

Rutherford Scattering

Spoken Tutorial Project

<http://spoken-tutorial.org>

National Mission on Education through ICT

<http://sakshat.ac.in>

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Learning Objectives



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- ▶ **Demonstrate Rutherford Scattering, PhET Simulation**



System Requirement



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- ▶ **Ubuntu Linux OS v 14.04**



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- ▶ **Java v 1.7.0**



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- ▶ **Ubuntu Linux OS v 14.04**
- ▶ **Java v 1.7.0**
- ▶ **Firefox Web Browser v 53.02.2**



Pre-requisites



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- ▶ **Learner should be familiar with topics in high school science**



Learning Goals



Learning Goals

- ▶ About Plum pudding and Rutherford atomic models



Learning Goals

- ▶ About Plum pudding and Rutherford atomic models
- ▶ To visualise the Rutherford gold foil experiment



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- ▶ About Plum pudding and Rutherford atomic models
- ▶ To visualise the Rutherford gold foil experiment
- ▶ About behaviour of alpha particles



Learning Goals

- ▶ About Plum pudding and Rutherford atomic models
- ▶ To visualise the Rutherford gold foil experiment
- ▶ About behaviour of alpha particles
- ▶ To identify the factors that affect the deflection of alpha particles



PhET Simulation-Link



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<https://phet.colorado.edu>



Limitations of Plum Pudding Model



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Plum Pudding model of an atom failed to explain,



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Plum Pudding model of an atom failed to explain,

- ▶ **The stability of an atom**



Limitations of Plum Pudding Model

Plum Pudding model of an atom failed to explain,

- ▶ The stability of an atom
- ▶ **Position of the nucleus in an atom**



Plum Pudding Model



Plum Pudding Model

- ▶ Plum Pudding model could not account for the atomic structure



Plum Pudding Model

- ▶ **Plum Pudding model** could not account for the atomic structure
- ▶ It provided the base, for the development of other atomic structure models



Assignment



Assignment

- ▶ Try various combinations of protons and neutrons and check the deflections



Assignment

- ▶ Try various combinations of protons and neutrons and check the deflections
- ▶ Give an explanation for the change in the behaviour of the alpha particles



Summary



Summary

- ▶ How to use Rutherford Scattering, PhET simulation



Summary



Summary

- ▶ About Plum pudding and Rutherford atomic models
- ▶ To visualise the Rutherford gold foil experiment
- ▶ About behaviour of alpha particles
- ▶ To identify the factors that, affect the deflection of alpha particles



About the Spoken Tutorial Project

- ▶ Watch the video available at http://spoken-tutorial.org/What_is_a_Spoken_Tutorial
- ▶ It summarises the Spoken Tutorial project



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- ▶ If you do not have good bandwidth, you can download and watch it



Spoken Tutorial Workshops

The Spoken Tutorial Project Team

- ▶ Conducts workshops using spoken tutorials
- ▶ Gives certificates to those who pass an online test
- ▶ For more details, please write to contact@spoken-tutorial.org



Forum for specific questions

- ▶ Do you have questions in **THIS Spoken Tutorial?**
- ▶ Please visit
<http://forums.spoken-tutorial.org>
- ▶ Choose the minute and second where you have the question
- ▶ Explain your question briefly
- ▶ Someone from our team will answer them



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- ▶ It is supported by the National Mission on Education through ICT, MHRD, Government of India
- ▶ More information on this Mission is available at

<http://spoken-tutorial.org/NMEICT-Intro>

