Name_____ per____

Shadow Lab Analysis

Please type or write on a lined piece of paper. Staple this handout to your paper and your shadow data sheet.

1. **Write** the procedure that you followed for setting up the lab and collecting data. Is there any way the lab procedure could have been improved? If yes, explain.
2. **Compare and Contrast** the general movements of both of your building shadows across time. **Discuss** both the direction that each shadow moved and the direction that each shadow was cast. **Use** your data as evidence.
3. What does this data tell us about the Earth's rotation?
4. Explain why we have day and night. Use evidence from the lab if possible.
5. **Predict** how you think your shadows will change throughout the year and seasons.

I. DESIGNING INVESTIGATIONS (DI)

Scoring Guide

LEVEL	DESCRIPTION
Level 4 Above and beyond	Student accomplishes Level 3 and goes beyond in some significant way, such as: • identifying alternate procedures. • suggesting improved materials. • relating clearly to scientific principles and approaches.
Level 3 Complete and correct	Student's design is appropriate and has a reproducible procedure, if required.
Level 2 Almost there	Student's design or procedure is incomplete or has significant errors.
Level 1 On your way	Student's design or procedure is incorrect or demonstrates a lack of understanding of the goals of the investigation.
Level 0	Student's design or procedure is missing, illegible, or irrelevant.
X	Student had no opportunity to respond.

4. UNDERSTANDING CONCEPTS (UC)

Scoring Guide

LEVEL	DESCRIPTION
Level 4 Above and beyond	Student accomplishes Level 3 AND goes beyond in some significant way, such as: • providing relevant information not provided in class that enhances the response. • using a diagram to clarify scientific concepts. • relating the response to other scientific concepts.
Level 3 Complete and correct	Student accurately and completely explains or applies relevant scientific concept(s).
Level 2 Almost there	Student explains or applies scientific concept(s) BUT omits some information OR includes some errors.
Level 1 On your way	Student incorrectly explains or applies scientific concept(s) OR shows a lack of understanding of the concept(s).
Level 0	Student's response is missing, illegible, or irrelevant.
X	Student had no opportunity to respond.