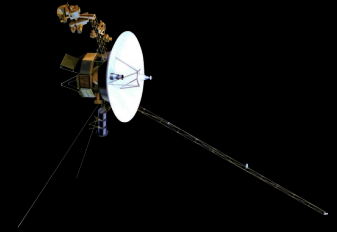
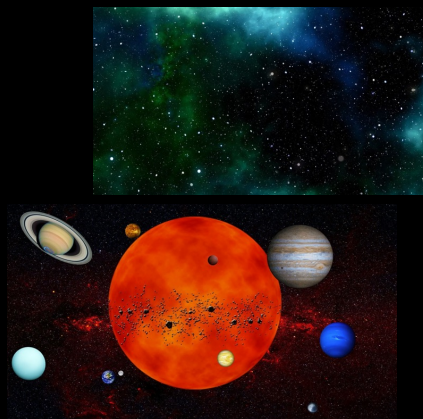
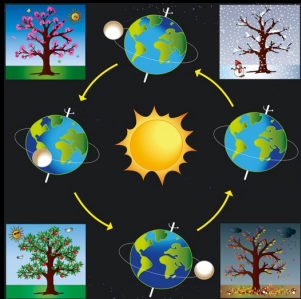


Space 5E Lesson Bundle



The 5E model is a scientifically proven method to improve student engagement and learning in your classroom.

- ✓ Engagement
- ✓ Exploration
- ✓ Explanation
- ✓ Elaborate
- ✓ Evaluate



Complete Teacher Instructions

The Moon and its Phases 5E Lesson

Grades 7-10	The Moon and its Phases
Essential Questions:	Ongoing Lesson (5-6 hours)
Lesson Objective: - Students will develop a model of the Earth-Sun-Moon system to describe cyclic patterns of lunar phases - Students will learn the importance of having a moon - Students will learn how the Moon rotates and revolves - Students will learn about how the Moon-Sun system affects Earth's tides	
Possible Student Misconceptions: - The "Dark Side" of the Moon - The Moon illusion - The cause of the Moon's phases	
Materials: 1 device (smartphone, chromebook, laptop, tablet, or computer) per 3 students - A means of projecting a PowerPoint presentation - Internet access	
Teacher Notes: - All videos can be accessed directly from the PowerPoint. To retrieve them, click on the video icon while in slideshow mode and it will automatically open for you. If it doesn't for some reason, right-click on the image and click Edit Hyperlink or something similar. - I've created a video walkthrough if needed. It can be accessed here - https://youtu.be/cCKIP9SaDQ	

The Moon and its Phases - 5E Lesson

Engagement Phase Is the Moon Important? Have your students complete the thinking questions in - <i>Engagement - Is the Moon Important?</i> Teacher Note: We will revisit the questions inside the PowerPoint. That great time to discuss how their views have changed. Moon Illusion Review the examples from the file - <i>Engagement - The Moon Illusion</i> Teacher Note: Make sure you have your students answer the question page 1 before you review any of the examples.	Duration: 20-30 min. Teacher Role - Facilitate learning and guide student understanding Goals - Connect student's experiences - Create interest - Ask questions - Understand the objectives of the lesson
Exploration Phase Moon and its Phases Lab Station Activity In groups of 2-3, have your students complete <i>Exploration - The Moon and its Phases - Lab Station Activity</i> . Once they're done, they will submit their passport to you. Teacher Notes: The complete instructions for my Lab Station activity can be found in the <i>START HERE - Instructions</i> file.	Duration: 55-60 min. Teacher Role - Facilitate learning and guide student understanding Goals - Students receive real experience with the topic - Students use and develop creative thinking skills - Students make observations, record results, and make connections
Explanation Phase Moon Lesson Over the course of 1 - 2 days, go through the <i>Explanation - The Moon Lesson</i> . There are many opportunities to engage your students and show how the content is relevant to their lives. The lesson covers the following topics: ✓ Moon Stats ✓ What if we had no Moon? ✓ Orbit of the Moon ✓ Rotation of the Moon ✓ The Dark Side of the Moon ✓ The Phases of the Moon ✓ The Tides	Duration: 2-2.5 hours Teacher Role - Explain the concepts by presenting the material found in the presentation.

Teacher Notes: - No prior knowledge is required for this lesson - All videos can be accessed directly from the PowerPoint. To retrieve them, click on the video icon while in slideshow mode and it will automatically open for you. If they don't open, right-click the image and select Edit Hyperlink or something similar. - I've created a video walkthrough if needed. It can be accessed here - https://youtu.be/cCKIP9SaDQ - I have also enclosed a .PDF version of both the teacher and student versions	Goals - Students develop understanding of the content - Observations and experiences are discussed and critiqued - Students develop vocabulary - Students are able to connect the content presented to previous experiences
Elaborate Phase The Moon Scavenger Hunt Activity The scavenger hunt activity will require your students to move beyond what was covered directly in the lesson and allow them to demonstrate how Atoms and the Atomic Theory can be applied to the real world. Students will work in groups of two or three and will require a single device (smartphone, tablet, chromebook, laptop, etc.). The Hunt can be accessed from the folder - <i>Elaborate - The Moon Scavenger Hunt Activity</i>	Duration: 1 hour Teacher Role - Facilitate learning and keep students focused Goal Students use their newly obtained knowledge to propose solutions and extend their learning to new situations
Evaluate Phase The Moon quiz Have your students complete the <i>Evaluate - The Moon - Quiz</i> Teacher Notes: - It's sometimes best to have the students peer evaluate - Placing students in small groups and having them exchange papers to mark will accomplish two things: 1) Provide immediate feedback on the quiz they just completed 2) Significantly reduce your marking time - Peer evaluation is not needed, only suggested when appropriate	Duration: 20-40 min. Teacher Role - Distribute and collect evaluation Goal Students are given the opportunity to demonstrate their understanding and evaluate their own progress

Each phase is clearly described

Complete Lessons



Health affects of being in microgravity long-term

- Eyesight
 - blurred vision
 - flattening eye balls, swelling of the optic nerve, build-up of fluids
- _____
- Bones become weak
 - Calcium and phosphorus is removed
 - 2% bone loss per month



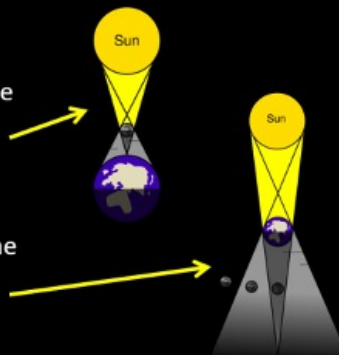
- Complete lessons that cover required topic criteria.
- Student copies with blanks to fill in.
- Videos embedded right into your presentation.

Solar vs. Lunar Eclipse

- What's the difference?

A solar eclipse is when the Moon blocks the Sun from the Earth

A lunar eclipse is when the Earth blocks the Sun from the Moon



What Happens to Tears in Space



Predict:

Observe:

Explain:



Interactive and Engaging Activities

Device-Based Scavenger Hunt

Our Solar System



Includes

- 5 Unique Locations
- Online form submission
- Answer Key

Works on all smartphones, tablets, Chromebooks and laptops

Our Solar System Lab Station Activity



Lab Station Activities to get your kids out of their seats and engaged in their learning

Device-Based Scavenger Hunt

Eclipse

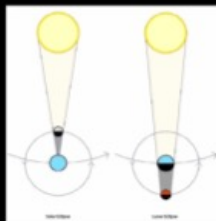


Includes

- 5 Unique Locations
- Online form submission
- Answer Key

Works on all smartphones, tablets, Chromebooks, and laptops

- **100% Digital**
- Simulations
- Quizzes
- Videos
- Games
- and more



Device-Based Scavenger Hunt

The Seasons



Includes

- 5 Unique Locations
- Online form submission
- Answer Key

Works on all smartphones, tablets, Chromebooks and laptops

- **100% Digital**
- Simulations
- Quizzes
- Videos
- Games
- Word Scramble
- and more

The Limitations of Space Travel Scientific Reading Comprehension Article



Improve your students **Scientific Literacy** and **Analysis Skills**, use as an **Emergency Substitute Plan** or create **Applicability** in your classroom

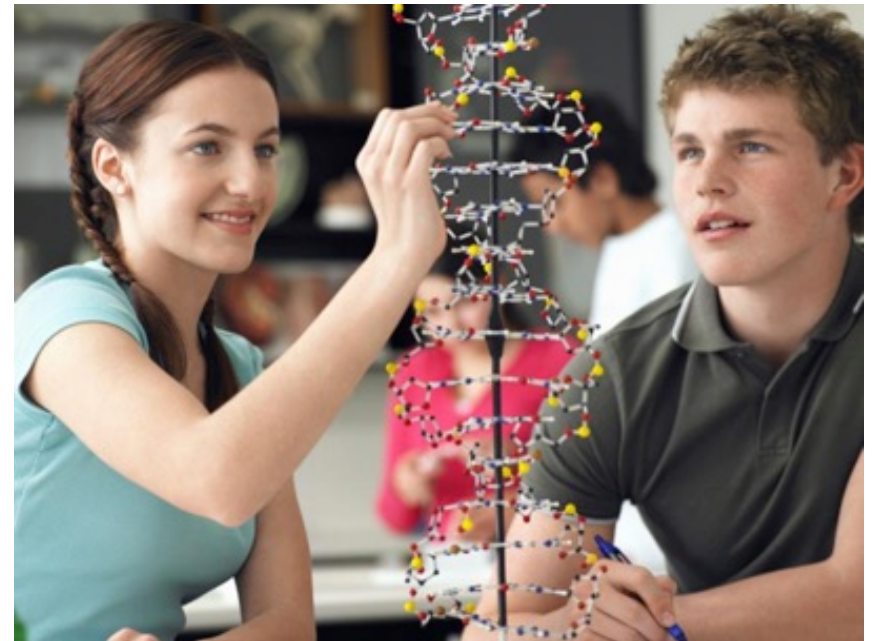
Get away from tired practices and unengaged students



TWF

Provide a Scientifically-Proven means of instruction

TWF



Incorporate Technology and Increase Collaboration



TWF



**click here
to START**