Bending Light

Talk to a Teacher
http://spoken-tutorial.org
National Mission on Education through ICT
http://sakshat.ac.in

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Learning Objectives

We will learn,

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- **How to use Bending Light, interactive PhET simulation**

Pre-requisites

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- **Learners should be familiar with topics in high school science**

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**

We will learn,

Learning Goals

We will learn,

- **Reflection of light**

Learning Goals

We will learn,

- **Reflection of light**
- **Refraction of light**

Learning Goals

We will learn,

- **Reflection of light**
- **Refraction of light**
- **Dispersion of light**

Learning Goals

We will learn,

- **Reflection of light**
- **Refraction of light**
- **Dispersion of light**
- **How reflection and refraction varies with different material media**

We will also learn to,

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- **Use optical instruments like prism and lens**

Learning Goals

We will also learn to,

- **Use optical instruments like prism and lens**
- **Measure intensity of light**

Learning Goals

We will also learn to,

- **Use optical instruments like prism and lens**
- **Measure intensity of light**
- **Measure velocity of light**

Learning Goals

We will also learn to,

- **Use optical instruments like prism and lens**
- **Measure intensity of light**
- **Measure velocity of light**
- **View different wave patterns**

Reflection of Light

- **Reflection is bouncing back of a light ray after hitting any surface**

Reflection of Light

- **Reflection** is bouncing back of a light ray after hitting any surface
- **Ex: A mirror reflects the image of the observer**

Refraction of Light

- **Refraction** is bending of a light ray, when it enters a medium

Refraction of Light

- **Refraction** is bending of a light ray, when it enters a medium
- Light changes its speed & angle of propagation as it enters a different medium

Refraction of Light

- **Refraction** is bending of a light ray, when it enters a medium
- **Light changes its speed & angle of propagation as it enters a different medium**
- **Ex: Bending image of a Pencil in a beaker of water**

Dispersion of Light

- **Dispersion** is a process of splitting of white light into seven colours

Dispersion of Light

- **Dispersion** is a process of splitting of white light into seven colours
- **Ex: Formation of a Rainbow on a cloudy day**

http://phet.colorado.edu

As an assignment,

1. **Change prism to glass slabs and observe the bending of light**

Assignment

As an assignment,

1. **Use various lenses and observe the dispersion**
2. **Change various Environments and observe the dispersion**

As an assignment,

1. **Change material medium and notice the change in speed and wave pattern**

We have learnt,

Summary

We have learnt,

- **How to use Bending Light, Interactive PhET simulation**

Summary I

- Reflection of light
- Refraction of light
- Dispersion of light
- How reflection and refraction varies with different material media

Summary II

Summary II

- **Use optical instruments like prism and lens**
- **Measure intensity of light**
- **Measure velocity of light**
- **View different wave patterns**

About the Spoken Tutorial Project

- **Watch the video available at http://spoken-tutorial.org /What_is_a_Spoken_Tutorial**
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- ▶ **Conducts workshops using spoken tutorials**

- ▶ **Gives certificates to those who pass an online test**

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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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- **More information on this Mission is available at**

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