



## Waves Lessons

### Websites

#### [Wave on a String](#)

Play with the excellent "wave on a string" simulation from the University of Colorado, and try out different conditions. For a good look at a classic wave, set the simulation using the following conditions:

Oscillate (lower left)

No end (lower right)

Amplitude = 50

Frequency = 15

Damping = 0

Tension = 7/10

PhET Interactive Simulations

([http://phet.colorado.edu/sims/wave-on-a-string/wave-on-a-string\\_en.html](http://phet.colorado.edu/sims/wave-on-a-string/wave-on-a-string_en.html) )

#### [University of Colorado](#)

( <http://phet.colorado.edu> )

*Science Companion cannot guarantee compatibility of web links with all devices. We recommend that you check these Internet resources on your device before using them in class.*



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### Books

#### **Earthquakes (A True Book)**

Ker Than. (2009, Children's Press)

Although the students don't explore seismic waves generated during earthquakes, they may be interested in learning about them. In this book students learn about earthquakes and how they are formed by looking at some of major events in history. Graphic illustrations show rift valleys, tectonic plates, and the impact of seismic waves.

#### **Earthquakes: The Science Behind Seismic Shocks and Tsunamis**

Laura Silverstein Nunn and Alvin and Virginia Silverstein. (2010, Enslow Publishers, Inc.)

Written for elementary-age students, this book takes an in-depth look at the science of earthquakes by describing where they are found, how they travel, and the damage that they can do. The book also describes how devastating tsunamis are formed by undersea earthquakes.

#### **How Do Waves Form? (Tell Me Why, Tell Me How)**

Wil Mara. (2011, Marshall Cavendish Benchmark)

Written for a lower elementary student, this book describes how waves get their start by the motion of wind. It describes how, once waves get their start in the open ocean, the wave energy moves through the water and toward the coast. Finally waves release their energy when they crash on the shore.

#### **Light and Sound**

Eve Hartman and Wendy Meshbesh. (2010, Raintree)

This book will challenge your students with concepts related to light and sound waves. It might be a good book to have in the science center for students to thumb through when they have time.



**Light and Sound (Kingfisher Young Knowledge)**

Dr. Mike Goldsmith. (2007, Kingfisher Publications Plc)

This book for early readers introduces students to a number of concepts related to light and sound. The book also includes some investigations for students to try on their own.

**Science Projects with a Music Lab (You Can Build)**

Robert Gardner. (2008, Enslow Publishers, Inc.)

Includes a wide variety of science projects related to sound including: The science of vibrations, science and music, instruments with strings, wind instruments, and percussion instruments.

**Tsunamis (Nature's Fury)**

John Hamilton. (2006, ABDO Publishing Company)

This short yet information packed book describes how tsunamis form as well as some of the devastation they have done and can do. It describes in detail some of the most devastating tsunamis that have impacted the shores of earth, including the calamity in South Asia in 2004.

**Waves: from Surfing to Tsunami**

Drew Kampion; Illustrated by Jeff Peterson. (2005, Gibbs Smith, Publisher)

Chock full of interesting photos and illustrations and written by a surfer, this book provides a unique perspective on waves. The author describes the source of waves as well as how they move. There are many beautiful photographs and illustrations showing anything from surfers on sun glinted waves to 100s of dolphins in formation riding the breakers. He also describes tides and how they form as well as some of the ways that tsunamis are generated.