

My

Favorite

Demonstrations

# Forced Harmonic Resonance

Forced harmonic resonance occurs when a system is driven at its natural frequency which produces an increase in the amplitude of oscillation

# Hurdy-Gurdy



RARE Vintage Hurdy Gurdy Music Machine Box Wind Up & Box Knobler  
Greensleeves NR

Pre-Owned

**\$2.99**

0 bids

+\$4.99 shipping

Free Returns

Watch

2d 19h left (Sat, 2:20 PM)

Top Rated Plus

**eBay**



Hurdy Gurdy Music Box - Tune: When You Wish Upon a Star  
by Music Treasures Co.


★★★★☆ 3

\$7.99

\$8.50 shipping

Only 16 left in stock - order soon.

**Amazon**



Kikkerland You Are My Sunshine Crank Music Box  
by Kikkerland

★★★★☆ 921

\$10<sup>83</sup>

prime FREE delivery by Fri, Feb 22

More Buying Choices  
\$9.00 (3 new offers)

**Amazon**



Hurdy-Gurdy Man

RESONANCE

RODS

# RESONANCE

# RODS



Roll over image to zoom in

Cramer Tuf-Skin Taping Base for Athletic Tape, Spray Adherent for Kinesiology Tape, Gymnastics Leotards, Aerial Silks, and Kinetic Taping, Prevents Blisters, Athletic Training Supplies

by Cramer

★★★★★ 192 customer reviews

| 33 answered questions

Amazon's Choice for "tuffskin"

Price: \$17.67 ✓prime

Get \$70 off instantly: Pay \$0.00 upon approval for the Amazon Prime Rewards Visa Card.

**Note:** Available at a lower price from other sellers, potentially without free Prime shipping.

Style Name: 10 Ounce Colorless Aerosol

10 Ounce Colorless Aerosol

\$17.67

✓prime

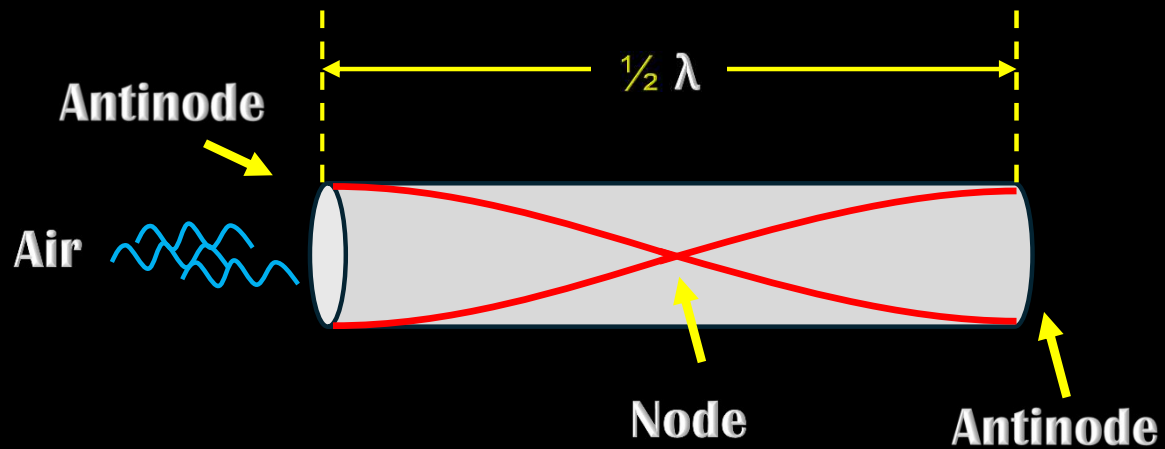
4 Ounce Colorless Aerosol

\$12.95

✓prime

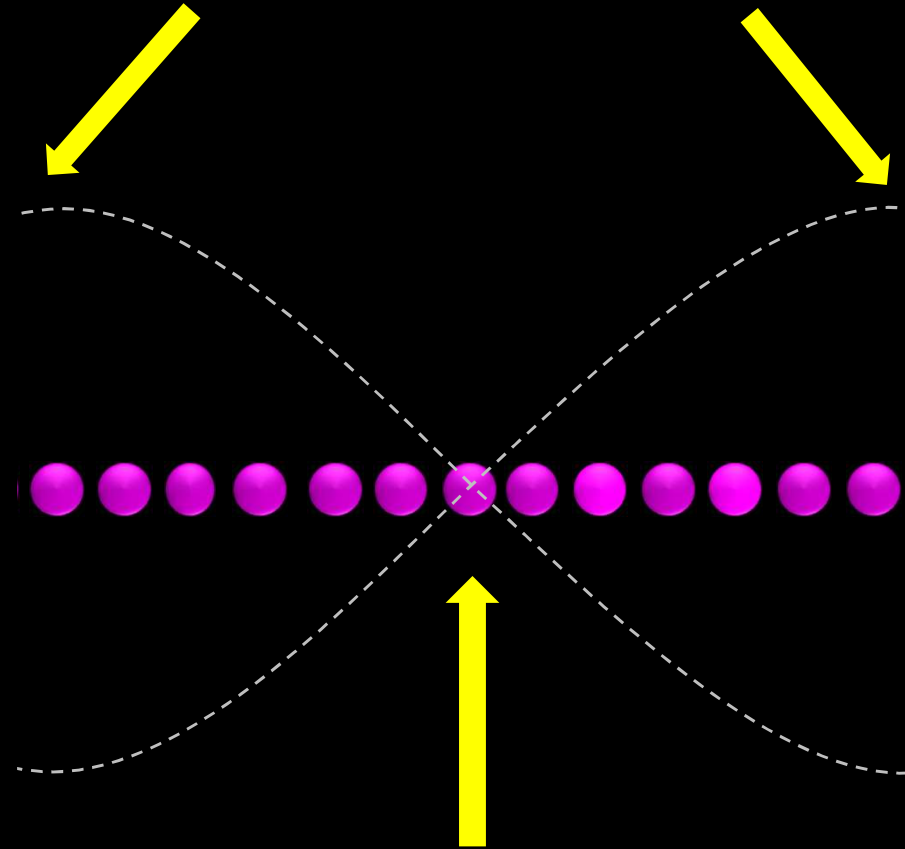
# RESONANCE

## RODS



$$f_n = \frac{nV_{\text{sound}}}{2L}$$

# Antinodes

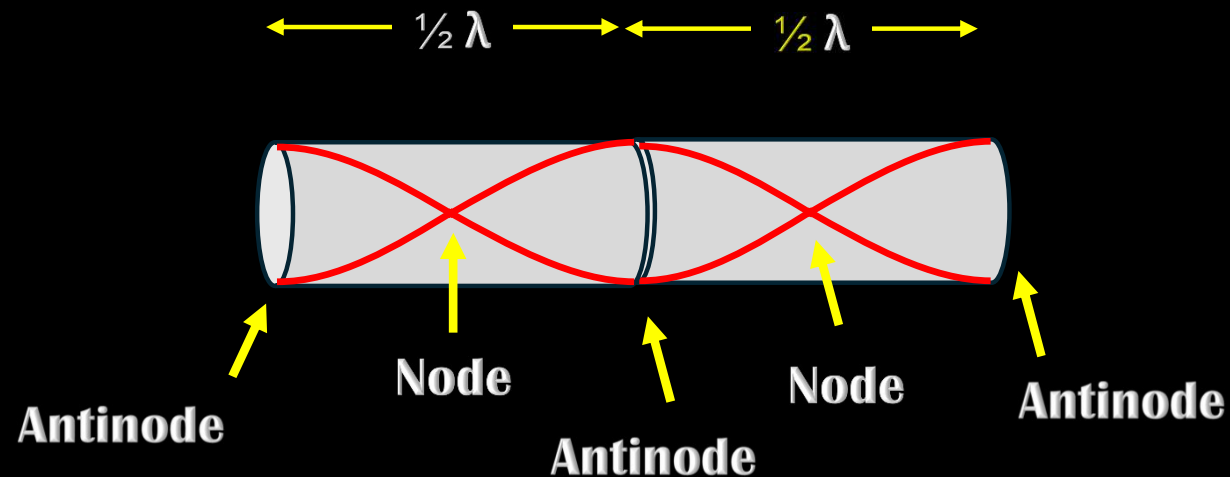


# Forced Node



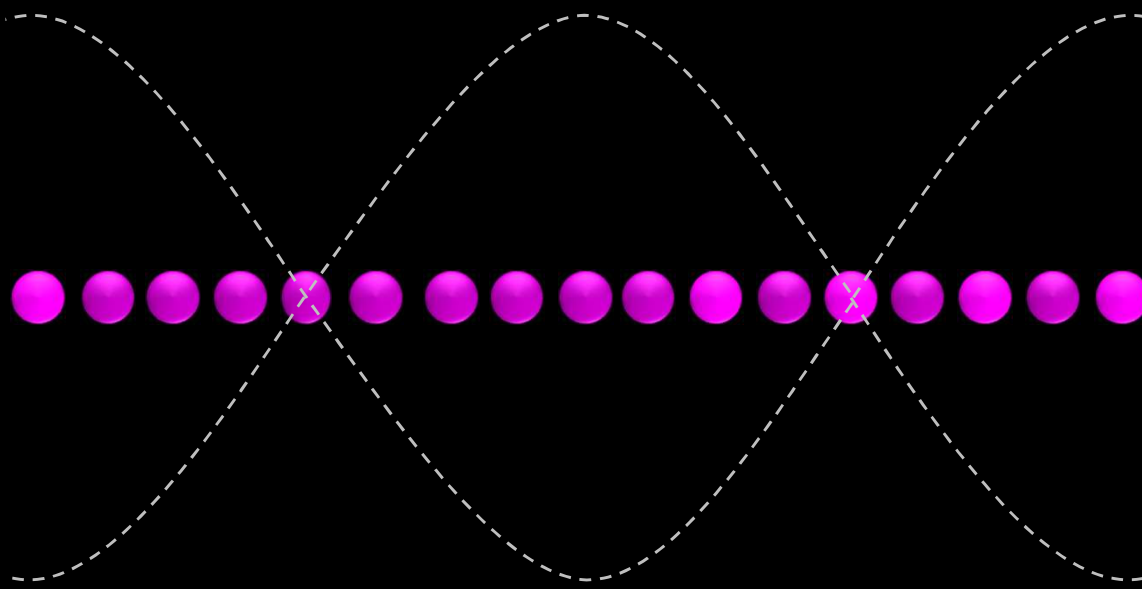
# RESONANCE

## RODS



$$f_n = \frac{nV_{\text{sound}}}{2L}$$

Antinode



CLICK

Electric

and

Gravitational Fields

# Electric and Gravitational Fields



**click**

Mirror

Mirror

on the Wall

# Plane Mirrors



Physics Student



Plane Mirror



Physics Student's image

IMAGE LOCATED BEHIND THE MIRROR

# Plane Mirrors

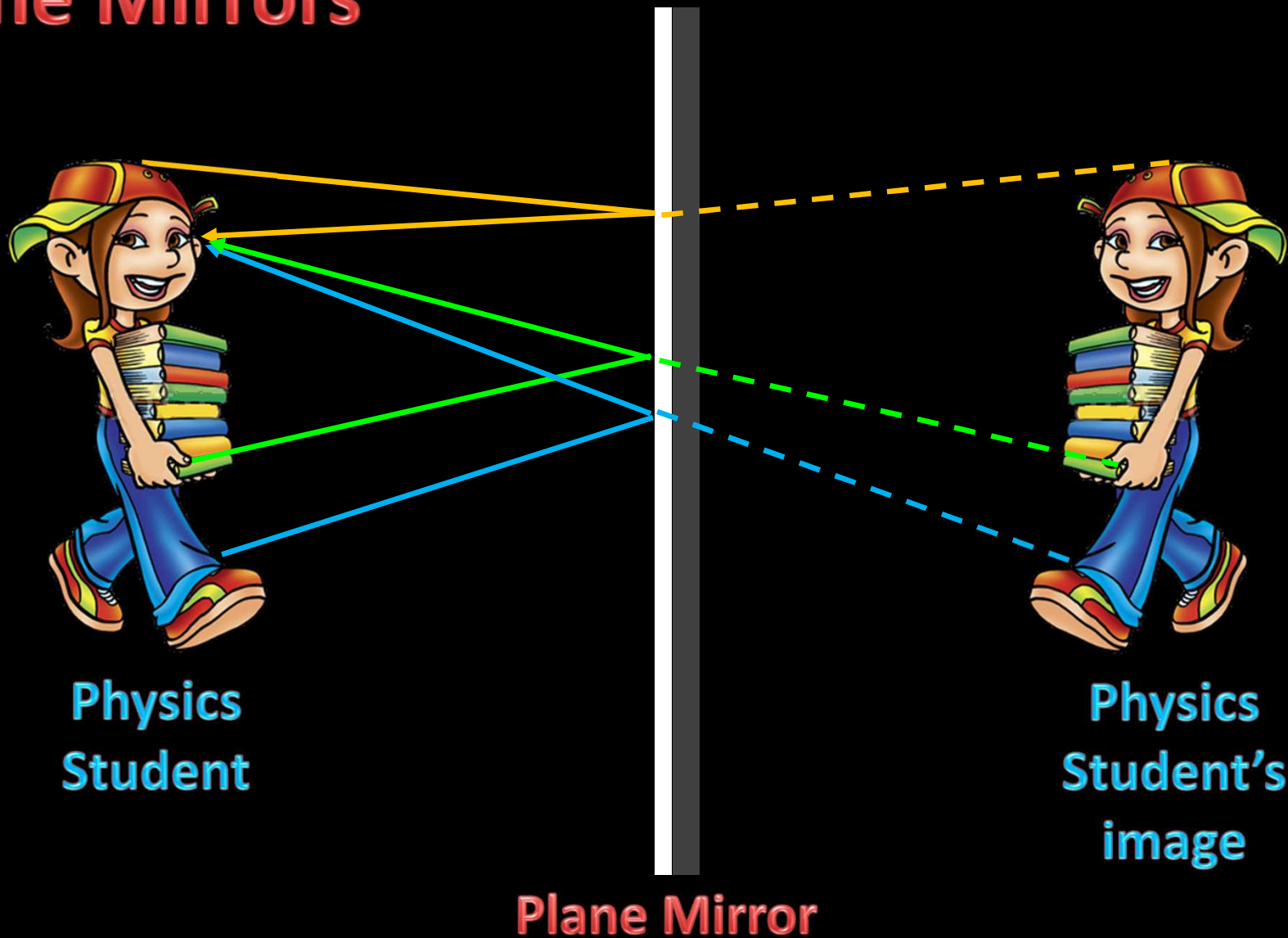


IMAGE the SAME DISTANCE from the MIRROR

$$p = q$$

# Plane Mirrors

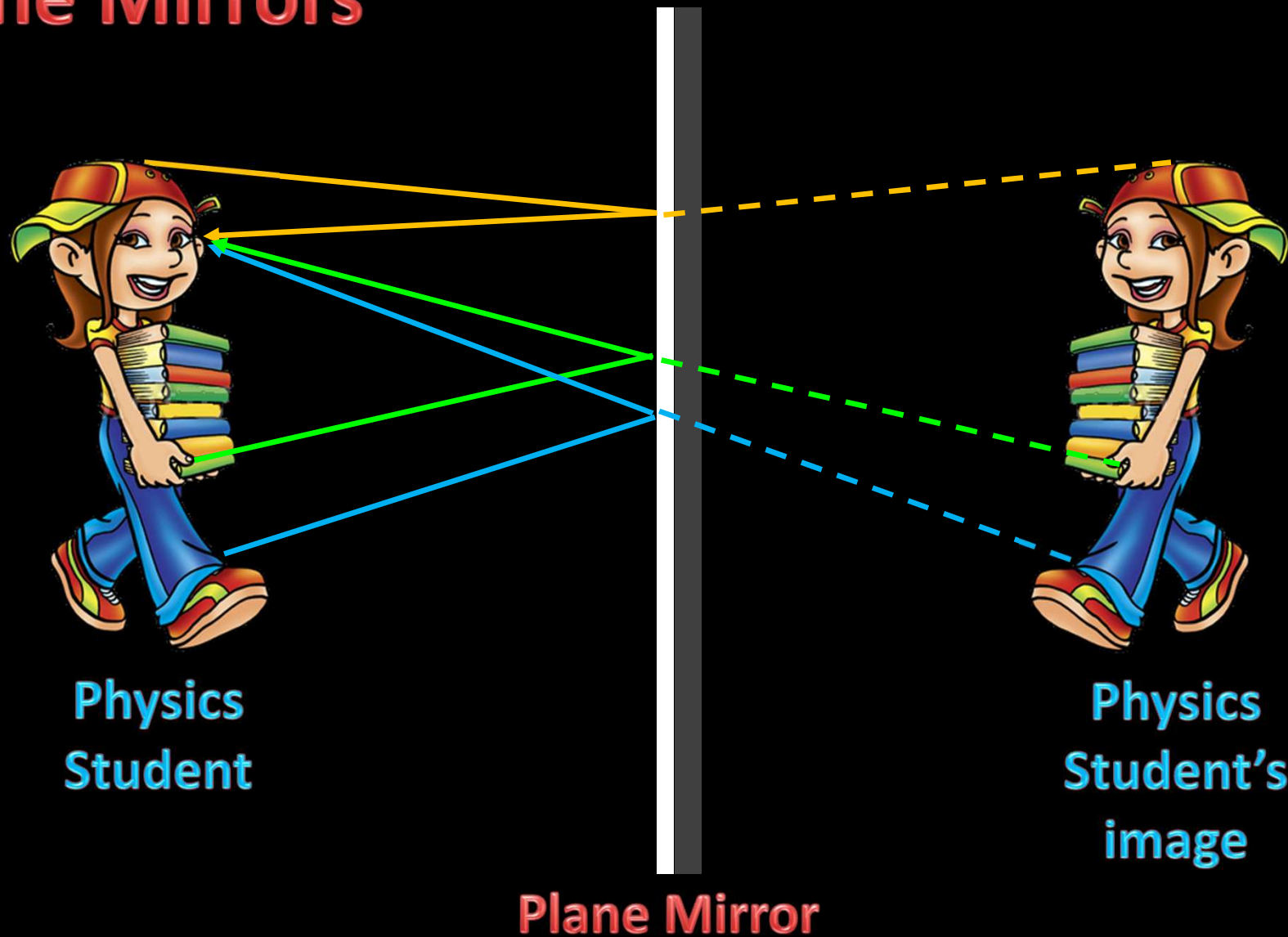


IMAGE HEIGHT EQUAL TO ACTUAL HEIGHT

$$h = h'$$

# Plane Mirrors



Physics Student



Plane Mirror



Physics Student's image

IMAGE IS A VIRTUAL IMAGE

# Plane Mirrors



Physics Student



Plane Mirror



Physics Student's image

IMAGE IS ERECT

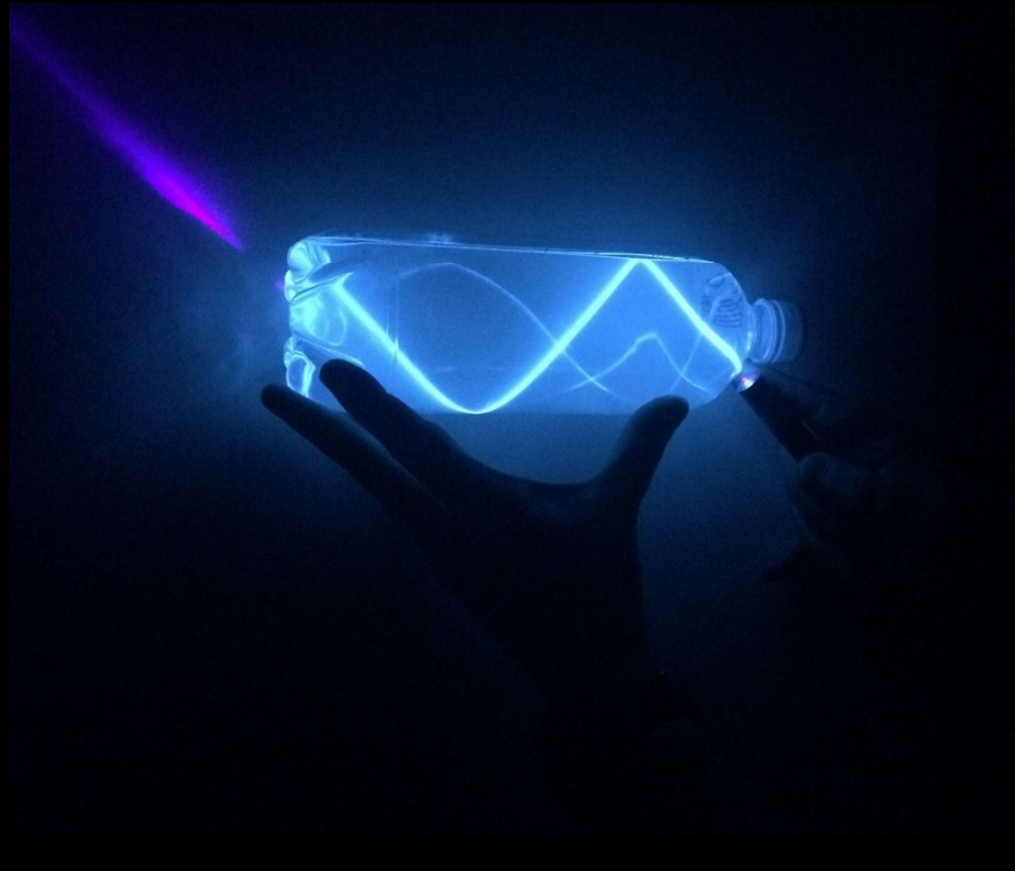
# Centripetal Force



Hooke's Law

# Total Internal Reflection

**Ultra-violet laser light undergoing  
TOTAL INTERNAL REFLECTION  
in a bottle of tonic water.**



**Tonic water contains quinine  
which fluoresces a bright blue when exposed to ultra-violet light.**

**CLICK**

# APPLICATIONS



Fiber Optic Swans



BabyBlueAzurite@aol.com



AZURITE  
 $\text{Cu}_3(\text{CO}_3)_2(\text{OH})_2$

Rich Terwilliger