

# ENERGY AND WAVES PHYSICS LAB 101

Designed for Students  
Grades 3rd-5th  
Ages 8-11

Program Length  
2.5 hours

Park Location  
Disneyland® Park

## SYNOPSIS

Younger students embark on a playful, exciting exploration of light and sound within *Disneyland*® Park, discovering how science can open up whole new worlds of storytelling!

The journey begins with an overview of energy and its applications to an attraction dreamed up by Walt Disney himself. Students learn how Walt was inspired by childhood heroes and historical figures, ultimately bringing the stories of *Disneyland*® to life using light and sound waves.

Activities with toy springs and tuning forks reveal the way sound waves interact with different states of matter. Students explore Main Street, U.S.A., in a scavenger hunt for creative uses of sound.

Lenses and prisms allow students to play with basic properties of light. Students uncover the link between wavelength and color through team activities. This is followed by a select attraction that uses ultraviolet and infrared radiation – as well as visible light – to create an interactive and immersive environment.

As students review all terms and concepts from their day, they construct a timeline of events that helped *Disneyland*® become a reality. This culminates in the revelation that the students take their place in that timeline by becoming the Imagineers of tomorrow. Students are left with a fun opportunity for further study after the program.

## LEARNING OUTCOMES

After completing Energy and Waves Physics Lab 101, participants will be able to:

- ✓ Define energy, work, and waves
- ✓ Describe different forms of energy and the Law of Conservation of Energy
- ✓ Demonstrate the properties of a compression wave in a medium
- ✓ Describe binaural hearing
- ✓ Articulate the relationship between light's wavelength and color
- ✓ Demonstrate how light is refracted in glass
- ✓ Discuss different historical figures and order events chronologically
- ✓ Realize that science is a powerful tool for creating enjoyable experiences