Grade 7 SCIENCE **LAB 4: Absorbing that Energy** Name:_____

Unit 2: HEAT **Chapter 6** Class:_____

Problem: How can you compare surfaces to see which one will ABSORB RADIANT ENERGY (electromagnetic waves) the most efficiently?

MATERIALS

2 empty cans	light and dark material	rubber ring
2 thermometers	100 Watt light	
Ruler	Aluminum foil	

HYPOTHESIS

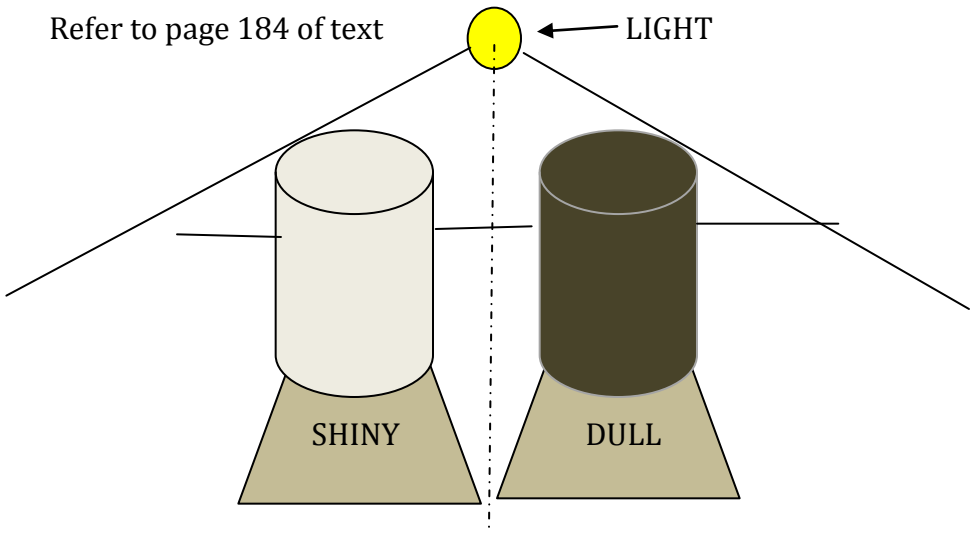
Which type of surface absorbs radiant energy the BEST?

A) Dark or Light?_____

B) Shiny or Dull?_____

PROCEDURE

Refer to page 184 of text



OBSERVATIONS

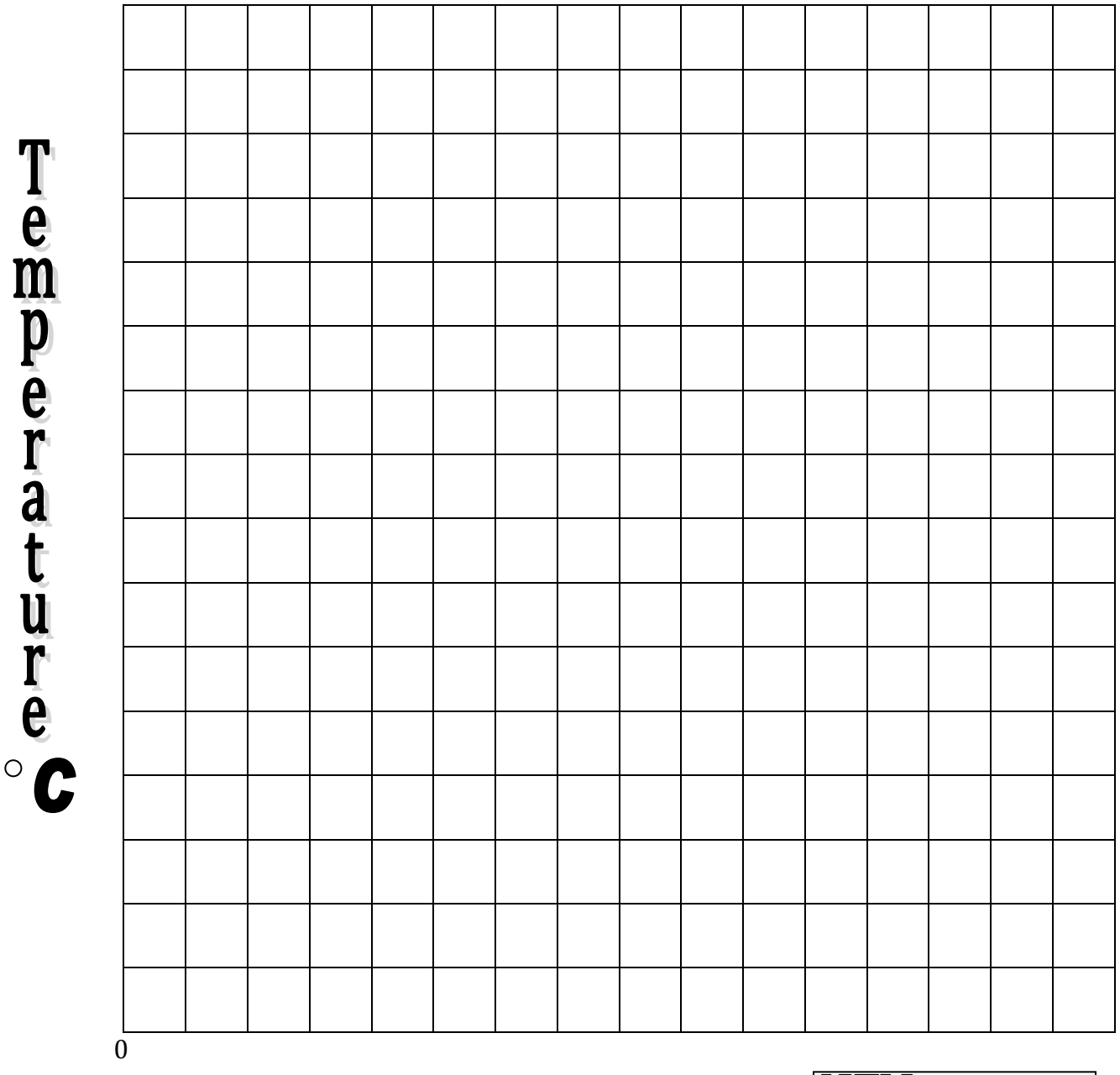
	Temperature (^oC)	
Time (minutes)	**Dark can**	**Shiny Can**
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

QUESTIONS

1. Draw a DOUBLE LINE GRAPH for the data collected in the lab.

   Be sure the LABEL the graph and make a KEY for your graph. (6 marks)

   TITLE:_____



2. What factors other than the ones you tested could be affecting the temperature change in the cans? (2)

3. According to scientific theory, the same materials that is absorbs radiant energy efficiently should also emit (give off) radiant energy efficiently. Suppose you have TWO similar objects but they have the surfaces listed below, which types of surface radiates energy better and also cools down more quickly? (2)

   A) A light-coloured surface OR a dark-coloured surface_____

   B) A dull surface OR a shiny surface_____

4. Using what you learned in this activity, EXPLAIN:

   A) When you travel to a warm climate (like Cuba), it is recommended that you bring LIGHT-COLOURED CLOTHING. Why?

   B) A gardener will often mix SOOT (burned wood) into their soil in the spring when setting up a garden. WHY?

CONCLUSION

How can the surface of an object affect its ability to absorb radiant energy? (2)

How did you show C.A.R.E. in the lab today?

C:_____

A:_____

R:_____

E:_____