 - goal(s) of the photo points
2. Also on the first page of the Permanent Record, sketch a bird's eye view of the site in the box at the bottom of the page. This will help to relocate the photo points for volunteers who come on site later. Make sure to draw a north arrow in one of the corners of the map. Once you have determined the north direction, draw the map from this north facing perspective. Make sure to include major features and landmarks of the site (SWRP, 1996). Instructions for how to use a compass are provided in Section 7.
3. A photo point should be at a spot that is easy to locate, and can serve as a reference point for subsequent photo points. You can also use a colored stake as a marker, to set next a permanent land marker.

Examples of good permanent land markers are:

- ✓ buildings
- ✓ telephone poles
- ✓ roads
- ✓ light posts
- ✓ bridges
- ✓ signs
- ✓ well-established tree (though it may die or fall before the next monitoring cycle)

4. Once you have found a permanent land marker from which to take your photo, look for potential views where you can include another landmark in your photo. This will make it easier for future photographers to capture the same picture at the same location that you took the photo. Also, make sure photos are an adequate distance away from vegetation, as future growth may obstruct the photo view (SWRP, 1996).
5. Looking through the viewfinder on the camera, locate the center of the photo. Take your compass, holding it at arm's length, and point the directional arrow at the location you determined as the photo center. Turn the compass dial until the red end of the arrow is lined up with the red "house" etched in the bottom of the compass. The bearing, or compass angle, is the number that is in line with the directional arrow (SWRP, 1996).
6. Record the bearing of the photo point on the Permanent Record sheet, photo log, and Photo Identification label (if using one).
7. If using a Photo Identification label, fill out the rest of the information with an erasable marker. Prop the label in the foreground of the picture, or have someone hold it. Make sure to tilt the label downward to avoid glare from the sun.
8. Take the photo.
9. On the Permanent Record sheet, note the directions to this photo point marker and the goal of the photo.
10. Make a rough sketch of the photo in the rectangle provided on the Permanent Record, and label landmarks. Record the photo point in the Photo Log including the date, time, camera number, and exposures remaining. This step will make it easier to identify each photo once they are developed.
11. Record the location of the photo point and mark with an arrow on the General Site map the direction in which the photo was taken (SWRP, 1996).
12. Repeat these procedures for subsequent photo points, using the following system:
 - a. Use a new number for each new point you set. For example, Photo Point 1=telephone pole; Photo Point 2= west end of the bridge.
 - b. Use letters to separate photos that are taken at the same location but in a different direction. For example, Photo Point 1A=telephone pole, 45 degrees NE; Photo Point 1B= telephone pole, 90 degrees E (SWRP, 1996).

Reflection:

This lesson was about monitoring and observing change over time. Read the quote below and ask the students how/if this quote is reflected in their lives.

Know what's weird? Day by day, nothing seems to change, but pretty soon ... everything's different. - Calvin from Calvin and Hobbes

Demonstration and Celebration:

Have students continue to work on their presentation from the last lesson.

Oregon Department of Education Standards Alignments:

Academic Content Standards	
Science	Life Science: Diversity/Interdependence Understand the relationships among living things and between living things and their environments. SC.CM.LS.03 Describe and analyze the effect of species, including humans, on an ecosystem SC.CM.LS.03.02 Explain how humans and other species can impact an ecosystem. SC.CM.LS.03.03 Explain how the balance of resources will change with the introduction or loss of a new species within an ecosystem.
English Language Arts	Reading: Find, understand, and use specific information in a variety of texts across the subject areas to perform a task. EL.CM.RE.15 Read directions; procedures; and technical directions
Mathematics	Measurement Understand measurable attributes of objects and the units, systems, and processes of measurement. MA.CM.ME.01 Determine the appropriate units, scales, and tools for problem situations involving measurement.
Technology	TG.01 Select and use technology to enhance learning and problem solving.

Career-Related Learning Standards	
Personal Management	CS.PM.01 Identify tasks that need to be done and initiate action to complete the tasks. CS.PM.02 Plan, organize, and complete projects and assigned tasks on time, meeting agreed upon standards of quality. CS.PM.04 Maintain regular attendance and be on time. CS.PM.05 Maintain appropriate interactions with colleagues.
Communication	CS.CM.01 Locate, process, and convey information using traditional and technological tools. CS.CM.04 Read technical/instructional materials for information and apply to specific tasks.
Employment Foundations	CS.EF.02 Select, apply, and maintain tools and technologies appropriate for the workplace CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation. CS.EF.07 Explain and follow health and safety practices in the work environment.
Teamwork	CS.TW.02 Demonstrate skills that improve team effectiveness (e.g., negotiation, compromise, consensus building, conflict management, shared decision –making and goal-setting).

Essential Skills
Read and interpret a variety of texts
Write for a variety of purposes
Think critically and analytically
Demonstrate career-related learning standards: Personal Management, Communication, Employment Foundations, and Teamwork.

Monitoring: Site Maintenance – Weeding, Watering, Mulching

Content Alignments: Science

Summary:

Students will complete needed maintenance work on the site.

Learning & Service Objectives:

- Students will learn that restoration sites need upkeep. They will also learn why these sorts of activities help the plants and the site as a whole.
- Maintenance is an essential part of stream restoration and needs to be completed for the success of the project.

Materials Needed:

- Shovels
- Buckets
- Pruners
- Gloves
- Mulch

Service Learning Activities:

- As directed by site partner, complete needed tasks.
- Explain benefits of each task to students:
 - Weeding: removes unwanted plants from restoration areas. Unwanted plants compete for nutrients, water and sunlight with native plants. Removing these increases the survival rates for beneficial plants
 - Mulching: keeps weeds down and helps hold water around a plant for longer. Some mulch involves compost that can give extra nutrients to the plant as well
 - Watering: All plants need water to survive! Eventually the roots of these native plants will be strong and long enough to reach water on their own, but in the first years of being planted they need more assistance.

Reflection:

*Stone Soup*⁶

Ask one of the students to be prepared to present, to the group, a synopsis of the familiar children's story, Stone Soup⁷:

Once upon a time there was a town that hadn't had any rain for a long time. There was a drought and people were running out of food. The mayor of the town told the people, "if we don't have anything to eat, we will have to make stone soup." She asked the people to come to the town square the next day with stones to make stone soup. One family set off to find stones for the soup, and as they put it in a basket to carry, they noticed some potatoes in the kitchen. They brought the stone and the potatoes. As they walked to the town square, another family saw them, and when they saw the potatoes, they remembered that there were a few carrots in the garden that had not been pulled. So they brought the carrots. A third family saw the carrots and brought some beans, and so on. The stone soup ended up being chock full of things to eat, and the whole town had a feast.

⁶ Adapted from: Innovation Center for Community and Youth Development, *Learning and Leading Toolkit* 2004.

⁷The story exists in many variations throughout the world. It is sometimes attributed as an old French story, a Russian story, a Portuguese story, and so on. The value of the "moral", then, is further strengthened by its universal appeal.

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Making Stone Soup:

Ask each student to add a “stone” to the soup. On a piece of paper, each person should write the answers to:

- **What?** What do you feel was accomplished in this project? (This does not need to be the actual physical result of the project; it could be relationships, etc.)
- **So what?** What difference did this result make?
- **Now what?** How can we use what we learned from this project to make more change in our community?

Each person then puts his/her piece of paper in a large bowl or pot.

Sharing and Reflecting:

Participants take turns drawing out pieces of paper and reading them aloud to the group. Then use the following questions to help guide a reflection discussion:

- Did anything surprise you from these pieces of paper? If so, what?
- Did everyone have the same result written down? Why do you think that is?
- Was there anything written down that will affect how you work together next time?
- Has this experience changed any opinions that you had regarding the people you worked with? If so, how?

Demonstration and Celebration:

Students will be able to apply the leadership, teamwork, and restoration skills they learned in this program to other parts of their lives. Have students commit to teaching at least one other person a skill or piece of knowledge they learned in this program.

Oregon Department of Education Standards Alignments:

Academic Content Standards	
Science	Life Science: Diversity/Interdependence Understand the relationships among living things and between living things and their environments. SC.CM.LS.03 Describe and analyze the effect of species, including humans, on an ecosystem SC.CM.LS.03.02 Explain how humans and other species can impact an ecosystem. SC.CM.LS.03.03 Explain how the balance of resources will change with the introduction or loss of a new species within an ecosystem.
Career-Related Learning Standards	
Personal Management	CS.PM.01 Identify tasks that need to be done and initiate action to complete the tasks. CS.PM.02 Plan, organize, and complete projects and assigned tasks on time, meeting agreed upon standards of quality. CS.PM.04 Maintain regular attendance and be on time. CS.PM.05 Maintain appropriate interactions with colleagues.
Communication	CS.CM.01 Locate, process, and convey information using traditional and technological tools. CS.CM.04 Read technical/instructional materials for information and apply to specific tasks.

Employment Foundations	CS.EF.02 Select, apply, and maintain tools and technologies appropriate for the workplace CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation. CS.EF.07 Explain and follow health and safety practices in the work environment.
Teamwork	CS.TW.02 Demonstrate skills that improve team effectiveness (e.g., negotiation, compromise, consensus building, conflict management, shared decision -making and goal-setting).

Essential Skills	
Think critically and analytically	
Demonstrate career-related learning standards: Personal Management, Communication, Employment Foundations, and Teamwork.	

“The best leader of all, the people know not they exist. They turn to each other and say we did it ourselves.”

Zen Saying

Education!

Content Alignments: English Language Arts

Summary:

This lesson is designed to allow time for students to meet either students or staff from a college. Alternately, if no one is available from a local college, you could have someone who is knowledgeable in advising low-income, first generation, or students of color in preparing for and entering college. Students will have an opportunity to listen to a presentation and ask questions.

Learning & Service Objectives:

- Students will be exposed to opportunities for high education;
- Students will be able to ask question specific to their needs as future students.

Materials Needed:

- Guest speaker(s)
- *Notes for the Guest Speaker* handout for the speaker
- White board or other communal writing surface

Service Learning Activities:

1. Contact potential guest speakers and work out a date and time for them to come to the class.
Speakers could be from a local college/vocational school, alumni from your school that went to college or someone who could talk with the students about preparing for and entering school after high school. Ideally, the speakers would reflect the diversity of the students or be well versed in working with Latino students and overcoming their barriers to education.
2. Provide the speaker (in advance) with the handout, *Notes for the Guest Speaker*.
3. Have students prepare their own questions about college or vocational school. Brainstorm some common worries or barriers they have to going on for more schooling.
4. Provide opportunities for – and encourage students to – ask questions of the guest speaker. You may want to prepare students ahead of time by having them brainstorm a range of appropriate questions.
5. Involve students in writing formal thank-you notes to the guest speaker.

Reflection:

1. Begin by explaining very briefly that *Chalk Talk*⁸ is a silent activity. *Chalk Talk* is an example of a *Critical Friends Protocol*. Explain to students that no one may talk at all during the activity, and anyone may add to the *Chalk Talk* as they please. Participants may comment on other people's ideas simply by a drawing a connecting line to the comment. It is alright for the leader to write/add comments as well, especially if you want to guide students in a particular direction, or emphasize an important point.

⁸ Mohr, Nancy and Thompson-Grove, Gene. (2001). Adapted from Daniel Baron: HSEC/NSRF National School Reform Faculty.

2. Write the following question on the board:

“How can what I learned in this program help me as I pursue future education and career options?”

3. Distribute a dry-erase marker to everyone, or places many markers at the board.

4. Invite students to write as they feel moved (and again, the leader may write as well). There will likely be long silences – that is natural, so allow plenty of “wait time” before deciding it is over.

Note: A *Chalk Talk* can be an uncomplicated silent reflection or a spirited - but silent - exchange of ideas. It has been known to solve vexing problems, surprise everyone with how much is collectively known about something, get an entire project planned, or give a committee everything it needs to know without any verbal sparring.

How you (as facilitator) choose to interact with the *Chalk Talk* influences its outcome; you can stand back and let it unfold, or expand thinking by:

- circling interesting ideas, thereby inviting comments to broaden
- writing questions about a participant’s comment
- adding your own reflections or ideas
- connecting two comments together with a line and adding a question mark
- adding other punctuation marks to emphasize an item or make a point

The teacher/facilitator decides when the *Chalk Talk* is “done”.

Demonstration and Celebration:

Students will be able to demonstrate that they have learned about educational opportunities by discussing this information with their parents and making an appointment with their school career counselor.

Oregon Department of Education Standards Alignments:

Academic Content Standards	
English Language Arts	<p>Speaking and listening: Listening Listen critically and respond appropriately across the subject areas. EL.CM.SL.10 Formulate judgments about ideas under discussion, and support those judgments with convincing evidence.</p> <p>Speaking and listening: Analysis Evaluate the significance and accuracy of information and ideas presented in oral, visual, and multimedia communications across the subject areas. EL.CM.SL.12 Evaluate the clarity, quality, and effectiveness of a speaker’s important points, arguments, evidence, organization of ideas, delivery, diction, and syntax. EL.CM.SL.13 Identify and analyze the types of arguments used by the speaker, including argument by causation, analogy, authority, emotion, and logic. EL.CM.SL.17 Analyze how language and delivery affect the mood and tone of the oral communication and make an impact on the audience.</p>

Career-Related Learning Standards

Career Development	CS.CD.01 Assess personal characteristics related to education and career goals. CS.CD.02 Research and analyze career and educational information. CS.CD.03 Develop and discuss a current plan designed to achieve personal, educational, and career goals.
Personal Management	CS.PM.04 Maintain regular attendance and be on time. CS.PM.05 Maintain appropriate interactions with colleagues.
Communication	CS.CM.01 Locate, process, and convey information using traditional and technological tools.
Employment Foundations	CS.EF.06 Demonstrate dress, appearance, and personal hygiene appropriate for the work environment and situation. CS.EF.07 Explain and follow health and safety practices in the work environment.

Essential Skills
Think critically and analytically
Demonstrate career-related learning standards: Personal Management, Communication, and Employment Foundations.

Notes for the Guest Speaker

Thank you for agreeing to be a guest speaker for the *Equipo Verde* program.

The program is designed to:

- help Latino youth gain knowledge and skills in watershed restoration;
- increase their engagement in school; and
- expose them to additional career and educational opportunities.

YOUR role as the guest speaker is to present education on post-high school education opportunities and address access to education issues specific to these low-income, Latino, and/or first-generation students. For example, the range of classes they could take, admissions processes, financial resources, campus life, etc. Please allow plenty of time for their prepared questions and tailor your presentation to their needs.

Students will be prepared to ask questions of you. You may choose to ask them to hold their questions until the end of your presentation, or to ask you questions all along. Please also feel free to ask them questions as well, especially concerning their knowledge and plans for college or vocational school.

We all thank you for supporting youth in our community by sharing with them your time, expertise, and experience!

Teacher Resources



Reflection Activities for Service-Learning

Pre-service Reflection:

Set the stage for the project by helping students understand the purpose and context for their service experience. Having student reflect on previous experiences can help them learn from the past to develop future plans for success.

KWL

Use a K-W-L Chart to guide student reflection. Make a chart showing: what you know (K), what you want to know (W), and when you finish your project, with what you learned (L).

Poster Presentations

Ask students to make a poster that describes the issue they are working on and gives information about their project or community.

Photo Response

Have students look at a photo of the project site. Ask them to write what they know about the issue, based on their current knowledge.

Van Conversations and Dialogue with Site Hosts

On the way to the project site, ask students to generate some questions they might have about the issue. Prepare them to find out the answers to these questions at the site (through dialogue with site host, guests, observations, etc.).

Knowledge/Assumptions Inventory

Brainstorm what students know about an issue or community. At the end of the project, revisit the students' reflections and review their previous knowledge based on their experiences at the service site.

Community Mapping

Design an activity in which participants walk or drive through a particular neighborhood or section of town and make observations about livability, income distribution, environmental health, or other relevant concepts; have students draw a map of the types of businesses, people, graffiti, etc. they see.

Activities for Reflection During Service:

Two Voices Exercise

Find divergent articles related to your service project. Ask students to read the differing perspectives. Ask the group: Which position is most convincing to you? Why? How might these people most effectively justify their position? What further questions would you ask of these people if they were here with us? What voice(s) are missing? What points are left out in these statements?

Force Field Analysis

At the end of a community mapping activity, ask students to map out the positive and negative factors affecting livability or a related concept in a community. Where does the balance lie? What would need to change in order for livability to be realized?

Reflection Activities for Service-Learning *continued*

Reflection on an Article

Give participants an article to read that is related to the service project. Use the article to reflect on students' service experience.

Quotes

Use quotes as part of an icebreaker by taping one-half of a quote to each student's back and asking them to find the matching "other half". Consider selecting quotes related to the project or community. During a final reflection ask, "How did your experience at the service site reflect the quote by...?"

Post-service Reflection:

Use the following questions to design activities that help students reflect on their service project. Be creative in how you use the questions; use them to lead a class discussion, or as journal prompts, or for an artistic activity.

WHAT?

- Report what happened, objectively. Without judgment or interpretation, describe in detail the facts and events of the service experience. What happened? What is the issue you addressed? What events or "critical incidents" occurred?
- In what ways are you learning, applying or demonstrating your Career-Related Learning goals or your core academics?
- What careers and/or jobs were present at your service-learning site? What skills did employees use at their jobs? What training and education would adequately prepare someone for this work?
- How did you use your math, science, communication skills, etc.?

SO WHAT?

- Describe what was learned, what difference the event made.
- Discuss your feelings, ideas, and analysis of the service-learning experience.
- How is your experience different from what you expected?
- How have you affirmed or altered your previously assumed knowledge?
- What did you learn from the community that you served?
- What are some of the pressing issues in the community?

NOW WHAT?

- Brainstorm what you will do differently in the future as a result of the experience.
- How have these experiences shaped or affirmed your future plans as a learner, citizen or worker?
- Consider broader implications of the service experience and apply learning.
- How is this experience tied to the community?
- What information can you share with your peers?
- What more would you like to learn about this issue?
- What larger social issues come to mind?



Nombre del Estudiante: _____ Fecha: _____

Estándares de Aprendizaje Relacionados con la Profesión: Instrumento de Valoración

Gestión Personal		
Estándar	Criterio: ¿El estudiante... ?	Evidencia del Estudiante
Mostrar ética de trabajo y conductas adecuadas en la escuela, comunidad y lugar de trabajo.	<ul style="list-style-type: none"> <input type="checkbox"/> CS.PM.01 Identificar las tareas que deben realizarse e iniciar la acción para completarlas. <input type="checkbox"/> CS.PM.02 Planificar, organizar y completar puntualmente los proyectos y tareas asignadas, cumpliendo con los estándares de calidad acordados. <input type="checkbox"/> CS.PM.03 Asumir responsabilidad por las discusiones y acciones y anticipar las consecuencias de las decisiones y acciones. <input type="checkbox"/> CS.PM.04 Mantener una asistencia regular y ser puntual. <input type="checkbox"/> CS.PM.05 Mantener interacciones adecuadas con los colegas. 	<ul style="list-style-type: none"> <input type="checkbox"/> ¿Identificó las tareas e inició un plan de acción para completarlas? <input type="checkbox"/> ¿Completó las tareas puntualmente y cumplió los estándares de calidad acordados? <input type="checkbox"/> ¿Asumió responsabilidad por sus acciones y anticipó las consecuencias de las acciones? <input type="checkbox"/> ¿Mantuvo una asistencia regular y ha sido puntual? <input type="checkbox"/> ¿Interactuó adecuadamente con los demás? <input type="checkbox"/> ¿Documentó su trabajo y explicó como su trabajo exhibe la Gestión Personal?

Comentarios del Estudiante:

Evaluación de colega:

Evaluación del Maestro:

Puntuación:

Rúbrica de Puntuación del Departamento de Educación de Oregon:

Superior a Estándares- 3 Satisface Estándares - 2 Por de bajo de Estándares - 1 Evidencia Insuficiente- 0

**Solución de Problemas**

	Estándar	Criterio: ¿El estudiante...?	Evidencia del Estudiante
Aplicar técnicas de toma de decisiones y solución de problemas en la escuela, comunidad y lugar de trabajo.	<ul style="list-style-type: none"> <input type="checkbox"/> CS.PS.01 Identificar los problemas y ubicar la información que pueda conducir a soluciones. <input type="checkbox"/> CS.PS.02 Identificar las alternativas para resolver los problemas. <input type="checkbox"/> CS.PS.03 Evaluar las consecuencias de las alternativas. <input type="checkbox"/> CS.PS.04 Seleccionar y explicar una solución propuesta y un curso de acción. <input type="checkbox"/> CS.PS.05 Desarrollar un plan para implementar el curso de acción seleccionado. <input type="checkbox"/> CS.PS.06 Evaluar los resultados y tomar la acción correctiva. 	<ul style="list-style-type: none"> <input type="checkbox"/> ¿Identificó efectivamente un problema? <input type="checkbox"/> ¿Ubicó la información que llevó a la solución del problema? <input type="checkbox"/> ¿Identificó y evaluó las soluciones alternativas al problema? <input type="checkbox"/> ¿Seleccionó una solución y un curso de acción? <input type="checkbox"/> ¿Desarrolló e implementó un plan para resolver el problema? <input type="checkbox"/> ¿Evaluó sus resultados? <input type="checkbox"/> ¿Documentó su trabajo y explicó como su trabajo muestra la Solución de Problemas? 	

Comentarios del Estudiante:

Evaluación de Colega:

Evaluación del Maestro:

Puntuación:

Rúbrica de Puntuación del Departamento de Educación de Oregon:

Superior a Estándares- 3 Satisface Estándares - 2 Por de bajo de Estándares - 1 Evidencia Insuficiente- 0



Comunicación		
Estándar	Criterio: ¿El estudiante . . . ?	Evidencia del Estudiante
Demostrar habilidades de comunicación efectiva para suministrar y recibir información en la escuela, comunidad y lugar de trabajo.	<ul style="list-style-type: none"> <input type="checkbox"/> CS.CM.01 Ubicar, procesar y transmitir información usando herramientas tradicionales y tecnológicas. <input type="checkbox"/> CS.CM.02 Escuchar atentamente y resumir los elementos claves de la comunicación verbal y no verbal. <input type="checkbox"/> CS.CM.03 Suministrar y recibir retroalimentación en una manera positiva. <input type="checkbox"/> CS.CM.04 Leer los materiales técnicos/académicos para informarse y aplicarlos a tareas específicas. <input type="checkbox"/> CS.CM.05 Redactar clara y precisamente las instrucciones, informes técnicos y comunicaciones comerciales. <input type="checkbox"/> CS.CM.06 Hablar claro, y adecuadamente para el público específico cuando se expongan instrucciones orales, informes técnicos y comunicaciones comerciales. 	<ul style="list-style-type: none"> <input type="checkbox"/> ¿Usó métodos tradicionales (escrito, oral) y tecnológicas (Internet [la red], multimedia) ubicar y transmitir información? <input type="checkbox"/> ¿Escuchó atentamente y resumió elementos claves? <input type="checkbox"/> ¿Suministró y recibió retroalimentación en una manera positiva? <input type="checkbox"/> ¿Leyó y usó los materiales técnicos/académicos para informarse y aplicarlos a tareas específicas? <input type="checkbox"/> ¿Habló con claridad, exactitud y en una manera adecuada a otros estudiantes y adultos? <input type="checkbox"/> ¿Documentó su trabajo y explicó como su trabajo muestra Comunicación?

Comentarios del Estudiante:

Evaluación de Colega:

Evaluación del Maestro:

Puntuación:

Rúbrica de Puntuación del Departamento de Educación de Oregon:

Superior a Estándares- 3 Satisface Estándares - 2 Por de bajo de Estándares - 1 Evidencia Insuficiente- 0



Trabajo en Equipo		
Estándar	Criterio: ¿El estudiante. . .?	Evidencia del Estudiante
Demostrar trabajo en equipo efectivo en la escuela, comunidad y lugar de trabajo.	<input type="checkbox"/> CS.TW.01 Identificar los diferentes tipos de equipos y roles dentro de cada tipo de equipo; describir por qué cada rol es importante para un trabajo en equipo efectivo. <input type="checkbox"/> CS.TW.02 Demostrar las habilidades que mejoran la efectividad del equipo (por ejemplo: negociación, compromiso, formación de consenso, manejo de conflictos, toma de decisiones compartidas y establecimiento de metas).	<input type="checkbox"/> ¿Identificó y asumió roles dentro de un equipo? <input type="checkbox"/> ¿Trabajó productivamente con otros (negociación, se comprometió, formo consensos, manejo conflictos, compartió toma de decisiones y estableció metas)? <input type="checkbox"/> ¿Documentó su trabajo y explicó como su trabajo muestra Trabajo en Equipo?

Comentarios del Estudiante:

Evaluación de Colega:

Evaluación del Maestro:

Puntuación:

Rúbrica de Puntuación del Departamento de Educación de Oregon:

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Fundamentos de Empleo		
Estándar	Criterio: ¿El estudiante. . . ?	Evidencia del Estudiante
<p>Demostrar el conocimiento y las habilidades académicas, técnicas y organizacionales requeridas para un empleo exitoso.</p> <ul style="list-style-type: none"> <input type="checkbox"/> CS.EF.01 Aplicar conocimiento académico y las habilidades técnicas en un contexto de carrera. <input type="checkbox"/> CS.EF.02 Seleccionar, aplicar y mantener las herramientas y tecnologías adecuadas para el lugar de trabajo. <input type="checkbox"/> CS.EF.03 Identificar las partes de las organizaciones y sistemas y cómo encajan. <input type="checkbox"/> CS.EF.04 Describir cómo se mueve el trabajo a través de un sistema. <input type="checkbox"/> CS.EF.05 Describir la naturaleza cambiante del trabajo, el lugar de trabajo y los procesos de trabajo en los individuos, organizaciones y sistemas. <input type="checkbox"/> CS.EF.06 Explicar y seguir prácticas de salud y seguridad en el ambiente y situación de trabajo. <input type="checkbox"/> CS.EF.07 Explicar y seguir los requisitos reglamentarios, procedimientos de seguridad y prácticas éticas. <input type="checkbox"/> CS.EF.08 Demostrar el vestuario, apariencia e higiene personal adecuada para el ambiente y situación de trabajo. 	<ul style="list-style-type: none"> <input type="checkbox"/> ¿Aplicó el conocimiento académico y las habilidades técnicas en un contexto de carrera? <input type="checkbox"/> ¿Aplicó y mantuvo las herramientas y tecnologías adecuadas para la tarea? <input type="checkbox"/> ¿Identificó los partes de las organizaciones o sistemas y cómo se mueve el trabajo a través de una organización o un sistema? <input type="checkbox"/> ¿Describió cómo cambios en el lugar de trabajo afectan individuos y la organización del trabajo o sistema? <input type="checkbox"/> ¿Siguió prácticas de salud y seguridad, y los requisitos reglamentarios, procedimientos de seguridad y prácticas éticas en el ambiente y situación de trabajo? <input type="checkbox"/> ¿Demostró adecuadamente su apariencia e higiene personal para el ambiente de trabajo? <input type="checkbox"/> ¿Documentó su trabajo y explicó como su trabajo muestra Bases del Empleo? 	

Comentarios del Estudiante:

Evaluación de Colega:

Evaluación del Maestro:

Puntuación:

Rúbrica de Puntuación del Departamento de Educación de Oregon:

Superior a Estándares- 3 Satisface Estándares - 2 Por de bajo de Estándares - 1 Evidencia Insuficiente- 0



Desarrollando tú Profesión

	Estándar	Criterio: ¿El estudiante...?	Evidencia del Estudiante
Demostrar habilidades en el desarrollo de una profesión y planificación de experiencias posteriores a la preparatoria.	<ul style="list-style-type: none"> <input type="checkbox"/> CS.CD.01 Evaluar las características personales relacionadas con las metas educativas y de la carrera. <input type="checkbox"/> CS.CD.02 Investigar y analizar la información educativa y de la carrera. <input type="checkbox"/> CS.CD.03 Desarrollar y discutir un plan actual diseñado para alcanzar las metas personales, educativas y de la carrera. <input type="checkbox"/> CS.CD.04 Monitorear y evaluar las metas educativas y de la carrera. <input type="checkbox"/> CS.CD.05 Demostrar habilidades de búsqueda de empleo (por ejemplo: redactar un currículum, llenar solicitudes y participar en entrevistas). 	<ul style="list-style-type: none"> <input type="checkbox"/> ¿Evaluó su conocimiento personal y habilidades relacionadas con sus metas educativas y de profesión? <input type="checkbox"/> ¿Planeó para su vida después de la preparatoria (investigó opciones educativas y de la carrera y desarrolló un plan para realizar sus metas)? <input type="checkbox"/> ¿Revisó sus metas educativas y de la carrera para determinar si deben cambiar? <input type="checkbox"/> ¿Usó habilidades de búsqueda de empleo (redactar un currículum, llenar solicitudes y participar en entrevistas)? <input type="checkbox"/> ¿Documentó su trabajo y explicó como su trabajo muestra Desarrollo de Profesión? 	

Comentarios del Estudiante:

Evaluación de Colega:

Evaluación del Maestro:

Puntuación:

Rúbrica de Puntuación del Departamento de Educación de Oregon:

Superior a Estándares- 3 Satisface Estándares - 2 Por de bajo de Estándares - 1 Evidencia Insuficiente- 0