Lesson 9: What chemical ratios can we use to produce the most heat?

Question - What ratio of calcium chloride ($CaCl_2$) and water (H_2O) will produce the most heat?

Hypothesis - The hypothesis is written as a statement and provides support for the hypothesis.
If….then….because

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Variables - Define the independent, dependent, and controlled variables of the experiment.

| Independent: |
| Dependent: |
| Controlled: |

Materials
- Goggles
- Thermometer
- Calcium chloride ($CaCl_2$) (10g per trial)
- Water (H_2O)
- Beaker
- Graduated cylinder
- Metric scale

Procedure:
1. Use a sheet of filter paper to measure 10g of Calcium Chloride ($CaCl_2$), pour into a beaker.
2. Place the thermometer into the beaker.
3. Measure the amount of water needed
4. Pour water into the beaker.
5. Gently swirl the beaker until the calcium chloride ($CaCl_2$) is dissolved.
6. Record the highest temperature.

Data - Record your group data on the class data table.

Trial Number	CaCl$_2$ (g)	(H$_2$O) (g)	Highest Temp (℃)	Ratio
	10g			
	10g			
	10g			
	10g			
	10g			
	10g			
	10g			
	10g			

On a separate sheet of paper, create a bar graph from the class data table.

Conclusion - Using the class data as evidence, **on a separate sheet of paper**, write a CER answering the question, "What ratio of chemicals will produce the most heat?"