



Grade 8

PROPERTIES OF SUBATOMIC PARTICLES AND HISTORY

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Introduction

This presentation will discuss the scientific discoveries and theories from the pre-Socratic Era to the early 20th century that shaped our understanding of the structure of the atom. It will focus on the work of scientists like Democritus, Dalton, and Rutherford, among others.



Democritus' Theory of Atoms

Democritus, a Greek philosopher from the pre-Socratic era, was the first to propose the theory of atoms. His theory stated that all matter is made up of indivisible units he called atoms. Dalton, an English scientist, built on Democritus's theory and developed the first modern atomic theory. Rutherford, a New Zealand scientist, conducted experiments that led to the discovery of the nuclear atom. The theories of these three scientists have shaped our understanding of the structure of the atom.



John Dalton

John Dalton was an English scientist who developed the first modern atomic theory. Dalton's theory proposed that all matter is made up of indivisible units he called atoms. This theory helped explain the physical and chemical properties of matter. Dalton's work laid the foundation for the work of future scientists, such as Rutherford and Bohr, who would further our understanding of the atom.



Thompson's Atomic Model

In 1897, J.J. Thomson discovered the electron, which he proposed was a component of all atoms. Thomson's atomic model proposed that atoms were composed of electrons embedded in a matrix of positive charge. This model helped explain the electric and magnetic properties of atoms. Thomson's work laid the foundation for the work of future scientists, such as Rutherford and Bohr, who would further our understanding of the atom.



Bohr's Atomic Model

Bohr's atomic model proposed that atoms were composed of electrons orbiting the nucleus. This model helped explain the atomic structure and the behavior of atoms. Bohr's work improved our understanding of the atom and paved the way for the work of future scientists.



Schrodinger's Atomic Model

In 1913, Schrödinger proposed his now famous wave equation, which described the behavior of electrons in atoms. This model improved our understanding of the atom and led to the development of quantum mechanics. Schrödinger's work improved our understanding of the atom and paved the way for the work of future scientists.

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Rutherford's Atomic Model

In 1911, Rutherford proposed his now famous model of the atom. This model described the atom as a small, dense nucleus with electrons orbiting around it. Rutherford's work improved our understanding of the atom and paved the way for the work of future scientists.



Conclusion

Rutherford's work on the atom was groundbreaking and led to a better understanding of the atom and its structure. His work paved the way for the work of future scientists, who would build on his work to develop more advanced models of the atom.



The Surprising Properties of Subatomic Particles

Introduction

Subatomic particles are the very essence of matter, but they have some surprising properties that remain to be explored in this presentation. We will discover these exciting unexplained physical phenomena and understand how they can be utilised.



Properties of Electrons

Electrons are fundamental subatomic particles that have a wide range of properties. They are electrically charged, have a spin, and can be found in different orbital states. Electrons are also relatively light, which makes them easy to work with in experiments.



Properties of Neutrons

Neutrons are subatomic particles that have some interesting properties. They are electrically neutral, have a spin, and are found in the nucleus of atoms. Neutrons are also relatively heavy, which makes them difficult to work with in experiments.



Properties of Protons

Protons are subatomic particles that also have interesting properties. They are positively charged, have a spin, and are found in the nucleus of atoms. Protons are also relatively heavy, which makes them difficult to work with in experiments.



Effect of Temperature on Particles

The behavior of subatomic particles can be affected by temperature. This is due to the fact that particles are in constant motion and their kinetic energy increases with temperature. As a result, high temperatures can cause particles to behave erratically or even break apart. This can be a problem in experiments that require precise measurements.



Conclusion

Subatomic particles are fascinating and often surprising objects. Their properties can be affected by a variety of factors, such as temperature, electric fields, and magnetic fields. In some cases, these particles can even be used to create new materials with unique properties.

