**Is a Nickel Coin Made of Nickel?**

This activity is going to serve as your unit summative for Density. We will be using the SHOE model to complete it.

**Summary:**

What you are going to be doing (Purpose)–

What I need to do the activity (materials) –

Diagram of what I am going to do (draw it) –

**Hypothesis:**

My independent variable is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

My dependent variable is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Make your prediction. Please include the what and the why

Nickel Prediction (predict what the Nickel is made out of)

Hypothesis 1:

I predict that the nickel is …..

Penny Prediction (predict what the two pennies are made of)

Hypothesis 2:

I predict that the “old penny” is….

Hypothesis 3:

I predict that the “new penny” is….

**Observation:**

Quantitative Observations

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Mass (use electronic scale) | Volume 1 | Volume 2 | Volume 3 | Average Volume | Density  D = m/v |
| Nickels |  |  |  |  |  |  |
| “Old Penny” |  |  |  |  |  |  |
| “New Penny” |  |  |  |  |  |  |

Qualitative Observations

|  |  |
| --- | --- |
| Coin | Observation |
| Nickels |  |
| “Old Penny” |  |
| “New Penny” |  |

**Explanation:**

You will need to say if your hypotheses were correct or not. Use the data you have gathered and compare it to the density chart provided in the lab to draw your conclusions. Please be specific and use your data in your answers.

1. Was your hypothesis 1 correct? How do you know?
2. Was your hypothesis 2 correct? How do you know?
3. Was your hypothesis 3 correct? How do you know?
4. Does the density of an object depend on the volume of the object? For example: If two objects are made out of the same type of material, will the larger object have a greater density?
5. Does the density of an object depend on the mass of the object? For example: If two objects are made out of the same type of material, will the larger object have a greater density?

|  |  |  |  |
| --- | --- | --- | --- |
| Level 4 | Level 3 | Level 2 | Level 1 |
| All sections are completed with care  IV, DV and CV were all described in detail  Data was properly recorded. Both  quantitative and qualitative data present  Students provided detail and personal reflection in their explanation | All sections are complete  IV, DV and CV were all described  Data was properly recorded. Only quantitative data present  Students provided some detail and personal reflection in their explanation | Most sections are complete  IV, DV and CV were mostly described  Some data was properly recorded. Only quantitative data present  Students provided limited detail in their reflection and explanation | An attempt was made to complete the experiment  IV, DV were described  Some data was properly recorded. Only quantitative data present  Students provided insufficient detail in their reflection and explanation |