

Enhancement Activities/Strategies for Gifted/High Ability Learners: Sample Science Learning Plan

Big Idea/ Topic

- Weather, moon phases, collecting data

Standard Alignment

- S4E4. Obtain, evaluate, and communicate information to predict weather events and infer weather patterns using weather charts/maps and collected weather data.
- Construct an explanation of how weather instruments (thermometer, rain gauge, barometer, wind vane, and anemometer) are used in gathering weather data and making forecasts.
 - Ask questions and use observations of cloud types (cirrus, stratus, and cumulus) and data of weather conditions to predict weather events.
- S4E2. Obtain, evaluate, and communicate information to model the effects of the position and motion of the Earth and the moon in relation to the sun as observed from the Earth.
- Develop a model based on observations to describe the repeating pattern of the phases of the moon (new, crescent, quarter, gibbous, and full).

Advanced Research

Select a location and research the weather and climate of the location. Use an almanac to gather data and create a [graph](#). If available, allow students to create a green screen weather report for the chosen location. Green Screen by [Do Ink](#) is a great tool (iPad/iPod/iPhone \$4.99). (Sample directions on page 5)

Communication

[Breakout EDU](#) (You can sign up for a free game if you don't have an account) [3, 2, 1...Blastoff!](#). Digital Breakout games are an easy way to challenge students to collaborate, use critical thinking, and communication to “breakout” (like an escape room concept, but everything is digital). This game requires children to apply their understanding of **moon phases**. If this is your students' first experience with a Breakout Challenge, you may need to be prepared to give hints to help guide students. I find the best hints are questions to make them think more. Allow the students time to struggle before providing a hint. I encourage students to use the back of their recording sheet to write down solutions they try. Oftentimes, they will figure out the answer by working through what does not work. (*Handout on p. 3*)

Critical Thinking and Critical Problem-Solving Skills

[Tynker's Hour of Code](#) (FREE) includes 8 different coding challenges spanning beginner level to advanced. Each challenge includes a teacher's guide and step-by-step tutorial. Teachers DO NOT need to have an understanding of coding or programming to lead this lesson. Children will step up and support each other to succeed. If in a virtual setting, provide an avenue for students to collaborate and communicate (discussion board, Breakout Room, Channel, etc.). Students can use any of the following browsers: Chrome (29+), Firefox (30+), Safari (7+) or Edge (20+). The entire project should take approximately 50 minutes. Students must apply critical thinking and perseverance to accomplish a coding mission.

Creative Thinking and Creative Problem-Solving Skills

Why do meteorologists get a bad reputation? Learn about the various tools and instruments meteorologists use and write a response to the public defending meteorologists. You can respond on behalf of a specific meteorologist, or generically on behalf of the profession.

Awareness of Self—Student's Well-being

Severe storms in Georgia happen multiple times each year. Challenge students to create a storm survival guide. It could be in the format of a video (stop motion, green screen, animation, etc.), a brochure, a manual, or something different. Encourage students to think research challenges related to storms in Georgia. Provide an opportunity for students to share their project with peers or others who may benefit from the project.

Digital Breakout EDU Challenge Recording Sheet: 3, 2, 1...Blastoff!





My Name _____

Names of the Students in My Group: _____



You have been chosen to become an astronaut for the newest mission to the moon! Help NASA collect all the data they need prior to your journey to space!

Record the Correct Lock Combination for Each Lock


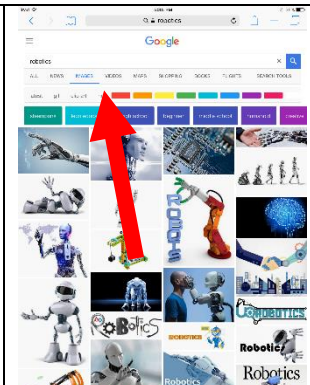

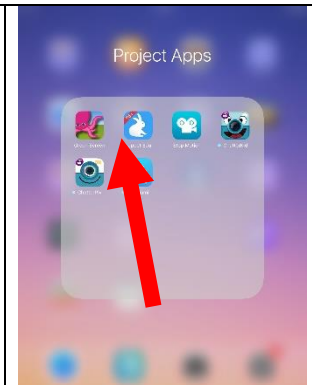
Lock	Correct Combination					
 Number Lock						
 Color Lock						
 Word Lock						
 Word Lock						

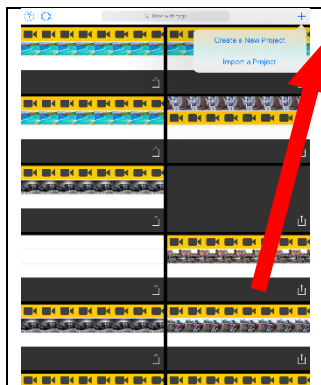
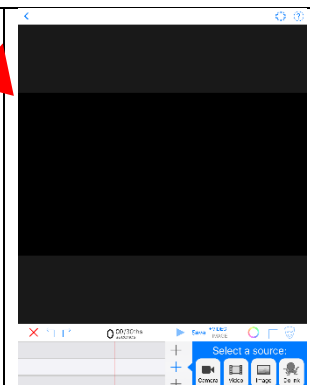
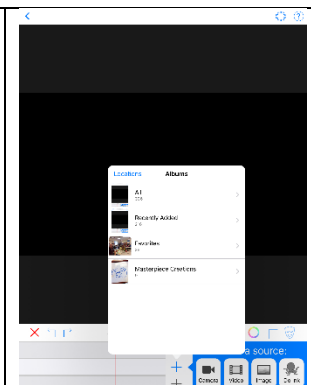
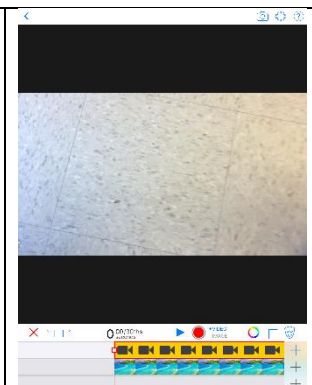
Explain what you know about the moon cycle.


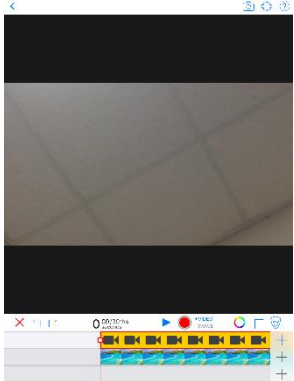
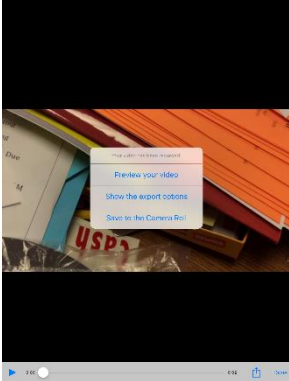
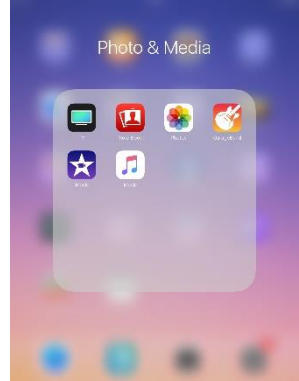
If you were going to add a new puzzle to this game, what would it be and why?

Green Screen Project Directions

- Only 2-3 people can be at the Green Screen space at one time.
- You must have your script written BEFORE you get the iPad.
- If others are waiting, you can only do up to 3 takes. Then let someone else have a turn.

			
<p>Write your script. Be sure to practice reading your weather report.</p> <p>If you have access to an extra device, you can use a teleprompter app to scroll the text.</p>	<p>Find a background picture to use.</p>	<p>Hold one finger on the large picture and wait for the "Save Image" prompt to show up. If it doesn't work after 5-10 seconds, try again.</p>	<p>Find and open the Green Screen App by Do Ink.</p>

			
<p>Select the plus sign to create a new project.</p>	<p>In the MIDDLE row, click the + to add the image.</p>	<p>Select Recently Added and find the picture you saved.</p>	<p>Now click the + sign in the top row and select camera. At the top of the iPad, change the camera to standard (not Selfie mode).</p>

			
<p>Put the iPad on the tripod and line it up so you don't see the wall on the screen. Tape your script to the tripod so you can see it when you record.</p>	<p>Press the red Record button. Let it count down from 5.</p>	<p>When you are finished recording, tap the main screen and the recording will stop. Select Save the Camera Roll.</p>	<p>You can find your video in Photos.</p>