Lincoln Park High School

ENVIRONMENTAL SCIENCE

Grade: Junior/Senior
Teacher:
Carol Widegrin
Artist:
Reginald Lawrence- MPAACT
Academic Content and Learning Skills:
Environmental science
Arts Content:
Drama

Overview

Drama is explored as a methodology for representing and analyzing interactive systems in theater and in environmental science.

Classroom Goals Addressed by Project

Academic-Environmental Science
Students will:
1. Analyze disorder and the flow of matter and energy in various physical, chemical, geological, and biological cycles.
2. Use scientific knowledge, common sense, and scientific reasoning strategies to understand and explain a wide range of phenomena.

Arts (Drama Theater)
Students will:
1. Describe characteristics of the elements of drama
2. Demonstrate an understanding of realistic physical interaction between characters.
3. Work as a creative ensemble (small groups) to interpret and dramatize phenomenon.

State Goals Addressed by Project

Academic- Environmental Science
1. Understand the facts and unifying concepts of life, physical, and earth/space science
2. Understand connections and relationships among science, technology, and society.

Arts(Drama/Theatre)
1. Understand the principle sensory, formal, technical and expressive qualities in drama/theater
2. Identify process and tools required to produce drama/theater
3. Demonstrate the basic skills necessary to participate in the creation and/or performance of drama/theater

What Resources were used

Theater games focused on ensemble building and cooperative work

Key Words/Vocabulary that are most important to this unit

• Improvisation
• Dynamic systems
• Characterization

Brief Step-by-Step daily/weekly lesson plan for this unit
This is a three-week unit plan. Following is the step-by-step process:

Arts Class #1
Introduction to ecology unit (EU) by teacher and artist. Deliver an overview of the three-week unit plan. Define parameters of cyclic model building (i.e. global changes and their consequences: The first order effects on atmosphere, oceans, & Biota). Students may define an ecological system, demonstrate the system through staged choreography, and introduce a perturbation. Activity: Count down (Focus). Stage sculpture demonstrations (teach methods to utilize by students)

Classroom #1
Reintroduce and overview of ecological systems: (i.e. Atmosphere, Oceans, & Biota). Identification of small groups (creative ensembles). Students should begin to select which ecological system they wish to interpret.

Art Class #2
Introduction to characterization utilizing stage pictures of natural phenomena. Artist directed exercise should quickly transition into student directed exercise. Each student will direct a component of the process with the other students in their creative ensemble serving s actors. Creative ensembles work to create a sculpture and then present it to the class. Students are encouraged to give feedback on their classmate's sculptures for the purpose of understanding how audiences perceive their interpretations.

Classroom #2
Continuation of classroom instruction on ecological systems.

Art Class #3
Advance students to a more challenging form of stage sculpture by allowing students to use three distinct sculptures in the creation of one scene (stop motion photography). Careful attention should be paid to transitions between photos. Begin with artist directed interpretation (utilizing stop motion photography) of a pre-selected ecological system model (e.g. El Nino and ocean currents). Artists directed exercise should quickly transition into student directed exercise. Creative ensembles work to create their sculptures and then present them to the class. Students are encouraged to give feedback on their classmate's sculptures for the purpose of understanding how audiences perceive their interpretations.

Art Class #4
Advance students to a more challenging formed of staged sculpture by allowing students to use three distinct sounds (not words) in the creation of one scene (stop motion photography with sound). Begin with artist directed interpretation (utilizing stop motion photography with sound) of a pre-selected ecological model. Artist directed exercise should quick transition into student directed exercise. Creative ensemble work to give feedback on their classmates sculptures for the purpose of understanding how audiences perceive their interpretations.

Classroom #3

Planning time in class is devoted to creative ensemble work on interpreting and planning the stage of system dynamics. Students are informed that their final presentations will be composed in a minimum of five scenes. Each scene is restricted to the use of a minimum of three sounds (not Words), no properties are allowed, and all restrictions on movement are lifted. Students are encouraged/cautioned to maintain the visual nature of their presentation.

Art Class #5

Artist does a brief demonstration on a simple story boarding to aid students in the conceptualization of visual storytelling (staged choreography). Story boarding is encouraged but not required. Classroom time is devoted to students planing and rehearsing their final presentations. Teachers and artists act as resources for students.

Classroom #4

Classroom time is devoted to students planning and rehearsing their final presentations.

Art Class #6

Final presentations are performed and videotaped.

Assessments Used for this project

Expectations: What percentage of students will achieve the course objectives?

The Class: expectation is that students will learn/utilize the scientific vocabulary for environmental science and demonstrate their understanding of the many variables governing the equilibrium of the system they chose to interpret. (Approximately 90% are expected to achieve this objective).

The Arts: expectation is that 90% of the students participating shall demonstrate the ability to interpret a phenomenon and effectively communicate their ideas through the use of staged choreography.

Academic:

1. Students will write reports on the dynamics of systems they chose to represent.
2. Students will construct dynamic models of an ecological system and these shall be scored. Comprehension of the relationships of the components shall be assessed based upon the extent the student utilizes the themes and relationships of the ecological cycle within the group presentation.
3. Forced choice work sheets.

Theater:

1. Students will construct dynamic models of an ecological cycle. Demonstration of focus, characterization, and plot shall be assessed based upon the extent the student utilizes the components within the group presentation, and exercise throughout the unit.
2. Students will be assessed with regard to the meeting of course objectives by the appropriate assessment tool for the particular objective.

Monitoring:

The students shall have a separate grading scale for each discipline.
Science A through F
Art Meets/Exceeds/Does not meet.

Students: (Did they meet objectives?)
Class: Students attending class regularly met objectives.
Arts: the students who participated consistently met the arts objectives.
Teachers: (What was the success of teaching activities or strategies?)
Class: The majority of the students were familiar with the function of their selected ecological system. Most were highly motivated active learners.
Arts: The teaching of theater in the science classes have improved significantly over the past three years. We have refined our strategies during our partnership and are confident that our students are adept at utilizing the principles of drama to create models and analyze systems.
Artists: The students were suprisingly adept at abstraction of thought. They consistently demonstrated the ability to apply abstraction to their interpretations. I believe the teaching activities were highly successful in getting the students to analyze the relationship within the natural world and then through abstraction, synthesize models for environmental systems.

Comments/Reflections from Teachers, Artists, Students, Parents

- Activity/Experience that you enjoyed: (High Rate of Response)
- Making science models with human bodies
- Watching others act
- Describing food digestion in "normal language"
- The play at the end

- Activity/experience that you did not enjoy: (High Rate of Response)
- Making science models with human bodies
- Getting up in front of the class
- Being Director

Others Comments:

- When are we going to do this again?
- How come we can't be here everyday?