

Student Teacher Candidate: Olivia Stone
 Lesson Subject(s)/Title: Earth and Space Science
 Lesson Date(s): April 5, 2019
 Course & Grade(s): ECE 369-3rd Grade

INSTRUCTIONAL MATERIALS: The Night Sky-Constellations worksheet, blue and white construction paper, sharp pencils, glue or glue sticks

ESSENTIAL QUESTIONS/ SUBSIDIARY QUESTIONS:

- What is a constellation?
- How can we determine the differences between not only the stars but also the different constellations?

PURPOSE: The purpose of this lesson is for students to begin to understand the constellations in the night sky.

SPECIFIC LEARNING OBJECTIVES: (clear, observable) Students will identify the group of stars called the Big and Little Dipper and create a constellation of their own to share within a guessing game format.

STANDARDS:

- Earth and Space Science
 - 3.3.3.B1-Relate the rotation of the earth and day/night, to the apparent movement of the sun, moon, and stars across the sky. Describe the changes that occur in the observable shape of the moon over the course of a month.
- Arts
 - 9.1.3.A- Know and use the elements and principles of each art form to create works in the arts and humanities.

DIFFERENTIATION STRATEGIES:

- Enrichment:
 - Challenge students to create an additional constellation that points to another one, much like the outer stars of the Big Dipper bowl pointed to Polaris on the Little Dipper ladle.
- Support:
 - Pair students who need extra help with a partner who can assist.

ANTICIPATORY SET:

- Ask students what they think of when they hear the words “North Star.” Guide the discussion to include the use of a star “landmark” for navigation.
- Explain that this star’s name is **Polaris** and is part of a star group called the **Little Dipper** in North America.
- Explain that today we’ll make our own **constellations**, which are groups of stars that form pictures if we connect the dots. **[Visual Intelligence]**

Sensory Register	STM	LTM
Attention Recognition Perception	Focus Organization Rehearsal Visualization	Connections Elaborations Meaning

Facets of Understanding

1. Explanation
2. Interpretation
3. Application
4. Perspective
5. Empathy
6. Self-Knowledge

Multiple Intelligences

1. Linguistic [words]
2. Visual [pictures]
3. Mathematical [numbers & reasoning]
4. Kinesthetic [hands-on]
5. Musical [music]
6. Interpersonal [social]
7. Intrapersonal [self]
8. Naturalist [nature]

Multiple Exposures [4 x 2]

1. Dramatization
2. Visualization
3. Verbal

Complex Interactions

1. Discussion
2. Argumentation

Bloom’s Taxonomy

1. Knowledge [Verbatim]
2. Comprehension [Own Words]
3. Application [Problem-Solving]
4. Analysis [Identify components]
5. Synthesis [Combine information]
6. Evaluation [Decisions]

Aspects of the Topic

1. Facts
2. Compare
3. Cause/Effect
4. Characteristics
5. Examples
6. Relationships

9 Effective Strategies

1. Similarities and Differences
2. Summarization and Note Taking
3. Reinforcing Effort and Providing Recognition
4. Homework and Practice
5. Nonlinguistic Representations
6. Cooperative Learning
7. Setting Objectives and Providing Feedback
8. Generating and Testing Hypotheses
9. Questions, Cues, and Advanced Organizers

INPUT/ ACQUIRE NEW KNOWLEDGE:

- Explicit Instruction
 - Using The Night Sky-Constellations worksheet as a guide, draw the **Big Dipper** on the board.
 - Explain that this group of stars, part of the **Ursa Major**, or Big Bear, constellation looks a bit like a drinking ladle. Add that this term may have come from Africa, where it was sometimes seen as a drinking gourd. Runaway slaves would follow the so-called drinking gourd to the North to find freedom.
 - Point to the two stars at the end of the Big Dipper bowl on the worksheet and identify them as "Pointer Stars." Explain that a line drawn between them points to Polaris, the bright star at the end of the ladle of the **Little Dipper**. Point out that Polaris is always there in the northern hemisphere and it marks the **North Celestial Pole**.
 - Display Catching the Light showing the Big and Little Dipper picture. Draw a line with a marker or your finger from the two pointer stars at the outer end of the bowl of the Big Dipper up to Polaris at the end of the Little Dipper handle.
- Guided Practice
 - Distribute The Night Sky-Constellations worksheet and read aloud the directions.
 - Rotate around the room, assuring that all students are completing the connect-the-stars activity.

APPLY/ DEEPEN NEW KNOWLEDGE:

- Announce the Constellation Guessing Game.
- Direct the students to think of an object to create a constellation around. **[Kinesthetic]**
- Distribute blue and white construction paper and direct students to draw an outline of the chosen object in pencil on the blue construction paper.
- Distribute markers and direct students to choose and mark at least six points on the penciled outline to be stars of the constellation.
- When students are finished with markers, direct them to erase the pencil outline and use the pencil tip to poke holes through the marker dots on the blue construction.
- Distribute glue or glue sticks and direct students to glue the blue construction paper to the white one.
- Each student will trade completed and pasted constellation paper with a partner, who will guess what the object is. **[Interpersonal]**
- Partners will connect the star dots of partner's constellation and return it to the owner, who will each write a constellation title and verify if the partner guessed correctly or not.

CLOSURE/ASSESSMENT:

- Thumbs up to indicate yes, and down to indicate no to answer to the question: Do I know how to find Polaris?
- Ask a thumbs up person to explain or demonstrate how to find Polaris.

EVALUATION/ASSESSMENT OF STUDENTS:

- Students stand and share constellations and say whether or not their partner guessed it correctly.
- Collect worksheets and constellations to assign percentage grades to assess understanding of constellations.

INSTRUCTIONAL PROCEDURES:

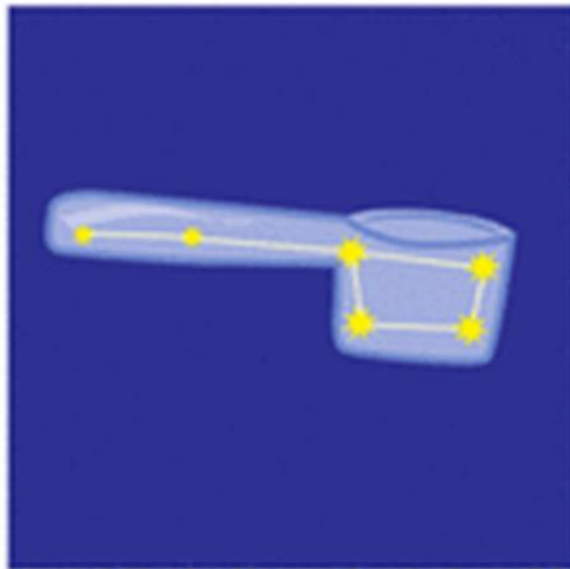
Time:

<p>The teacher will:</p> <ol style="list-style-type: none">1. Ask students what they think of when they hear the words "North Star"2. Explain name of Polaris3. Explain that students will be making constellations4. Draw Big Dipper on the board5. Explain constellation6. Point to the two stars at the end of the Big Dipper bowl on the worksheet and identify them as "Pointer Stars"7. Display Catching the Light8. Distribute worksheet and read directions9. Facilitate worksheet completion10. Announce the constellation guessing game11. Provide students with directions12. Distribute supplies13. Facilitate game14. Thumbs up or down to answer: Do I know how to find Polaris?15. Ask a thumbs up person to explain or demonstrate how to find Polaris	<p>The students will:</p> <ol style="list-style-type: none">1. Answer question2. Listen to explanation3. Listen to explanation/directions4. Look at board displaying Big Dipper5. Listen to explanation6. Look at the board, listen to explanation7. Look at the board8. Receive worksheet and listen to directions9. Complete worksheet10. Listen for Constellation Guessing Game11. Listen to directions12. Receive supplies13. Participate in game14. Thumbs up or down: Do I know how to find Polaris?15. If Thumbs Up, explain/demonstrate how to find Polaris
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The Night Sky - Constellations

Constellations are groups of stars that form pictures, such as animals or people, in the night sky. This group of stars can be seen all year.

It is called **THE BIG DIPPER**, and is part of The Bigger Bear constellation.



Draw a **DIPPER** over this group of stars below.

