



High School

National FFA Organization

Lesson HS.95

IDENTIFYING NEEDS AND ALIGNING WITH A VISION

Unit. Stage Three of Development—DO

Problem Area. How Does the Vision Get Accomplished.

Precepts. J4: Solve problems.

National Standards. NS.9-12.1 — Science as Inquiry — Students should develop abilities necessary to do scientific inquiry.



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

- 1 Identify a problem, given a scenario.
- 2 Analyze a group/problem situation based on appropriateness factors.
- 3 Make a recommendation on a group's ability to solve a problem.



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Time. Instruction time for this lesson: 50 minutes.



Tools, Equipment, and Supplies

- ✓ Writing surface
- ✓ Overhead projector and transparencies
- ✓ Copies of HS.95.AS.A—one per student
- ✓ Copies of HS.95.AS.B—one per group
- ✓ Copies of HS.95.AS.C—cut for distribution
- ✓ Copies of HS.95.AS.D—cut for distribution
- ✓ Copies of HS.95.Assess—one per student
- ✓ Transparency of HS.95.TM.A



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

- Problem
- Feasible
- Appropriate



Interest Approach

You will be presenting the students with a logic problem to solve. They may all be given different approaches or methods to solve the problem. They may stand up and walk through it, they may draw it out to visually depict it, or they may focus on the problem in their mind. The key is there are many approaches used to solve the problem, and all of them may be effective. They can get valuable ideas on how to solve it by the mix of other students in their groups. You will need to divide the class up into groups of two.



A problem that needs solving is face down on a sheet of paper. Do not turn the paper over until you hear the word “begin.”



There are many different ways to solve this problem, and any one of those ways may lead you to the correct answer. Take each other’s suggestions into consideration. You are part of a team of two that has been selected to solve a problem.

Pass out handout HS.95.AS.A, face down.



Once you hear the command word, you may start. To help you be more successful, I’ll assign partners. *Quickly establish partners.* As a team, put your minds together to solve the problem. Take each other’s suggestions into consideration. You will have one minute. Double-check your answer and be ready to fully explain how you got it. Begin.



Allow them to work on the problem for one minute. Once a minute is up, have them stop if they haven't solved it yet. The answer to the question is "facing west." To get them thinking, pose the following questions.



Without sharing the answer you came up with, answer each of these questions to help unpack your thinking.

Was the problem clearly defined?

Elicit responses.



Could you solve the problem using the resources and time available to you?

Elicit responses.



What solution did you arrive at?

Elicit responses. Help all students discover the correct solution.



Not every problem you are presented with can be solved. What are some reasons problems can't be answered?

Possible answers include: your understanding of issue; not all information about the problem is presented; the resources available to solve the problem; the time allotted; difficulty; lack of interest to the group.

Set global context for this lesson.



Think about the following questions based on the problem you were presented with:

Was the problem clearly defined.

Could you solve the problem using the resources and time available to you.

Were you able to solve the problem.

Give the students a moment to think about these questions. A long pause will suffice. Pose the following question:



Not every problem you are presented with can be solved. What are some reasons you were able to solve the problem presented.

Possible answers include: your ability to solve it depends upon your group members; the problem presented; the resources available to solve the problem; the time allotted; difficulty; appropriate for the purpose of the group; interest to the group.



Set global context for this lesson.



Our brains are wired to try and solve problems! The activity to start class is a prime example of that. We humans depend on our ability to solve problems for survival, to make our lives easier and more enjoyable, and sometimes just for enjoyment. Solving problems on our own is one thing, but learning to work with teams to solve problems is a whole other thing. Why is it critical that groups of people learn how to work together to solve problems?

Elicit responses.



Think about our own community. What problems has this community addressed recently?

Elicit responses.



Learning to lead teams and be part of teams that can effectively solve problems is an enormously valuable skill. Why do you think that statement is true?

Elicit responses.



Today, our task is to learn what it takes to be that valuable team member, so set your brains to "absorb" and your focus your eyes on "the future".

SUMMARY OF CONTENT AND TEACHING STRATEGIES

Objective 1. Identify a problem, given a scenario.

The first step in solving a problem is to clearly identify it. In this next section, the focus is on clearly identifying the problem.



Imagine that you work for Evaluation Inc. - an outside group of evaluators hired by teams who are facing situations. Your job is to help the group identify the problem. Your feedback will help the group determine the exact problem.

Divide class into teams of 3 or 4 each.

Give a copy of handout HS.95.AS.B to each group. Give them five minutes to evaluate the scenario and determine the problem presented in the scenario



In your groups, you will have five minutes to evaluate the given scenario. Determine the problem presented in the scenario and be ready to share. Remember you are getting paid huge bucks to help this group identify its problem.



Have each group present their findings using the Bob the Weather Guy Moment . Have each group present the main problem from the scenario presented. Congratulate each group. Task students to note differences in the finding reported by each group.

On a writing surface, outline the concepts below. You will be adding to this list later in the lesson.

- I. Identifying Needs
- Step one: identify the problem
- A **problem** : is a question or situation of complexity.



The first step in solving a problem is to identify it. Without identifying a clear problem, your group lacks clues on how to address the problem. When the problem is identified, we will be able to determine where to start to solve it.

Let's use a simple situation: the disorganization of my desk (or another situation students can see in the room). Some might think the problem is a lack of organization skills by the user-me. But if you really watched what happened during the day, you'd learn that many people leave items on top of my desk instead of using the "in" boxes provided on the wall. The correctly identified problem is a lack of understanding by others leaving items for me. See how differently the solutions would be to those problems? That's why identifying the correct problem is vital.

How do you know when you've correctly identified the problem in a given situation?

Elicit responses and capture on writing surface.

Congratulate students for the discussion and remind them that these ideas would be great to add to their notes. Provide review and bridge to next activity.



Not many people are hired just to identify the problem—even though we've found it is a critically important skill. Knowing the problem is just the first step. The next step is to solve it, right? Not yet! Let's think about this for another moment...literally.

Objective 2. Analyze whether or not a problem is appropriate for the group to solve.

The next section takes problem solving a step further. Once the problem is identified, the group can determine whether or not the problem is appropriate for them to attempt to solve.



When solving a problem, each member of the group has something to contribute—similar to a piece of a puzzle. Each of you has different information that brings a different piece to the puzzle. To visualize this, for the next activity you will each receive a piece of information. This piece of information is for your eyes only. You must bring this piece of information to the group to work together in solving the problem.



Display HS.95.TM.A and handout a copy to each student. Cut up the statements on HS.95.AS.C and hand out one to each student. If you have a large class, you may want to split the class into two groups to do this activity. If you have a smaller class, you will need to hand out more than one statement to each student. This may take longer than the time allotted. Adjust accordingly. Encourage the students to stay on task. Explain that an efficient use of their time is vital to solving this puzzle.



As a team, using your individual puzzle pieces, you will see if you can solve the presented problem. You will have 10 minutes to solve the problem. Free feel to use the public writing surface.

The answers for the baseball activity are: Duncan is the first baseman; Perry is the third baseman; Billings is in center field; Johnson is the pitcher; Banks is at short stop; Woods is the right fielder; Winters is the second baseman; Dixon is in left field; Lynch is the catcher.

II. Identifying Needs

A. Step one: Identify the problem.

B. Step two: Determine if the problem is appropriate for the group to solve. Do you have the information needed to solve the problem.

1. Appropriate means suitable or compatible, able to be done. The question to ask is should we solve it. Is it in line with our mission.



Let's go back to the first step: What was the group's problem?

Elicit responses.

Now's let's answer a few questions found in step two:



Could your group solve the problem with the information provided?

Is there any other information that would have been useful to solve this problem, besides the answers?

Is it in line with the group's mission to solve this problem?

Give the students 30 seconds to process the questions. Call on students to share their reaction to the questions. This should bring up a discussion about whether or not a problem is appropriate for the group to solve.



What if you had been asked to address the issue of drug trafficking in this situation, would that have been an appropriate problem for you to solve?

Choose a group here in this school. Let's identify three problems that are appropriate and three problems that would not be appropriate for this group to address.



Elicit responses and conduct discussion.



Knowing the exact problem and making a conscious decision about whether or not it's appropriate for a group to address the problem are two critical steps, but there's one more before a group attempts to make tackle the problem. What do think that step might be?

Elicit responses.

Objective 3. Determine if a problem can be solved by the group.

Clarifying the problem and determining if it is appropriate is the first step in solving a problem. The next step is to determine if it is feasible to be solved.



For the next activity, a little cooperation from you is necessary. In a moment, each of you will be told the name of an animal. Do not tell anyone else what animal you have been given. Think quietly about the traits of that animal.

Depending upon the size of your class, you will want five groups of four or five students. Go around the class and whisper an animal name into each student's ear: sheep, dog, cat, chicken, or pig.



Each of you has an animal. Without saying the name of your animal, you need to make the sounds your animal makes, and find other students with the same animal. Once you find your other animals in your group, sit with that group and listen for directions. Your class is now divided into five groups.



Each group will be given a scenario. In your groups, read through the scenario carefully. Identify the problem and discuss the appropriateness of this problem for the group. This should take about three minutes.

Cut out the five scenarios on HS.95.AS.D and pass out one to each group. Give them five minutes to discuss the scenario. After five minutes, call on the group to share their problem and whether a solution was feasible. Add to the content covered in Objective One and Objective Two. Write step three on the board.

III. Identifying Needs

- A. Step one: Identify the problem.
- B. Step two: Determine if the problem is appropriate for the group to solve. Do you have the information needed to solve the problem.
- C. Step three: Determine if the problem is feasible to be solved by the group. Do you have enough information about the problem, enough resources, and enough time to solve the problem.
 1. Feasible means capable of being done. Questions to ask are: Can we realistically do this. Do we have enough time. Do we have the knowledge and ability to solve the problem. Do we have the resources available.



Pose the following questions:



Can the group realistically solve this problem...is it feasible?

Give the groups an additional two minutes to address these questions. Have each report their findings.



Feasible is defined as capable of being done. In this situation, you were not given all of the information necessary, so the problem was not feasible, or not capable of being done. If the problem is not feasible, your group cannot solve it. Maybe you need more resources or more time. In this instance, you needed more information. You were missing some numbers that were key to you solving the problem.

In your groups, create a scenario where a group in this community attempts to solve a problem that is not feasible. Use the next two minutes to create your scenario and prepare to present it to the class.

Give the groups an two minutes to create scenario. Have each report their ideas.



Review/Summary

Use a Picasso Moment to have students create a visual representation that shows the relationship of the three steps to problem solving by groups.

You can have students share their drawing or not depending on time. Conclude the lesson by challenging students to see the application of these ideas immediately.



Even as we sit here, there are groups attempting to solve problems that affect us all-making our air cleaner, improving the local economy, eliminating hunger in our community, helping make cars more fuel efficient. You can be a valuable part of team like this when you bring your understanding of how groups solve problems. Between now and when you go to sleep at night, notice problems yet to be solved, think about which groups are trying to solve them and ask yourself: have they correctly identified the problem, is it appropriate and feasible for each to solve them, and how successful do you think they'll be?



Application

►Extended Classroom Activity:

Have students think of a problem or challenge they are currently facing in their life. Have them map out the problem by stating the problem, analyzing whether or not it's appropriate for them to solve on their own. Have them determine if they have the resources and time, and if it is feasible for them to solve the problem.



►FFA Activity:

Have the students sit in on an FFA officer meeting or committee meeting where they are trying to solve a problem or plan an activity. Have the students list appropriate and inappropriate problems the FFA might solve. Have them identify the problem by stating the problem, analyzing whether or not it's appropriate for them to solve on their own, and determine if they have the resources, time, and ability to solve the problem and present this to the officer team or committee to help them more effectively solve the problem.

►SAE Activity:

Have the students identify a problem with their SAE. An example would be finding a medical problem based on symptoms of their animals. Have them map out the problem by stating it, analyzing whether or not it's appropriate for them to approach, and determine if the medical problem and its cure are feasible.



Evaluation

HS.95.Assess

Answers to Assessment:

1. Identify a problem, determine if the problem is appropriate to be solved, and determine if the problem is feasible to be solved.
2. Answers may vary.



IDENTIFYING NEEDS AND ALIGNING WITH A VISION

1. List the three objectives that must be identified before a group can solve a problem.
2. Explain why the three outlined objectives help to efficiently solve a problem.

2. Explain why the three outlined objectives help to efficiently solve a problem.



BASEBALL GAME

Instructions: Nine Men—Duncan, Johnson, Winters, Perry, Banks, Dixon, Billings, Woods, and Lynch—play the positions on a baseball team. As a group, determine the position played by each man from the clues you have been given. Record your answers and be prepared to share the solution your group came up with.

Positions:

- Catcher
- Pitcher
- First Baseman
- Second Baseman
- Third Baseman
- Shortstop
- Left Fielder
- Center Fielder
- Right Fielder

Players:

- Duncan
- Perry
- Billings
- Johnson
- Banks
- Woods
- Winters
- Dixon
- Lynch



HS.95.AS.A Name: _____

**You are facing south. You turn left, make an about face, turn right, and turn right again.
Which direction is behind you.**



Today, the rainforest is being cut down at an alarming rate. The land is being cleared to use as pasture for animals, to build on, and for lumber. There are thousands of plants, insects, and animals that depend on the rainforest environment for their existence. The rainforest is being cut down faster than scientists can analyze the long-term effects of resources that it provides. What if there is a cure for cancer that some tiny insect produces. What if there is a plant that has a leaf that can alleviate diabetes.

Once the rainforest has been cut down, we will never know if we could have utilized the resources available. Organisms may become extinct before we know they even existed. Nearby communities need lumber, which contributes to urban sprawl. Nearby communities also need jobs, and the habitat supplies needed food for starving populations.



Cut out the following clues for distribution to the class.

The second baseman beat Johnson, Billings, Duncan, Dixon, the catcher, and the third baseman at golf.

Lynch, Duncan, and Banks each won \$50 playing cards with the pitcher.

Johnson is married, and lives across the hall from the catcher, who is also married.

Dixon is taller than Billings; Woods is shorter than Billings. They, and Winters, weigh more than the pitcher and the third baseman.

The left fielder is taller than the center fielder, who is taller than the right fielder.

Duncan, Perry, Johnson, and the shortstop lost \$400 betting on the horses.

Perry lives in a house with his wife, his sister, and her husband, who is the pitcher.

Perry and Winters dislike the catcher.

The pitcher's wife is the third baseman's sister.

Two of the outfield positions are played by Woods and Billings.

The third baseman lives with the pitcher.



Dixon is taller than the infielders, with the exceptions of Johnson, Lynch, and Perry.

The third baseman, the shortstop, Winters, and Lynch made \$150 speculating on the commodities.

The catcher, third baseman, and Dixon are married.

Banks' sister is engaged to the second baseman.

Four members of the team are married. Winters, Banks, Duncan, the right fielder, and the center fielder are bachelors.



1. John, Henry, and Phil are married to Sally, Nancy, and Arlene—but not necessarily in that order. John, who is Sally’s brother, has five children. Nancy, who is a CPA, wants to wait a few years to start a family. Henry is married to John’s sister. Who is Phil married to.
2. Two of your cows get out and go across the street. There is another farmer across the street who has the same breed of cows as you. How do you tell which cows are yours.
3. A student organization you are in is holding elections. You know that your friend Sally wants to run for secretary, but she is not at the meeting. Tom is also running for secretary, and he is highly qualified. Sally is your best friend, but you think Tom would make a better candidate. What should you do. Should you elect Sally and speak on her behalf.
4. You are in anatomy class. The teacher instructs you to locate the volar that is to the right of the sagital plane of your body.
5. You planted sunflowers in the greenhouse. Half of the plants are sprouting, half of them are not. You know that there are other students in the greenhouse during the day. There is also a problem with the classroom cat digging up seeds because she uses the dirt as cat litter. Why are only half of the seeds growing.

