**Petri Dish Atoms**

**Purpose:** To examine subatomic particles and determine atomic number and atomic mass

**Materials:** Journal with Data Table

Petri Dish Atoms

**Procedure:**

1. Glue Petri Dish Data Table in you journal. Data Table should be in the center of the journal page. You will add notes later.
2. Title the page: Petri Dish Atoms. Enter this activity in your Table of Contents
3. You will work in partners today. Your teacher will determine your partner.
4. Fill in the first 6 columns of your data table by examining the petri dishes placed around the room.
5. After completing dishes I-VII, ask your teacher to check your work.
6. Dishes VIII and IX are challenge atoms
7. After columns 1-6 are completed, use the Periodic Table to determine the Symbol and Element Name.
8. You have 25 minutes to complete this activity.

**Pink = Protons**

**White= Neutrons**

**Small = Electrons**

Bead Key

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| DISH | **Protons** | **Neutrons** | **Electrons** | **Atomic Mass** | **Atomic Number** | **Charge** | **Symbol** | **Element Name** |
| **I** |  |  |  |  |  |  |  |  |
| **II** |  |  |  |  |  |  |  |  |
| **III** |  |  |  |  |  |  |  |  |
| **IV** |  |  |  |  |  |  |  |  |
| **V** |  |  |  |  |  |  |  |  |
| **VI** |  |  |  |  |  |  |  |  |
| **VII** |  |  |  |  |  |  |  |  |
| **VIII** |  |  |  |  |  |  |  |  |
| **IX** |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| DISH | **Protons** | **Neutrons** | **Electrons** | **Atomic Mass** | **Atomic Number** | **Charge** | **Symbol** | **Element Name** |
| **I** |  |  |  |  |  |  |  |  |
| **II** |  |  |  |  |  |  |  |  |
| **III** |  |  |  |  |  |  |  |  |
| **IV** |  |  |  |  |  |  |  |  |
| **V** |  |  |  |  |  |  |  |  |
| **VI** |  |  |  |  |  |  |  |  |
| **VII** |  |  |  |  |  |  |  |  |
| **VIII** |  |  |  |  |  |  |  |  |
| **IX** |  |  |  |  |  |  |  |  |

**Atomic Number = # of Protons**

the Element’s Identity

Protons never change for an element

Use the Atomic Number to find the symbol and the element name on the periodic table.

Symbols should be written:

first letter upper case, second letter lower case

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| DISH | **Protons** | **Neutrons** | **Electrons** | **Atomic Mass** | **Atomic Number** | **Charge** | **Symbol** | **Element Name** |
| **I** |  |  |  |  |  |  |  |  |
| **II** |  |  |  |  |  |  |  |  |
| **III** |  |  |  |  |  |  |  |  |
| **IV** |  |  |  |  |  |  |  |  |
| **V** |  |  |  |  |  |  |  |  |
| **VI** |  |  |  |  |  |  |  |  |
| **VII** |  |  |  |  |  |  |  |  |
| **VIII** |  |  |  |  |  |  |  |  |
| **IX** |  |  |  |  |  |  |  |  |

**Charge**

If the protons equal the electrons, the charges cancel and the overall charge of the atom is 0

If there are more electrons, the overall charge is negative –

If there are more protons, the overall charge is positive +

When protons ≠ electrons it is called an **ion.**

**Atomic Mass = P+N**

Found in nucleus

Can also be found on the periodic table. Should be rounded to the nearest whole number as the value on the periodic table is an average of all known isotopes

Pink = Protons

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Small = Electrons

KEY with Notes

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|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Protons** | **Neutrons** | **Electrons** | **Atomic Mass** | **Atomic Number** | **Charge** | **Symbol** | **Element Name** |
| **I** | 6 | 6 | 6 | 12 | 6 | 0 | C | Carbon |
| **II** | 11 | 12 | 11 | 23 | 11 | 0 | Na | Sodium |
| **III** | 8 | 8 | 8 | 16 | 8 | 0 | O | Oxygen |
| **IV** | 4 | 5 | 4 | 9 | 4 | 0 | Be | Beryllium |
| **V** | 10 | 10 | 10 | 20 | 10 | 0 | Ne | Neon |
| **VI** | 3 | 4 | 3 | 7 | 3 | 0 | Li | Lithium |
| **VII** | 13 | 14 | 13 | 27 | 13 | 0 | Al | Aluminum |
| **VIII** | 9 | 10 | 8 | 19 | 9 | +1 | F+1 | Fluorine Ion |
| **IX** | 12 | 13 | 12 | 25 | 12 | 0 | 25Mg | Magnesium Isotope |

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