

# PROBLEM SOLVING



An Activity Module  
For the  
William S. Schmidt Outdoor Education Center

Special thanks to Camp Edwards YMCA

## SUMMARY

Students will participate as a team to overcome physical obstacles that represent environmental issues and concepts. Each obstacle requires group effort and problem solving skills to be completed, and helps promote team building and communication. Group discussion concentrating on cooperation and communication skills will follow each activity.

**OBJECTIVES:** Upon completion of this lesson students will

- Be able to communicate in group situations effectively and in a positive manner.
  - Be able to recognize that there is diversity within their own group and that it is beneficial.
  - Be able to recognize the different roles team members, including themselves play and the importance of each.
  - Be more aware of environmental issues and concepts.
  - Be able to state at least one positive and negative effect humans have on the environment.
  - Be able to give at least one example of how trust, teamwork and cooperation between people can solve environmental problems.
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## INTRODUCTION

Gather the students together in a circle. (Run all discussions for these activities in a circle so that everyone can see and have an equal opportunity to participate.) Explain that they will be Participating in activities where the entire group must work as a team to solve a specific problem.

### Leading the Group Initiatives Course

Most groups can expect to accomplish between 2-4 activities in 1 1/4 hours depending on the obstacles and the group. To begin an element, give the students the problem and the parameters they have in which to solve the problem. Then give them all the safety instructions. Tell them that you may stop them periodically and change things if you feel what they are doing are unsafe. If at any time you feel your group is not ready to handle a specific obstacle, go to something different. Safety should always be the primary consideration. Although you do not have to do the obstacles in any specific order, it is recommended that you start with the easier activities first if possible. You also need to establish your role with the students. You are the facilitator. It is your job to help make sure the students stay on task and do not get hurt. You may need to help them identify why they are having difficulty. If a group is arguing too much or just not getting anywhere, you may need to stop them and help them get back on track. They often will not realize what they are doing wrong. They need someone to help them discover that everyone is talking and no one is listening rather than someone to tell them that the tall people should go first. This will probably be the hardest thing for you as facilitators. You can facilitate as an observer or as a participant. **Many people like to participate because it allows the students to see you in a different light. However, if you participate, you must resist all temptations to give solutions to the problem.** You may only do what the students ask you to. Some groups may never correctly complete an obstacle. Help them to keep the goals in mind. It is more important that they work together, and learn how to improve their group interactions, than to solve a specific obstacle. Sometimes it is best to stop them and finish with a discussion and move on to a new one than continue with one that is causing the group too much frustration. Each activity is written up with a discussion that outlines questions that help process the activity and lead in to discussion about the environmental concept. Use the time after each activity to process it. This is where much of the learning and understanding of how and why things did or did not work takes place. Discuss the specific situations that arise relative to your group. **Since some activities are easier to solve than others you may want to start with a easier activity at first and progress to more difficult challenges as the students team work and problem solving abilities develop.**

**RATING SCALE: A = Easy**

**B = Moderate**

**C = Difficult.**

## **WARM-UP: HULA HOOPS**

**Objective:** The group must move the hula-hoop(s) completely around the circle without using their hands or letting their hands loose.

### **Additional Challenge:**

- Try using two hula-hoops at the same time, or
- Try using two hula-hoops, but send them in opposite directions, or
- Time the group to add competition into the activity – try to set a record!

**Discussion:** Keep students in the circle position and ask some debriefing questions. Was there group support? Did they work as a team? Is there something you would do differently?

**WHOLE GROUPS 20 min. Then follow the yellow trail and have the four groups complete the activities below. Allow 30 minutes for each activity and make sure to debrief. A teacher can stay at each activity and have the students rotate.**

**(Follow the Yellow Trail to find the Stations)**

## Spiders Web (C)

**Objective:** Get every member of the group through the web without touching the ropes

### **Environmental Scenario:**

You are a group of moths, trying to pass through a spider's web without getting stuck. Once you use a hole you may not use it again with the exception of the center hole. The center hole may be used multiple times. Place a clothespin on the edge of each hole as you use it so you can keep track. If any moth touches the web, the **WHOLE** group must start over, so remember to communicate and work together.



**Safety:** Every student in the group must be a spotter for this activity, due to the risk that someone may be dropped as they are passed through a hole. Be sure to protect the head, neck and back of the person you are passing. Also, remember that a person's head must be higher than their feet as they are being passed through the web. **Do not allow anyone to dive through holes in the web or over the top.**

**Discussion:** (Predator/Prey) Identify the predator and the prey. (Spider/moth) What happens when a moth touches the spider web? Is it bad that the spider ate the moth when it touched the web? (Students should consider the food web.)

## Crab Grass (C)

**Objective:** To move the group from behind the board to the platform, using the rope.

**Environmental Situation:** You are a Blue Crab living in the Chesapeake Bay. You have lost your habitat due to decline bay grasses. In order to find a new home, crabs must first cross this open sandbar lurking with predators in your way. Luckily you spot a rope from an old crab pot. In order for you to survive you need to make it across on the rope as it's the only way to avoid predators when you move from the grass you are hiding in!



**Safety:** Only one person on the rope at a time. Make sure people on the platform are paying Attention to the swinging rope so no one is accidentally kicked or hit by a person swinging across.

**Discussion:** Why do you think crabs are a blue green color? (Adaptation to blend in with bay grasses.) If bay grasses decline, what do you think would happened to the crab population? Can you think of any threats to animals' habitats around your home or schools? What could people do to help animals facing habitat loss?

## Balance of Nature (B)

**Objective:** Get the platform in balance.

**Environmental Scenario:** Every action has an impact! Student need to keep nature in balance.

1. Get everyone on the platform balanced. You must enter from the middle. (see white arrow)
2. Once the students are balanced have them sit down keeping the platform balanced.
3. Have students move their heads and see how much they can affect the platform's balance. (See discussion below)



ENTER / EXIT PLATFORM

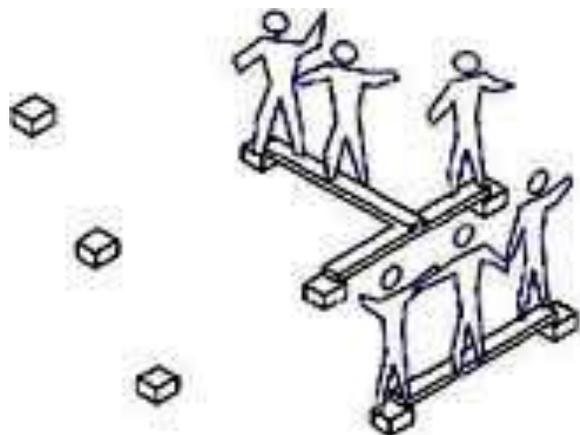
**Safety:** Students must enter and exit from the middle of the platform. **Students and all adults should be careful to avoid having the platform hit their toes!**

**Discussion:** Anything you do makes an impact on our environment no matter how small. Even small decisions such as picking up trash on our trails or turning off the lights at home will make a difference. Every action we take effects someone or something else. Ask the students if shifts in the platform could represent a shift in nature. Have the students explain how nature stays in balance.

## Perilous Patuxent (C)

**Objective:** Cross the river as a group.

**Environmental Scenario:** Due to increased development (buildings, roads, and parking lots) there has been a decrease in **Permeable** surfaces for storm water run-off. Your party was camping in the woods when a sudden and strong storm dumped a significant amount of rain on the region. Unfortunately, the water moved across **impervious surfaces** and into the watershed resulting in flash flooding and pollution (sediment, trash, and herbicides/pesticides). The river near your campsite is rising and you must cross before you are swept away by the currents. Luckily for you there are platforms that are currently above the water line and a few boards. Your party must cross the river. However, once you start no one can exit the river until everyone has left the bank of the river.



**Safety:** Boards must sit squarely on the platforms before students can attempt a crossing. **Two** students must work together to move any board.

**Discussion:** What are Permeable surfaces? *A surface that allows a liquid (water) or gas to pass through.*

What are impervious surfaces?

*Impervious surfaces are mainly artificial structures--such as pavements (roads, sidewalks, driveways and parking lots) that are covered by impenetrable materials such as asphalt, concrete, brick, and stone--and rooftops. Soils compacted by urban development are also highly impervious.*

What can we do to help? *Install devices that decrease the storm water run-off into streams.*

*(Rain barrels, rain gardens, Permeable paving solutions, and riparian forest buffers)*

## TEE PEE SHUFFLE (B)

**Objective:** The objective is to have the group perform various tasks while balanced on the log.

**Environmental Scenario:** Description: placing an entire group on top of telephone pole. Divide the group in half and ask those two halves to face one another and trade ends without stepping off the pole, or making contact with the group. If a student falls off they must restart at the end of the pole or where they started.

Variations:

- No verbal communication
- Arrange students based on birthday or alphabetical order.



### Some facilitation tips:

- Be aware of the group's success rate. Remember that the process is important, not just the act of balancing. By progressively making the challenges harder, you can provide opportunities for success.
- Slippery when wet!
- The entire group may fall if they do not let go of each other soon enough when falling—encourage students to do their best to land on their feet if falling and to not bring others down with them.

### Discussion:

1. Lead a group discussion on the strengths and weaknesses of the group's method.
2. Have the group explore the possibility of a better or different way to meet the challenge.