Subject: TAG
Grade: K,1,2

Note: TAG instruction occurs one day a week for each student. These plans are meant to replace the time that would be spent on core learning activities (reading, ELA/writing, math social studies/science) for that one day each week. Students should still complete activities for specials classes (art, music, PE) on their TAG day.

Week 4

Standards (include both TAG standards and grade level standards addressed)	S1E1. Obtain, evaluate, and communicate weather data to identify weather patterns S1P1. Obtain, evaluate, and communicate information to investigate light and sound. **TAG Creative Thinking and Problem Solving** Gifted students demonstrate skills in fluency, flexibility, elaboration and originality to generate innovative ideas, products, and/or solutions to problem.
Brief Description	During this lesson, students will learn about moonbows. They will begin by reading an article on moonbows and answering a discussion question to practice fluency and originality. Students will then complete a CSI handout to practice flexibility, elaboration, and originality. Students may complete an optional experiment using a glass of water and a piece of paper.

Student Directions:

1. Read the Wonderopolis article on Moonbows. Adapted from https://wonderopolis.org/wonder/how-rare-is-a-moonbow

2. Discussion question: If there's a pot of gold at the end of a rainbow made by the sun, what do you think would await you at the end of a moonbow? Come up with a list of at least three different possibilities of things that might be found at the end of a moonbow. Share your list with a friend or family member. What ideas do they have?

Idea #1: _____

Idea #2: _____

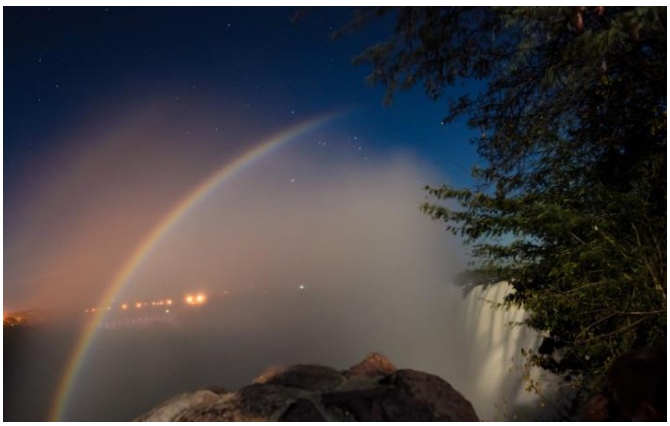
Idea #3: _____

3. Complete the CSI (color/symbol/image) handout.
4. Optional extra fun: Complete the water glass experiment.

Wonderopolis

Have You Ever Wondered...

- How rare is a moonbow?
- What causes a moonbow?
- During what phase of the Moon are moonbows most common?



Some mornings, we wake up and see clouds and rain. That can be frustrating if we were hoping to go outside and play. The good news is that there's a chance that we will get to see something beautiful if the sun comes out after the rain. What are we talking about? A rainbow, of course!

How is a rainbow made? As the sunlight shines through the water droplets still floating in the air, the droplets act like prisms, scattering the sunlight into the colors we see as the rainbow.

When the sun goes down, so does the chance of seeing a rainbow, right? Maybe not! Although they're rare, rainbows produced by moonlight — known as lunar rainbows or moonbows — can happen.

Just like the rays of the sun can create a rainbow during the day, reflected light from the moon can create a moonbow if the conditions are just right. One of the main reasons moonbows are so rare is that moonlight isn't very bright. To see a moonbow, it needs to be a bright full moon. The sky must be very dark, and the moon must be very low in the sky. Finally, a source of water droplets, such as rain or the mist from a waterfall, must be present in the opposite direction of the moon.

If you're lucky enough to see a moonbow, you'll notice that it probably doesn't look exactly like a rainbow. Instead, a moonbow often looks white to the human eye, because the dim light from the moon produces colors that usually aren't bright enough for us to see. However, if you use a camera to take a picture of the moonbow, it will be able to pick up the colors in the photograph.

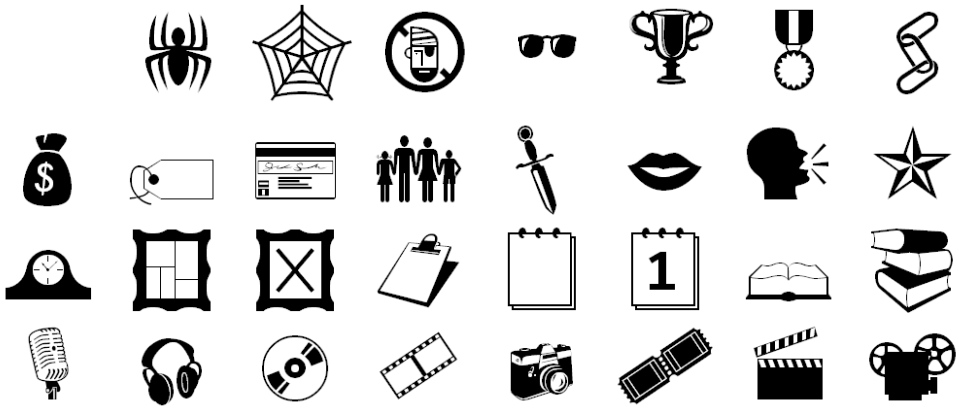
Although moonbows are rare, they do tend to happen in certain locations more than others. These locations usually have waterfalls. The moonbows created near waterfalls are often called spray moonbows. If you hope to get a glimpse of a spray moonbow, some of the best locations include Yosemite National Park in California, Cumberland Falls State Resort Park in Kentucky, Victoria Falls between Zambia and Zimbabwe in Africa, Waimea in Hawaii, and Plitvice Lakes in Croatia.

Name: _____ Date: _____

CSI: Moonbows

Which color do you think would be the easiest to see in a photograph of a moonbow? Color it in the box.

Which symbol reminds you most of a moonbow?



Why did you pick this symbol?

Use the back of this page or another piece of paper, create an image of a moonbow using as much information from the article as possible in your drawing.

Experimenting with Light

You will need:
A glass of water
A piece of paper
Sunlight

Directions:
1. Put the glass of water in the sunlight.
2. Put the paper next to it.
3. Let the sunlight stream through the water and create a rainbow on the paper.

Task:
Trace the bottom of the water glass on your paper. Can you trace and color the rainbow(s) made from the water onto the paper?