Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_

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| --- | --- | --- | --- | --- |
|  | **Scientist** |  |  | **Experiment** |
| \_\_\_\_\_ 1 | Bohr |  | A. | Cathode Ray |
| \_\_\_\_\_ 2 | Thompson |  | B. | Gold foil |
| \_\_\_\_\_ 3 | Rutherford |  | C. | Hydrogen’s line spectrum |

|  |  |  |  |  |
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|  | **experiment** |  |  | **Evidence from experiment** |
| \_\_\_\_\_ 4 | Cathode ray |  | A. | Positive particles were deflected by something positive  |
| \_\_\_\_\_ 5 | Gold foil |  | B. | Atoms emit only lines of color when energized which means  |
| \_\_\_\_\_ 6 | Hydrogen’s line spectrum |  | C. | A ray is attracted to a positive plate  |
|  |  |  |  |  |

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|  | **model** |  |  | **Conclusion from experiment** |
| \_\_\_\_\_ 7 | Nuclear |  | A. | Electrons only exist at certain distances from the nucleus |
| \_\_\_\_\_ 8 | Plum Pudding |  | B. | Atoms remain intact & are not destroyed in chemical reactions  |
| \_\_\_\_\_ 9 | Planetary |  | C. | There must be electrical charges associated with matter |
| \_\_\_\_\_ 10 | Billiard Ball |  | D. | All of the positive matter in an atom must be small & centrally located |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **model** |  |  | **experiment** |
| \_\_\_\_\_ 11 | Nuclear |  | A. | Cathode Ray |
| \_\_\_\_\_ 12 | Plum Pudding |  | B. | Gold foil |
| \_\_\_\_\_ 13 | Planetary |  | C. | Hydrogen’s line spectrum |
|  |  |  |  |  |

**List the 4 models of the atom in chronological order. Then describe the model & what distinguishes it from the previous model**

 **Model Description/distinction**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_