

Earth Science

SPECIFIC HEAT QUESTIONS

Use page 1 of the ESRT to answer the questions

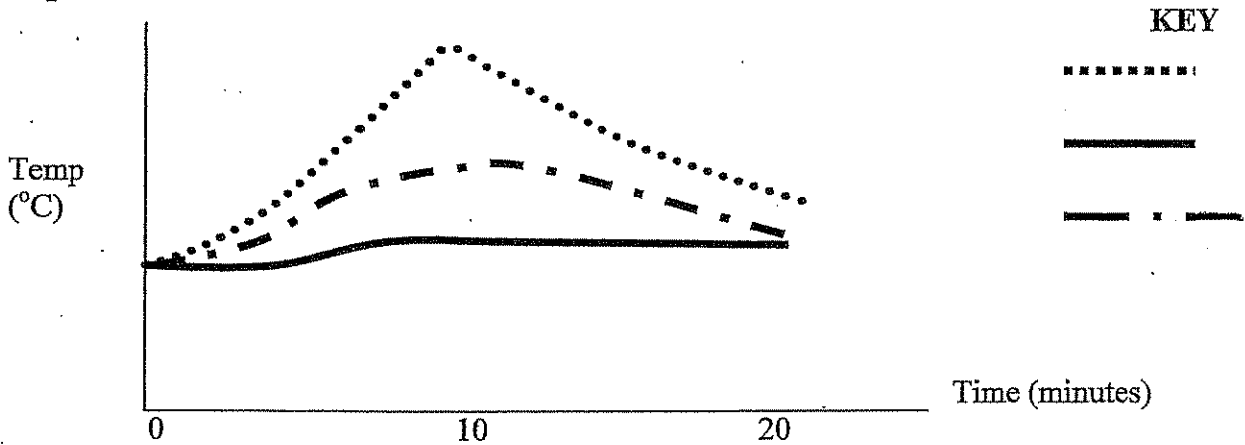
100 grams of the following substances were heated equally for 10 minutes under a hot lamp, and then were allowed to cool for 10 minutes after the lamp was shut off:

liquid water, basalt, iron, lead

1. Which substance would have the lowest temperature after 10 minutes?
2. Which substance would show the greatest rate of change during the entire 20 minutes of the experiment? Why is this the case?
3. Which substance would cool down quicker after the light was shut off—the basalt or the iron?
4. If the water heated up at a rate of $0.2^{\circ}\text{C}/\text{minute}$, approximately at what rate could you predict that the iron heat up?
5. Fill in the table below by writing in the correct substance (of the ones above) in the blank:

Substance	Temperature at 0 minutes ($^{\circ}\text{C}$)	Temperature at 10 minutes ($^{\circ}\text{C}$)	Temperature at 20 minutes ($^{\circ}\text{C}$)
	23	25	25
	23	30	25
	23	50	30
	23	43	32

6. Identify each substance (water, basalt, lead) in the graph by labeling the key. Use the data table above for help.



(

(

(