

PhET Simulation: Rutherford Scattering

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Pre-Activity Questions:

How do we know that atoms exist?

How do we know the different parts of the atom if we cannot see them?

Go to the following website:

https://phet.colorado.edu/sims/html/rutherford-scattering/latest/rutherford-scattering_en.html

Answer the following questions as you interact with the simulation.

1. Imagine you are Dr. Rutherford and you are watching this experiment for the first time. What are your initial thoughts on what you see?
2. Use the features in the simulation to help prove your thoughts. Explain what you manipulated or changed in the table below.

Variable changed	Observation	Possible explanation of the result

3. What do you think an alpha particle is? Explain.

4. Imagine you are Dr. Rutherford again. What conclusions would you make about what you saw after changing the variables? What additional questions do you still have?

5. Brainstorm some ideas of things that exist that you cannot see. Choose one and devise an experiment that could prove its existence.