

## Research and Collaboration

#### **ANSWERING QUESTIONS OR SOLVING PROBLEMS**

#### **Prior to Instruction**

Program student AAC devices with the "problem" and "solution" phrases from Worksheet 4 that are needed for participating in the activity. Students will need to voice one "problem" each. Students should have multiple options for possible solutions from the "solution" word cards. Prepare the T-Chart graphic organizer by writing or gluing "problem" on the left column and "solution" on the right column. Additionally, program a Yes/No response option for communicating with others about whether a problem + solution card pair forms an appropriate way to solve a problem. Sample words and definitions include:

- Problem statements, like "there is not enough clean water for everyone" and "there is a lot of trash in landfills and in the ocean."
- Solutions, like "I can turn off the water while I am brushing my teeth" and "I can borrow things and reuse things I have."

## **Core Vocabulary and Concepts**

The focus skills word has an asterisk:

- Natural resources
- Renewable resources
- Non-renewable resources
- Flow resources
- Solve problems\*s\*

#### **Anchor Instruction for All Students**

Prior to beginning instruction, review the target words briefly (natural resources, renewable resources, non-renewable resources) and review the concept of "solve problems." Point to the words and picture of "solve" and "problem" on Worksheet 4 and read it to students. Say **We have** been reading a book called *Science Experiments*. We have learned about how to think like scientists to answer questions about the world. There are lots of questions to ask and problems to solve about natural resources. One question I have is from our Newsletter.



## **Learning Objectives**

- Students will sort problems and solutions.
- Students will select the best solution for solving a community problem.

#### **Materials**

- Student Worksheet 3: Social Studies Newsletter (one per student and one for the teacher)
- Student Worksheet 4:
   Research and Collaborate
   (one per student and one for
   the teacher), T-Chart graphic
   organizer

It said, "There can be more renewable resources if we are careful." What can we do to be careful? How can we help there be enough natural resources? Let's use what we know about asking questions and solving problems to learn more. Let's see if we can find solutions that will help our world.

LEVEL I LEVEL 2 LEVEL 3 What did we learn in our Show me our Newsletter. Show me some of the Place Student Worksheet 3 in things we learned in our **Newsletter?** Wait for students **Newsletter.** Place Student front of the student and wait to recall words, concepts, or for students to indicate the Worksheet 3 in front of each answers to questions from text at the top of the page. student and wait for students the Newsletter. Prompt as Prompt as needed. Yes! This needed. Yes! Great work to point to the highlighted is our Newsletter. Let's words or questions. Prompt remembering what we've learn more protecting as needed. Yes, great work learned about natural natural resources! Point talking about natural resources. We need to to the pictures and words of resources. We need to work together to help problems on Worksheet 4. I'll work together to help protect natural resources. read you these "problem" protect natural resources. One way to help protect and "solution" words. One thing we can do is help resources is to help solve Read the words and point solve problems. When we problems. There are things NTRODUCE we can all do to be a part to each picture. Let's solve find a good solution, we problems. can solve a problem. Point of the solution. When we to the pictures and words of find a problem, we can "problems" and "solutions" think of a good solution on Worksheet 4. I'll read that makes sense. Let's you these "problem" and learn some more about "solution" words. Read the solving problems. Point words and point to each. Let's to the pictures and words of solve problems and figure "problems" and "solutions" out ways to help our Earth. on Worksheet 4. Let's read you these "problem" and "solution" words. Point to each word and pause for students to read along with you. Let's solve problems so that we can help protect the natural resources we have on Earth.

## Researching and Collaborating with Model-Lead-Test

This instruction is leveled for three types of support needs. All instruction is delivered in a model-lead-test format. During the "test" phase of instruction, provide immediate prompting and error correction as needed. If students cannot respond independently after four seconds, deliver the prompt. This instruction is designed to teach students to use their Student Worksheet 4 to follow the steps of the activity as independently as possible. Model the think-aloud strategy in the model phase to show students how follow the steps of the Solving Problems activity. Next, guide them to tell you how to follow steps while you model with a new problem and corresponding solution card. Finally, give each student an opportunity to select a problem (a new problem that hasn't been picked) and evaluate if the solution card they pick is the *best* choice to solve the problem.

#### Materials: Student Worksheet 4: Research and Collaborate, T-Chart graphic organizer

LEVEL 1 LEVEL 2 LEVEL 3

My turn. First, I find a **problem.** Model touching a problem on the sheet. pick "there is not enough clean water for everyone" and I put that card here. Model placing the card in the "problem" column on the T-Chart. Next, I look at the "solution" cards. What is the best way to fix or solve my problem? I will pick one that makes sense. The problem is about water. I need a solution about water. Model reading three "solution" cards and considering each card. Read each card out loud and say, Yes, this will help or No, will NOT help. After hearing each possible solution, use a YES/NO response card and your voice to say,, "I can turn off the water while I am brushing my teeth!" This will help solve the problem. Model placing the corresponding "solution" card on the "solution" column of the T-Chart.

My turn. First, I find a natural resources problem. Model finding a problem from the response options and placing it on the "problem" column on the T-Chart. I pick "there is not enough clean water for everyone." This is a problem, which means it needs to be fixed or solved. Next. I look at the "solution" cards. What can I do to help? What is the solution? The problem is about using water. I need a solution about using water. I will pick a solution that makes sense. Model reading three solution cards and considering each card. Read each card out loud and say,, Yes, this will help. This is a solution about using water. or No, this will NOT help. This solution is NOT about using water. After hearing each possible solution, say, "I can turn off the water while I am brushing my teeth!" This will help solve the problem. This will help protect clean water. Model placing the corresponding solution card on the "solution" column of the T-Chart.

My turn. I'm going to do the Solving Problems about **Natural Resources activity.** First, I find a problem about natural resources. Model finding a problem from the response options and placing it on the "problem" column on the T-Chart. I pick "there is not enough clean water for everyone." This is a problem, which means it needs to be fixed or solved. Next. I look at the "solution" cards What can I do to help? What is the solution? The problem is about using a flow resource, water. There is always going to be water on earth, but there is not always enough clean water. I need a solution about protecting water. I will pick a solution that makes sense. Model reading three solution cards and considering each card. Read each card out loud and say, Yes, this will help. This is a solution about protecting water. or No, this will NOT help. This solution is NOT about protecting water. After hearing each detail, say,, "I can turn off the water while I am brushing my teeth!" This will help solve the problem. This solution will help protect clean water, and it's something that I can do myself! Model placing the corresponding solution card on the "solution" column of the T-Chart.

Let's work together. First, let's pick a problem. Should we pick this problem, or this problem? Point to two options for the next problem. Great! We picked "." Next, we look at the "solution" cards and try to find the one that is the best way to solve the problem. Point to three different solution cards. Each time, ask Does this help? [Say the problem]. Help students identify the solution card that matches the problem they picked. When you have found the correct solution card as a group, say, Yes! [solution card] is the best way to solve this problem. Point to the "solution" side of the T-Chart and wait for students to place the card in the correct spot.

Let's work together. First, let's pick a what? Yes! A problem. Which problem should we pick next? Great! We picked "\_\_\_." Next, we look at the "solution" cards and try to find the one that is the best way to solve the problem. Point to three different solution cards. Each time, ask The natural resource from the problem was Does this help us protect the natural resource? [Say the problem]. Help students identify the solution card that matches the problem they picked. When you have found the correct solution card as a group, say, Yes! [solution card] is the best way to solve [problem]! This is how we can help! Where do we put our "solution" card to show how we solved our **problem?** If needed, point to the "solution" side of the T-Chart and wait for students to place the card in the correct spot.

Let's work together. What do we do first? Yes! Pick a new problem. Which problem should we pick next? Great! We picked " ." What do we do next? Yes! Find a "solution" word that is our solution, or the best way to solve our problem. Pick a solution that is a good way we each can help protect natural resources. Point to three different solution cards. Each time, ask What was the natural resource from the problem? Does this help us protect the natural resource? [Say the problem]. Help students identify the solution card that matches the problem they picked. When you have found the correct solution card as a group, say, Yes! [solution card] is the best way to solve [problem]! [Problem] is the problem and [solution] is the solution. This is how we can help protect natural resources! Where do we put our "solution" card to show how we solved our **problem?** If needed, point to the "solution" side of the T-Chart and wait for students to place the card in the correct spot.

	LEVEL I	LEVEL 2	LEVEL 3	
TEST	Your turn. Solve a problem!  When students have finished the test phase, prompt them to record their problem and solution card on their Student Worksheet 4. Help them record their work in the box labeled "What is the problem and solution?" Use drawings, words, or cut and paste the problem from the table on the worksheet.	Your turn. Find a problem and find a solution!  When students have finished the test phase, prompt them to record their problem and solution card on their Student Worksheet 4. Help them record their work in the box labeled "What is the problem and solution?" Encourage them to write or draw their response using the "problem cards" as reference.	Your turn. Find a problem and find a solution. Think of a way you can help protect a natural resource!  When students have finished the test phase, prompt them to record their problem and solution card on their Student Worksheet 4. Help them as needed to record their work in the box labeled "What is the problem and solution?"	
7	Note: To be used during the Test phase as needed.			
PROMPTING AND ERROR CORRECTION	Prompt for next steps as needed.  When asked about solution cards, if the student does not respond after 4 seconds, say,  [the solution card] IS or is NOT the best way to help when [problem]. Wait for the student to respond. If correct, deliver specific verbal praise.  If the student makes an error, say, No, and model the correct response or step in the activity.	Prompt for next steps as needed.  When asked about solution cards, if the student does not respond after 4 seconds, say,  [the solution card] IS or is NOT the best way to help when [problem]. Wait for the student to respond. If correct, deliver specific verbal praise.  If the student makes an error, say, No, and model the correct response or step in the activity.	Prompt for next steps as needed.  When asked about solution cards, if the student does not respond after 4 seconds, say,  [the solution card] IS or is NOT the best way to help when [problem]. Explain why the solution card is or is not the best solution to the problem. Wait for the student to respond. If correct, deliver specific verbal praise.  If the student makes an error, say, No, and model the correct response or step in the activity.	
REINFORCE	Great work finding the solution to a problem!	Great! You found the solution to a problem about natural resources!	Great! You found the best solution to a problem about natural resources! You found a way that YOU can help protect natural resources.	

Instructional Tip! For students who have difficulty with fine motor skills or vocal speech, record the "problem" and "solution" in AAC devices so the student can activate the response options as needed.

#### **Generalization and Extension Activities**

To promote generalization, pick a problem and a solution that you can work on together as a class. Think about your school community or local neighborhood. Is there something you can do as a group to help solve a problem related to natural resources? Use the problems in the activity as a guide, or come up with some on your own. Help students vote on a problem to work on as a class.

## **Measuring Student Learning**

Using the event recording "details" data sheet, collect data on student-specific responses during the problem-solving activity. You will use this data sheet every time a lesson incorporates the skill of identifying details. Track progress with solving problems over time.

## Independent, Technology-Delivered Instruction

enCORE provides additional instruction and practice on the target skills and concepts addressed in this Unit. Both teacher-led and independent student lessons that automatically adapt to differentiate across learning levels are key components of enCORE:

- enCORE automatically selects and assigns these lessons to your students based on their learning level and the Unit you are currently teaching
- or, to view and select any of these lessons at any time go to the Curriculum tab in your enCORE teacher dashboard.



# Presenting and Communicating

#### WRITING AND SHARING WHAT WE KNOW

#### **Prior to Instruction**

Cut out the response options for writing as needed. Program student AAC devices with the responses your student will need to communicate with others. Include the template and the words specific to the "problem" and "solution" cards your students selected and recorded on their worksheets in Segment 1 of this lesson. Sample words and phrases include:

- "The soil is not healthy for growing plants."
- "I can borrow things and reuse things I have."
- "I can help solve problems about protecting natural resources!"
- Yes/No response options for answering presentation checklist.

## **Core Vocabulary and Concepts**

The focus skills word has an asterisk:

- Natural resources
- Renewable resources
- Non-renewable resources
- Flow resources
- Solve problems\*

#### **Anchor Instruction for All Students**

Prior to beginning instruction, show students video clips or pictures of people talking to other people. Vary the examples to show some formal speeches, friends talking in a small group, and presenters who use graphics or supports to communicate information (i.e., presentations or charts). Ask them to think about all the ways we can tell other people our feelings and ideas.

## **Differentiated Systematic and Explicit Instruction**

Follow the instructional steps below. Adapt the steps or language, as needed, to account for student-specific needs. After each step, provide specific verbal feedback for correct responses and participation.



## **Learning Objectives**

- Students will write about what they learned.
- Students will communicate what they learned to others.

#### **Materials**

- Complete versions of Student Worksheet 4: Research and Collaboration from Segment I (one per student and one for the teacher)
- Student Worksheet 5: Present and Communicate (one per student and one for the teacher)

## Writing What We Know

LEVEL I LEVEL 2 LEVEL 3 Let's write. Look at Let's write about what Let's write about what Worksheet 4. Where's the we've learned. Look at we've learned in social Worksheet 4. Where's the studies. Look at Worksheet you picked problem? Limit the response option by covering problem you picked from 4. What was the problem some of the distractor choices our activity? Help students you picked in the Natural if needed. Help each student as needed. Great! How did **Resources Solving Problems** you solve the problem? activity? Help students as point to or indicate the problem they identified and recorded on Wait for a response. If needed, needed. Great! How does their worksheet. Great! How your solution fix or solve point to where they have did you solve the problem? already recorded the problem the problem? Wait for a Point to the "solution" cards on and solution. What was the response. If needed, say, How Worksheet 4. Can you show did you decide to help solution to your problem? me the solution? Again, limit protect natural resources? If needed, help students response options as needed and point to or read the portion Wait for a response. Show help students find their target of the statement that is the students where they already solution. Great work! You "solution" word. Let's write wrote the problem in the box are ready to write. more about how we solve on Worksheet 4. What did problems. you decide was the best solution? If needed, help students point to or read the portion of the statement that is the "solution" word. Great work! You are ready to write more about problems

## Writing What We Know with Model-Test

This instruction is leveled for three types of support needs. All instruction is delivered in a model-test format (note, there is no "lead" phase for this instruction). During the "test" phase of instruction, provide immediate prompting and error correction as needed. If students cannot respond independently after 4 seconds, deliver the prompt. This instruction is designed to teach students to use their Student Worksheet 4 to complete the writing task on Worksheet 5. Model the think-aloud strategy in the model phase to show students how to reference Worksheet 4 to complete the writing task. Students can write in the blanks or paste the response options from Worksheet 4 directly on their writing template.

INTRODUCE

and solutions.

**Materials:** Student Worksheet 4: Research and Collaborate, Student Worksheet 5: Present and Communicate

	LEVEL I	LEVEL 2	LEVEL 3
MODEL	My turn. My problem was "there is not enough clean water for everyone." I'll glue that here. Model finding the "there is not enough clean water for everyone" response option from the response options for Worksheet 5 and gluing it on the writing template on Worksheet 5. Next, I'll find the solution. "I can turn off the water while I am brushing my teeth." I'll glue that here. Glue the solution word phrase in the third box on the writing template. I did it!	My turn. I'll use my work from Worksheet 4 to help me write. I picked the problem "there is not enough clean water for everyone." I'll write that here on Worksheet 5. Model writing "there is not enough clean water for everyone" on the writing template on Worksheet 5. Next, I'll find the solution. I see "I can turn off the water while I am brushing my teeth" was my solution from Worksheet 4. I'll write that solution here. Model writing the "solution" from Worksheet 4 on the template on Worksheet 5. I did it! I wrote about how I solved a problem!	My turn. My problem was "there is not enough clean water for everyone." I'll write the problem here. If I need help remembering or spelling, I can look at Worksheet 4. Model writing the words "there is not enough clean water for everyone" on the writing template on Worksheet 5. Next, I'll write the solution to the problem here. "I can turn off the water while I am brushing my teeth" was my solution. Model writing the response on the template on Worksheet 5. I did it! I wrote about how I can help solve a problem about natural resources!
TEST	Your turn. What was the problem you picked? Glue the problem here. Point to the space where students should glue their problem on Worksheet 5 and wait for students to select and glue the correct response. Assist with gluing as needed. What was your solution? Glue your solution words here. Point to the space in the third box on the template on Worksheet 5 and wait for students to select and glue the correct response. Assist with gluing as needed.	Your turn. What was the problem you picked? Write the problem here. Point to the space where students should write their problem on Worksheet 5 and wait for students to write the correct response. What was your solution? Write your solution words here. Point to the template on Worksheet 5 and wait for students to write the correct response.	Your turn. Write about your problem and solution. Point to the writing template on Worksheet 5 and wait for students to write the correct responses.

	LEVEL I	LEVEL 2	LEVEL 3	
	Note: To be used during the Test phase as needed.			
PROMPTING AND ERROR CORRECTION	For each section of the writing worksheet, if the student does not respond after 4 seconds, say, Let's write like this. Model picking the correct response and placing it on the correct blank on Worksheet 5. After a few moments, set the response option to the side of the blank on Worksheet 5 and say, Your turn to write. Wait for the student to respond. If correct, deliver specific verbal praise. If the student makes an error, say,, No, and touch the correct response option. Try and catch errors before incorrect responses are glued to Worksheet 5.	For each section of the writing worksheet, if the student does not respond after 4 seconds, say, Let's write like this. Model picking the correct response and writing it on a blank copy of Worksheet 5. Your turn to write. Wait for the student to respond. If correct, deliver specific verbal praise.  If the student makes an error, say, No, point to the correct response on Worksheet 4, and model writing that response on a blank copy of Worksheet 5.	For each section of the writing worksheet, if the student does not respond after 4 seconds, say, Let's write like this. Model picking the correct response and writing it on a blank copy of Worksheet 5. Your turn to write. Wait for the student to respond. If correct, deliver specific verbal praise.  If the student makes an error, say, No, point to the correct response on Worksheet 4, and model writing that response on a blank copy of Worksheet 5.	
REINFORCE	You did it!	You did it! You wrote about solving problems!	You did it! You wrote about problems and solutions for protecting natural resources!	



#### Instructional Tips!

- For students who have difficulty with fine motor skills, help students use a sponge with glue and provide guidance positioning the responses as needed. Add the outline of a box or a yellow dot to the worksheet to provide a target for glued items. Be careful to allow for independence in selecting the response options.
- For students who have difficulty with multi-step directions, apply model-test procedures to each step of the writing template (instead of all at once). Consider using a light-colored bingo stamper for students who need support circling responses.

## **Sharing What We Know**

LEVEL 1 LEVEL 2 LEVEL 3

We wrote about our problem and solution! Let's share our ideas! How do you share ideas with other people? Help students indicate their preferred mode of communication by gesturing to and/or saying I speak with my voice OR I speak with my device. Adjust this statement to best describe each student's primary mode of communication. Before we start, let's make sure we can say, all of our important words. Be sure the student can activate or say, all three components of the presentation.

INTRODUCE

We wrote about our problem and solution! Now let's share our ideas! When we tell each other things that are important, we are presenting ideas. Can you think of a time you presented or shared ideas with other people? Give students a chance to think of times they shared ideas. Guide the conversation to help students see the difference between casual conversation and presenting ideas. Let's learn more about presenting ideas to others! Before we start, let's look at our presentation checklist. It asks us, "Can I tell about the problem and solution?" Can you? Answer any questions the students have about their problem or solution. It also asks us, "Do I know how to say, all of the words?" Let's look over our writing. Are there words you need help saying? Give students a chance to ask about specific words they do not know how to read or say. Our checklist says to practice with a partner and then with a group. Let's learn more about this!

We wrote about our problem and solution! Now let's share our ideas! When we tell each other things that are important, we are communicating by presenting our ideas. Can you think of a time you presented or shared ideas with other people? Give students a chance to think of times they shared ideas. Guide the conversation to help students see the difference between casual conversation and presenting ideas. Let's learn more about presenting ideas to others! Before we start, let's look at our presentation checklist. It asks us, "Can I tell about the problem and solution?" Can you? Do you understand the problem and solution? Answer any questions the students have about their problem or solution. It also asks us, "Do I know how to say, all of the words?" Let's look over our writing. Are there words you need help saying? Give students a chance to ask about specific words they do not know how to read or say. Our checklist says to practice with a partner and then with a group. Let's learn more about communicating with others! Let's present!

## **Sharing What We Know with Model-Lead-Test**

This instruction is leveled for three types of support needs. All instruction is delivered in a model-lead-test format. During the "test" phase of instruction, provide immediate prompting and error correction as needed. If students cannot respond independently after 4 seconds, deliver the prompt. This instruction is designed to teach students to use their writing component of Worksheet 5 to present ideas to the class.

Materials: Student Worksheet 5: Present and Communicate

	LEVEL I	LEVEL 2	LEVEL 3	
МОВЕГ	My turn. Model reading the worksheet to the class.	My turn. I will share what I know about the problem and solution. Model reading the worksheet to the class.	My turn. I will share what I know about the problem and solution. I will use my worksheet to help me present my ideas. Model reading the worksheet to the class.	
LEAD	Let's work together. We can practice with one person first. Place students in pairs with peers or adults. The student should present to the other person by independently stating or activating all four components of the presentation.	Let's work together. Place students in pairs with each other. Have students take turns presenting to one another.	Let's work together. Place students in pairs with each other. Have students take turns presenting to one another. Tell the listener to listen for both the problem and solution.	
TEST	Your turn. Prompt each student to present to the group.	Your turn. Now you get to present to the whole group! Prompt each student to present to the group.	Your turn. Now you get to present to the whole group! Listeners, let's listen for the problem and solution! Prompt each student to present to the group.	
Z	Note: To be used during the Test phase as needed.			
PROMPTING AND RROR CORRECTION	If the student does not respond after 4 seconds, model presenting the first component of the presentation. Say, <b>Your turn. Say the whole thing.</b>			
PROMP ERROR CO	If the student makes an error, immediately say, <b>Stop, my turn.</b> State the correct information or model the correct sequence of information. <b>Your turn. Try again.</b>			
REINFORCE	Great work presenting!	Great work presenting ideas about problems and solutions!	Great work presenting! You communicated your ideas about solving problems about natural resources!	

Instructional Tip! Ensure everyone has a communication mode that allows them to read/recite each part of their speech, rather than programming the entire presentation (which would require a single activation of the device). This format allows students with communication support needs to actively engage in their presentation throughout the experience (as they will need to activate the output three times to fully communicate all of their ideas).

#### **Generalization and Extension Activities**

To promote generalization, consider opportunities to present to different audiences across different contexts. This activity lends itself to an inclusive format, working alongside peers in general education classrooms. To further extend this lesson for students who are ready, add a fourth open-ended component to the writing and presentation template by creating a forth box at the bottom of the page using a prompt such as: The MOST important thing I learned about solving problems is \_\_\_\_\_\_. OR My favorite thing I learned about solving problems is \_\_\_\_\_\_. For students who are ready to answer these questions, be sure you have pre-taught the concepts of "important" and "favorite."

## **Measuring Student Learning**

Using the task-analytic "presentation" data sheet, collect data on student-specific responses during the presentation. This data sheet mirrors the presentation checklist students use to self-monitor and prepare for their presentation during this lesson. Monitor student progress regularly and make data-based decisions to ensure instruction is individualized.

## **Independent, Technology-Delivered Instruction**

enCORE provides additional instruction and practice on the target skills and concepts addressed in this Unit. Both teacher-led and independent student lessons that automatically adapt to differentiate across learning levels are key components of enCORE:

- enCORE automatically selects and assigns these lessons to your students based on their learning level and the Unit you are currently teaching
- or, to view and select any of these lessons at any time go to the Curriculum tab in your enCORE teacher dashboard.