



Name: _____

Diffusion – It's Molecular Confusion

Kinetic Molecular Theory states:

- 1.
- 2.
- 3.
- 4.

Today, in the course of carrying out a **Controlled Experiment** we will look at a phenomenon that can be explained using **Kinetic Molecular Theory**.



Have you ever smelled your favourite dinner as soon as you walked into the house? Or a $\frac{1}{2}$ a can of Axe sprayed in the hallway at school? You can thank **DIFFUSION** for both. The molecules of your favourite food and your least favourite deodorant have spread to fill up the available space.



DIFFUSION is



In a **CONTROLLED EXPERIMENT** you are going to answer the question:
Does temperature affect the rate at which molecules diffuse?

More specifically you are answering the question:

WILL A DROP OF FOOD COLOURING DIFFUSE FASTER IN HOT WATER OR IN COLD WATER?

CRITERIA

Partners

You will be carrying out this experiment with partners. Everyone will hand in a write-up with **ONE** name at the top.

Name Date Title

Displayed at beginning of Write-Up. STB in effect.

Purpose

The purpose of your experiment is clearly stated and includes the **INDEPENDENT VARIABLE** that you will be testing.

Hypothesis

Your Hypothesis is a testable statement, not a question.

Materials

- An unordered/bulleted list
- Includes ALL materials needed to carry out experiment.

Procedure

- An ordered/numbered list
- Clearly states ALL steps needed to carry out experiment
- Can be replicated by any scientist in the world
- Includes at least one DIAGRAM illustrating how you set up your experiment. All conventions for a Scientific Diagram apply.

Data/Results/Observations

- Include both **QUANTITATIVE DATA** and **QUALITATIVE OBSERVATIONS(1-2)**
- Include a TABLE of your **QUANTITATIVE** results
- Include a **GRAPH** of your results. All conventions for a **GRAPH** apply
- Include a **STATEMENT OF FINDINGS** summing up your **QUANTITATIVE DATA**.

Conclusion

- 2 sentences
- 1st sentence is 4 words
 - My hypothesis was correct.
 - My hypothesis was incorrect.
 - My results are inconclusive.
- 2nd sentence explains first sentence with relation to hypothesis

Question

- After the Conclusion of this experiment answer the question "How can **KINETIC MOLECULAR THEORY** explain the difference in **DIFFUSION** times in hot and cold water?"

EVALUATION

Students will receive 30 Marks for completing this experiment. The STB is in effect so students may receive a mark of 31 on this assignment.

Students will lose marks for the following:

Description	Demerits
Partners: More than 1 name on assignment	15
Major Missing: Including a missing section or part thereof; table; diagram; question, etc, title.	5 each
Minor Missing: Including missing material; diagram convention; Name; date; etc.	2 each
Content Errors: Including unclear descriptions of procedure; errors in table, diagram or graph; incorrectly stated purpose, hypothesis, statement of fact, conclusion; etc.	2 each
Out of Order *Please note: The only part of this assignment that may be out of the order outlined in the criteria is the GRAPH. This may be appended to the back of the Experimental Write-up IF IT IS DONE ON ITS OWN SHEET OF GRAPH PAPER.	5
Minor Care and Attention: Some part of Write-up is illegible; table, or diagram not neat; etc.	2 each
Layout Name and Date above title; Title Stands out; Headings: Purpose, Hypothesis, Materials, Procedure, Data/ Results/Observations, Conclusion underlined and aligned left	½ Each
Major Care and Attention: Write-up displays a general lack of concern for neatness or for completing an assignment properly for handing in; It's a MESS	15
Extra or Incorrect Staples	1 each
Late	10% per day

DUE DATE