

Study Guide: Explaining Another Phenomenon

Name: _____ Hour: _____

You watched the [video](#) of the elephant's toothpaste, which was the result of combining three different ingredients together: potassium iodide (a substance), a mixture of hydrogen peroxide and water, and soap (a mixture).

To help us figure out what is going on, here are the results from tests of different combinations of the three ingredients.

Combination	Ingredients combined	Bubbles?
A	hydrogen peroxide + soap	No
B	potassium iodide + soap	No
C	hydrogen peroxide + potassium iodide	Yes, lots!

Since combination C was the only one that produced bubbles, we will analyze a video showing what else happens when those two ingredients are combined.

1. Watch this [second video](#) and record your observations below. (7 points)

Checklist:

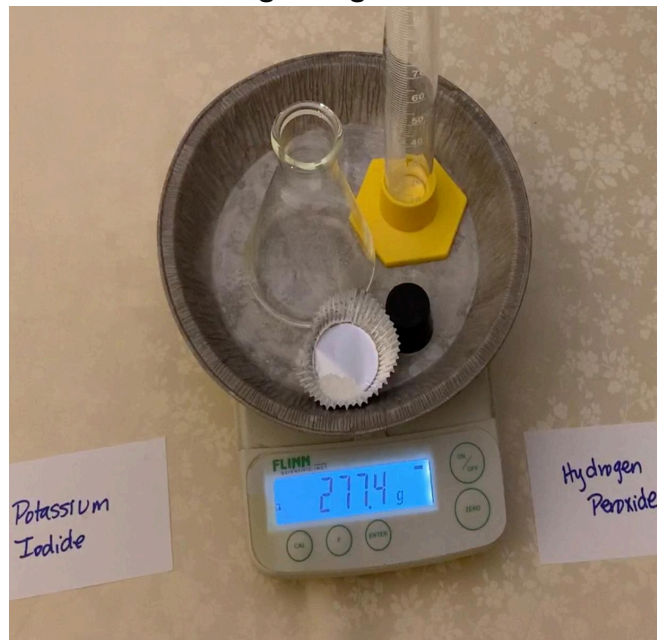
Discuss the following that occurs throughout the experiment:

- ☐ Color of each ingredient before and after test (3)
- ☐ Reaction (3)
- ☐ Mass (1)

Observations:

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Mass of the system before
mixing the ingredients:



Mass of the system after
mixing the ingredients:



2. Use these two resources: a) your observations and b) your key model ideas to make an argument to answer this question:

- After combining these ingredients what could have caused the mass of the system to change? (4 points)

Checklist:

Explain the following items and how each could have caused the mass of the system to change:

- ☐ Mass
- ☐ Open vs. closed system
- ☐ What is leaving/entering the flask
- ☐ Bubbles

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3. Use these three resources: a) your observations, b) your key model ideas, and c) the data table in your notebook of *Some Common Gases*, to make an argument to answer this question: (3 points)

- What gases could not have been produced in this process?

Checklist:

- ☐ State the claim
- ☐ Have and explain evidence to support your claim. (Use the experiment that was viewed)
- ☐ What is the reasoning as to why and how your evidence supports your claim

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4. Another student claims that the gas that was produced in this process was methane. If you wanted to collect additional evidence to either help support or refute this claim you would need additional data. Use the data table in your notebook of *Some Common Gases*, to make an argument to answer this question:

- Describe one additional test you could do that would help you collect additional data. How could the results help you either support or refute the student's claim? (3 points)

Checklist:

- ☐ Identify and explain the test to be done
- ☐ Explain and identify the data that would be collected
- ☐ Explain what the results would mean depending on what results you could get

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5. Define each of the following terms:

- Density -

- Flammability -

- Property -

- Chemical Reaction -

- Mass -

- Substance -

- Mixture -

- Soluble -

- Insoluble -
