

Physics Optics Project - Spring 2010

Project Objective: To explain the cause and effects of light phenomena that clearly illustrates one or more of the concepts of reflection, refraction, or diffraction.

Create the poster such that after a person views the poster, he can walk away with the knowledge of the light phenomena and fundamental knowledge of the science behind the light phenomena.

The presentation will allow the audience to understand what the light phenomena is and also what the science is behind that light phenomena.

Class time will be allowed for research. Establish your plan. If your project requires any technical equipment that is available on campus, make sure you let me know *in advance!*

Project Timeline:

Topic Selection date:	Monday May 17, 2010
Outline and procedures:	Tuesday May 18, 2010
Presentation dates:	Monday/Tuesday May 24/25, 2010

Your project will have two parts and their total will be a major grade:

Do not plagiarize.

I. Poster (50 points) - This is to assist the audience to understand the topic. It should be a clear and concise graphical representation of your optical phenomena and how the respective concept(s) of light ties in to the phenomena. The poster can consist of sketches, photographs, diagrams, and definitions that explain the phenomena. The back of the poster will contain your names, date, period and references used in the project in MLA format.

II. Oral Presentation (50 points) – The presentation will consist of at least two visual aids to help the audience understand what the light phenomena is and the physics behind it. This will be a 3 - 6 minute presentation with duties equally shared by both members of the team. Examples of the visual aids are:

Animation
Demonstration

PowerPoint
Video

The presentation should indicate a clear understanding of your topic. The presentation should hold the audiences' interest and entice questions from the audience. I will draw names and your team must be ready to present. If your team is not ready to present, your team will incur a 50% point deduction.

Physics Optics Projects

Possible Topics:

Primary and Secondary Rainbows	Blue Moons
Animal Navigation & Polarized Light	Coronas
Heiligenschein	Sky Polarization
Crown Flash (Flachenblitz)	Cloud maps (Ice Blink)
Sun Pillars	Zodiacal Light (Gegenschein)
Dew Bows	Brocken Bows (glory; anticorona)
Supernumerary Bows	Sprites
Rainbow Pillars	Sunset Colors
Lunar Rainbows	Liquid Crystals
Fog Bows	Star Colors
Sundogs (Parahelia)	Luminescent Organisms
Green Flash	Black Light
Northern Lights (Aurora Borealis)	Purkinje Figures & Color Effects
Red Shift	3-D Movies
Nichols Prism	Snow blindness
Blue Hazes	Phosphenes
Mirages	Polarized Sunglasses
Sunburn Through Clouds	Holograms
Lasers	Lens Flares
Noctilucent Clouds	

Name: _____
Name: _____

Topic: _____
Date: _____

Physics Optics Project - Grading Rubric – Spring 2010

I. Poster (50 Points)

A.	Shows a clear example of the light phenomena	10	7	4	0
B.	Illustrates the physics that creates the light phenomena	10	7	4	0
C.	Neatness / Organization	10	7	4	0
D.	Understandable?	10	7	4	0
E.	Project references in MLA format on the back	10	7	4	0

II. Presentation (50 points)

A.	Shows a clear example of the light phenomena	10	7	4	0
B.	Illustrates and defines the physics that applies to the light	10	7	4	0
C.	Illustrates how the physics ties with the phenomena	10	7	4	0
D.	Two or more illustrations	10	7	4	0
E.	Organization of the presentation	5	3	1	0
F.	Held the audiences interest	5	3	1	0