



Planetarium Project¹

Grade Level: 8

OVERVIEW	<i>The purpose of this lesson is to gain an understanding of the constellations in our universe, specifically one constellation per student, and do a research project over the particular constellation. Students will have the opportunity to look at and study the stars within the classroom setting, as well, in our very own planetarium.</i>
OBJECTIVES	<p><i>At the end of this project, students will:</i></p> <ul style="list-style-type: none"> ❖ <i>Have gained an understanding of the sky</i> ❖ <i>Researched one particular constellation</i> ❖ <i>Applied their knowledge through different subjects (history, science, visual arts)</i> ❖ <i>Students will each be required to research a constellation, view the night sky outside of the classroom at three different times, participate in planetarium visits during class, and participate in the “Starry Night Family Celebration.”</i>
STANDARDS²	<p>1. Engineering & Technology Education MS.2: Describe technology as a system with inputs, processes, outputs, impacts, and feedback.</p> <p>2. Science: The Physical Setting 8.3: Students collect and organize data to identify relationships between physical objects, events, and processes. They use logical reasoning to question their own ideas as new information challenges their conceptions of the natural world.</p> <p>3. Principles of Earth and Space Science ES.1: Students investigate, through laboratory and fieldwork, the universe, the Earth, and the processes that shape the Earth. They understand that the Earth operates as a collection of interconnected systems that may be changing or may be in equilibrium. Students connect the concepts of energy, matter, conservation, and gravitation to the Earth, solar</p>

¹ Adapted from http://school.discoveryeducation.com/lessonplans/programs/da_impressionism/#obj

² Indiana Academic Standards for found at <http://dc.doe.in.gov/Standards/AcademicStandards/StandardSearch.aspx>

	<p>system, and universe. Students utilize knowledge of the materials and processes of the Earth, planets, and stars in the context of the scales of time and size.</p> <p>4. Creating Art: Studio Production 8.7: Students apply the elements and principles and distinguish varied lines, shapes, textures, colors, and space, and the use of balance, proportion, rhythm, variety, repetition, and movement in works of art. They utilize visual characteristics of given media and employ appropriate media and processes in artwork, demonstrating safe and proper use of materials.</p>
MATERIALS	<ul style="list-style-type: none"> ❖ Pen and paper for brainstorming ❖ Computer with internet access for research and for Jotform use; printer for research paper ❖ Library for research ❖ Poster board and art supplies ❖ Refreshments, black shirts, glow paint, etc. for family celebration night
PROCEDURE	<ul style="list-style-type: none"> • On the first day take the class to the planetarium and explain to them what they are looking at and what the project outline is • For the remainder of the class period, take students to the library to begin looking at books on the stars and begin thinking about which particular constellation they wish to do for the project • During the next class period, students will receive three observation sheets to go out at night at home and observe/draw what they see in the sky. Try to make each observation around the same time on three separate nights. • For the next week or two, depending on the progress of the class, students will research their constellation and write a paper over what they have learned • Students will also be required to create a poster board over their constellation and present to the class; students will be given two class periods to create their boards and presentations; outside class work may be necessary to finish the project • While the students are creating their poster boards, they will be also learning how to use Jotform, specifically the Party RSVP form, to create invitations for the Starry Night Celebration. Students will be required to send one invitation to their parents/guardians and one more invitation to a friend outside of class. • The following two class periods will consist of presentations. • On Starry Night, students and their families/guests will come in for pizza & refreshments at night. Students will be painting black shirts of their constellations with glow in the dark paint, and parents will be able to see all the poster boards and research papers set up around the room. After crafts are done, everyone will go to the planetarium for the students to present their constellations to the group. The class and guests may need to be split into two or three groups to fit into the planetarium.
EVALUATION	<p>The teacher will be grading the research paper, the three outside class observations, the poster board and presentation, and the presentation given during</p>

Starry Night. The instructor will also monitor progress daily to make sure students are staying on task. There will be participation points awarded to those students that finish work in a timely manner, and points will be taken away from students that do not stay on task or focused.