

Name _____ Team Number = 1 / 2 / 3 / 4 (circle one)



The Reasons for the Seasons Thinksheet



Begin with a Question: *Do shadows change with the seasons?*

Think It Through: Take a few minutes to brainstorm what you know about the different seasons. Focus on facts that will help you to answer the question above.

spring	summer	fall	winter

Hypothesis for December: The shadow will be longer/shorter/about the same (circle one) as in September because _____

Hypothesis for March: The shadow will be longer/shorter/about the same (circle one) as in December because _____

Hypothesis for June: The shadow will be longer/shorter/about the same (circle one) as in March because _____

Name _____

Date _____



*The Reasons for the Seasons
Thinksheet
(continued)*



Design a Test That's Fair: Consider the following variables in this controlled experiment.

treatment variable	control variables
--The shadow will be measured during different seasons.	The shadow is always measured: --at the same time of day --using the same measuring device --from the same start point --to the nearest tenth of a meter

Do an Activity (Procedure):

- 1) Go to the pole where the shadow will be measured near the beginning of a season.
- 2) Record the length of the shadow to the nearest tenth of a meter on your Data Sheet.
- 3) Record the time the measurement was taken. Be sure that future measurements are taken at the same time to be fair.
- 4) Make a hypothesis for the next season on your Thinksheet.

Make Some Sense of It (to be completed in March):

- 1) Review your Thinksheet and Data Sheet(s).
- 2) Complete this sentence: I accept/reject (circle one) my original

hypotheses because _____

(Use your data sheet for support.)

- 3) Write an improved hypothesis. (Use the space below.)

Name _____

Date _____



The Reasons for the Seasons Data Sheet



Directions: Use this sheet to record information as you make observations.

Question: Do shadows change with the seasons?

*DST = Daylight Savings Time (one hour ahead of Standard Time)
Standard = Eastern Standard Time (no DST)

Date / Time	Shadow Length	Sunrise Data	Sunset Data	Reflections
fall		*DST	*DST	
		Standard	Standard	
winter		*DST	*DST	
		Standard	Standard	
spring		*DST	*DST	
		Standard	Standard	

March (Spring) Data Analysis

What patterns do you see in the data? _____
