



Middle School

National FFA Organization

Lesson MS.53

EVALUATING POTENTIAL IMPACTS

Unit.

Stage Three of Development—DO

Problem Area.

How Do I Make Things Happen?

Precepts.

N2: Demonstrates problem-solving skills.

National Standards.

NL-ENG.K12.7 - Evaluating Data - Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources to communicate their discoveries in ways that suit their purpose and audience.



Student Learning Objective. As a result of this lesson, the student will ...

- 1 Identify positive and negative impacts of solutions.



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Time. Instruction time for this lesson: 50 minutes.



Resources

National FFA Organization's Essential Learnings, 2003.



Tools, Equipment, and Supplies

- ✓ Writing surface
- ✓ Transparencies
- ✓ Overhead projector
- ✓ Student notebooks or journals
- ✓ Post-it notes—blue and yellow
- ✓ MS.53.AS.A—one per student
- ✓ MS.53.TM.A
- ✓ MS.53.Assess—one per student



Key Term. The following term is presented in this lesson and appears in bold *italics*:

▶ Impact



Interest Approach

As students walk into the classroom, greet them and hand each of them a copy of MS.53.AS.A. Ask them to read over the worksheet until further instructions are given.



We each have had the opportunity to read the problem of the day. We need to solve this problem. In our last class, we discussed and developed strategies to create solutions to problems. Today during this class, we will need to be super problem-solvers. Our mission is to decide what would be the most effective solution to this problem. To begin the mission, we will need to evaluate this problem from every possible angle and consider all the people who are being affected by this problem.

In a moment, all my super problem-solvers will begin to detect and brainstorm solutions to the problem. Quietly capture all your possible solutions in your notebooks. We have two minutes to complete this task. Are there any questions?

Answer any questions students may have.



Begin!

Wait for the students to finish capturing their potential solutions





5 ... 4 ... 3 ... 2 ... 1 ... stop! Okay, pencils and pens down. We all were working very hard on capturing all of our potential solutions to this problem.

Use the Me-You-Us Strategy to help students share their thoughts.



In a moment, I will assign you to groups of three. Please remember who your partners are.

Call out the students' names slowly so they can see with whom they will be working.



Great! Now that we know whom we will work with, on the count of three, we will have 30 seconds to get with our partners. Please take your notebooks with you when you get into your groups. 3 ... 2 ... 1 ... go!

Wait 30 seconds.



Excellent! Now that we have found our partners, please find a seat so we all are sitting next to one another. We will have 90 seconds to discuss all the potential solutions our problem of the day. The only conversations I should hear in these groups should be related to the problem of the day. What questions do you have? Begin!

Wait 90 seconds for the students to discuss their potential solutions. Walk around the class to make sure the students are staying on task.



Okay, let's stop the conversations. In a moment, each group will share three of their solutions with the entire class. We will have 45 seconds to select the three solutions we want to share, and also to select a spokesperson. Begin.

Wait 45 seconds for the students to make their selections.



Stop! Let's re-focus our attention on the front of the room. When your group is called on, your spokesperson will stand up and share the group's three solutions. I will record the solutions on the board.

Capture the possible solutions on a public writing surface. Possible answers to the problem include: raise taxes to help with the cleanup; set up environmental clean-up options; establish a committee to examine the problem in more detail.



Awesome! We come up with a wonderful list of possible solutions to the problem. There is more than one way to solve a problem. But before we select an ultimate solution, we first must weigh the impact the solution may have on others.

Today, we are going to examine how our actions in the solution to problems can affect others. In order for us to do this, we will need to be top-notch problem-solvers. The way in which we will be super problem-solvers is to be an inquisitive and curious learner throughout class. You may wonder what does an inquisitive learner look like? Well, an inquisitive learner is one who is sitting on the edge of his or her seat, paying very close attention to everything happening in class. Students, show me how inquisitive you are!

Wait for all the students to participate, and make sure they all are sitting on the edge of their seats.



SUMMARY OF CONTENT AND TEACHING STRATEGIES

Objective 1. Identify positive and negative impacts of solutions.



- Great! It looks like you are ready to begin our mission to examine solutions to problems. As super problem-solvers, we developed potential solutions to the problem of the day. However, each problem has many potential solutions. What we are going to do today is learn how to decide which solution is the best for solving this particular problem and other problems we may encounter in our life. So, what do we think makes a good solution to a problem?

Entertain responses from the class. Possible answers include: one with a positive outcome where everyone wins, and is for the good of everyone involved.



There are many factors that can impact your decision to select the best solution to a problem. In a moment, WE will capture some information from the overhead. While WE are writing down this information, think about how WE can use this to help select the best solution to our problem of the day.

Have students copy notes from MS.53.TM.A.

I. Strategies for selecting a solution

A. What should you consider when selecting a solution?

1. The impact the solution may cause

- An **impact** is the effect the solution may have on people, places, and relationships.
- What effect will this solution create for everyone involved in the problem?
- Examine all the angles that are affected by the potential solution.

B. How do you evaluate solutions?

1. Prioritize the solutions-place them in order of importance.
2. Develop a pro and con list for each solution-what are its benefits and what are its detriments?
3. Look at the big picture and explore the consequences-what effects will this solution create for the people involved and for those not directly involved?
4. Seek the advice of others-what types of individuals or groups should you consult for advice?
 - a. Experts
 - b. Advisors





Let's put these strategies to use and evaluate the potential solutions we wrote on the board.

Using the strategies for evaluating a solution, let's develop a list of pros and cons, or the positives and negatives, of the proposed solutions. Each group will develop a pro and a con for the three solutions your group shared earlier in the class. I will be walking around and will give each group three yellow and three blue Post-It notes. Each group will need to capture its answers on the colored Post-It notes: The yellow Post-It notes will be for the pros, and blue Post-It notes will be for the cons for each solution. Each Post-It note should contain only one pro and one con, depending on the Post-It note's color. What questions do you have?

Answer any questions the students may have.



We will have four minutes to complete this task.

Write on the board what each color Post-It note stands for. Begin to hand out the Post-It notes.

Allow the students four minutes to complete the task. After the students have finished, ask them to read their Post-It note as they place the Post-It notes under each of the solutions on the board. This will give a very visible model to evaluate the pros and cons for each solution.



Great! In a moment, we will have 30 seconds to select a different spokesperson. Begin!

Wait 30 seconds



Now that we have selected our spokesperson, when our group is called on, the spokesperson will stand up and walk to the board. We will place our respective Post-It note under the solution it applies to. Read the Post-It note out loud as you place it on the board under your solution. Okay, let's start.

Select a group to begin. Stop to discuss the pros and cons for each of the solutions before the next group is called on. Continue until each group has had the opportunity to share.



Thank you, spokespeople, for sharing your groups' answers. Each solution has at least one pro and one con. If we had time, we probably could have come up with many different positive and negative angles to them.

When evaluating and choosing a solution, we need to remember that it is important to consider all of the pros and cons. We have seen many different solutions, and we have reviewed the pros and the cons for each one of them.

It is now time to make our final decision as to what solutions we should use to solve our problem of the day. In order to do this, we are going to take a vote to select the top three potential solutions from all the choices listed on the board. Each of you will have a chance to vote for three different solutions. When I read the solution out loud, raise your hand if you think that it is a satisfactory solution to the problem. Okay, let's begin with solution number one.

Begin to read the solution out loud. Have the students raise their hand if they are in favor of the solution. Place the number of students who voted for the solution on the board. Continue to do this until all solutions have been voted on. Circle the three highest solutions. Erase or cross off the solutions that are not selected.





Now that we have our top three solutions, let's examine each of these a little more to see how each of them will impact the people, places, and relationships that would be involved.

In your notebooks, write down at least one possible impact each of the remaining solutions may have. You will have a total of three impacts listed in your notebooks. You have 90 seconds to complete this task. Begin!

Wait 90 seconds Ask for students to share their answers with the class.



Those were some awesome answers we just heard! We are all truly top-notch problem-solvers. We have seen today the possible impacts these solutions may have on the people, places, and relationships involved. Taking all of this into consideration, let's vote one more time to select the ultimate solution to this problem. Each of you will have only one vote this time around. You will have 30 seconds to think about and weigh all the information you know about each of the solutions before you make your choice. Okay, you have 30 seconds to think starting now!

Wait 30 seconds



Each of our votes is very important. In a moment, I will call each of our groups up to the board. Each person in the group will place a checkmark next to the solution he or she chooses to solve this problem. As we are waiting for our turn to go to the board, please sit quietly. Okay, let's start with this group.

Point to a group and have them come to the board and vote on their choice. Continue this until each group has had its opportunity and each student has voted.

Have each student vote, keeping in mind that each student votes only once.



We have selected an excellent solution to the problem that will have the best outcome for everyone involved. Our solution was examined thoroughly by this class, and it demonstrates how WE should weigh all the potential impacts, both pros and cons, or negatives and positives, of each solution. When WE are faced with a problem in your own life, it is very important to examine the potential solutions to that problem. Once WE have done that, WE can then select the solution that has the best outcome for all who are involved in the problem.



Review/Summary

Use the Choral Response Moment to review the strategies of evaluating a solution.



Let's look back over your notes and review the strategies for selecting a solution. When I call out a question, you will shout out the answers all at once. For example, if I ask what should we consider when selecting a solution, we would all shout out, "The impact the solution may cause." Give me thumbs up if you understand the directions! Great! Let's get started!



What are the four steps to evaluating a solution?

Step one.

Correct answer: prioritize the solutions



Step two.

Correct answer: develop a pro/con list for each solution



Step three.

Correct answer: look at the big picture and explore the consequences



And finally, Step four.

Correct answer: seek the advice of others



Great! How about what types of people or groups should you consult for advice?

Correct answer: experts and advisors



Excellent! We all really seem to know all the right answers for choosing solutions. That might be because we were such inquisitive learners!

Today we examined the strategies needed to help evaluate a solution to a problem. We were able to apply these strategies to solve the problem of the day with the best possible solution. We will be able to use these strategies to help evaluate the potential solutions to problems we may encounter throughout life.



Application

►Extended Classroom Activity:

Have students select a problem they are currently facing and to brainstorm possible solutions. Have them develop the pros and cons for each solution. Each student will decide on one solution and write a paragraph supporting his or her choice.

►FFA Activity:

Students will select a problem in the FFA Chapter and evaluate the potential solutions.

►SAE Activity:

Students will evaluate potential solutions to problems they are encountering in their SAE project.



✓ Evaluation

A written test is provided to evaluate the objective of this lesson. Provide each student a copy of MS.53.Assess.

Answers to Assessment:

1. True
2. False
3. True
4. True



EVALUATING POTENTIAL IMPACTS

► True or False

Instructions: Read each statement and decide if it is true or false. Write the word “true” or “false” beside each statement.

- _____ 1. An impact is the effect a solution may have on people, places, or relationships.
- _____ 2. When prioritizing solutions, you should place them in order from least important to most important.
- _____ 3. When evaluating impacts, you will need to examine the people who are involved in the solution.
- _____ 4. Experts and advisors are examples of people you can consult for advice.



STRATEGIES FOR SELECTING A SOLUTION

What should you consider when selecting a solution.

- ◆ **The impact the solution may cause**
 - ➔ **An impact is the effect the solution may have on people, places, and relationships.**
 - ➔ **What effect will this solution create for everyone involved in the problem.**
 - ➔ **Examine all the angles that are affected by the potential solution.**

How do you evaluate solutions.

- ◆ **Prioritize the solutions—place them in order of importance.**
- ◆ **Develop a pro and con list for each solution— what are its benefits and what are its detriments.**
- ◆ **Look at the big picture and explore the consequences—what effects will this solution create for the people involved and for those not directly involved.**
- ◆ **Seek the advice of others—what types of individuals or groups should you consult for advice.**
 - ➔ **Experts**
 - ➔ **Advisors**



MS.53.AS.A Name: _____

PROBLEM OF THE DAY:

What would you think if you heard that a major employer in your area was found to be dumping poisonous chemicals, which in turn showed up in your local water supply.

The company has stated that if it is forced to clean up its operations, it will simply close its plant and open one in another county with less stringent environmental controls.

