HUGK12 Activity

Title: *Rainbows*

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DCPS Standards:

8.5.7.
Know the sun's radiation consists of a wide range of wavelengths, mainly visible light and infrared and ultraviolet radiation.

Goals:

1. To see how the sun emits white light in the visible range but the light can be refracted so that we can see that white light is composed of colored light.

Objectives:

1. For students to be able to perform the experiment and to identify the colors in the rainbow and the science behind the appearance of a rainbow in the mirror.

Prerequisite Knowledge

Rainbows are caused by dispersion of sunlight as it goes through raindrops. The light is first refracted as it enters the surface of the raindrop, reflected off the back of the drop, and again refracted as it leaves the drop. A rainbow is an optical illusion and does not actually exist at a particular position in the sky. The illusion position depends on the location of the observer and the position of the sun. All raindrops refract and reflect the sunlight in the same way, but only the light from some raindrops reaches the observer's eye. This light is what constitutes the rainbow for that observer.

Essential Questions:

1. Keeping in mind this experimental setup, why do you think the rainbow is more vivid in a darker room?

2. How can this experiment, given the same conditions, be made better?

Laboratory Materials:

- Flash light
- beakers
- mirrors
- water

Differentiating Instruction:

English Language Limited (ESL) students should have no problems with this activity.

Rationale:
This activity is designed to have students become familiar with laboratory set up and safety. Also they will also create a rainbow indoors using everyday materials.

Research Activity:

Students will set up and perform the experiment with assistance from both Mrs. Denkins-Taffe and Mr. Webb. See attached lab write-up.

EVALUATION AND ASSESMENT:

Students will be asks to write down the procedure and their observations. They will also be asked to write down their conclusion and answer questions which require further investigation.