STEM NOTEBOOK

**Chemical Interactions**

Investigation 1: Mystery Substance

[](http://etc.usf.edu/clipart/41200/41272/bag_41272_lg.gif)

BIG QUESTION: How can careful observations and reasoning skills be used to identify a mystery substance?

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| What Do You See? |
| What Do You Think? |
| What Do You Think Now? |

OBSERVATIONS ORGANIZER

*Observations of: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

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| ***Think of properties you can see*** *such as size, shape, color, lines, texture, pattern, behavior…* | I observed… |
| ***Think of the other senses*** *of smell, sound, touch, and perhaps taste* | I noticed… |
| *Connect it with something that you already know.* | It reminds me of… |
| *Add more detail to support your statement.* | This is so because… |
| *Be curious and ask questions you could investigate.* | I am curious about…  I wonder what would happen if… |

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| FOCUS QUESTION: How can water help us to identify an unknown substance? | |
| PLAN | DATA |
| Explanation: | |

WORD BANK/CONTENT

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| FOCUS QUESTION: What information about a material can I obtain from labels and careful observations? |
| OBSERVATIONS:   |  |  |  |  | | --- | --- | --- | --- | | Chemical Name | Chemical Formula | Common Name | Observations | |  |  |  |  | |  |  |  |  | |  |  |  |  | |  |  |  |  | |  |  |  |  | |  |  |  |  | |
| EXPLANATIONS:  What patterns do you see? |

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| FOCUS QUESTION: What observations can be made when materials are combined? |
| OBSERVATIONS:   |  |  |  |  | | --- | --- | --- | --- | | Well # | Substance 1 | Substance 2 | Results | | 1 |  |  |  | | 2 |  |  |  | | 3 |  |  |  | | 4 |  |  |  | | 5 |  |  |  | | 6 |  |  |  | | 7 |  |  |  | | 8 |  |  |  | | 9 |  |  |  | | 10 |  |  |  | | 11 |  |  |  | | 12 |  |  |  | |
| EXPLANATION: |

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| FOCUS QUESTION: How can our previous observations and our reasoning skills be used to identify the mystery substance? |
| OBSERVATIONS:   |  |  |  |  | | --- | --- | --- | --- | | Well # |  |  |  | | 1 |  |  |  | | 2 |  |  |  | | 3 |  |  |  | | 4 |  |  |  | | 5 |  |  |  | |
| SUMMARY OF PROCESS: |
| CLAIM: |
| EVIDENCE: |

WORD BANK/CONTENT

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| BIG QUESTION: | |
| CLAIM  I claim  I claim  I claim | EVIDENCE  I know this because  I know this because  I know this because |