Research and Collaboration

SOLAR SYSTEM

Core Vocabulary

The focus skills word has an asterisk:

- Sun
- Stars
- Moon
- Solar System*

Prior to Instruction

Program student AAC devices with the "problems" words and "answers" words from Worksheet 4 that are needed for participating in the activity. Additionally, program a Yes/No response option for communicating with others about whether a tools card forms an appropriate match with the problem. Sample words and definitions include:

- What do you see words, like "sun," "trees."
- Characteristic words, like "warms earth," "seen at night."
- Sun- A huge ball of fire and gas in the sky that heats the earth and the earth orbits around.
- Moon- The big white circle object that is seen at night in the sky.
- Earth- The planet we live on.

Learning Objectives

- Students will identify what can be seen at night and day in the sky.
- Students will sort characteristics of moon, sun, Earth.

Materials

- Student Worksheet 3: Newsletter and Comprehension (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

Anchor Instruction for All Students

Prior to beginning instruction, review the target words briefly (sun, moon, stars, (new word) Earth) and introduce the concept of "Solar System." Point to the word "Sun," "Moon," and "Earth" and read the definitions. Say, **Today we will learn about the sun, moon, and Earth. We will identify what we can see in the sky at night and during the day. We will sort characteristics for sun, moon, and earth. We will present what we learn to each other.**

	LEVEL 1	LEVEL 2	LEVEL 3
INTRODUCE	**Show me our newsletter.** Place Student Worksheet 3 in front of the student and wait for students to indicate the text at the top of the page. Prompt as needed. **Yes! This is our newsletter. Let's learn more about the solar system!** Point to the pictures and words of produce words on Worksheet 4. **I'll read you these words**. Read the words and point to each picture. **Let's play a game.**	**Show me some of the things we learned in our newsletter.** Place Student Worksheet 3 in front of each student and wait for students to point to the highlighted words or questions. Prompt as needed. **Yes, great work talking about the solar system. Let's investigate.** Point to the pictures and words of on Worksheet 4. **I'll read you these words**. Read the words and point to each. **Let's play a game about the solar system.**	**What did we learn in our newsletter?** Wait for students to recall words, concepts, or answers to questions from the newsletter. Prompt as needed. **Yes! Great work remembering what we've learned. Let's learn some more about the solar system and things in it like the sun, moon, and even our earth. The sun is a huge ball of fire and gas in the sky that heats the earth and the earth orbits around. The moon is the big white circle object that is seen at night in the sky. The earth is the planet we live on.** Point to the pictures and words on Worksheet 4. **Let's read you these words**. Point to each word and pause for students to read along with you. **Let's play a game about the solar system.**

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. Use think aloud modeling in the model phase to show students how follow the steps of the textures and materials Game. Next, guide them to tell you how to follow steps while you model the game. Finally, give each student an opportunity to independently go through the game.

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

	LEVEL 1	LEVEL 2	LEVEL 3
MODEL	**My turn. I'm going to play the game. First, I find a "what do you see" card.** Model touching a card on the sheet. **I pick "sun." Look below at the picture. This half is different than this half.** Indicate the part that looks dark is night and the part that is light is day**. Hmmm. Where does this picture go? Which side?** Model looking for the correct side of the circle. **I see a picture of the sun in the daytime picture so it goes on this side.** Model gluing the cards in the correct columns. Continue through the other cards. **Now let's look for characteristics that fall under moon, earth, and sun. I'll pick a card "warms Earth." Hmmm… I think this goes under the sun column.**	**My turn. I'm going to play the game. First, I find a "what do you see" card.** Model touching a card on the sheet. **I pick "sun." Look below at the picture. This half is different than this half. This half has a sun and I can see everything out because it is bright.** Indicate the part that looks dark is night and the part that is light is day**. Hmmm. Where does this picture go? Which side?** Model looking for the correct side of the circle. **I see a picture of the sun in the daytime picture so it goes on this side.** Model gluing the cards in the correct columns. Continue through the other cards. **Now let's look for characteristics that fall under moon, earth, and sun. I'll pick a card "warms Earth." Hmmm… I think this goes under the sun column because we know that the sun is a ball of fire that heats the earth.**	**My turn. I'm going to play the game. First, I find a "what do you see" card.** Model touching a card on the sheet. **I pick "sun." A sun is a huge ball of fire and gas in the sky that heats the earth and the earth orbits around. Look below at the picture. This half is different than this half. This half has a sun and I can see everything out because it is bright.** Indicate the part that looks dark is night and the part that is light is day**. Hmmm. Where does this picture go? Which side?** Model looking for the correct side of the circle. **I see a picture of the sun in the daytime picture so it goes on this side.** Model gluing the cards in the correct columns. Continue through the other cards. **Now let's look for characteristics that fall under moon, earth, and sun. I'll pick a card "warms Earth." Hmmm… I think this goes under the sun column because we know that the sun is a ball of fire that heats the earth.**

	LEVEL 1	LEVEL 2	LEVEL 3
LEAD	**Let's work together. First, let's find a "what do you see card." Should we pick this card or this card?** Model touching two cards. **Great! We picked "____." We need to find the which picture this goes to. The night picture or day picture? What do you think?** Model looking for the match. Help students identify the answers and put it in the correct spot. **Yes! ____ goes in the [night/day] picture.** Model gluing the match and wait for students to place the card in the correct spot. Continue through the other cards. **Now let's look for characteristics that fall under moon, earth, and sun. Should we pick this card or this card?** Model touching two cards. **Great! We picked "____." Now which column do we think it goes under? Sun, Moon, or Earth? Hmmm…** Help students identify the answer. **Yes! You did it!**	**Let's work together. First, let's find a "what do you see card." Should we pick this card or this card?** Model touching two cards. **Great! We picked "____." Remember, we can use our words and definitions to remember what each is. We need to find the which picture this goes to. The night picture or day picture? What do you think?** Model looking for the match. Help students identify the answers and put it in the correct spot. **Yes! ____ goes in the [night/day] picture.** Model gluing the match and wait for students to place the card in the correct spot. Continue through the other cards. **Now let's look for characteristics that fall under moon, earth, and sun. Should we pick this card or this card?** Model touching two cards. **Great! We picked "____." Now which column do we think it goes under? Sun, Moon, or Earth? Remember reading the definitions could help us. Hmmm…** Help students identify the answer. **Yes! You did it! You played the solar system game!**	**Let's work together. First, let's find a "what do you see card." Should we pick this card or this card?** Model touching two cards. **Great! We picked "____." Remember, we can use our words and definitions to remember what each is. We need to find the which picture this goes to. The night picture or day picture? What do you think?** Model looking for the match. Help students identify the answers and put it in the correct spot. **Yes! ____ goes in the [night/day] picture.** Model gluing the match and wait for students to place the card in the correct spot. Continue through the other cards. **Now let's look for characteristics that fall under moon, earth, and sun. Should we pick this card or this card?** Model touching two cards. **Great! We picked "____." Now which column do we think it goes under? Sun, Moon, or Earth? A sun is a huge ball of fire and gas in the sky that heats the earth and the earth orbits around. The moon is a big white circle object that is seen at night in the sky. Hmmm…** Help students identify the answer. **Yes! You did it! You played the solar system game!**

	LEVEL 1	LEVEL 2	LEVEL 3
TEST	**Your turn. Play our game!** When students have finished the test phase, prompt them to record their results on their Student Worksheet 4. Help them record their work in the box labeled "Which do I like best?" Use drawings, words, or cut and paste the pictures from the worksheet.	**Your turn. Show me how you play our game!** When students have finished the test phase, prompt them to record their results on their Student Worksheet 4. Help them record their work in the box labeled "Which do I like best?" Encourage them to write or draw their response or use the cards as reference.	**Your turn. Show me how you play our problem and answer game!** When students have finished the test phase, prompt them to record their results on their Student Worksheet 4. Help them record their work in the box labeled "Which do I like best?" Encourage them to write or draw their response or use the cards as reference.
PROMPTING AND ERROR CORRECTION	**Note:** To be used during the Test phase as needed.		
	Prompt for next steps as needed. *When asked about a characteristic card, if the student does not respond after 4 seconds,* say, **Here is the matching column.** 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 game.	*Prompt for next steps as needed.* *When asked about a characteristic card, if the student does not respond after 4 seconds,* say, **Here is the matching column.** Explain why it is the match. 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 game.	*Prompt for next steps as needed.* *When asked about a characteristic card, if the student does not respond after 4 seconds,* say, **Here is the matching column.** Explain why it is the match. Remind them of the definitions as needed. 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 game.
REINFORCE	**Great work matching characteristics to the sun, moon, and Earth.**	**Great! You matching characteristics to the sun, moon, and Earth.**	**Great! You matching characteristics to the sun, moon, and Earth.**

Instructional Tip! For students who have difficulty with fine motor skills or vocal speech, record the "earth," "moon," and "sun" in an AAC device so the student can activate the response options as needed.

Generalization and Extension Activities

To promote generalization, consider opportunities to vary the types of images you use (both the content of the images and the format of the images) and look for opportunities to incorporate real-life materials or examples. Encourage students to think of other characteristics of the sun, moon, and Earth.

Measuring Student Learning

Using the event recording data sheet, collect data on student-specific responses during the activity. You will use this data sheet every time a lesson incorporates the skill of identifying categories. Track progress of the skill 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

Core Vocabulary

The focus skills word has an asterisk:

- Sun
- Moon
- Stars
- Earth
- Solar system*

Prior to Instruction

Program student AAC devices with target vocabulary words (sun, moon, stars, solar system) and image or pictures (with the definition programmed). Be sure to include the responses your student will need to communicate with others. Include the template and the words specific to the "characteristic" cards your students selected and recorded on their worksheets in Segment 1 of this lesson as well as Worksheet 3. Sample words include:

- Characteristic words, like "warms earth," "white circle," "planet."
- What do you see words, like "sun," "moon," "stars."
- Yes/No response options for answering presentation checklist.

Learning Objectives

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

Materials

- Student Worksheet 3: Newsletter and Comprehension (one per student and one for the teacher)
- Complete versions of Student Worksheet 4: Research and Collaborate from Segment 1 (one per student and one for the teacher)
- Student Worksheet 5: Present and Communicate (one per student and one for the teacher)

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 (like PowerPoint presentations or charts). Ask them to think about all the ways we can tell other people our feelings and ideas.

Tell them: We live on the planet earth. In the book the Moon and the Hat, the main character can see the moon. Sometimes we can see the moon, planets and stars from earth. Planets and the moon rotate around the sun. The sun is a large, hot star. The sun gives us light and heat on earth. Sometimes we can use a telescope to see the moon, stars, and planets close up.

Differentiated Systematic 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.

Writing What We Know

	LEVEL 1	LEVEL 2	LEVEL 3
INTRODUCE	**Let's write. Look at Newsletter. The sun, earth, and moon are part of the _____?** Limit the response option by covering some of the distractor choices if needed. Help each student point to or indicate the response they identified and recorded on their worksheet. **Great! There are many ____ and planets in the solar system?** Point to the question 2 response cards on the newsletter worksheet. **We live on which planet?** Again, limit response options as needed and help students find "earth." **Great work! You are ready to write.**	**Let's write about what we have learned. Look at Newsletter. The sun, earth, and moon are part of the _____?** Limit the response option by covering some of the distractor choices if needed. Help each student point to or indicate the response they identified and recorded on their worksheet. **Great! There are many ____ and planets in the solar system?** Point to the question 2 response cards on the newsletter worksheet. **We live on which planet?** Again, limit response options as needed and help students find "earth." **Great work! You are ready to write more about the solar system.**	**Let's write about what we've learned in science. Look at Newsletter. The sun, earth, and moon are part of the _____?** Limit the response option by covering some of the distractor choices if needed. Help each student point to or indicate the response they identified and recorded on their worksheet. **Great! There are many ____ and planets in the solar system?** Point to the question 2 response cards on the newsletter worksheet. **We live on which planet?** Again, limit response options as needed and help students find "earth." **Great work! You are ready to write more about the solar system.**

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 Newsletter to complete the writing task on Worksheet 5. Use think aloud modeling in the model phase to show students how to reference Worksheet 3 to complete the writing task. Students can write in the blanks or paste the response options from Worksheet 3 directly on their writing template.

Materials: Student Worksheet 3: Newsletter and Comprehension, Student Worksheet 5: Present and Communicate

	LEVEL 1	LEVEL 2	LEVEL 3
MODEL	**My turn. My sentence is "A characteristic of the ____ is _____." How can I find out what to write? I'll glue "sun" here and "hot" right here because I remember learning this in our research activity.** Model finding the response options from the Newsletter worksheet or response cards below and gluing it in sentence 1 on the writing template on Worksheet 5. **Next, I'll fill in "There are many _____ in our solar system."** Glue the words in the second box on Worksheet 5. **Last, I will fill in our summary sentence. _____ is a part of the solar system. I remember This from our newsletter.** Model filling in the correct answer in the third box. **I did it!**	**My turn. My sentence is "A characteristic of the ____ is _____." How can I find out the answer to my question? I'll glue "sun" here and "hot" right here because I remember learning this in our research activity.** Model finding the response options from the Newsletter worksheet or response cards below and writing it in sentence 1 on the writing template on Worksheet 5. **Next, I'll fill in "There are many _____ in our solar system." I'm going to look at the response options to see if it can help me fill in this writing response.** Write the word in the second box on Worksheet 5. **Last, I will fill in our summary sentence. _____ is a part of the solar system. I remember This from our newsletter.** Model filling in the correct answer in the third box. **I did it!**	**My turn. My sentence is "A characteristic of the ____ is _____." How can I find out the answer to my question? I'll glue "sun" here and "hot" right here because I remember learning this in our research activity. I can use my worksheet 3 to help me write my words.** Model finding the response options from the Newsletter worksheet or response cards below and writing it in sentence 1 on the writing template on Worksheet 5. **Next, I'll fill in "There are many _____ in our solar system." I can also look response options to see if it can help me fill in this writing response.** Write the word in the second box on Worksheet 5. **_____ is a part of the solar system. I remember This from our newsletter.** Model filling in the correct answer in the third box. **I did it!**

	LEVEL 1	LEVEL 2	LEVEL 3
TEST	**Your turn. "A characteristic of the ____ is _____." Glue your response here.** Point to the space where students should glue their responses on Worksheet 5 and wait for students to select and glue and circle the correct response. Assist with gluing as needed. **"There are many _____ in our solar system." Glue your way words here.** Point to the space in the second part of the template on Worksheet 5 and wait for students to select and glue the correct response. Assist with gluing as needed. **To summarize, _____ is a part of the solar system.** Point to the pictures for response options in the third part of the template on Worksheet 5. Assist with gluing as needed.	**Your turn. "A characteristic of the ____ is _____." Write your response here.** Point to the space where students should write their responses on Worksheet 5 and wait for students to select and write the correct response. Assist with writing as needed. **"There are many _____ in our solar system." Write your way words here.** Point to the space in the second part of the template on Worksheet 5 and wait for students to select and write the correct response. Assist with writing as needed. **To summarize, _____ is a part of the solar system.** Point to the pictures for response options in the third part of the template on Worksheet 5. Assist with writing as needed.	**Your turn. Write about tools.** Point to the writing template on Worksheet 5 and wait for students to write the correct responses.
PROMPTING AND ERROR CORRECTION	**Note:** To be used during the Test phase as needed.		
	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 5, 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 5, and model writing that response on a blank copy of Worksheet 5.

	LEVEL 1	LEVEL 2	LEVEL 3
REINFORCE	**You did it!**	**You did it! You wrote about the solar system!**	**You did it! You wrote about things in the solar system!**

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-lead-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 supports circling responses.

Sharing What We Know

	LEVEL 1	LEVEL 2	LEVEL 3
INTRODUCE	**We wrote about the solar system! Let's share what we wrote! How do you share ideas and information with other people?** Help students indicate their preferred mode of communication by gesturing to and saying **I speak with my voice** OR **I speak with my device**. Adjust this statement to best describe each students' 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.	**We wrote about the things in the solar system! Now let's share what we wrote! 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 solar system?" Can you?** Answer any questions the students have about their questions and how to find the answers. **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 the sun, moon, and starts in the solar system. Now let's share what we wrote! 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 solar system?" Can you? Do you understand how to find the answer to your question?** Answer any questions the students have about their question and how to find their answer. **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 1	LEVEL 2	LEVEL 3
MODEL	**My turn.** Model reading the worksheet to the class.	**My turn. I will share what I know about the solar system.** Model reading the worksheet to the class.	**My turn. I will share what I know about things in the solar system. I will use my worksheet to help me present about the solar system.** 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 three 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 their question, how to find the answer, and the summary statement.
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 all the parts!** Prompt each student to present to the group.
PROMPTING AND ERROR CORRECTION	**Note:** To be used during the Test phase as needed.		
	If the student does not respond after 4 seconds, model presenting the first component of the presentation. Say, **Your turn. Say the whole thing.** *If the student makes an error, immediately say,* **Stop, my turn.** State the correct information or model the correct sequence of information. **Your turn. Try again.**		
REINFORCE	**Great work presenting!**	**Great work presenting about the solar system!**	**Great work presenting! You communicated about the things in the solar system!**

Instructional Tip! Ensure everyone has a communication response mode that allows them to activate each component of the presentation rather than programming the entire presentation as one discrete output. 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 the solar system is _____. OR The most interesting thing I learned about was ____.* For students ready to answer these questions, be sure you have pre-taught the concepts of "important" and "interesting."

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 student's use to self-monitoring 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.