

## Could You Live on Another Planet?

**Topic:** The solar system (MN earth science and space science standard)

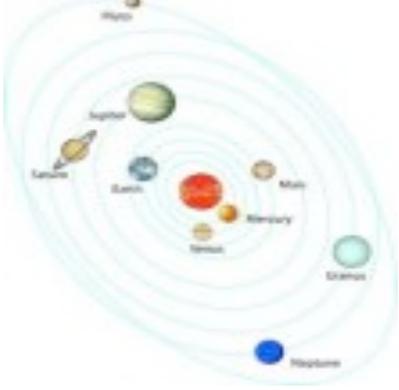
**Student Grade Level:** Elementary 3<sup>rd</sup> grade curriculum content, Advanced Level ESL,

**Language:** English (Any)

**Authors:** Ellen Schmidt, Stillwater Public Schools, Stillwater, MN

**Background:** Students are elementary English Language Learners in a pullout program with several languages represented, but with Spanish and Hmong predominant. The group for whom I developed this unit plan consists of third grade students who function very well with social language, but struggle understanding the academic content.

One of the units of study for third grade is the solar system and the moon. Objectives for this unit are based on district goals and Minnesota State Science Standards. The instruction is in English, performance tasks will be completed in English, although they could be adapted to any language.

<p><b><u>UNIT PLAN INVENTORY</u></b></p>	<p><b>Theme/Important Question:</b> Could you live on another planet?</p>
	<p><b>GOALS/OBJECTIVES</b></p> <ol style="list-style-type: none"> <li>1. Students will use English to interact and communicate with peers to identify the planets and their order from the sun by creating a mnemonic.</li> <li>2. Students will gather and organize information about a planet to make a Planet Poster.</li> <li>3. Students will report information about a planet by giving an oral presentation.</li> </ol>

### Summary of Assessment Tasks

<b>Communication</b>	Interpersonal task	Interpretive task	Presentational task
<p><b>Performance Assessment</b> (Note: The performance assessment tasks are integrated throughout the instructional unit; they are not intended to be given at one time at the end of the unit.)</p>	<p><b>Interpersonal</b> tasks students will do during the unit:  Students will create a mnemonic to help them remember the order of the planets.</p>	<p><b>Interpretive</b> tasks students will do:  Students will research a planet, collect information and record it on a planet report outline. They will use this information to create a travel poster.</p>	<p><b>Presentational</b> tasks students will perform:  Students will present their travel poster to the class.</p>
<p><b>What are the <u>Cultural Aspects</u>?</b></p>	<p>Students will learn that people in all cultures have seen, read, or heard stories about the planets and that the knowledge is shared by all cultures.</p>		
<p><b>What are the <u>Connections to other subjects</u>?</b></p>	<p>This unit will be connected to the Minnesota Earth and Space Science Standards for third grade.</p>		
<p><b>What are the language and cultural <u>Comparisons</u></b></p>	<p>For homework, students will:</p> <ul style="list-style-type: none"> <li>• Enlist the help of parents to write down the names of the planets in their home language.</li> <li>• Students will also share with the class any stories/ personal experiences/information parents have relating to planets in their culture.</li> </ul> <p>The class will make a chart to show the planet names in different languages.</p>		
<p><b>What are the connections to <u>Communities in and outside of the classroom</u>?</b></p>	<ul style="list-style-type: none"> <li>• Students take a field trip to the Planetarium in third grade. Knowledge of the planets will make this field trip more relevant to them.</li> <li>• Students will learn and recognize vocabulary they have used and read in the unit.</li> <li>• In upper grades, they will continue learning in greater depth about the Universe, solar system, and planets.</li> <li>•</li> </ul>		

### Assessment Tasks

<b>Mode of Communication</b> →	Interpersonal task
<p><i>Performance Assessment</i> →</p> <p>Where does this task fit best?</p>	<p>Students will work with a partner and create a mnemonic to remember the order of the planets. Each team will work with the first letter of each planet – MVEMJSUN- to come up with a way to remember the order. Each team will have an opportunity to share their mnemonic with the rest of the class.</p> <p>My objective for this assessment is to let students interact with each other and use language to develop a mnemonic to solidify their knowledge of the names of planets. This assessment ties to the Minnesota State Science Standard, identifying planets and their relationship to Earth and the Sun.</p> <p>Beginning of unit</p> <p>After creating the mnemonic, students will fill in a diagram of the solar system by gluing pictures of planet in correct order.</p>

## RUBRIC or Criteria for Assessment Task 1

**TASK: Make a mnemonic for the order of the planets with your group/partner**

**Non-negotiables:**

- Listen to each other
- Work together, not by yourself

Student \_\_\_\_\_

Criteria	Strong	Acceptable	Approaching
<b>Comprehensibility</b> How well is the student understood?	Student is understood by peers and teacher in the classroom	Student is understood by peers and teachers with some clarification needed by listeners	Some of what student says is understood by peers and teachers. Frequent clarification is needed
<b>Communication</b> How does the student keep the conversation going?	Student uses strategies to understand and respond and clarify misunderstandings	Student uses strategies to understand and respond. Some ability to clarify misunderstandings. Support may be needed	Student still learning to use strategies to clarify misunderstandings and respond
<b>Content</b> How well is the student using the language?	Student successfully uses language in a way that is relevant and culturally appropriate	Student uses language in a way that is relevant and culturally appropriate. May need reminders.	Student attempts to use language in a way that is relevant and culturally appropriate
<b>Interaction</b> How often does the student share his/her ideas and thoughts?	Student contributes easily and spontaneously to conversation	Student contributes to the conversation. Some support may be needed	Student is beginning to contribute to the conversation. Prompting and support were needed.

## Assessment Task 2

<b>Mode of Communication</b>	Interpretive task
<p><i><b>Performance Assessment</b></i></p> <p>Where does this task fit best?</p>	<p>Students will research a planet and in preparation for creating a planet travel poster. Students will need to use at least 2 websites and 2 books, and will record all information on the “Planet Report Outline.” The outline contains the required information students need to collect, but there is space to add interesting and unique information about their planet.</p> <p>Students will use the information that they have gathered to create their travel posters. The information will be presented with visuals and in written form.</p> <p>Objective is for students to gather, understand and organize factual information. It also relates to the Minnesota State Academic Standards for Research in which students will locate and use information in grade-level appropriate reference materials, and for Vocabulary Expansion in which students will acquire, understand and use new vocabulary.</p> <p>This task will be done in the middle of the unit. Students will have built background knowledge about planets, and, with guidance, should be ready to work individually.</p>

## RUBRIC or Criteria for Interpretive Task

### TASK: Research information for your Planet Travel Poster

#### Non-negotiables:

- All required information from the “Planet Report Outline” is included. The teacher and/or students can decide what information will be included in the Planet Report Outline (facts such as distance from sun/earth, diameter, length of a day/year, number of moons, lack of water, atmosphere, temperatures, interesting facts, etc.). Students will answer the question “Can we live on this planet?” and explain why they can not.
- You have 4 pictures/ charts downloaded from Internet and/or drawn with a source from where you downloaded them or if drawn, where you got the model

#### Planet Report Outline:

Planet Name:		
	Distance from Earth	
	Length of days	
	Conditions	
	Temperature Day- night	
	Distance from sun	
	Distance from earth	
	What is interesting about the planet?	
	Stories connected to the planet?	

### Assessment Task 3

Mode of Communication	Presentational task
<p><b><i>Performance Assessment</i></b></p>	<ol style="list-style-type: none"> <li>1. Students create a poster on the planet they have researched. The poster will include all of the basic information from their outline, plus any additional information they found. The goal of the poster is to provide information about their planet.</li> <li>2. Students will orally present the information about their planet to the rest of the class. Their presentation will include all of the basic information that is on their poster, plus any additional information they found and what makes the planet very interesting. The presentation should be at least 2 – 3 minutes, and at the end they will answer questions from the students. They will have several opportunities to practice their presentation and they may use note cards when giving the presentation</li> </ol> <p><b>How does this relate to objectives and standards:</b>            My objective is to have students use English to report information. It relates to the Minnesota State Academic Standard for Vocabulary Expansion in which students will acquire, understand and use new vocabulary, and the Minnesota State ESL Standards for Speaking where students will produce spoken English to participate in academic contexts</p> <p>This task and assessment will be at the end of the unit.</p> <p>*Another option could be a travel brochure.</p>

### RUBRIC for Assessment Task 3

#### TASK: Create a travel poster for your planet

#### Non-negotiables:

- All information from the “Planet outline” must be included
- Poster must include at least one chart and one picture (remember you downloaded four pictures and/or charts)
- Poster must have corrections made to draft.

Criteria	Strong	Acceptable	Approaching
Content/Required Information	Student includes 5-6 pieces of additional information about the planet. Sources are documented and support the travel poster’s purpose: what is the planet like; can we live on the planet?	Student includes 3-4 pieces of additional information about the planet. Most sources are documented and support the travel poster’s purpose.	Student includes 1-2 pieces of additional information about the planet. Some or no sources are documented and don’t always support the travel poster’s purpose.
Text	All important items on poster are clearly described, using all key vocabulary correctly.	Most important items are clearly described, using most key vocabulary correctly.	Some important items are clearly described, using some key vocabulary correctly.
Charts/Pictures	All charts/pictures are related to the topic and make it easier to understand	All charts and pictures are related to the topic and most make it easier to understand	Some charts and pictures are related to the topic, but explanation is needed for understanding
Attractiveness	The poster is very attractive and is neat; information is very well organized.	The poster is poster is attractive and neat; information is organized well enough to resemble a travel poster	The poster may be a bit messy; the organization is confusing, or the poser does not resemble a travel poster.

**RUBRIC for Assessment Task 3**  
**TASK: Oral Poster Presentation**

**Non-negotiables:**

- Use complete sentences in your presentation
- Use Planet Poster in your presentation

Criteria*	Strong	Acceptable	Approachable
Preparedness Are you ready to give the presentation?	Student is completely prepared and has obviously rehearsed. No long pauses. Used notes infrequently	Student is prepared, but had 1 or 2 long pauses. Used notes occasionally	Student is somewhat prepared, needs more rehearsal time. Many long pauses to recapture thoughts. Used notes frequently.
Content Do you know your subject?	Student shows a full understanding of the subject, uses the science vocabulary correctly, and is able to answer accurately almost all the questions classmates ask.	Student shows good understanding of the subject, uses the science vocabulary correctly, and is able to answer accurately most of the questions classmates ask.	Student shows understanding of parts of the subject, uses a few of the science vocabulary correctly, and is able to answer accurately a few of the questions classmates ask.
Voice/Eye Contact Do you speak loudly and clearly? Do you look at your audience?	Student speaks clearly and loud enough for classmates to hear all of the time. Looks at the audience through most of the presentation	Student speaks clearly and loud enough for classmates to hear most of the time. Looks at the audience during some of the presentation	Student clearly and loud enough for classmates to hear at least some of the time. Beginning to look at the audience during the presentation.

Instructional and formative assessment components of the unit

Functions	Structures	Vocabulary	Materials/Resources
<p>(Asking questions, telling time, describing, telling likes and dislikes, narrate; etc.)</p> <p>Questions Give Information Compare/Contrast</p> <p>When/How do I assess these?</p> <p>At the beginning of the unit students will write <b>questions</b> about the solar system. This assessment will be at the end of the unit. Students will answer the questions and look for answers to any unanswered questions.</p> <p>Using information from the web and from books, students will give factual information about a planet. They will</p>	<p>Verbs, adjectives, adverbs</p> <p>Forms of the vocabulary words (rotation-noun; rotate-verb) and how these forms are used in language, synonyms for vocabulary words</p> <p>When/How do I assess these?</p> <p>Assessment of language structures will be included in the travel posters and presentations</p>	<p>What are the essential words needed? What are additional words that are nice to know?</p> <p>Rotation Revolution Gravity Atmosphere Pressure Density Diameter Orbit, rings Temperature, distance, Geographical features, rocks, ice</p> <p>When/How do I assess these?</p> <p>Vocabulary will be assessed throughout the unit. At the beginning, students will be completing a personal solar system dictionary. Periodically, there will</p>	<p>Pictures, stories, online resources, videos, games</p> <p>Assortment of photos Cultural stories students bring from home</p> <p>Online sites: nineplanets.org kids.nineplanets.org kidsastronomy.com starchild.gsfc.nasa.gov nasa.gov/audience/forkids/home</p> <p>Videos; A Closer Look at the Planets</p> <p>Books: Magic School Bus Lost in the Solar System – Cole, Joanna</p> <p>Postcards from Pluto – Leedy,</p>

<p>display this information in paragraph form on Planet Travel Posters</p> <p>Students will <b>compare/contrast</b> characteristics of planets;</p> <p>This will happen in the middle of the unit, after researching their planet. Completed Venn Diagrams will be used for assessment.</p>	<p>assessment</p>	<p>be group vocabulary games to deepen understanding. Students will also be assessed in all small group activities, their travel posters, and their presentations</p>	<p>Loreen</p> <p>Don't Know Much About the Solar System – Davis, Kenneth C.</p> <p>The Planets – Gibbons, Gail</p> <p>Assorted books from the library</p>
<p><b>Reflection:</b> What worked well, what needs to be changed?</p>			

## STEP 3

### Planning Template

#### Preparing for (Interpersonal/Presentational/Interpretive) Assessment

Beginning–middle–end (How do I introduce topic, build a middle, wrap up the unit?)

Learning Activities /Opportunities for students to practice

	<b>Learning Activities: Description</b>
<i><b>Beginning</b></i>	<ol style="list-style-type: none"> <li>1. “I Wonder” question chart will activate students thoughts about planets and let me know what students know about the subject. Students will work with partners and write 3 questions they want to learn about the solar system</li>   <li>2. To prepare students for the unit, I first focus on vocabulary. Each student makes an individual planet dictionary, and the words are put up on the content word wall. As a group, students write the word in their dictionary. We use different strategies to ensure understanding (acting, photos, quick draws, synonym/antonym graphs, etc). Students draw a picture for the word, write a definition in their own words, and write a sentence using the word</li>   <li>3. I will show a video clip about the planets (unitedstreaming.com: “A Closer Look at the Planets: Space Science Series). Students will watch the video without sound as I narrate the key points. Students then watch the video with sound and complete the video planet checklist</li>   <li>4. Students will pair up and be given a sheet containing drawings of the planets and the Sun</li> </ol>

<p><b><i>Beginning</i></b></p>	<ol style="list-style-type: none"> <li>1. “I Wonder” question chart will activate students thoughts about planets and let me know what students know about the subject. Students will work with partners and write 3 questions they want to learn about the solar system</li>   <li>2. To prepare students for the unit, I first focus on vocabulary. Each student makes an individual planet dictionary, and the words are put up on the content word wall. As a group, students write the word in their dictionary. We use different strategies to ensure understanding (acting, photos, quick draws, synonym/antonym graphs, etc). Students draw a picture for the word, write a definition in their own words, and write a sentence using the word</li>   <li>3. I will show a video clip about the planets (unitedstreaming.com: “A Closer Look at the Planets: Space Science Series). Students will watch the video without sound as I narrate the key points. Students then watch the video with sound and complete the video planet checklist</li>   <li>4. Students will pair up and be given a sheet containing drawings of the planets and the Sun and a “Distance Chart.” Partners will glue the planets in the correct order on a copy of the solar system</li>   <li>5. complete a Venn diagram comparing size, distance, and physical characteristics of their planets</li> </ol>
<p><b><i>Middle</i></b></p>	<ol style="list-style-type: none"> <li>1. Students will be given time to check the internet and look at the various planet books that are in the room. They can work with another student during this time to get more familiar</li> </ol>

*End*

1. Students will give an oral presentation about their planets, using their posters as visual aids. They will give detailed information about their planets to their classmates and answer any question the students ask.
2. We will revisit the questions that students wrote at the beginning of the unit. Individually, they will answer as many as they can. We will then go over the questions and answers in large group. Students will research any questions that remain unanswered.
3. Class discussion and revisiting of important question. Discussion will focus on why people cannot live on the other planets.