

## Locating a Constellation

*Amount of time for this lesson = 65 minutes 4th Grade*

### 1. Standards and Safety and Materials:

A. Standards –Wyoming State Standards, SC4.1.5 Objects in the Sky: Students describe observable objects in the sky and their patterns of movement.

SC4.1.6 Change in Earth and Sky: Students describe observable changes in earth and sky, including rapid and gradual changes to the earth's surface, and daily and seasonal changes in the weather.

CCSS W.4.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

RL.4.7 Make connections between the text of a story or drama and a visual or oral presentation of the text, identifying where each version reflects specific descriptions and directions in the text

B. Safety Concerns: minimal safety concerns with regular class activity

C. Materials:

- a) Classroom Planetarium
- b) 4-square worksheet
- c) Computer w/ internet
- d) YouTube Access
- e) Toilet Paper Rolls ( 2/per student)
- f) Black construction paper
- g) Paper clips
- h) Tape
- i) Pencils
- j) Flashlights

### 2. Objectives:

A. SWBAT... **describe** the characteristics of a constellation.

B. SWBAT... **locate** a constellation in the night sky.

C. SWBAT... **sketch** and **construct** a model replica of the constellation they located.

### 3. Connections, Misconceptions, and Crosscutting Concepts:

A. Real world connections: Astronomers, Weather, Seasons, Greek Mythology

B. Student connections: Students will understand how the stars relate to constellations.

C. Misconceptions: Stars and Constellations move throughout the year.

D. Crosscutting Concepts: Science assumes consistent patterns in natural systems.

4. *Catch/Engagement*: Place black construction paper, tape, paper clip, and a toilet paper roll on each student's desk. When they come in from lunch have them guess what we could be **constructing** with the materials.

5. Pre-test: 4 square-(Term- Constellation / **Construct** a picture or diagram/ **Develop** a description or definition/ **Write** related terms)

## 6. Activity/Exploration:

Part 1: Catch- Place on each student's desk black construction paper, tape, paper clip, and a toilet paper roll. When they come in from lunch have them guess what we could be **constructing** with the materials. (2-3 mins)

Pre-test, students should work independently to complete the pre-test. (10-12 min)

Part 2: Class Discuss/ Lecture- Students will **describe** what they know about a constellation. (5 min)

### Part 3: Lab

M – Constellation Story, Students will watch a short YouTube video on constellations and the stories behind them. <https://www.youtube.com/watch?v=KYATNRGVyqk> (3 mins)

N –Classroom Planetarium- as a class we **locate** one of the constellations during the current season. Students should use their toilet paper rolls as "constellation finders". This should help students to focus on a smaller area of the sky. Once our constellation is located we will **sketch** it on our black construction paper with a pencil. (5 min)

O- **Construct** a model of the constellation we located as a class. (15 min)

1. Student should take the sketched constellation and place it over one end of the toilet paper roll.
2. Next tape the construction paper onto the toilet paper roll.
3. Then unfold the paper enough that you have a long straight end. Use the paper clip to poke holes into the black construction paper where your "stars" are sketched.
4. Shine a flashlight on the open end of the toilet paper roll and view your constellation on the classroom wall.
5. Research and record 3 interesting facts about the constellation we located.  
<http://www.constellation-guide.com/constellation-list/orion-constellation/>

Part 4: Discussion -Students will **report** the interesting facts they discovered to the class. (5 min)

7. Review/Essential Questions/*Explanation*: Complete this activity at home **locating** a different constellation and **writing** a journal entry **describing** your constellation.

- A. Low Level – Describe a constellation.
- B. Middle Level – Explain why we see different constellations during the year.
- C. High Level – Support the idea with evidence that constellations will be in different places in the sky on different nights.

8. Assessments (Post-test)/*Evaluation*- 4 square-(Term- Constellations / **Construct** a picture or diagram/ **Develop** a description or definition/ **Write** related terms)

- A. Formative: Through discussion and observing during lesson.
- B. Post-test: Same as pre-test
- C. Explain how the data will inform tomorrow's teaching.- If the students still have questions after the lesson then we can extend the lesson further therefore they will be able to complete there at home portion of the lesson.

9. Timeline:	A. Catch	2-3 min
	B. Pre-test	10 min
	C. Activity	33 min
	D. Review	5 min
	E. Post-test	10 min

10. Enrichment/*Elaboration*: Create their own constellation by drawing and connecting the stars. Write a story to go along with the drawing.

11. IEP Accommodations/Differentiation/Diversity: What accommodations will you use to support struggling learners? Ability grouping-high achieving students partnered with a lower achieving student.

### How to Make a Star Gazer

Materials -

You will need:

- 1 toilet paper roll
- Tape
- a thumb tack or paper clip
- a 4x4 piece of black construction paper

First locate which constellation you would like to make. Sketch the constellation onto the black construction paper.

Using the thumb tack/paper clip, punch holes through and the black paper on the dots (stars).

Next, place the black paper over one end of the toilet paper tube. Make sure to center the holes (stars) over the opening. Gently gather the paper around the tube and secure by taping the edges around the paper and tube.

Finally, put the tube up to one eye and view the constellation you created.

\*\*I also encourage my students to use just the toilet paper tube (star gazer) during their observations. It helps them to “focus” in on a part of the night sky instead of the whole thing.

Term: Constellation

Definition/Description:

Related Terms:

Diagram/Picture