

It's Getting Bright In Here! Thematic Unit
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Instructional Goal: Students need to define, examine the origins, collect and record data and describe how light can be produced, reflected, refracted, and separated into visible light of various colors. Teacher will determine prior knowledge by giving students a pretest on light.

A pre-assessment was created and distributed to a 6th grade elementary class. The purpose of this pre-assessment was to help the designer analyze the learners, the performance and learning context for the unit on light. The pre-assessment also helped determine students' background knowledge, what they already know about light, what they want to learn and their learning preferences.

Learner Analysis:

Entry Behaviors and Prerequisites:

Students will use their knowledge of the scientific method to hypothesis, conduct, collect, record data and draw a conclusion for the refraction experiment.

Attitudes, Values and Opinions:

When asked about their learning preferences 40% of the students preferred projects. Therefore the creation of the Prezi to reflect what they have learned about light will be used. The next highest learning preference was working with a partner at 18%. To use this learning style I will have the students work with a partner on the science experiment.

Group Characteristics:

This class is made up of 31 sixth grade students. One of the students is in a self-contained resource model but will be present for the science part of these lessons and accommodations put forth by the IEP will be met within those lessons.

Performance Objectives:

Based on the Utah State Core Curriculum, students will describe how light can be produced, reflected, refracted, and separated into visible light of various colors.

Instructional Goal:

Describe how light can be produced

Performance Objective:

1. Students will compare light from various sources.

Instructional Goal:

Investigate and describe how light reflects.

Performance Objective:

1. Students will compare reflection of light from various surfaces.

Instructional Goal:

Investigate and describe refraction of light passing through water.

Performance Objective:

1. Students will investigate refraction of light by conducting the penny in water experiment.

Testing and Evaluation Strategies:

Students will complete a pre-test before the light unit is taught and a post-test at the end of the unit. Comparisons will be made between the two scores to show student growth and mastery of content.

Students will also be evaluated with a group Prezi presentation, participation and lab procedure rubrics.

Feedback Mechanisms and Practice Activities to support Testing and Evaluation

During the unit, students will be able to watch teacher created Prezi's and teacher lab demonstrations before students complete the independent labs, class work and group work.

Motivational Strategies

Students will be motivated to stay on task because of the appeal to their learning styles of creating projects and working with a partner. Students will also be given opportunities to respond through think-pair-share, cloze readings and note taking.

Scope and Sequence

Pre-Test

Lesson 1: Light Vocabulary Notes

Lesson 2: How is light produced?

Lesson 3: What role did Thomas Edison Play

Lesson 4: Reflection and Refraction Experiments

Lesson 5: Present recorded data

Lesson 6: Creation of a Prezi

Post-Test

Basic Plans for Instructor Materials

Lesson 1: Teacher created Prezi to define the terms needed for this thematic unit. (reflection, angle of reflection, refraction, absorption, electromagnetic waves, convex, concave, prism and white light)

Lesson 2: Teacher will bag of assorted objects: canning jar lid, foil, transparency, waxed paper, fabric, netting, square of construction paper, 3 x 5 card, penny, empty spool, plastic test tube, 1 oz. food container, clear plastic cup, flashlight to conduct comparing light resources experiment.

Lesson 3: Teacher will need article about Thomas Edison's contributions of light.

Lesson 4: Teacher will need pie plate, water, and penny to conduct refraction experiment. Teacher will need reflective surfaces worksheet, Square of aluminum foil (cannot be reused), Flashlight, a sample of each of the following: sandpaper, white cardstock, black construction paper, stiff plastic (CD case), metal (canning jar lid, underside of stapler), glass baby food jar, small glass container, etc.)

Lesson 5: Teacher will provide a class time for groups to present their experiment findings. Teacher will also provide a rubric for grading their experiment recording sheets.

Lesson 6: Teacher will need the grade level computer lab for student groups to create their own Prezi and a rubric for grading their Prezi's.