

Name: _____ Date: _____ Period: _____

Chemical and Physical Changes Caused by Heat Lab

Grading Rubric				Teacher remarks
Safety violations: -5 points	Question	5		
	Background Information	25		
	Prediction / Hypothesis	10		
	Safety precautions	15		
	Data table	20		
Procedure violations: -5 points	Conclusion	25		
	Errors & New Questions	10		
	Point deductions			
	Final grade	100		

Question: _____

Background Information:

Chemical Reaction- _____

Phase Change- _____

Reactant- _____

Product- _____

Heat's affect on substances

- Substances react differently to heat, according to their _____ and _____.
- Substances that are _____ or _____ may _____.
- Substances may _____, or _____ and _____ depending on their _____.

Chemical Changes

In some cases, heating a substance can cause it to undergo a _____ change, and a new substance (or more) will be formed from the old one.

_____ (when it catches fire), it reacts with the _____ in the air to produce _____.

Physical Changes

In other cases, substances may have a high ignition point and will not catch fire, but its _____ will begin moving faster, causing it to _____, or increase in _____.

Example: heating a steamer bag of vegetables will cause the _____ in the veggies to _____ (change from a liquid to a gas) and the gas will _____ as far as the bag will allow.

Example: If _____ is heated above it's _____

Prediction: _____

Safety Precautions







Procedures:

1. Place ONE scoop of the first substance into a test tube.
2. Examine the substance and record your observations in the correct box of your data table.
3. Attach the test tube clamp near the mouth of the test tube.
4. Heat the bottom of the test tube for 1-2 minutes. Keep the test tube moving to evenly heat the substance, and remember not to point it at

anyone.

- Record any changes that occur to the substance while it is being heated in the appropriate box of your data table.
- Place the hot test tube into a 250 ml beaker, and allow it to cool for 1-2 minutes. Examine the substance again, and record your observations in the appropriate box of your data table.
- Repeat these procedures with the remaining substances, using a clean test tube.

Data & Observations:

Substance	Appearance before heating	Change observed during heating	Appearance after cooling	Type of change
Sucrose				
Ammonium Chloride				
Copper (II) Carbonate				
Copper (II) Sulphate				
Sodium Chloride				
Zinc Oxide				
Sulfur				

Conclusion:

- Which Substance (if any) showed no change when heated?

2. Which of these substances produced new substances when heated?
3. How can heating a substance help you identify it?

4. Which of the substances behave similarly while heating? Explain.

5. Which substances looked different after being heated?

6. Which substances still looked different after cooling? Explain what you think this means.

7. Did any of the substances not react to the heat? Which one(s)?

8. Why do you think it didn't do anything?

Errors & New Questions:

Systemic Errors: _____

Random Errors: _____

New Questions: _____
