

Physics Optics Project - Spring 2012

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.

Three class days will be allowed for research. Establish your plan.

Project Timeline:

Topic Selection date: Thursday/Friday May 10/11, 2012
 Research and work dates: Monday through Monday May 14 to May 21, 2012
 Presentation dates: Tuesday through Friday May 24/25, 2012

Your project will have two parts and their total will be a major grade. **Do not plagiarize:**

I. Poster (50 points) – The poster 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. The references must be in MLA format.

II. Oral Presentation (50 points) – The presentation will be a power point that will help the audience understand the light phenomena and the physical concepts behind it. The power point may include charts, graphs, photographs and animations. Your presentation will be 3 to 5 minutes with the duties equally shared by the team.

Be Prepared! When I draw your team to present, if you are not ready you will have a 25 point penalty.

Name: _____
 Name: _____

Topic: _____
 Date: _____

Physics Optics Project - Grading Rubric – Spring 2012

I. Visual Aids (50 points)

A.	Shows a clear example of the light phenomena	10	7	4	0
B.	Illustrates and defines the characteristic of light that applies	10	7	4	0
C.	Illustrates how this characteristic ties with the phenomena	10	7	4	0
D.	Two or more illustrations	10	7	4	0
E.	References MLA Format	10	7	4	0

ii. Presentation (50 points)

A.	Phenomena clearly defined to audience	10	7	4	0
B.	Light Characteristic clearly defined	10	7	4	0
C.	How occurrence of phenomena depends on light characteristic	10	7	4	0
D.	Organized	10	7	4	0
E.	Held the audiences interest	10	7	4	0

Total points _____ out of 100

Physics Optics Project

Possible Topics:

Primary and Secondary Rainbows
Polarized Light
Heiligenschein
Crown Flash (Flachenblitz)
Sun Pillars
Dew Bows
Supernumerary Bows
Rainbow Pillars
Lunar Rainbows
Fog Bows
Sundogs (Parahelia)
Green Flash
Northern Lights (Aurora Borealis)
Red Shift – Blue shift
Nichols Prism
Blue Hazes
Mirages
Sunburn Through Clouds
Lasers

Blue Moons
Coronas
Sky Polarization
Cloud maps (Ice Blink)
Zodiacal Light (Gegenschein)
Brocken Bows (glory; anticorona)
Sprites
Sunset Colors
Liquid Crystals
Star Colors
Noctilucent Clouds
Black Light
Purkinje Figures & Color Effects
3-D Movies
Snow blindness
Phosphenes
Polarized Sunglasses
Holograms
Lens Flares