



# Environmental Change Makers

Grade Level: 6-10

Length: Multiple 40-55 Minute Sessions

[www.pwsrcac.org/lessons](http://www.pwsrcac.org/lessons)

Adapted from Project WILD

## NGSS Standards

**MS-ESS3-3** Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

## Crosscutting Concepts

**Stability and Change** For both designed and natural systems, conditions that affect stability and factors that control rates of change are critical elements to consider and understand.

## Related Resources

**Worksheets** Change Makers Rubric

## Overview

We can all be stewards of the environment and ecosystems that support us.

*>>Educator Tip: This is best accomplished over the course of many weeks, a semester or even a year as students develop, refine, and present their plans. Implementing a selected plan will present an additional series.*

## Objectives

- Students will identify and analyze an environmental problem.
- Students will create a plan to protect, restore, or improve an ecosystem of the environment.

## Materials

- Pens or Pencils
- Paper or Journals
- Whiteboard or Posterboard
- Dry Erase Markers or Colored Markers
- Research Books About Ecosystems, Plants, Animals
- Expert Panel: Wildlife Biologist, Waste Management Employees, School Employees, Local Authorities, Conservation Leaders, etc.
- Guest Speaker: A Change Maker OR video about a Change Maker
- Computers

**Notes**

## Background

Each of us can make constructive contributions for improving the environment in which we live. Sometimes our actions can improve the environment for people, sometimes for ecosystems, and ideally for both. Our effectiveness is usually increased if we work with other people, sharing ideas, information, and skills. Oil spills can kill many animals and have long-term effects on their habitat, but there are innumerable changes students can make to help protect, restore and improve ecosystems and the larger environment. The major purpose of this activity is to provide students with an opportunity to make change happen in order to improve the environment for people, wildlife, and other biotic (living) things.

## Preparation

Invite a guest speaker to visit your class and talk about how they have created positive, lasting change. If possible, pick a local person that your students may be familiar with and try to find someone who works to improve the environment, protect animals, or restore ecosystems. Explain to the guest speaker what you are hoping to accomplish with this activity, and guidelines for the presentation (15-30 minutes is probably plenty, with time for questions if they are comfortable with that).

## Introducing the Lesson

Introduce the guest speaker as a “Change Maker,” someone who creates positive change in the world. Remind students to be respectful to the speaker.

## Activity

1. After the guest speaker has finished and students have asked questions, have students think about changes that could be made in and around the school to improve the environment, protect animals, or restore ecosystems.
2. Begin by brainstorming on the whiteboard a list of things around the school that could be having a negative impact: litter, lots of pavement, lack of habitat, pesticide use, waste from lunches, etc. Depending on your class and what you have been studying, you may choose to focus more in-depth on a theme such as “waste” or

work with the broader idea of making change for wildlife, ecosystems, and environment.

3. Have students look at the list of problems and challenges. Have them work in small groups to create a list of suggestions for solving or minimizing each of the problems.
4. Share the suggestions and write them all on the board.
5. Ask students to select one that they think they could do to improve the situation. You may have the whole class address the same problem or let individuals or small groups choose different problems and challenges.
6. Once they have selected the problem to be addressed, have the students work alone or in small groups to generate ideas for possible solutions and their implementation. Use resource books on wildlife, ecosystems, and change-making for ideas. Allow students to use internet resources as well, if you would like.
7. Ask the students to list local experts on the topic such as wildlife biologists, clean water monitors, waste management officials, etc. If needed, help students to brainstorm who the local experts might be and encourage them to include community members and volunteers as well as professionals. Help students to contact these individuals through phone or e-mail.
8. Give students time to develop their plan and create a thorough presentation that addresses the problem, a possible solution or way to make the situation better, and the resources needed to implement the solution. Provide an example and work closely with students through the problem-solving process. If you would like, have students use PowerPoint or another computer program to design their presentation.
9. Invite a panel of local experts to your class on the day of student presentations. Encourage the panel to ask questions of each group and make suggestions for improving them. Give other students a chance to ask questions and make suggestions as well.

*>> Educator Tip: Encourage “sandwich feedback” where students (and panelists!) tell the presenters one piece of positive feedback, one piece of constructive criticism, and one more piece of positive feedback. You may choose to have students write feedback to each other. This will also allow you to evaluate how closely each student listened to their peers’ presentations.*

10. After all the plans have been presented, allow students a short amount of time to make any revisions they would like. Compile all the ideas. Then, have the students select one plan that seems most a) constructive, b) realistic, c) helpful to wildlife, ecosystems or environment and d) apt to make a lasting contribution. You

may find there is more than one proposal that fits the criteria, so you can decide to support more than one project.

11. Ask students to select a delegation to present their proposal to the school principal or whomever the appropriate authority may be (include janitors, groundskeepers, school board, etc. – anyone physically or officially involved.) Each student should be involved in some way, whether it is making the appointment to present the proposal, creating visual aids, or conducting the actual presentation. Provide students with a practice session in front of the class before they meet with authorities.
12. Once students have made the presentation to the principal or other authority, have them report back to the class. If the plan is accepted, assist them to contact anyone else they need to and work as a class to successfully implement the project.

## Wrap-up

Once they have implemented the project, ask the students to analyze their results. Did things work out the way they expected? Were there any surprises? Any unforeseen problems? How might they have been more effective? Who did they collaborate with? Have students write a summary of the project and lessons learned for the school newsletter or website or community newspaper. Also, have students write a letter to the editor thanking the people that assisted with their project.

## Assessment

Use the Change Makers Rubric to evaluate student work. Assess the posters and presentations for evidence that students have developed locally relevant designs for how they can use scientific ideas and personal experience to be stewards of the environment. Successful posters and presentations will be engaging, clearly communicated, and demonstrate that all students were involved in the process. Consider whether students provided feedback to each other, and also how each group incorporated feedback into the second iteration of their project.

## Public Awareness Campaign: Change Makers Grading Rubric

Teacher Name: \_\_\_\_\_

Student Name: \_\_\_\_\_

CATEGORY	4	3	2	1
Brainstorming - Solutions	Students identify more than 4 reasonable, insightful possible solutions/strategies to encourage change.	Students identify 4 reasonable, insightful possible solutions/strategies to encourage change.	Students identify 3 reasonable, insightful possible solutions/strategies to encourage change.	Students identify fewer than 3 reasonable, insightful possible solutions/strategies to encourage change.
Research/Statistical Data	Students include 4 or more high-quality examples, quotations, types of evidence, or data to support their campaign.	Students include 3 high-quality examples, quotations, types of evidence, or pieces of data to support their campaign.	Students include 2 high-quality examples, quotations, types of evidence, or pieces of data to support their campaign.	Students include fewer than 2 high-quality examples, quotations, types of evidence, or pieces of data to support their campaign.
Campaign/Solution	Students design an original, accurate and interesting solution based on scientific principles. The method they design is a very effective way to monitor and/or minimize a human impact on the environment.	Students use scientific principles to design a fairly effective method to monitor or minimize a human impact on the environment.	Students create a plausible solution but it does not adequately address the issue or consider scientific principles.	The solution is not relevant or effective.
Content & Comprehension	Shows a full understanding of the topic. Student is able to accurately answer almost all questions posed by classmates about the topic.	Shows a good understanding of the topic. Student is able to accurately answer most questions posed by classmates about the topic.	Shows a good understanding of parts of the topic. Student is able to accurately answer a few questions posed by classmates about the topic.	Does not seem to understand the topic very well. Student is able to accurately answer a few questions posed by classmates about the topic.
Preparedness & Presentation	Student is completely prepared and has obviously rehearsed. Speaks clearly and distinctly all (100-95%) the time.	Student seems pretty prepared but might have needed a couple more rehearsals. Speaks clearly and distinctly almost all (95-90%) the time.	The student is somewhat prepared, but it is clear that rehearsal was lacking. Speaks clearly and distinctly most (90-80%) of the time.	Student does not seem at all prepared to present. Often mumbles or can not be understood.