Introduction to Matter

Part 1: Properties of Matter

1. What is **matter**?
2. Give an example of something that is not matter.
3. Definition of a **physical property** –
4. List some physical properties:

|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

1. Density =
2. Density units =
3. Definition of **density** –
4. Why do ice cubes float in water?

**Density of Pennies**

Materials:

Procedures:

Data for Pre-1982 Pennies

|  |  |  |
| --- | --- | --- |
| **Number of Pennies** | **Mass (grams)** | **Volume (milliliters)** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Data for Post-1982 Pennies

|  |  |  |
| --- | --- | --- |
| **Number of Pennies** | **Mass (grams)** | **Volume (milliliters)** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Analysis

1. Graph the data for the pre-1982 pennies. Put mass on the y-axis and volume on the x- axis. Draw a best-fit line that runs through as many of the points as possible. Do the same thing for the post-1982 pennies. Make the best-fit line a different color.
2. Determine the slope of both lines and write them on the graph. Use the equation below and don’t forget units.

 Slope = $\frac{change in y}{change in x}$

 **The slopes will equal the densities of your pre-1982 and post-1982 pennies.**

