

8th Grade Science Ohio Achievement Test
Scientific Ways of Knowing Standard

Question 16
Benchmark A
May 2007

16. Students do an investigation on the reaction of baking soda with vinegar. They create a data table to record the mass (grams) and temperature (degrees Celsius) of the mixture every 5 seconds. Several pieces of data are missing from the table.

Time (seconds)	Mass (grams)	Temperature (degrees Celsius)
0		21
5		20
10	57	18
20	55	17
25	54	17
30	54	
35	54	

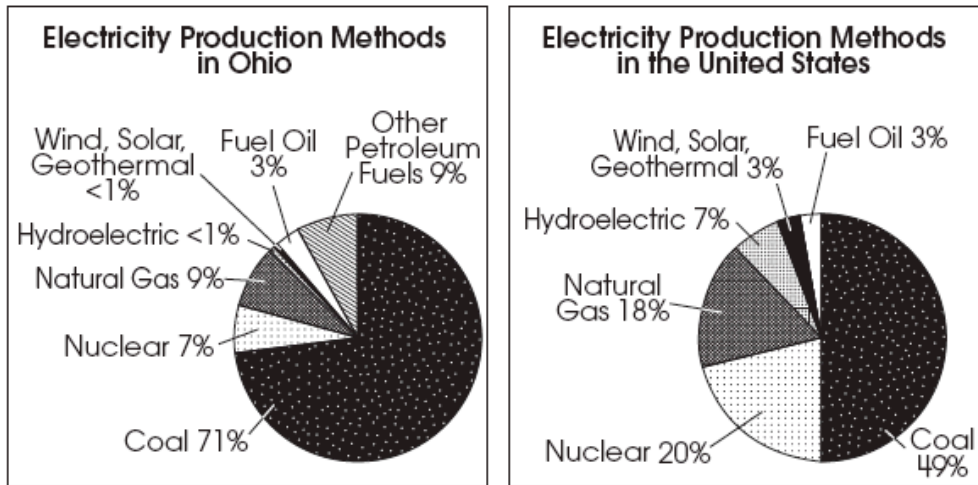
In your **Answer Document**, give one example of how the incomplete data make it difficult for the students to draw conclusions about the changes that occur when baking soda reacts with vinegar.

Explain how the incomplete data will affect the ability of other students to reproduce the experiment. (2 points)

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Question 38
Benchmark A
May 2007

38. The two charts below show percentages of production methods for generating electricity in Ohio and in the entire United States in 2002.



Source: Department of Energy, 2002

The charts show some differences in the amount of electricity produced by different methods in the United States and in Ohio. Various constraints, such as geographic, social or economic factors, influence the method used for electricity production in a region.

In your **Answer Document**, choose one method of electricity production used in Ohio.

Give two reasons or factors that support using this method in Ohio, and give two reasons or factors that can be used to argue against using this method in Ohio. (4 points)

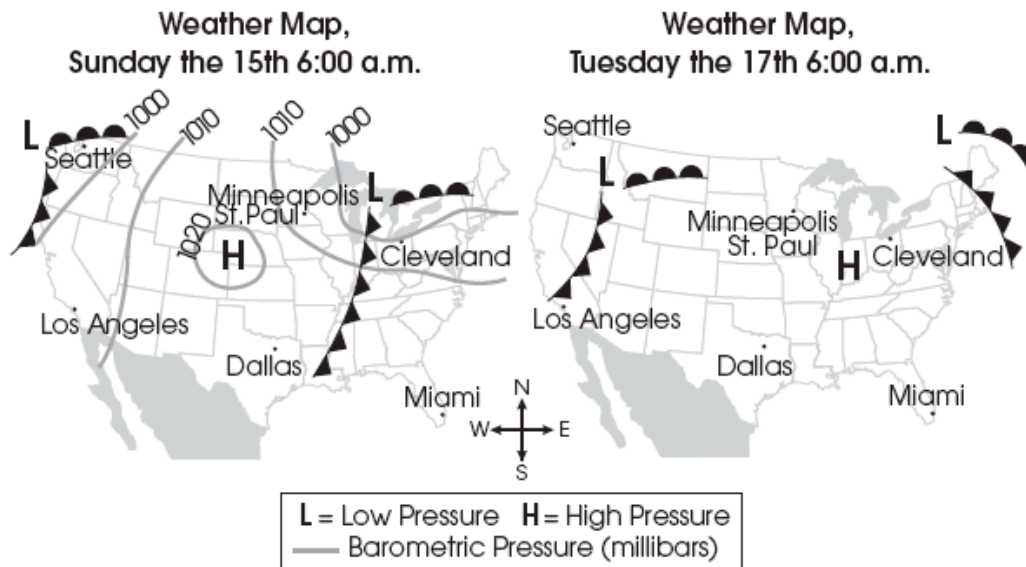
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Question 9
Benchmark C
May 2007

Weather Table and Maps

The weather information shown below was reported on Sunday, the 15th of the month, and two days later on Tuesday, the 17th of the month. The table includes conditions for Sunday only, whereas the maps report early morning conditions for both Sunday and Tuesday.

Weather Conditions for Sunday at 6:00 a.m. and for Previous 24 Hours				
City	Previous 24 Hour Temperatures		Barometric Pressure 6:00 a.m. (millibars)	Relative Humidity 6:00 a.m. (percent)
	High (Fahrenheit)	Low (Fahrenheit)		
Cleveland	65	53	?	88
Dallas	75	50	1017	65
Los Angeles	68	50	1007	58
Miami	80	64	1016	60
Minneapolis	54	39	1007	65
Seattle	64	57	998	100



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9. You live in Ohio and want to paint the outside of your house. You need fair weather for at least two days for two coats of paint to dry completely.

According to the weather maps, on which day should you start painting?

- A. Saturday, the 14th of the month
- B. Sunday, the 15th of the month
- C. Monday, the 16th of the month
- D. Thursday, the 19th of the month