

Writing an Explanation

Example #1

	Mass	Density	Melting Point	Color
Liquid 1	38 g	0.93 g/cm ³	-98°C	no color
Liquid 2	38 g	0.79 g/cm ³	26°C	no color
Liquid 3	21 g	13.6 g/cm ³	-39°C	silver
Liquid 4	16 g	0.93 g/cm ³	-98°C	no color

Are any of the liquids the same substance?

Write a **scientific explanation** that answers the question:

Writing an Explanation

Example #2

Carlos has two liquids, butanic acid and butanol. He determines a number of measurements for the two liquids and then mixes them together. After heating and stirring the liquids, they form two separate layers, layer A and layer B. Carlos uses a dropper pipette to take a sample from each layer, and he determines a number of measurements for each (all measurements are displayed on the table below).

	Volume	Mass	Density	Solubility in Water	Melting Point
Butanic acid	10.18 cm ³	9.78 g	0.96 g/cm ³	Yes	-7.9° C
Butanol	10.15 cm ³	8.22 g	0.81 g/cm ³	Yes	-89.5° C
Layer A	2 cm ³	1.74 g	0.87 g/cm ³	No	-91.5° C
Layer B	2 cm ³	2.0 g	1.0 g/cm ³	Yes	0° C

Did a chemical reaction occur when Carlos mixed butanic acid and butanol?

Use the template to construct a **scientific explanation** that answers the question.

Developing a Scientific Explanation Tool

What is the question that you want to answer?

What did you do to collect evidence that will be used to support your explanations:

Support for your explanation

Claim that is based on the evidence	Evidence (observations)

Scientific Explanation = Claim + Evidence + Science Reasoning

My claim is _____ because _____ (evidence and science reasoning)

(Write a paragraph that includes all three parts to a scientific explanation)