Engineering Fun
Grownup Guide

Young makers craft, construct, and explore through hands-on building and play.

Visit **kiwico.com/engineering-fun** or sign in to access online **explore more** materials.

Build & Experiment

☐ **CRATE:**
Marble Roller Coaster
Discover: Potential & Kinetic Energy

☐ **CRATE:**
Build & Play Chess Set
Discover: Mechanical motion

☐ **CRATE:**
Flex & Fly Plane Launcher
Discover: Aerodynamics

☐ **CRATE:**
Remote-Controlled Snake Robot
Discover: Biomimicry

☐ **CRATE:**
Levitating Lantern
Discover: Science of Tension

☐ **CRATE:**
Color Projector Lamp
Discover: Color & Light

Explore more

☐ **ONLINE DIY:**
Graphite Circuit
Discover: Conductivity

☐ **ONLINE DIY:**
Thermal-Powered Flower
Discover: Thermal Air Currents

☐ **ONLINE DIY:**
Marble Maze
Discover: Game Engineering

☐ **ONLINE DIY:**
Bottle Cap Bots
Discover: Robotics

☐ **ONLINE DIY:**
Rubber Band Racer
Discover: Potential & Kinetic Energy

☐ **VIDEO:**
How to Build and Launch Pop-Top Rockets
Discover: Chemical Reactions

☐ **VIDEO:**
How to Build a Brush Bot
Discover: Robotics

☐ **VIDEO:**
Spaghetti Skyscraper and Straw Bridge Challenge
Discover: Engineering

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Explore more materials 

PRINTABLE: Egg Drop Challenge

- [ ] printable card templates
- [ ] dark-colored cardstock or construction paper (black, purple, or blue work well)
- [ ] scissors
- [ ] clear nail polish
- [ ] water
- [ ] bowl
- [ ] paper towel
- [ ] gloves
- [ ] glue
- [ ] pencil

PRINTABLE: Robot Grabber Challenge

- [ ] printable soap boat template
- [ ] foam or cardboard (you can use your crate box)
- [ ] glue
- [ ] scissors
- [ ] clean, wide container
- [ ] water
- [ ] toothpick
- [ ] dish soap

ONLINE DIY: Motorized ArtBot Robot

- [ ] hobby motor
- [ ] battery pack
- [ ] tape
- [ ] plastic cup / disposable cup
- [ ] googly eyes
- [ ] markers
- [ ] poster board paper
- [ ] batteries

ONLINE DIY: Desk Catapult

- [ ] binder clip (jumbo)
- [ ] rubber bands
- [ ] Tape
- [ ] pencil
- [ ] bottle cap
- [ ] pom poms
- [ ] sticky foam (or glue) (optional)

ONLINE DIY: Baking Soda-Powered Boat

- [ ] plastic bottle (empty)
- [ ] baking soda
- [ ] vinegar
- [ ] straw
- [ ] Scissors
- [ ] craft knife (optional)

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Achievement Certificate

has successfully completed the **Engineering Fun** Summer Adventure Series.

- [x] Physics of Light
- [x] Electric Circuits
- [x] Gears, Cams & Linkages
- [x] Astronomy
- [x] Density
- [x] Chaotic Systems
- [x] Physics of Simple Machines
- [x] Centripetal Force

