

# Sun and Shadows Assessment Materials

These have been prepared by Rebekah R. Rice (ACASE) and Jennifer Burgin (Diamond Middle School, Lexington).

See the document called "S&S Plans 2005-06" for complete descriptions of how Jennifer uses these materials.

The **first part**, on the following two pages, is often given as a nearly blank form, with the actual questions presented on an overhead projector. It has been formatted here to fit on the front and back of a handout, but could be reworked to give students more space. It takes too long to use in the same short period as the other part, so unless you are working with block scheduling it should be done on different days.

The **second part** is not intended to be used as a handout at all. Students are provided with their choice of paper—graph, plain, and lined. The instructions are read out loud and/or placed on an overhead projector.

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Class: \_\_\_\_\_

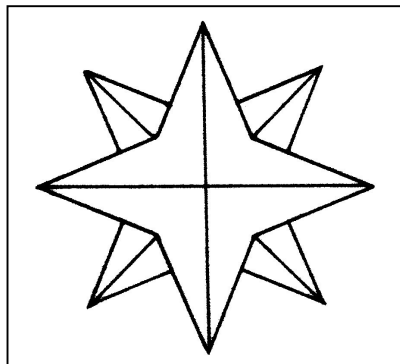
## Sun and Shadows Pre-Assessment Student Response Sheet

1. Imagine you are outside on a sunny day looking directly at your shadow, where would the sun be – in front of you, behind you, somewhere else, or is it impossible to say?
2. Is there anything additional you can say about the sun if your shadow is short? (If so, explain what, using full sentences.)
3. Consider the duration of daylight and of darkness on days throughout the year. Connect **each** date to a description. Since there are more dates than descriptions, you should have more than one line coming from some of the descriptions.

day longer than night	Dec. 21
night longer than day	Feb. 7
day and night equal	March 21
longest day of the year	May 7
longest night of the year	June 21
	Aug. 7
	Sept. 23
	Nov. 7

4. How sure are you about your answers to the previous question?
  - (a) I'm really sure about all of them.
  - (b) I'm pretty sure about all of them.
  - (c) I'm sure about some dates, not sure about others. (Please put a question mark by the ones you're not sure about.)
  - (d) I guessed. (Please explain what, if anything, helped you guess.)
5. In a short sentence, tell something you know about equinoxes.
6. In a short sentence, tell something you know about solstices.

7. Label the points on this compass rose.





## Sun and Shadows Pre-Assessment Part II

1. Make a quick sketch of each of the tools the teacher left on the table, name the tool, and tell how it is used. Some of them are used for more than one thing – please mention each purpose.

Put your **name**, **science class**, and the **date** at the top of the “tools” side of your paper.

Turn your paper over to answer the second question.

2. An elementary class in Lexington decided to investigate shadows, and found a class in Ecuador that wanted to do so also. One day, both classes measured their flagpole's shadow.
  - The Lexington class, with a **25-meter** flagpole, found the shadow was **15 meters** long.
  - The class in Ecuador, with an **18-meter** flagpole, found the shadow was **5 meters** long.

Your job is to make a diagram including everything that is important for showing how the flagpoles with their shadows are different.