



Lesson Plan

Activity Templates: Problem Solving Skills

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STUDENT LEARNING OBJECTIVES

After completing these activities students will...

1. Analyze problems to develop appropriate solutions.
2. Identify the positive and negative impacts of proposed solutions.
3. Evaluate proposed solutions to identify the most viable option.

TIME REQUIRED: 15 to 30 minutes per activity, 3 activities included

RESOURCES: FFA.org

EQUIPMENT AND SUPPLIES NEEDED:

1. Handouts for each student when using the activities "Question the Problem" or "The Ripple Effect."
2. A small prize for the "That's Crazy!" idea generation activity.

SUGGESTED USE:

Incorporate any of these problem solving activities into the class curriculum before any of the following:

- Cooperative projects
- Practicums
- Project or service based lessons/units
- SAE planning

THESE ACTIVITIES ARE ALIGNED TO THE FOLLOWING STANDARDS:

AFNR Performance Element

- CS.02. Performance Element: Personal Growth: Develop a skill set to enhance the positive evolution of the whole person.

Common Core- Speaking and Listening

- CCSS.ELA-Literacy.SL.9-10.1.D Respond thoughtfully to diverse perspectives, summarize points of agreement and disagreement, and, when warranted, qualify or justify their own views and understanding and make new connections in light of the evidence and reasoning presented.

Common Core- Literacy in Science & Technical Subjects: Writing

- WHST.9.10.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Common Core- Math Practices

- CCSS.MP1: Make sense of problems and persevere in solving them.

Next Generation Science

- HS-ETS1-3 Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.

Partnership for 21st Century Skills

- Critical Thinking and Problem Solving
- Initiative and Self-direction
- Productivity and Accountability

ACTIVITIES:

The ability to think critically and to recognize and solve problems are important skill to have; these skills are consistently on an employer's top ten list of most desired skills. Problem solving is necessary in all agriculture classes and it is important to facilitate the development of these skills in students.

#1: Activity Template: Define the Problem

- a. *Introduction:* Share and discuss an upcoming activity where students will be required to identify and solve a problem. Choose one of the following activities to help students define the problem in a way that makes sense to them.
- b. *Activity:*
 - i. **"Read All About It!"** – Students must create a newspaper headline that highlights the problem in a clear and eye catching way. It can be written as if the problem still exists or as if it has already been solved.
 1. Example 1: *Local School Lacks Funds for Fresh Food*
 2. Example 2: *Local Agriscience Students Solve School's Food Dilemma*
 - ii. **"Get to the Root of the Matter"** – Students must describe the problem in 40 words. Then they need to condense this description to 20 words. From there they should get the problem down to ten words and finally five words. The five word description is the root of the problem and most likely holds the key to the solution as well.

#2: Activity Template: Generate Ideas

- c. *Introduction:* Share and discuss an upcoming activity where students will be required to identify and solve a problem. Choose one of the following activities to help students generate ideas to solve the problem.
- d. *Activity:*
 - i. **"Question the Problem"** –Each student (or small group of students) will need a copy of the "Question the Problem" handout. Each student or group of students should answer the five questions to evaluate their assigned problem.
 - ii. **"That's Crazy!"** – This activity works best when the entire class is trying to solve the same problem. Assign one student to be a recorder and have them write all the ideas developed by the class on the board or a piece of flipchart paper. Explain to students that the person to come up with the craziest or "dumbest" idea will receive a prize (a piece of candy, something from the class "treasure chest," etc.). Students should share all the crazy ideas that they can come up with and the recorder should write these down. When the flow of ideas has slowed go back through the list. Have students vote on the craziest idea and award the prize. Then identify those ideas that actually are not that crazy and could actually be real solutions. Divide the students into small groups and assign each group one of the "not so crazy" ideas. They should work to make the idea a viable solution.

#3: Activity Template: Choose a Solution

- e. *Introduction:* Have students share their top three solutions for a problem they are currently trying to solve, then use one of the following activities to help students generate ideas to solve the problem.
- f. *Activity:*
 - i. **"The Ripple Effect"** – Each student (or small group of students) will need a copy of the handout "The Ripple Effect." Each student or group of students will use the worksheet to identify the positive and negative impacts of their proposed solution.
 - ii. **"It's in the Jury's Hands"** – This activity works best when the entire class is trying to choose a solution to the same problem. When students cannot choose between two solutions use this activity to put the solutions on trial. Divide the group into three small groups. Two groups of students should be assigned to one of the solutions. The third group students will serve as the jury. Each solution will go on trial with opening and closing arguments, witnesses and cross-examination. The jury will decide on the best solution by voting and announcing their verdict.

NAME: _____

Question the Problem

DIRECTIONS:

Answer the following questions to help identify solutions to the problem you are trying to solve.

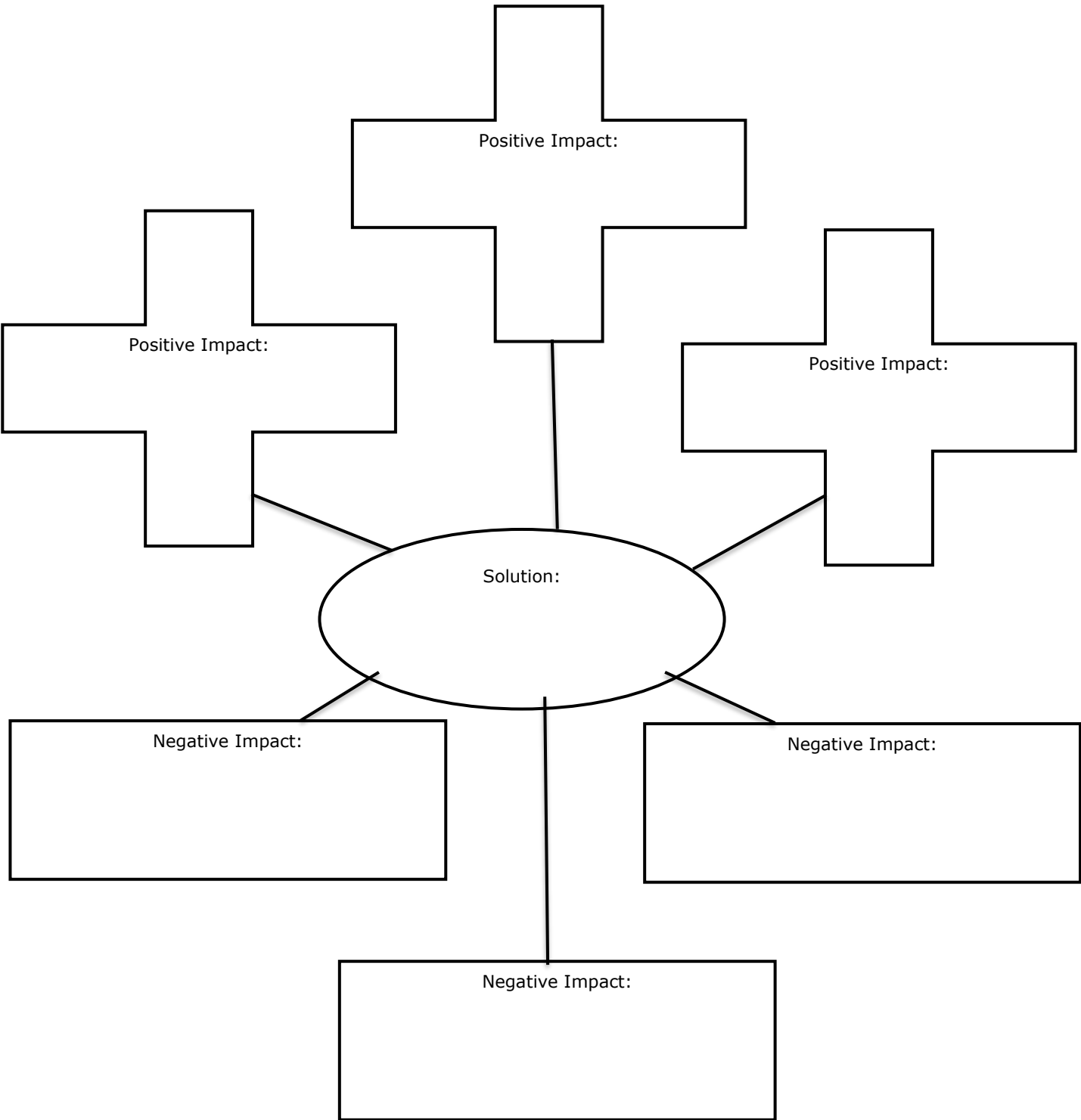
1. What needs to happen for this problem to disappear?
2. What are the obstacles?
3. Which obstacles can be easily removed?
4. Has anyone solved a similar problem? How did they do it?
5. If money, time and other resources were unlimited how would you solve the problem?

Aligned to the following standards:
CS.02; CCSS.ELA-Literacy.SL.9-10.1D;
WHST.9.10.4; MP1; HS-ETS1-3

The Ripple Effect

DIRECTIONS:

Use this to identify the positive and negative impacts of the proposed solution to your problem.



Aligned to the following standards:
CS.02; CCSS.ELA-Literacy.SL.9-10.1D;
WHST.9.10.4; MP1; HS-ETS1-3