



## MISSION SPACE TIMELINE

### 5E Lesson Plan for Mission Space Timeline

**Central Focus:** Students will discover the different missions into space, what scientific discovery occurred during the missions, and which nations oversaw those missions by exploring the timeline on The Giant Moon Map™.

#### Content Standard(s):

##### North Carolina

- NC 6.E.1 Understand the earth/moon/sun system, and the properties, structures and predictable motions of celestial bodies in the Universe.
- NC 6.E.1.3 Summarize space exploration and the understandings gained from them.

##### Next Generation Science Standards

- MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
- MS-ETS1-2 Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

#### Overview:

Students will explore the timeline located at the bottom of The Giant Moon Map™. Students will discover which countries have launched missions into space and what scientific discovery has occurred. Wingate Mission Space Timeline Artifact prompts students to move around the timeline as they discover when missions occurred. The students will utilize the Country Flags Diagram to help determine which nations have launched different missions. Students will also learn about different political leaders of the past and different astronauts who were on Apollo 11. This engagement can be done as a stand-alone engagement or with the following engagements developed by Wingate University (Mission Cratering, Mission Moon Geology, Mission Aerospace Professional, and Mission Apollo) that are designed to work in concert as rotational stations. Students performing this engagement will be moving back and forth along the timeline (see rotational stations map below).

#### Materials:

- The Giant Moon Map™
- Wingate Mission Space Timeline Artifact
- Country Flags Diagram



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<b>Prior Academic Knowledge and Conceptions:</b> <ul style="list-style-type: none"><li>• None</li></ul>
<b>Lesson objective(s):</b> <ul style="list-style-type: none"><li>• Discover when different missions occurred over time</li><li>• Explore which countries have completed missions to the moon</li><li>• Create own mission outlining what they would call their mission and what they would study while they were there</li></ul>
<b>Differentiation strategies to meet diverse learner needs:</b> <ul style="list-style-type: none"><li>• Consult with English Language Learners to make sure directions are understood</li><li>• Highlight use of pictures to connect with content</li><li>• Strategic partnering when needed</li></ul>
<b>ENGAGEMENT</b> <p>Students will be positioned on The Giant Moon Map™. The teacher will lead a discussion generating student responses related to what they know about the moon; how many attempts have been made to visit the moon; what countries have visited the moon; when we are planning on colonizing the moon; discuss some recent launches into space; and any other relevant questions.</p>
<b>EXPLORATION</b> <p>Students will use the Wingate Mission Space Timeline Artifact to explore the space timeline at the bottom of The Giant Moon Map™. There are eleven prompts in the artifact which initiate the students to explore all parts of the timeline. They will explore which countries went into space, the names of different missions, when missions were launched, and what were the main research topics of the missions. These engagements are independent in nature so minimal teacher oversight is needed.</p>
<b>EXPLANATION</b> <p>Discuss with the students how frequent space missions were in the past and why that may be. Discuss what missions they found interesting and which countries they saw that went up into space more frequently. The teacher could discuss the space race between the United States and USSR which explains why those two countries were seen so frequently at the beginning of the timeline.</p>
<b>ELABORATION</b> <p>Students can design their own mission to the Moon: What would they name the spaceship; where would they land (if they have completed the Wingate Mission Moon Geology they should pick between Maria and Highlands, North and South poles, or inside a crater etc.); what would be explored, researched and/or</p>



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sampled; and would any tasks be completed. Students may provide a drawing and/or diagram to convey what it may all look like.

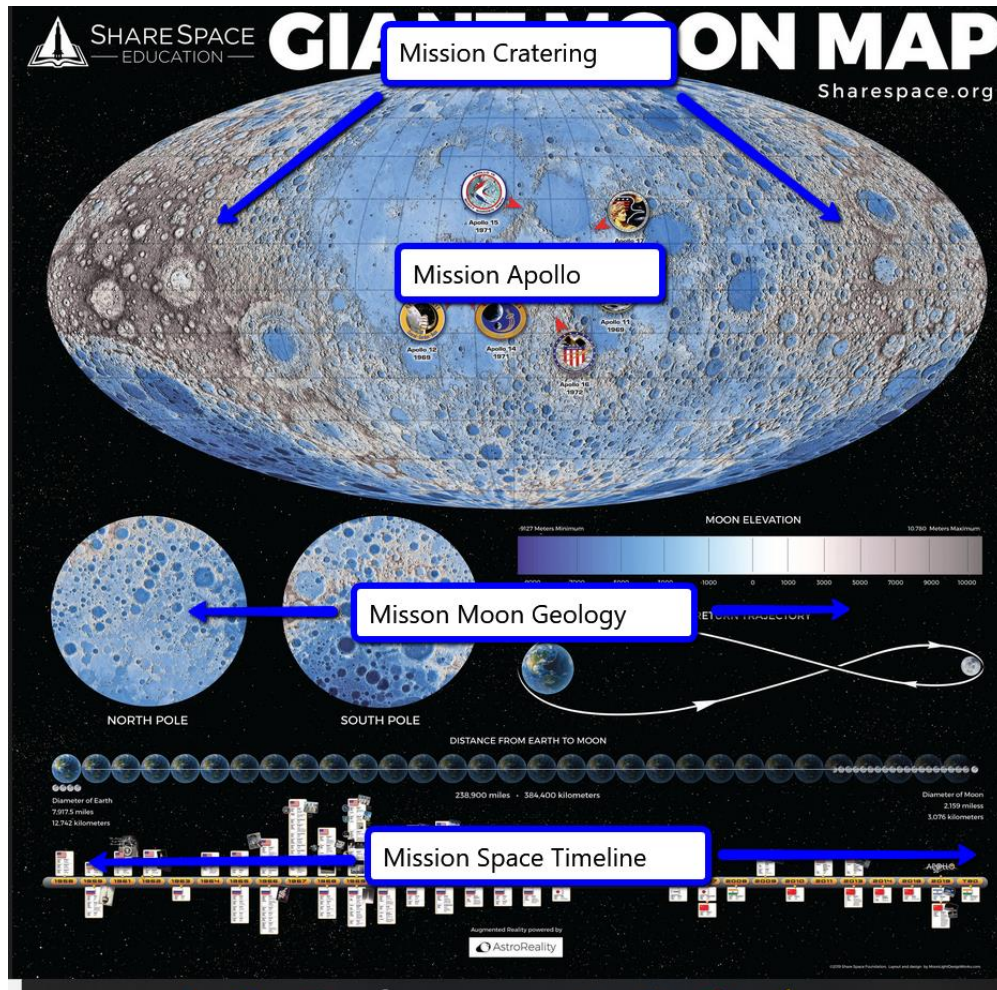
## EVALUATION

Students will answer the prompts about the space timeline on the Wingate Mission Space Timeline Artifact. Students may also write and/or draw about their own mission and what they would research if they could go into space.

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## Wingate Missions' Rotational Stations





## MISSION SPACE TIMELINE

We position Mission Aerospace Professional just off the Map to allow for room for the student groups.

Student Name: \_\_\_\_\_

1. Who was the president in 1961?

\_\_\_\_\_

2. When was the first Apollo mission?

\_\_\_\_\_

3. What year did America study the lunar atmosphere and dust environment?

\_\_\_\_\_

4. On April 17, 1967, what mission was launched?

\_\_\_\_\_

5. Did humans go into space for mission Clementine?


\_\_\_\_\_

6. When was the most recent mission?

\_\_\_\_\_

7. What mission launched in 2003?

\_\_\_\_\_

8. What years did Japan  launch a mission?

\_\_\_\_\_

9. What is the name of the first space mission?

\_\_\_\_\_



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10. What are the names of the people of the crew of Apollo 11 where humans first stepped on the moon?

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11. If you had to design a mission, what would be it's name and what would you study?

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## MISSION SPACE TIMELINE



The United States of America



Israel



Japan



China



## MISSION SPACE TIMELINE



India



USSR (Former Russia)