



Lunar Augmented Reality

Use augmented reality (AR) to explore the surface of Earth's Moon with the AstroReality app! From football broadcasts to brain surgery, learn how AR can transform our lives.

TEKS:

TECH 6-8.1 C: The student is expected to explore complex systems or issues using models, simulations, and new technologies to make predictions, modify input, and review results.

TECH 6-8.4 F: The student is expected to transfer current knowledge to the learning of newly encountered technologies.

TECH 6-8.6 H: The student is expected to discuss how changes in technology throughout history have impacted various areas of study.

Materials:

- Smartphone or tablet with internet access

How To:

1. Download an app called AstroReality. It's free!
2. Open the app. You'll see a space to create an account using your phone number or email address, or you can join using an Apple, Facebook, or Google Account.
3. Once you're logged in, click on the "Lunar AR" button.
4. Tap on the screen to place the Moon anywhere in your phone camera's view! To reset where you place the Moon, click on the circular arrow in the top right corner of the screen.
5. Once the Moon appears, you can rotate the surface of the Moon by dragging your finger across the screen or Zoom in on the Moon by using two fingers to pinch the screen.
6. Click on different landmarks to explore the terrain of the Moon and learn about all the spacecrafts that have landed on the Moon.

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STEM Explanation:

Augmented reality (AR) is an interaction between computer-generated graphics and reality. It allows us to see a real-life environment right in front of us and then places a digital component over it. The popular app Pokémon Go uses AR to place Pokémon characters in the real world that you can interact with and capture. AR can help us try on clothes virtually, or see how furniture will look in a space before we buy it. Sports broadcasters use AR to draw lines on fields, historical sites use AR to bring the past to life, and neurosurgeons sometimes use AR to project 3D models of the brain during surgery!

The AstroReality app uses AR to place a 3D model of the Moon in any environment! It also lets you interact with the Moon and learn all about our closest Solar System neighbor. Can you find the spot where the Apollo 11 mission landed? How about a large crater named Grimaldi, or the largest dark spot on the Moon called "Oceanus," or, "Ocean of Storms"? Take some time to explore Earth's only Moon!

Career Connection:

Animation and technology designers combine their artistic and technology skills to design art in a virtual space. They use a variety of different technologies and software to draw 2D and 3D images that can be brought to life through animation, 3-D modeling, and graphic design. These designs can be found in movies, video games, engineering models, and much more!

Resources:

<https://www.youtube.com/watch?v=N9hXqzkH7YA>

<https://www.jpl.nasa.gov/apps/images/3dtarget.pdf>

https://en.wikipedia.org/wiki/Augmented_reality

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