



## SHORELINE RESTORATION OUTDOOR LAB TEACHER'S GUIDE

**Learning Goal:** Learners will be able to determine how to restore/reforest the shoreline of a selected area of lake property.

**Objectives:**

- Learners will determine what plant types are appropriate for restoration/reforestation.
- Learners will be able to select and transplant vegetation to enhance the shoreline and littoral zone.

**Note:** When setting up for this lab, make sure you have enough transplanting equipment (trowels, bucket, plants, marker flags, and popsicle sticks) for your group. You will also need a measuring tape or strings that are precut to 2 meters. Graph paper in a plastic sleeve should be included with lab books on clipboard for each student group.

1. Introduce the leaders and volunteers who will be involved in the module. Discuss outdoor learning safety aspects and proper use of equipment. Point out delicate plant species and note which ones should not be disturbed.
2. Briefly review content from the indoor lab including the map activity and how the use of shoreline can impact the lake ecosystem. At the planting location, have students observe the environmental conditions, such as sunlight, soil types, slope and consider which plants would do best. Give students an overview on what they will be doing in this session, including a survey of the shoreline and planting trees to improve shoreline stability.
3. Demonstrate how to make a 2-meter circle by marking their area with a numbered flag in the middle with string attached. On the other end of the string attach a popsicle stick and stretch it out to trace a circle around the flag.
4. Next, demonstrate the transplanting process. After students complete the planting activity, they will create a survey map on graph paper with their names and flag number on it.
5. Instructors direct students to a predetermined area marked with a numbered flag, to make their own 2-meter circle. Have students transplant seedlings into the area with appropriate spacing and water the soil surrounding the plant.
6. Show students how to map out the area on graph paper to document the types of plants for survey purposes. First, have student groups write their names and flag number on the graph paper. Student groups will create their own site map and mark the newly planted seedlings. Have students answer the questions about their survey area on page 7 of their lab book. This

includes an estimate of various plant types, light availability, soil composition, and slope of the land.

7. Have students discuss how these environmental factors would affect the lake shoreline and which plants would do well when transplanted at your site. How would restoring the shoreline help protect water quality?
8. Be sure to wrap up in time to review the key points and fill out any remaining questions in the lab book. Instructors should also initial the completed shoreline restoration page and move the total score to the student lab cover page before students depart.