Introduction

Teachers’ Tips on Using Snacks

3-D Shadows
See 3-dimensional shadows.

Bits and Bytes
Record a binary message on the world’s cheapest digital tape recorder.

Circuit Workbench
Circuits so interesting you can’t possibly get board.

Diamagnetic Repulsion
Use a magnet to push a grape around without touching it.

Film Can Racer
A new version of an old toy.

Fractal Patterns
Squeeze paint drops to make fractal patterns.

Hoop Nightmares
Try to shoot a basket using a prism that retrain your brain.

Hydraulic Arm
Use hydraulic pressure in a syringe to operate a robot arm.

Hyperbolic Slot
Put a straight rod through a curved slot.

Light Conversation
A light-sensing night light communicates with itself and other night lights.

Membrane Aerophone
Make a simple pseudo-saxophone.

Modulated Coil
Send an audio signal over a modulated magnetic field.

Modulated LED
Listen to music carried on a beam of light.

Oil-Spot Photometer
Compare the brightness of two lights.

Palm Pipes
Whap the end of a PVC pipe to make music that’s out of hand.

Periscope with a Twist
Turn the top mirror on a periscope and watch the world go around.

Personal Pinhole Theater
A pinhole camera you can really get into.

Perspective Window
Draw the world on a plastic window.

Pinhole Mirror
Image may not be everything, but for the sun it tells you a lot.

Reverse Masks
A concave mask of a face seems to follow you as you move.

Saltwater Pentacell
Make a saltwater battery and light an LED.

Sensitive Filament
Use your breath to create a visible change in an electric circuit.

Shadow Panel
Make a shadow with a life of its own.

Snip and Snap
A ball that bounces higher than it falls.

Soap Film in a Can
See fascinating interference patterns in a soap film.

Sound Bite
Listen to music conducted to your ears by bone.

Sproting Cylindrical
Create a triangular illusion with a cylinder that’s both spinning and rotating.

Square Wheels
Make a square wheel roll on a round road.

String Machine
A spinning string makes standing waves.

Stripped-Down Generator
If you shake just right, you’ll see the light.

Your Father’s Nose
Mix your own face with someone else’s face.

Resource Guide

National Science Education Standards

About the Authors

Acknowledgments

Contributors

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General Index

Learning Tools from the Exploratorium