Lava Lamps Investigation Questions

Name : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Making connections:**

* Provide examples of convection currents in the natural environment.
* You might have seen the word “homogenized” on a carton of milk or on a jar of peanut butter. What does this mean? Why is this done by food manufacturers?

**Connecting Particle Theory and Mixtures:**

 Create a T-chart, to compare and contrast heterogeneous and homogeneous mixtures

|  |  |  |
| --- | --- | --- |
| **Only Heterogeneous Mixtures** | **Both Mixtures** | **Only Homogeneous Mixtures** |
|  |  |  |

**Big Ideas Questions:**

* What is kinetic energy? How does kinetic energy change matter?
* How does the Kinetic Molecular Theory help explain changes in the density of matter?
* How does the Kinetic Molecular Theory explain what happens to water as it changes states from solid ice to liquid water and then to water vapour or steam?
* How are convection currents formed in a lava lamp?
* How are convection currents formed under the Earth’s crust?

Taking it to the next step:

* How would you market a lava lamp to kids so that it was both cool and educational? Think about what message would you give about the product so that kids would want to buy one.

**Draw a one-page advertisement** to demonstrate your ideas. Send Mrs. Comte a picture through teams once it is complete!

Assessment Rubric

|  |
| --- |
| Making connections |
| /15 |
| Connecting particle theory with T chart |
| /15 |
| Big Ideas questions |
| /50 |
| Next step: Market to kids |
| 20 |
| Total /100 |
|  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Excellent 4 |  | Good 3 |  | Fair 2 |  | Poor 1 |  |
| Making connections/15 | Solid understanding of convection & mixtures in real life context (one example for each explained) |  | Some understanding of convection & mixtures in real life context (one example for each, with some explanation) |  | Basic understanding of convection & mixtures in real life context (little / no explanation) |  | Limited understanding of convection & mixtures in real life context (little to no explanation, or missing examples) |  |
|  |  |  |  |  |  |  |  |  |
| Connecting particle theory with T chart/15 | Completed T chart with at least 2 points in each column |  | Completed T chart with 2 points in some columns |  | Completed T chart with one point in each column |  | Incomplete T chart with one or more column empty |  |
|  |  |  |  |  |  |  |  |  |
| Big Ideas questions/50 | Answered all questions correctly / completely |  |  Answered most questions correctly / completely |  | Answered half the questions correcty / completely |  | Answered few questions correctly / completely |  |
|  |  |  |  |  |  |  |  |  |
| Next step: Market to kids/20 | Demonstrated excellent critical thinking and understanding of science behind the lava lamp to create ad |  | Demonstrated some critical thinking and understanding of science behind the lava lamp to create ad |  | Some components missing; demonstrated either critical thinking or understanding of science behind the lava lamp to create ad |  | Incomplete; demonstrated limited critical thinking and understanding of science behind the lava lamp to create ad  |  |
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