

MODEL OF AN ATOM

OBJECTIVE: Mimic the actions of scientists in discovering the structure of the atom. Make indirect observations to determine the identity of unknown objects.

PROCEDURE:

1. Obtain a "mystery atom" and make observations in three (3) different situations using the instructions below. NEVER use your eyes to observe the items in your mystery atom!
2. LIST the observations down the page, not across the line. Be very, very careful to list the observations under the appropriate column. You will receive no credit for observation in the wrong column.

OBSERVATIONS:

Step 1: RATTLE IN CAN – *Rattle the items inside your mystery atom and make observations to determine their properties/identity.*

- **10** total observations, at least ONE must be quantitative

| | QUALITATIVE | QUANTITATIVE |
|----|-------------|--------------|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |

DRAW: Based on your observations, draw the objects.

Step 2: FEEL THROUGH SOCK – Keeping the sock closed, look away and gently pour the items from the can into the top part of the sock so that you can feel the items through the sock. DO NOT LOOK AT THE ITEMS OR SOCK. Use only what you feel to make observations to determine their properties/identity.

- 15 total observations, at least THREE must be quantitative

| | QUALITATIVE | QUANTITATIVE |
|----|-------------|--------------|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |

DRAW: Based on your observations, draw the objects and, if possible, identify them.

Step 3: FEEL INSIDE CAN - *Open the end of the sock and INSERT THE HAND YOU DO NOT WRITE WITH into the sock to feel the items inside your atom. Make observations to determine their properties/identity.*

- **20** total observations, at least FIVE must be quantitative

| | QUALITATIVE | QUANTITATIVE |
|----|-------------|--------------|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |
| 16 | | |
| 17 | | |
| 18 | | |
| 19 | | |
| 20 | | |

