

## Hape E3027

# Hape Deluxe Scientific Workbench: Inventor's Experiment Building Set User Manual

Model: E3027

## 1. INTRODUCTION

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Welcome to the world of scientific discovery with the Hape Deluxe Scientific Workbench. This 79-piece set is designed to engage young minds in hands-on learning, fostering an understanding of basic scientific principles through play. Children can construct various devices and conduct over 15 experiments, exploring concepts like momentum, gravity, and energy conservation. This manual provides essential information for assembly, operation, maintenance, and safety to ensure a rewarding and educational experience.



Image: A child happily interacting with the assembled Hape Deluxe Scientific Workbench, featuring gears, a propeller, and other components.

## 2. SAFETY INFORMATION

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**WARNING: CHOKING HAZARD - Small parts. Not for children under 3 years.**  
**ADULT ASSEMBLY REQUIRED.**

- **Strangulation Hazard:** This product contains a long cord. Not suitable for children under 3 years.
- **Hearing Damage:** Do not use the rubber band as a catapult. Do not use close to the ear. Misuse may cause damage to hearing.
- This toy meets European and American safety standards EN 71 and ASTM F963.
- Remove all packaging material before giving the toy to a child.
- Please retain all relevant information for future reference.
- Decorations and colors may vary from those shown.

## 3. PACKAGE CONTENTS

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The Hape Deluxe Scientific Workbench includes 79 pieces, designed for various experiments and constructions. Please ensure all components are present before beginning assembly.

Included components:

- Screws
- Nuts
- Wheels
- Pulleys
- Box components
- PE slices
- String
- Various wooden and plastic connectors
- Tools (screwdriver, spanner)



Image: The product packaging displaying the workbench and various components, illustrating the 79-piece set.

#### 4. SETUP AND ASSEMBLY

The Hape Deluxe Scientific Workbench requires adult assembly. Follow the detailed instructions provided in the included brochure for step-by-step guidance. The workbench is constructed primarily from wood and is designed for straightforward assembly using the provided tools.

1. Unpack all components and verify against the package contents list.
2. Identify the main wooden panels for the workbench frame.

3. Use the provided screws and nuts to securely fasten the frame components.
4. Attach the workbench surface and the back pegboard.
5. Ensure all connections are tight and stable before allowing children to play.



Image: A fully assembled Hape Deluxe Scientific Workbench, showcasing its sturdy wooden construction and orange accents.

## 5. OPERATING INSTRUCTIONS

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The workbench serves as a base for numerous experiments. Children can attach various components to the pegboard and workbench surface using the screws, nuts, and tools. The design encourages free exploration and structured experimentation.

### 5.1 Using the Tools

The set includes child-friendly screwdrivers and spanners. These tools are designed for small hands to manipulate the screws and nuts, allowing children to assemble and disassemble creations independently.

### 5.2 The Hape "Know how" App

To further enhance the learning experience, Hape offers a "Know how" App. This application provides finished sample displays and detailed instructions for various experiments, guiding your child through the

process of building and understanding scientific concepts.

### 5.3 General Operation

Encourage children to:

- Experiment with different combinations of gears, pulleys, and levers.
- Observe how changes in one part of their creation affect others.
- Follow the experiment guides in the included brochure or the "Know how" App.
- Develop their own inventions and test their theories.

## 6. EXPERIMENTS AND CREATIONS

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The Hape Deluxe Scientific Workbench allows for over 15 different experiments and creations. Here are a few examples:

### 6.1 Digger

Construct a functional digger using the various wooden and plastic pieces. This experiment demonstrates principles of levers and simple machines.



Image: A detailed diagram illustrating the steps to build a Digger attachment for the workbench.

### 6.2 Zoetrope

Assemble a zoetrope to create moving pictures. This experiment introduces the concept of persistence of vision.

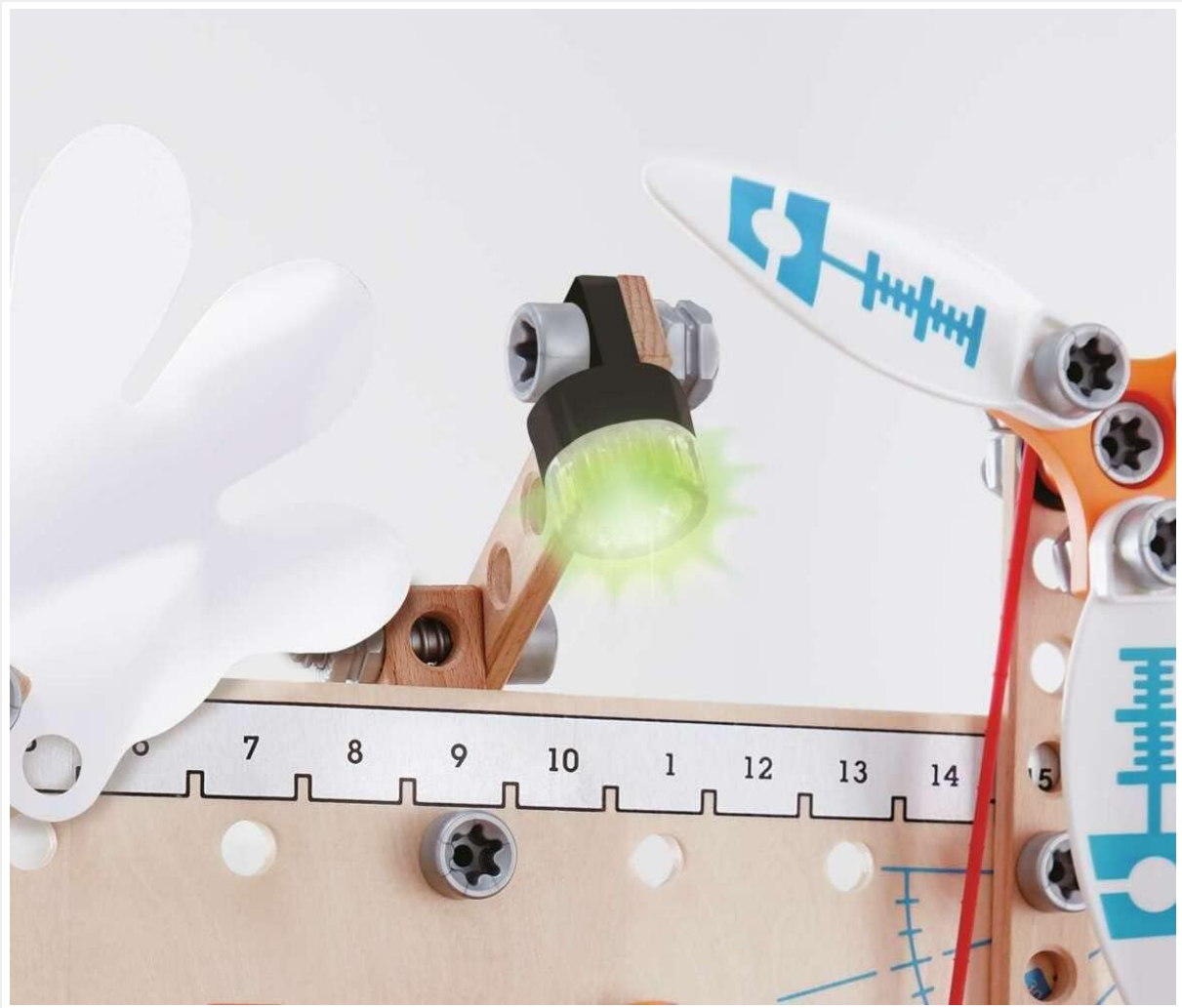


Image: A detailed diagram illustrating the steps to build a Zoetrope, showing how to create the illusion of movement.

### 6.3 Gravity Vehicle

Design and build a vehicle that moves using only gravity. This teaches about potential and kinetic energy.

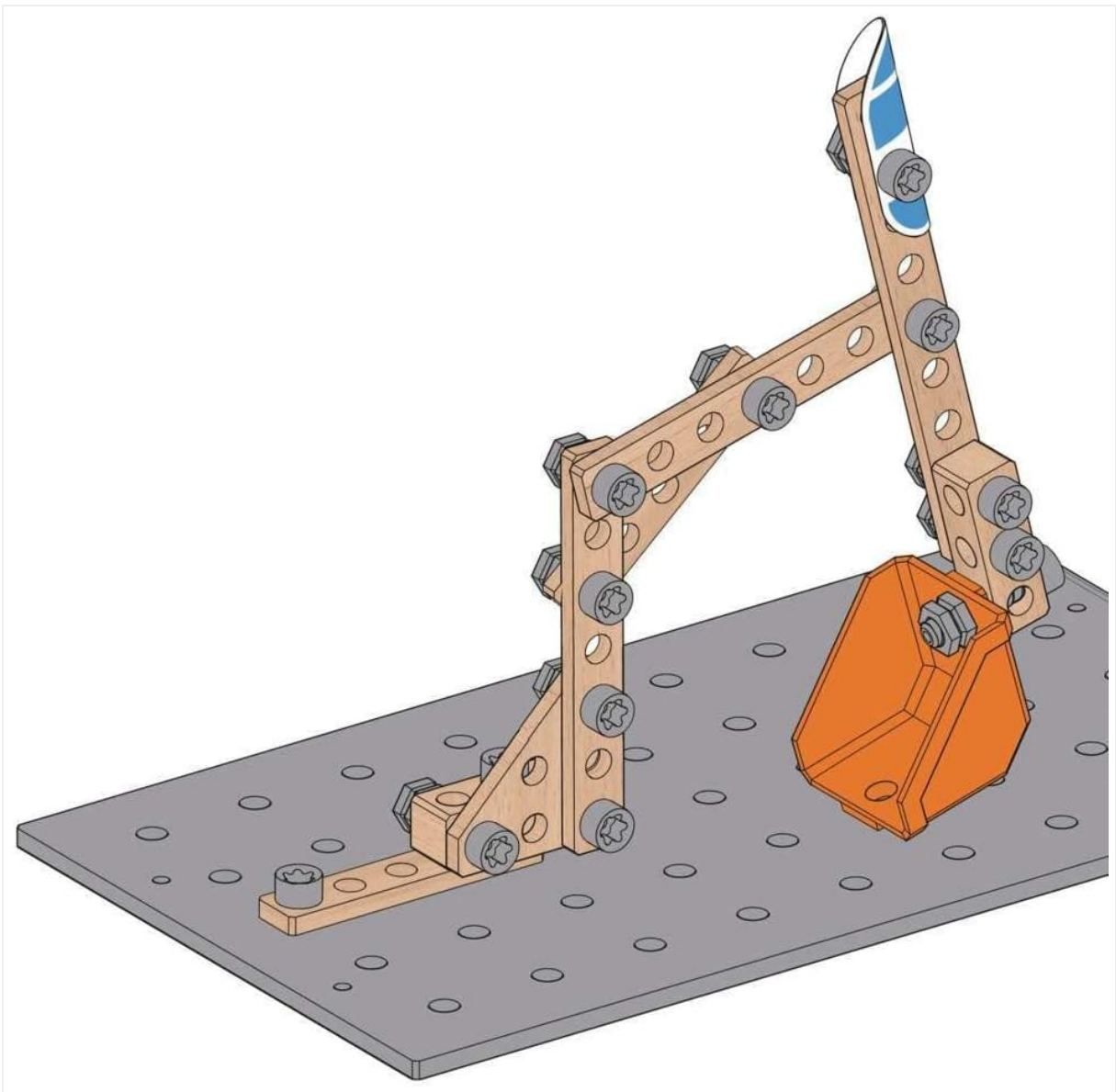


Image: A detailed diagram illustrating the steps to build a Gravity Vehicle, demonstrating how gravity can power movement.

#### **6.4 Rotating Light / Wind Maker**

Create a device with a rotating light or a wind-making propeller. This explores concepts of rotational motion and energy transfer.

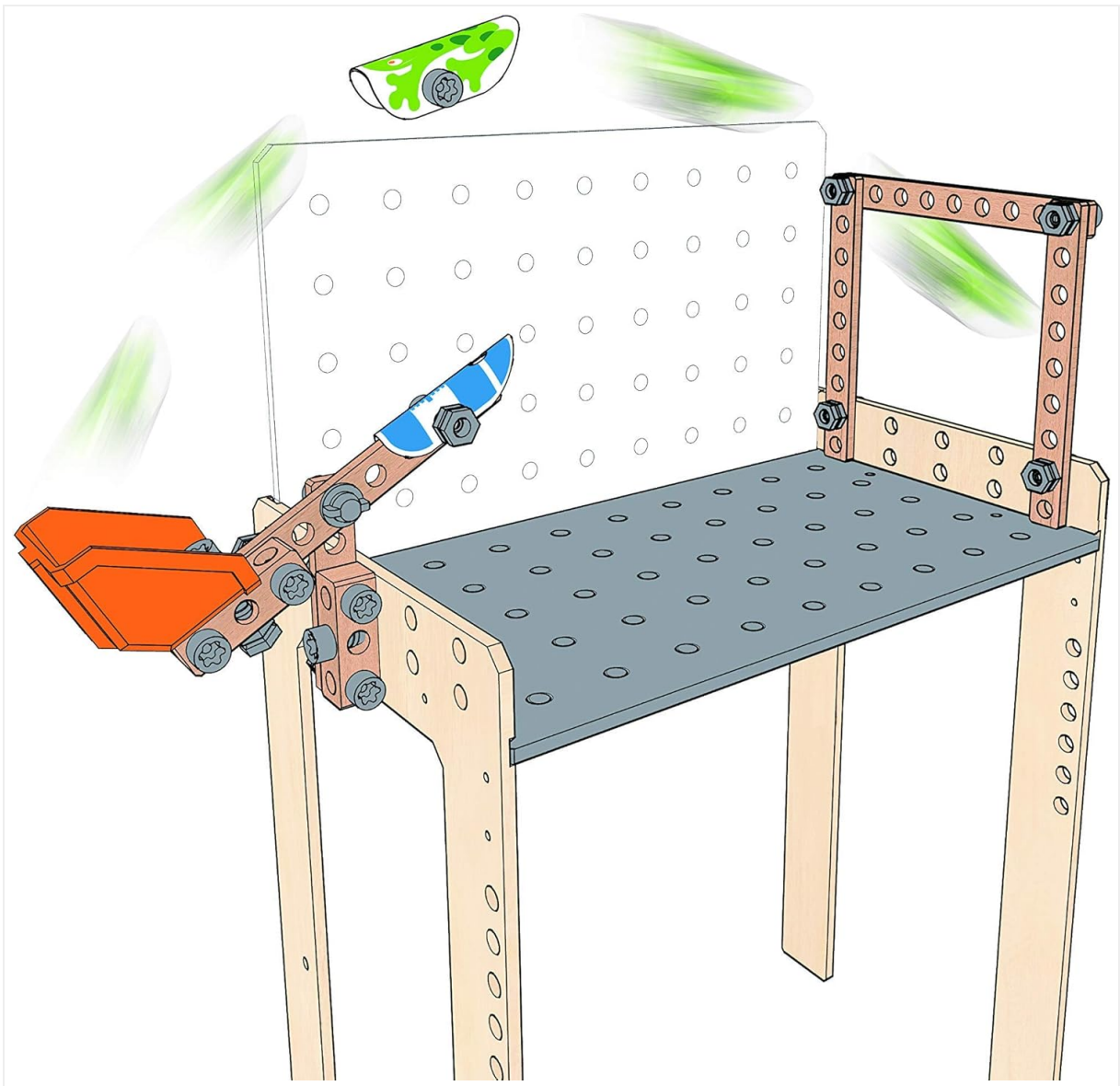


Image: A close-up of a child's hand turning a crank, which powers a propeller and illuminates a light on the workbench, demonstrating energy conversion.

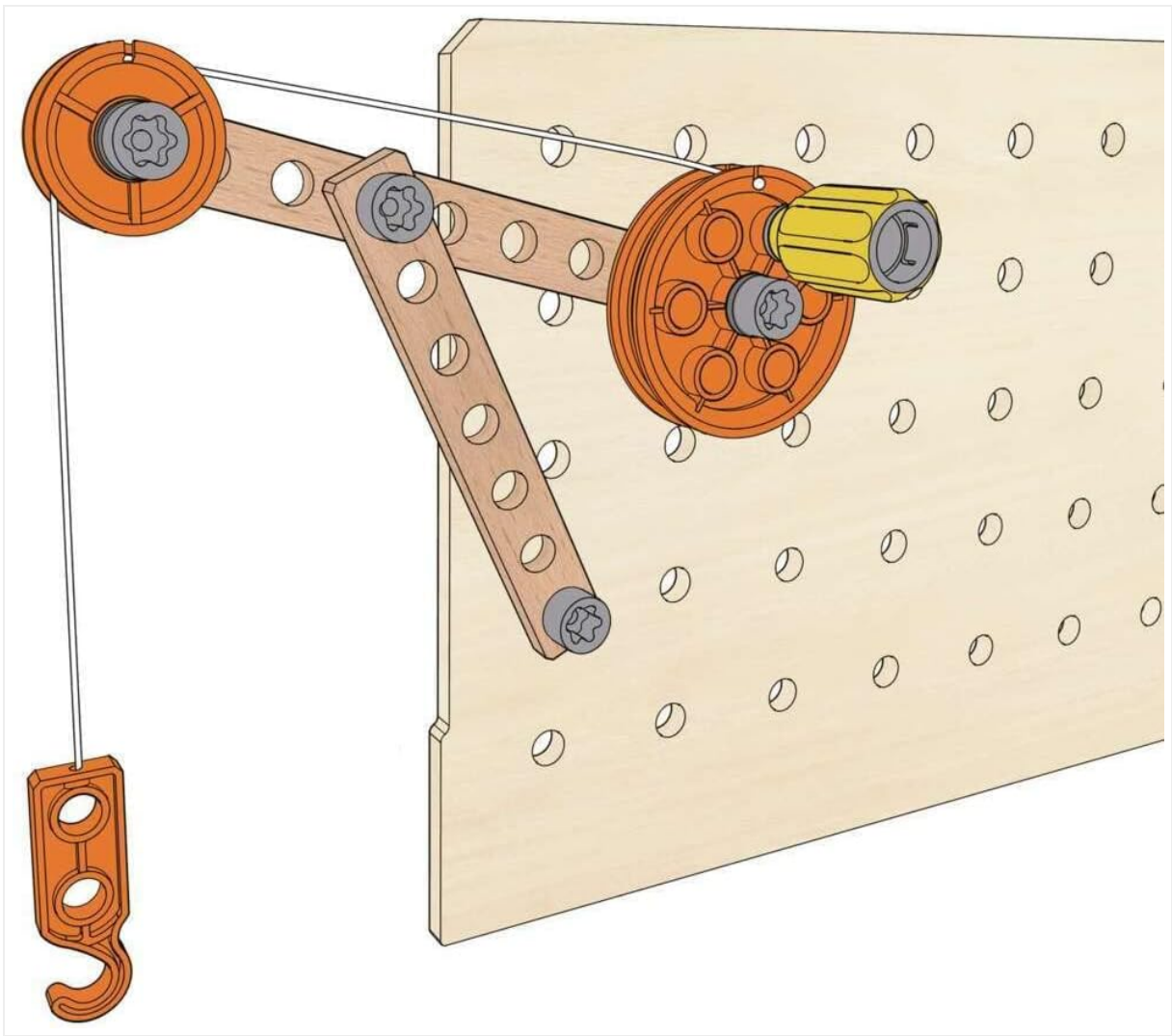


Image: A detailed diagram illustrating the steps to build a Windmill, showing the pulley system that drives the propeller.

## 6.5 Pulley Systems

Explore the mechanics of pulley systems using the provided ropes and hooks. This teaches about force, leverage, and mechanical advantage.

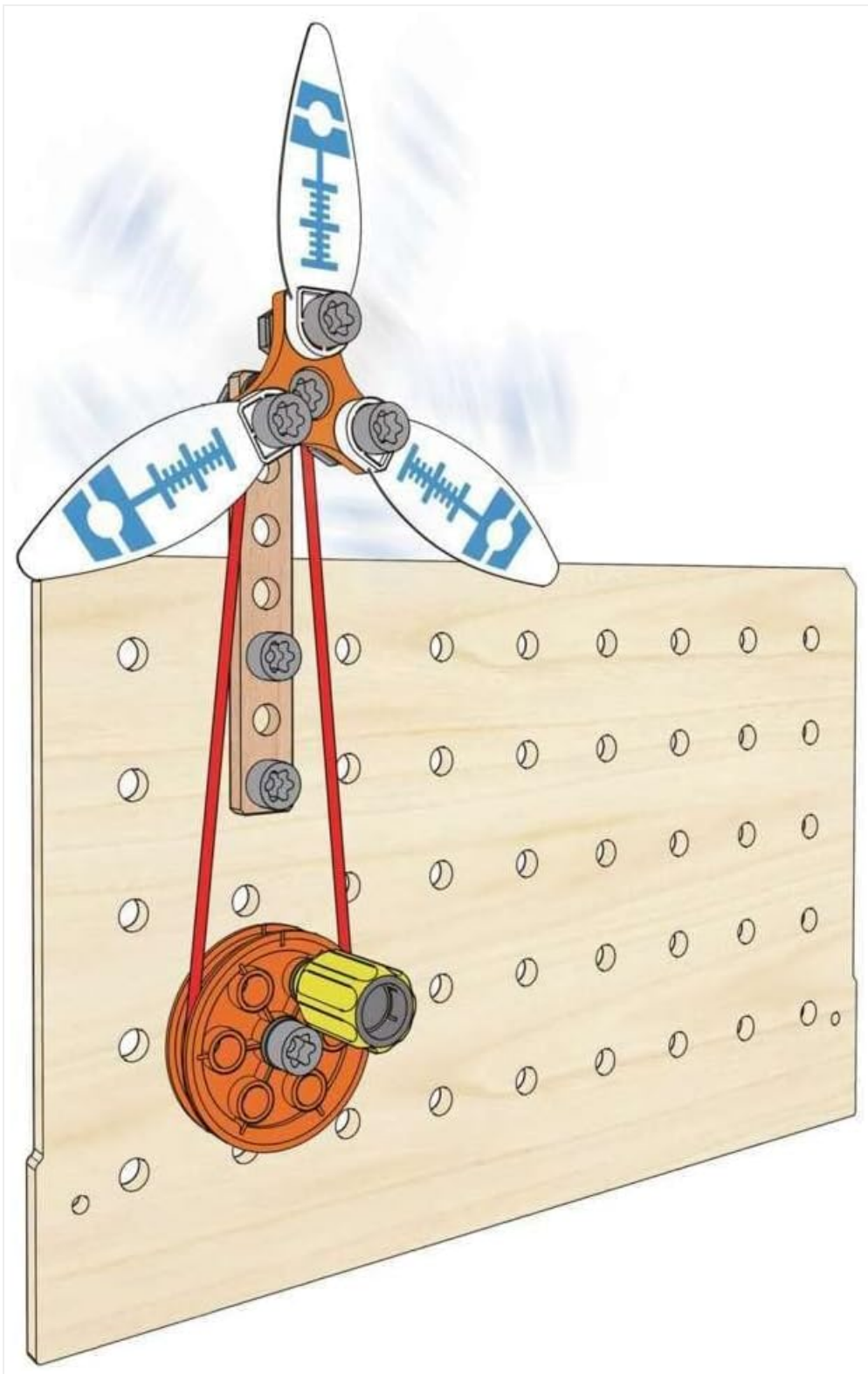


Image: A detailed diagram illustrating the steps to build a Pulley System with a hook, demonstrating how to lift objects.

## 6.6 Waving Hands

Construct a mechanism that makes hands wave, illustrating simple mechanical motion.

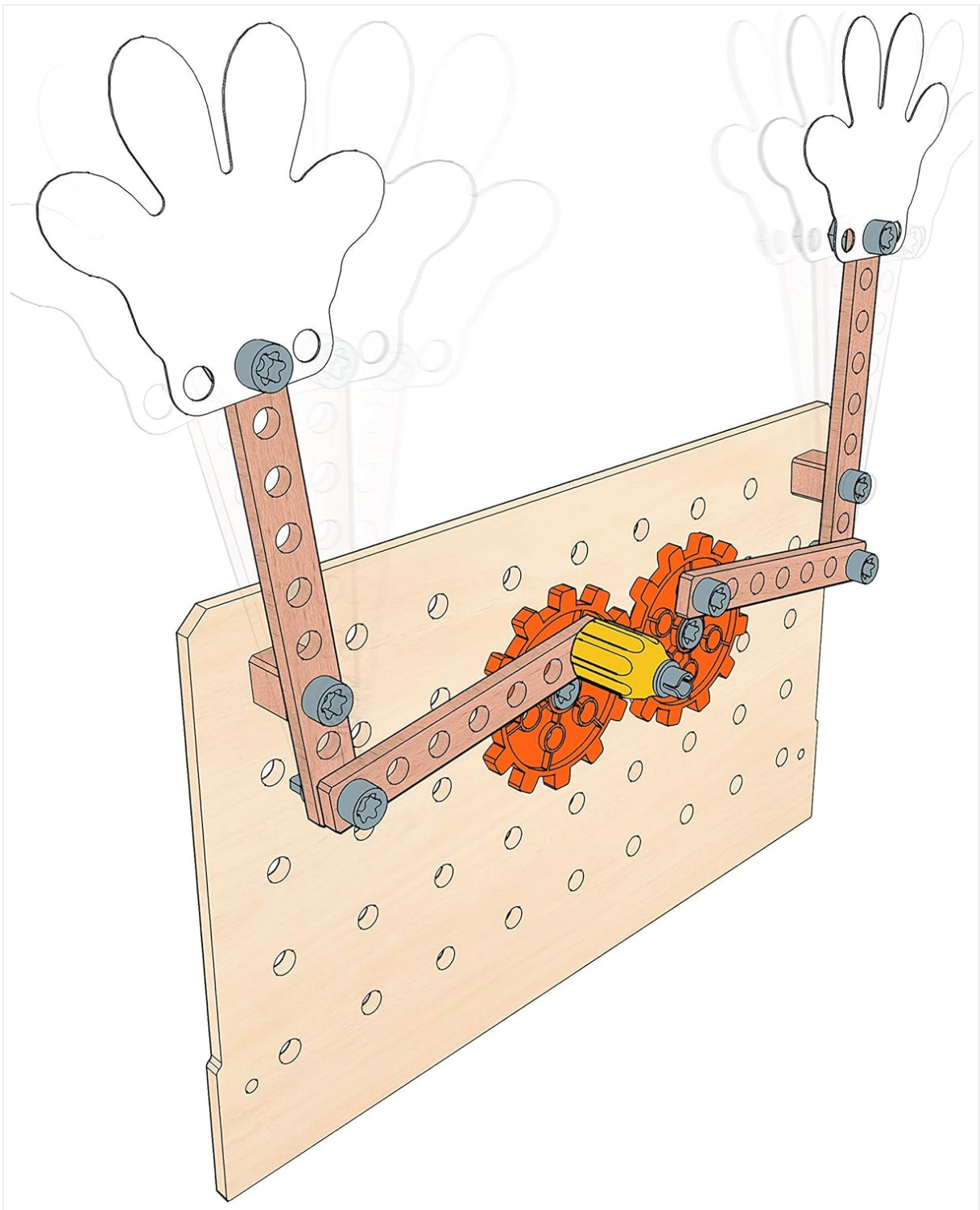


Image: A close-up of the workbench featuring a mechanism with two white hand shapes that move up and down, simulating waving.

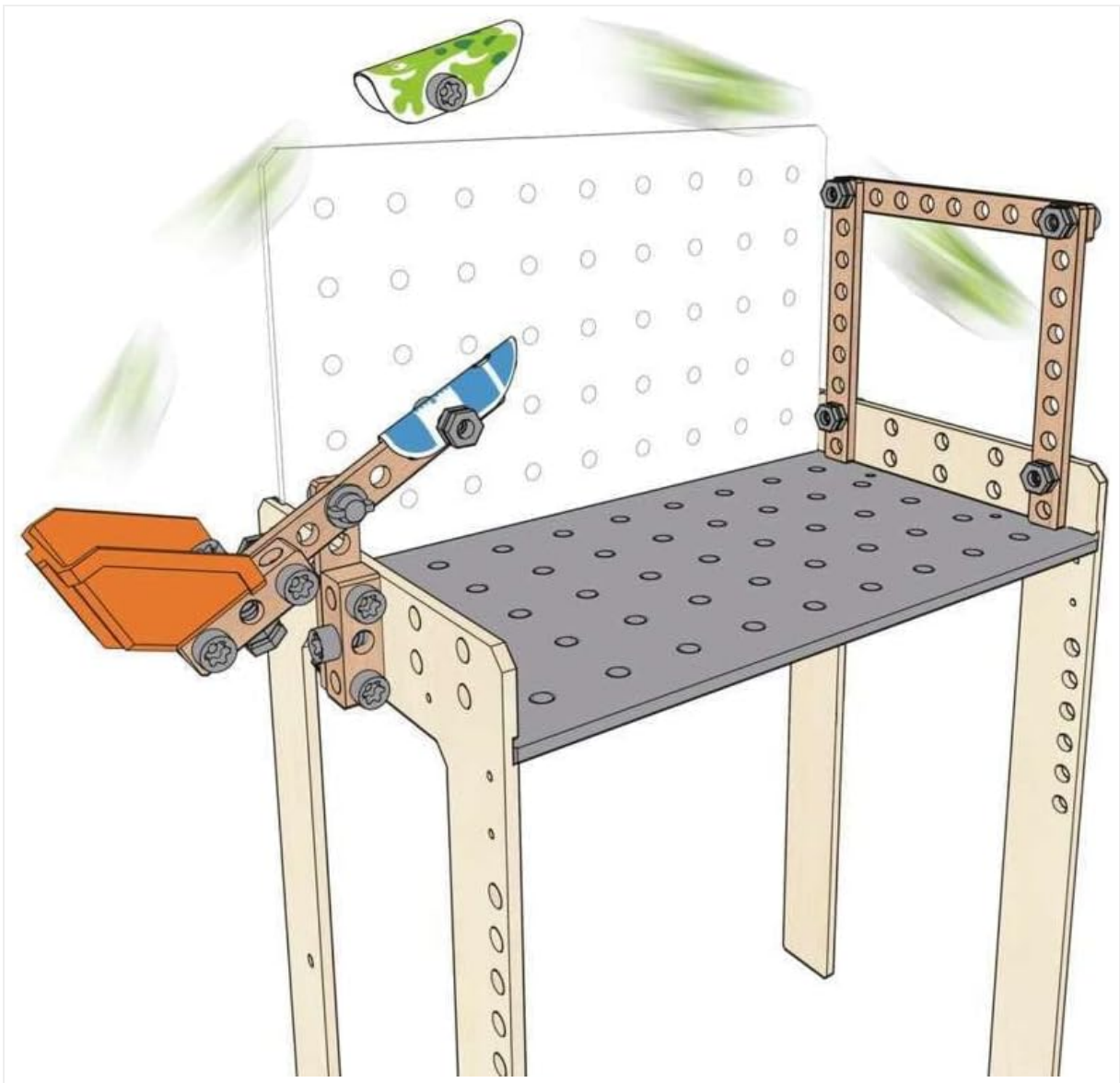


Image: A detailed diagram illustrating the steps to build a Waving Hands mechanism, showing the gears and linkages involved.

## 6.7 HapeToys Junior Inventor Line Video

Video: An official Hape video showcasing various creations possible with the Junior Inventor line, including the Deluxe Scientific Workbench. It highlights the educational aspects and fun of building different mechanisms.

## 7. MAINTENANCE

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To ensure the longevity and safety of your Hape Deluxe Scientific Workbench, follow these maintenance guidelines:

- **Cleaning:** Wipe down the wooden and plastic surfaces with a damp cloth. Avoid harsh chemicals or abrasive cleaners.
- **Storage:** Store the workbench and its components in a dry place, away from direct sunlight and extreme temperatures, to prevent warping or damage to the wood.
- **Inspection:** Regularly check all screws and connections to ensure they are tight. Tighten any loose fasteners to maintain stability.
- **Component Care:** Keep all small parts organized to prevent loss. The workbench includes a storage tray for this purpose.

## 8. TROUBLESHOOTING

If you encounter any issues with your Hape Deluxe Scientific Workbench, consider the following:

- **Loose Connections:** If parts feel wobbly or detach easily, check that all screws and nuts are securely tightened.
- **Gears Not Engaging:** Ensure gears are properly aligned and that the connecting rods are correctly positioned. Sometimes, a handle or crank might pop out; reinsert it firmly.
- **Missing Pieces:** If you believe pieces are missing, first thoroughly check all packaging materials and the storage tray. If still missing, contact Hape customer support.
- **Experiments Not Working:** Refer to the instruction brochure or the Hape "Know how" App for detailed steps. Ensure all components are assembled exactly as shown for the experiment to function correctly.

## 9. SPECIFICATIONS

Feature	Specification
Brand	Hape
Model Number	E3027
Item Type Name	Hape Junior Inventor Deluxe Scientific Workbench, STEM Building Set Toy, 79 Pieces, Multicolor
Material Type	Wood
Age Range Description	4+ Years
Educational Objective	Imagination Development, Logical Thinking, STEM
Item Dimensions (L x W x H)	19.29 x 11.81 x 30.51 inches (49 x 30 x 77.5 cm)
Item Weight	4.2 Kilograms
Assembly Required	Yes (Adult Assembly)
Battery Description	No batteries required





Image: The Hape Deluxe Scientific Workbench with key dimensions (length, width, height) indicated for reference.

## 10. WARRANTY AND SUPPORT

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Hape is committed to providing high-quality, safe, and educational toys. For any questions, concerns, or support regarding your Deluxe Scientific Workbench, please contact Hape customer service. Refer to the product packaging or the official Hape website for the most current contact information and warranty

details.

Hape toys are designed to inspire creativity and learning in children while committing to quality, sustainability, and safety.