



High School

National FFA Organization

Lesson HS.99

SELECTING A STRATEGY

Unit. Stage 3 of Development—Do

Problem Area. How Does the Vision Get Accomplished?

Precepts. **A2:** Focus on results.

National Standards. NL-ENG.K-12.7 — 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 Objectives. As a result of this lesson, the student will ...

- 1 Be able to explain four methods of problem-solving.
- 2 Given a scenario, list the advantages and disadvantages of each of the four problem-solving methods.
- 3 Given a scenario, determine the best problem-solving method.



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Time. Instruction time for this lesson: 50 minutes.



Resources

Leadership Curriculum Guide, National Association of Secondary School Principals.



Tools, Equipment, and Supplies

- ✓ *HS.99.AS.A—one per student*
- ✓ *HS.99.AS.B—one per student*
- ✓ *HS.99.AS.C—one per student*
- ✓ *HS.99.Assess—one per student*
- ✓ *Public writing surface*
- ✓ *Several colored writing utensils*



Key Terms. The following terms are presented in this lesson and appear in bold italics:

- ▶ *Autocratic*
- ▶ *Democratic*
- ▶ *Consensual*
- ▶ *Laissez faire*



Interest Approach

In this interest approach, students will get a chance to attempt to solve a problem. This activity will be an introductory activity that relates to the entire lesson.



Everyone in this class is unique. We all have different interests and talents, which make us individuals. There is something to celebrate about each of us! Some of you may be great at math. Some may have difficulty remembering the multiplication table and may have a natural talent in English class. Maybe we're not good at either, but love science. This is one way in which we are all different.



Another way we can be different is in our approach to solving problems. In a moment, a problem will be described to you and you will solve it by your own means. To help us observe how people solve problems differently, observers will be designated to watch and listen as the problem is solved.

Have students partner up. Line them up from youngest to oldest, and pair them off while they're standing in a line.





I need one person from each partner group to raise your hand. If your hand is raised you will be the problem-solver. As you approach the problem, explain everything going on in your head. It might sound something like, "Okay, I have read the problem and am thinking that the issue is...and that there could be four ways to solve this problem. Based on my experience with...I think ...is the best option. I'm going to try that first, though, before making a final decision." The partner who did not raise the hand will be the note-taker. The note-taker will report on the approach used to solve the problem. There is five minutes to solve the problem. What questions do you have?

Give each student a copy of the problem on HS.99.AS.A. One student will need it as a reference to solve, and the other partner will need it as a sheet to scribe on how their partner solved it. Give them five minutes to work through the problem.



When your group is called on, give us a brief summary of how your partner solved the problem.

Call on different groups to share their response. Look for different approaches among the partners.



As we have all seen, everyone took a little bit of a different approach to solving this problem. Most ended with the correct answer, but all were good attempts. As part of the bigger discussion we've been having about group problem solving, today we narrow our focus on the "how-to's", or the strategies, we employ to solve problems.

SUMMARY OF CONTENT AND TEACHING STRATEGIES

Objective 1. List four methods of problem-solving.

This section will introduce the four different methods of problem solving.



Everyone solves a problem in a different way. In a moment, we will be presented with a question. You will have the chance to solve the problem, and then we will share how we each solved the problem.



We've taken a lot of different approaches to solve the same problem. When solving a problem, there are four main strategies to use.

Use the Crayon Moment when sharing the four strategies and assign each of the four a different color.

I. Four strategies for group problem solving:

A. Autocratic: one person makes the decision for the group.



- B. Democratic: the group votes on the decision; majority rules.
- C. Consensual: the group makes a decision through group discussion and resolution.
- D. Laissez faire: based on the situation, the decision is made whether or not to solve the problem.

Hand out HS.99.AS.B to each student, have pairs join to form groups of 3 or 4. Give the groups five minutes to work through the problem.



When your group is called on share two things. First, share the answer you came up with. Second, share the color representing the strategy you think the group used to solve the problem. We'll keep track of the different styles used on the public writing surface.

Call on students to share their method. Write down a list of the strategies they share on the public writing surface.



All approaches used could be correct, and in some instances, some may be more useful than others. Each of you chose your own strategy to reach the answer, and most of you were successful. There are situations, though where choosing the right strategy becomes important if success is to be achieved. Let's take our journey deeper into understanding these strategies.

Objective 2. Given a scenario, list the advantages and disadvantages of each of the four problem-solving methods.

In the next section of the lesson, the students determine the advantages and disadvantages of a strategy used in a scenario.



Being leaders in your school, you are asked to be a positive influence on your peers. We are working to develop leadership skills that are valuable in all aspects of life. Because of the position you hold, and how you present yourself as leaders, you have been asked by the principal to do a special project. There are so many organizations, clubs, and other extracurricular activities that are available for students. The principal has suggested that some type of display be constructed in a place where all students have access to check out all of the opportunities available to them—and to showcase special events. Because of the quality of work you have done in the past, the principal has assigned this special project to you as a class. Using the consensual method, use the next five minutes to a class to come up with ideas as to what you would do.

Give the students five minutes to figure out what they would do. When done, provide HS.99.AS.C to each student. And use the series of questions to debrief their experience.



Describe what it was like to try and solve this problem using this strategy.

What worked well?

What didn't work well?

Capture these thoughts on the handout under advantages and disadvantages of the Consensual Strategy.



Generally there are four factors we can use to review the four strategies. Let's discover what those are.

Share the following information

I. Determining factors of different solution-selection strategies

- A. Time available
- B. Costs involved
- C. Efficiency
- D. Accuracy needed



With this information, what other advantages and disadvantages are associated with "consensual"?

Move discussion to address the other three strategies.



Depending on the personalities of those on the team and of the situation, each of the solution-selection strategies could work. Let's capture ideas about the advantages and disadvantages of the other three strategies in relation to time, costs, efficiency, and accuracy.

Lead students to complete AS.99.AS.C



Knowing and understanding strategies is lot like understanding how to use all the tools in a toolbox. it becomes much easier to get the job done when you understand the tools. In fact, let's practice that skill.

Objective 3. Given a scenario, determine the best problem-solving method to use.

In the next section, the students will be given a chance to determine the best problem-solving strategy to use with a given situation.



Let's imagine that this class became so good at solving problems that you started consulting for other organizations. Let's say a company hired you to help them with their next project. They want to build a new amusement park outside this community, but they aren't sure of the theme. They need to have the theme determined by summer of next year in order to start designing the rides and the park itself. They want this project to be successful so they are willing to invest the time and money it takes to come up with the best solution. Given this information, they've asked you to recommend the best strategy to solve the problem of choosing a theme. Take a moment to think about the solution-selecting strategies. What strategy would you recommend? Consider your answer for a minute.

Pause for a moment.

Call on students to share their responses. Be sure to ask for the reasoning behind each response. Discuss as a class the advantages and disadvantages of each.





Everyone had great ideas and great reasoning behind the strategy selection. Thanks for the great conversation. Regardless of your opinion on this issue, the key to this exercise is that you have started to look at why groups make the decisions they do when faced with options to reach a solution. And that will help you be more successful and help teams be more successful, too.



Review/Summary

Use an activity to review the key points to the lesson and provide a challenge for students to apply what they've learned immediately.

Have students pick a team they are a part of. Then, use a Go With the Flow Moment to have them show how that team faced a problem, selected a strategy, and arrived at a result.



At the next meeting you attend, watch for the predominant method of problem solving. Ask yourself, what are the results of that method being used so often. I bet you'll be surprised at what you notice.



Application

►Extended Classroom Activity:

Have the students do a Dickens Moment.

►FFA Activity:

Have the students use the strategies presented in the lesson to assist them in planning for the annual FFA banquet.

►SAE Activity:

Using the strategies today, like the one related to the job-shadow experience, have them set their schedule for getting their proficiency or degree applications done.



Evaluation

Give each student a copy of HS.99.Assess.

Answers to Assessment:

1. Autocratic: one person makes the decision for the group.

Democratic: the group votes on the decision; majority rules.

Consensual: the group makes a decision through group discussion and resolution.

Laissez faire: based on the situation, the decision is made whether or not to solve the problem.

2. Time, cost, efficiency, accuracy

3. Students' answers will vary.



SELECTING A STRATEGY

1. List and describe four strategies for solving a problem.
2. List four factors that influence selecting a strategy to solve a problem.
3. Write down a situation when you had to work as a group to solve a problem, outside of class today. Write down how your group chose to solve the problem, what the result was, and if a better strategy could have been used, and why.

2. List four factors that influence selecting a strategy to solve a problem.

3. Write down a situation when you had to work as a group to solve a problem, outside of class today. Write down how your group chose to solve the problem, what the result was, and if a better strategy could have been used, and why.



HS.99.AS.A Name: _____

An earthworm is 40 feet below the surface of the earth. Each evening, the earthworm moves four feet toward the surface of the ground. Each afternoon, the earthworm retreats three feet into the burrow it just dug. How many days will it take for the earthworm to reach the surface of the earth.

Answer: 37 days



HS.99.AS.B Name: _____

King Tut lived 20 years longer than King Solomon.

King Solomon lived to be 50.

King David was born in 80 B.C., 20 years prior to King Solomon.

In what year would King Tut's parents have had their son.

Answer: Not enough information has been provided to answer the question.



Methods	Advantages	Disadvantages
Autocratic		
Democratic		
Consensual		
Laissez-faire		

Which strategy did you feel to be the best to use in this situation and why.

