

Name:

Date:

Student Exploration: Ray Tracing (Lenses)

Directions: Follow the instructions to go through the simulation. Respond to the questions and prompts in the orange boxes.

Vocabulary: concave lens, convex lens, focal point, image, magnification, real image, refraction, virtual image

Prior Knowledge Questions (Do these BEFORE using the Gizmo.)

Agnes is trapped on a desert island with nothing but a magnifying glass. She wants to use the glass to focus sunlight and start a fire. She holds the glass above some dry grass as shown at right.

1. On the diagram, draw the path the Sun rays will likely take from the magnifying glass to the grass.
2. A magnifying glass is an example of a **convex lens**—a lens that curves outward on both sides. Why is a convex lens useful for starting fires?

Because the lens can direct the light to a point, it focuses all the light there so that point heats up, and can catch fire.



Gizmo Warm-up

The *Ray Tracing (Lenses)* Gizmo shows light rays passing through a lens. The light rays are bent by **refraction** as they pass through the lens and form a focused **image** to the right of the lens.

To begin, turn on the **Colorize lines** checkbox. Under **Show lines**, turn off the **Central line** and the **Line through focal point** so that only the **Parallel line** is showing.



1. The blue dots in front of and behind the lens are the **focal points** of the lens. Move the candle on the left back and forth and up and down.

What is always true about the light ray that emerges from the right side of the lens?

It always goes through the focal point.

2. Turn off the **Parallel line** and turn on the **Line through focal point**. Move the candle. What do you notice

Answers For Gizmo Lab Ray Tracing Lenses

J Ma



Answers For Gizmo Lab Ray Tracing Lenses:

The book delves into Answers For Gizmo Lab Ray Tracing Lenses. Answers For Gizmo Lab Ray Tracing Lenses is a crucial topic that needs to be grasped by everyone, ranging from students and scholars to the general public. This book will furnish comprehensive and in-depth insights into Answers For Gizmo Lab Ray Tracing Lenses, encompassing both the fundamentals and more intricate discussions.

1. The book is structured into several chapters, namely:
 - Chapter 1: Introduction to Answers For Gizmo Lab Ray Tracing Lenses
 - Chapter 2: Essential Elements of Answers For Gizmo Lab Ray Tracing Lenses
 - Chapter 3: Answers For Gizmo Lab Ray Tracing Lenses in Everyday Life
 - Chapter 4: Answers For Gizmo Lab Ray Tracing Lenses in Specific Contexts
 - Chapter 5: Conclusion
 2. In chapter 1, this book will provide an overview of Answers For Gizmo Lab Ray Tracing Lenses. This chapter will explore what Answers For Gizmo Lab Ray Tracing Lenses is, why Answers For Gizmo Lab Ray Tracing Lenses is vital, and how to effectively learn about Answers For Gizmo Lab Ray Tracing Lenses.
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- This book is crafted in an easy-to-understand language and is complemented by engaging illustrations. This book is highly recommended for anyone seeking to gain a comprehensive understanding of Answers For Gizmo Lab Ray Tracing Lenses.

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Answers For Gizmo Lab Ray Tracing Lenses Introduction

In this digital age, the convenience of accessing information at our fingertips has become a necessity. Whether its research papers, eBooks, or user manuals, PDF files have become the preferred format for sharing and reading documents. However, the cost associated with purchasing PDF files can sometimes be a barrier for many individuals and organizations. Thankfully, there are numerous websites and platforms that allow users to download free PDF files legally. In this article, we will explore some of the best platforms to download free PDFs. One of the most popular platforms to download free PDF files is Project

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