



## MISSION APOLLO



### 5 E Lesson Plan Mission Apollo

**Central Focus:** Students will explore the different Apollo Missions that landed on the moon, what occurred during the missions, and what advancements were made.

#### 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 different Apollo Missions that are shown on The Giant Moon Map™ by scanning the emblems with an iPad or Tablet using the AstroReality App. Students will discover what occurred during the missions by observing pictures and reading about each mission. Students will work in pairs and complete the engagement by describing the pictures and providing a written summary of each mission on the provided Wingate Mission Apollo Artifact. 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 Space Timeline) that are designed to work as rotational stations. This mission is performed in the center of Moon portion of the map (see rotational stations map below).

#### Materials:

- The Giant Moon Map™
- AstroReality App (Directions and download information can be found on ShareSpace.org and is listed as “Augmented Reality”)
- Wingate Mission Apollo Artifact
- iPads or other devices that can scan emblems on map



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### Prior Academic Knowledge and Conceptions:

- None

### Lesson objective(s):

- Summarize space exploration and the understandings gained from missions and research.
- Define the criteria and constraints of a design problem regarding space travel and offer potential solutions.
- List potential impacts on people and the natural environment that may limit possible solutions.

### Differentiation strategies to meet diverse learner needs:

- Consult with English Language Learners to make sure directions are understood
- Highlight use of pictures to connect with content
- Strategic partnering when needed

### ENGAGEMENT

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 we have made to visit the moon; what we have done on our moon visits; when we are planning on colonizing the moon; discuss some recent launches into space are; and any other relevant questions.

### EXPLORATION

Students will use iPads/tablet to scan emblems of Apollo Missions located in the middle of The Giant Moon Map™. There are six Apollo Missions that provide pictures and written information about each mission. Students will explore improvements and events on each mission utilizing their iPad/tablet and AstroReality App. These engagements are independent in nature so minimal teacher oversight is needed.

### EXPLANATION

Discuss with the students how space travel and objectives changed as more Apollo missions were successful. Discuss how all the Apollo missions landed in the same general location. The teacher will explain that not all Apollo Missions successfully landed on the Moon (i.e. what happened to Apollo 13).

### ELABORATION

Students can develop 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.); and what would be explored, done, and/or sampled.



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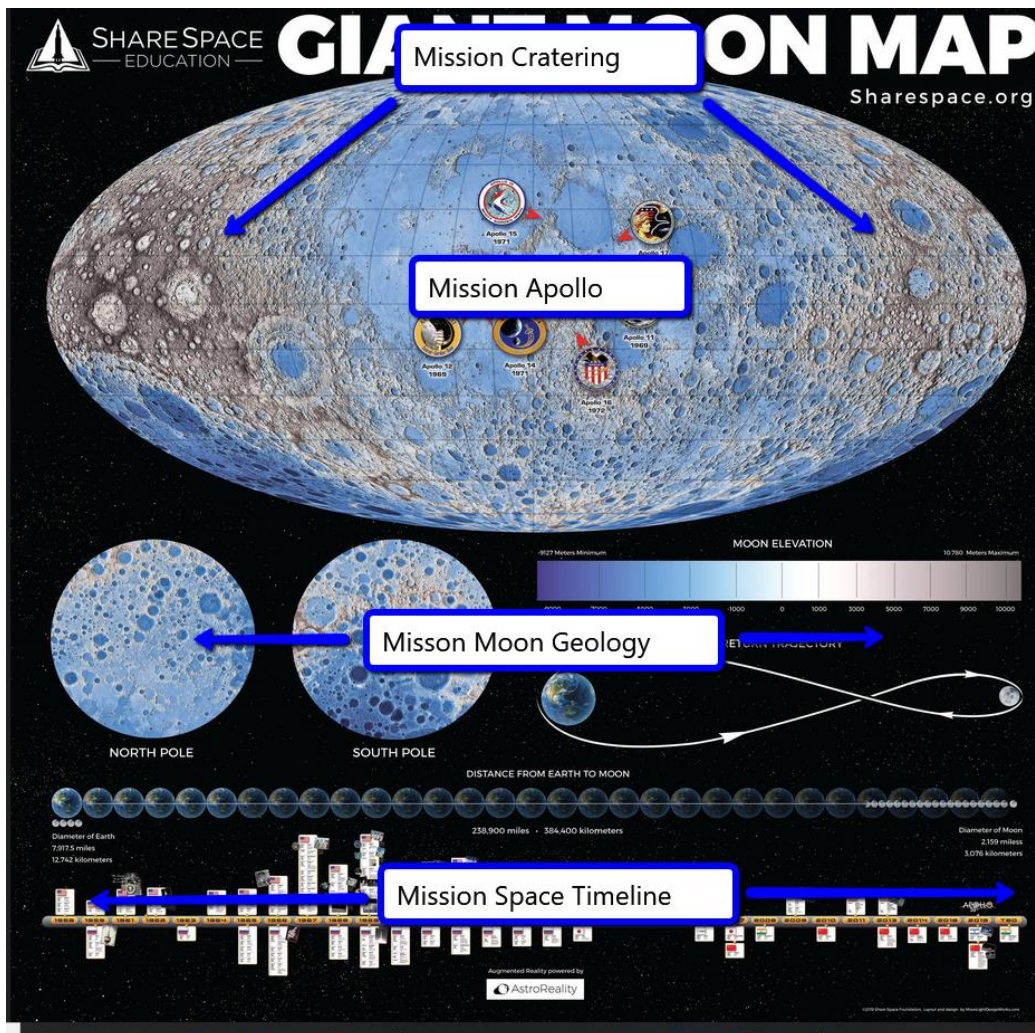
## EVALUATION

Students will choose a picture from each mission and describe what the image is displaying and why they chose that image. Students will write what improvements occurred and what happened on each mission on the Wingate Mission Apollo Artifact.

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## Wingate Missions' Rotational Stations



We suggest positioning the Mission Aerospace Professional station just off the Map when utilizing all five engagements in concert.



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

You will work in **PAIRS** so complete **ONE** worksheet for you and your partner. For each of the Apollo missions, chose a picture that appears once the emblem is scanned.

- A. Which picture do you find most interesting? What is the picture of?
- B. Write a sentence of what improvements were made **or** what happened on each mission.

Apollo 11:

A. \_\_\_\_\_  
\_\_\_\_\_

B. \_\_\_\_\_  
\_\_\_\_\_

Apollo 12:

A. \_\_\_\_\_  
\_\_\_\_\_

B. \_\_\_\_\_  
\_\_\_\_\_

Apollo 14:

A. \_\_\_\_\_  
\_\_\_\_\_

B. \_\_\_\_\_  
\_\_\_\_\_



## MISSION APOLLO



Apollo 15:

A. \_\_\_\_\_  
\_\_\_\_\_

B. \_\_\_\_\_  
\_\_\_\_\_

Apollo 16:

A. \_\_\_\_\_  
\_\_\_\_\_

B. \_\_\_\_\_  
\_\_\_\_\_

Apollo 17:

A. \_\_\_\_\_  
\_\_\_\_\_

B. \_\_\_\_\_  
\_\_\_\_\_

Why do you believe NASA used the same landing spot on the moon for the Apollo missions? Where would you land on the moon and why?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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