

Bending Light Lab

Name _____
Date _____ Period _____ Score _____ /4

CATEGORY	4	3	2	1
Question/Purpose Hypothesis ____/4	The purpose / hypothesis portion includes a research-based description of the reasoning the predicted relationship is based on. (You have written proof you researched the situation 1 st) "According to"	The purpose of the lab or the question to be answered during the lab is clearly identified and stated. The 1 st hypothesis clearly predicts the relationship between input angle and output angle of reflection. The 2 nd hypothesis clearly identifies 3 observable effects of refracted light.	The purpose of the lab or the question to be answered during the lab is identified, but is stated in a somewhat unclear manner. The hypothesis does not display clear logic based on information from the text	The purpose of the lab or the question to be answered during the lab is erroneous or irrelevant. The hypothesis is missing.
Materials Procedures ____/4	Exceptional detail.	All materials and setup used in the experiment are clearly and accurately described Procedures are listed in clear steps. Each step is numbered and is a complete sentence.	Almost all materials and the setup used in the experiment are clearly and accurately described. Procedures are listed in a logical order, but steps are not numbered and/or are not in complete sentences.	Many materials are described inaccurately Procedures do not accurately list the steps of the experiment and are difficult to follow
Note Point Value	16	12	8	4
Results: Observations Drawings/Diagrams Dara Table Graph ____/16	Exceptional detail. Exceptional detail. A data table was used to organize the observations.	Clear, accurate diagrams are included and make the experiment easier to understand. Diagrams are labeled neatly and accurately. A data table was used to organize the observations. Graph is complete. At least 5 additional observations are included which describe details of the lab which are not included in the drawings	Diagrams are included and are labeled. Attention to detail is lacking. Graph is incomplete 3-4 additional observations are included which describe details of the lab which are not included in the drawings	Needed diagrams are missing important details and labels. Graph is incomplete or missing 1-2 additional observation is included which describe details of the lab which are not included in the drawings.
Note Point Value	12	9	6	3
Analysis: Identifies evidence demonstrates how light is reflected and refracted ____/12	Identify how this lab/data can be transferred to other applications Extension topics include: Diffuse vs. regular reflection How lenses work / types of lenses Types of mirrors	This paragraph clearly explains the input angle of reflection equals the output angle – evidence which supports the law of reflection. Refraction data should be analyzed by specifically identifying what the different media (materials) did to the light waves. References to the text should support your analysis.	This paragraph clearly explains most of what was observed but some details are missing	This paragraph <u>does not clearly explain</u> evidence of reflection and refraction.
Note Point Value	4	3	2	1
Conclusion ____/4	Conclusion also includes a logical extension (I wonder...) that explores related topics AND <u>includes reasonable hypothetical responses to your "I wonder" question.</u>	Conclusion includes a topic sentence which restates the purpose and whether the findings supported the hypothesis, a discussion of the hypothesis, and what was learned from the experiment.	Conclusion includes whether the findings supported the hypothesis and what was learned from the experiment.	Conclusion shows little effort and reflection.

____/40 ÷ 10 = ____/4