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YUTIN YT1003

YUTIN STEM Science Kits for Kids (Model YT1003)

Instruction Manual

Introduction

This manual provides detailed instructions for assembling and operating your YUTIN STEM Science Kits. This kit includes five distinct educational models: Newton's Cradle, Tension Structure, Hydraulic Excavator, Sun-Earth-Moon Model, and a Mini Telegraph. Designed to foster hands-on ability, creativity, and an understanding of scientific principles, these kits offer an engaging learning experience for children aged 6 and up.

Safety Information

CHOKING HAZARD - Small parts. Not for children under 3 years.

- Adult supervision is recommended, especially for younger children (ages 6-8), during assembly.
- Ensure all small parts are kept away from young children to prevent choking.
- Handle wooden pieces carefully to avoid splinters. Sanding may be required for rough edges.
- Do not ingest any components of the kit.

Package Contents

Your YUTIN STEM Science Kit includes components for the following five models:

- Newton's Cradle
- Tension Structure
- Hydraulic Excavator
- Sun-Earth-Moon Model
- Mini Telegraph

Each model comes with pre-cut wooden pieces, necessary hardware (screws, wires, syringes, etc.), and a detailed instruction booklet with step-by-step pictures.



Image: The complete YUTIN STEM Science Kits package, showing the box and all five assembled models: Newton's Cradle, Tension Structure, Hydraulic Excavator, Sun-Earth-Moon Model, and Mini Telegraph.

Assembly Instructions

Before starting, carefully browse the included manual and identify all parts for the specific model you wish to assemble. Some parts may require gentle removal from their wooden frames.



Image: Close-up of the wooden sheets with laser-cut pieces, along with small components like marbles and screws, ready for assembly. This image highlights the quality of the laser cutting and the 'no glue need' feature.

General Assembly Steps:

1. **Review the Manual:** Familiarize yourself with the specific instructions for each model.
2. **Identify Parts:** Carefully detach the pre-cut wooden pieces from their frames.
3. **Assemble Step-by-Step:** Follow the numbered steps in the provided picture instructions.
4. **Secure Connections:** Use screws, wires, or other fasteners as indicated.



Image: A visual guide showing the four general steps for assembly: browsing the manual, taking off puzzle pieces, installing step-by-step, and the finished product (Hydraulic Excavator).

1. Newton's Cradle Assembly

This model demonstrates the law of conservation of energy. Assemble the wooden frame, then attach the five spheres using the provided strings, ensuring they hang freely and are aligned.

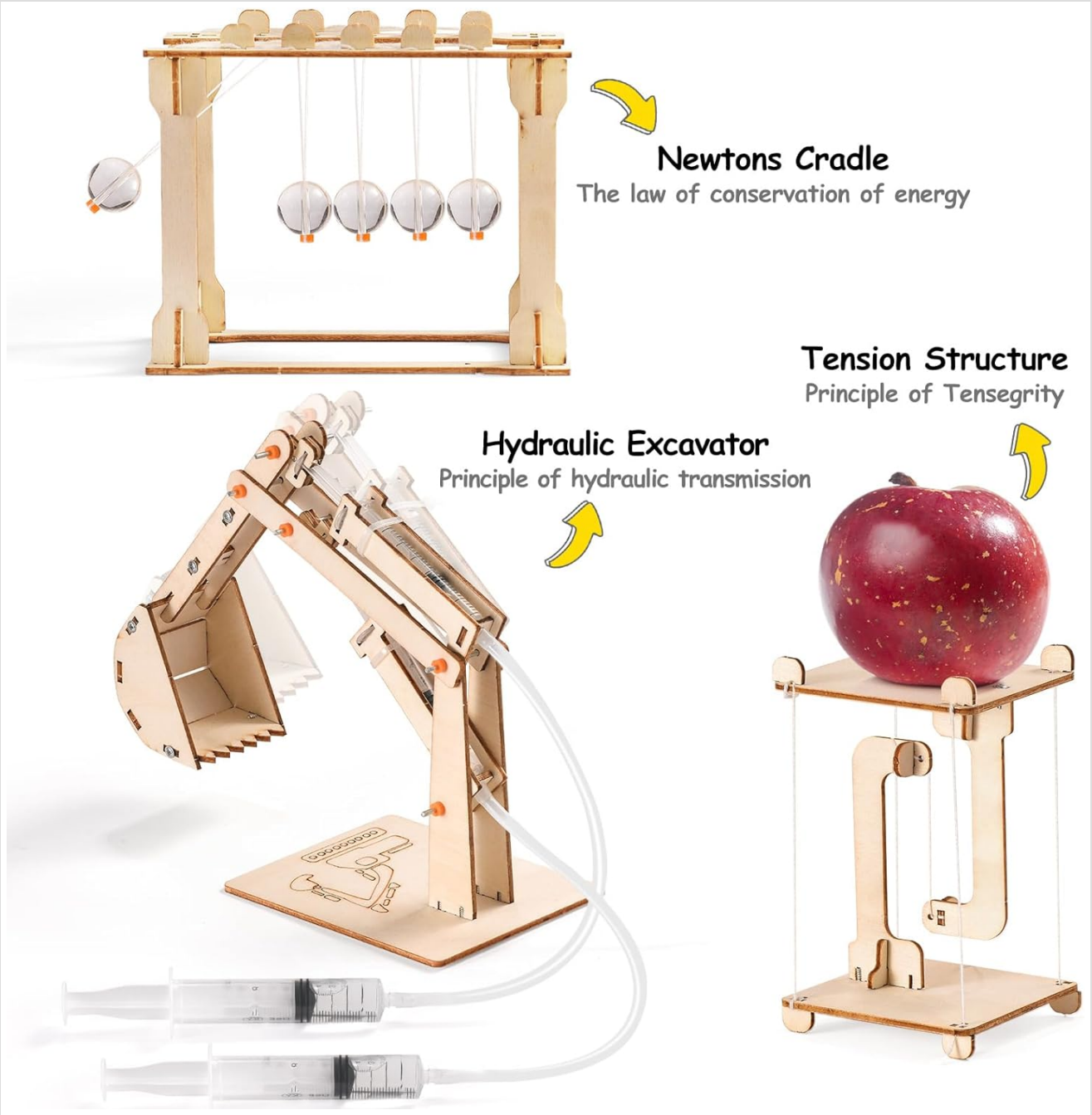


Image: The assembled Newton's Cradle, illustrating the principle of energy conservation with five swinging spheres. This image also shows the Tension Structure and Hydraulic Excavator.

2. Tension Structure Assembly

This model explores the principle of Tensegrity. Carefully connect the wooden pieces using the tension wires or strings to create a stable structure that appears to float.

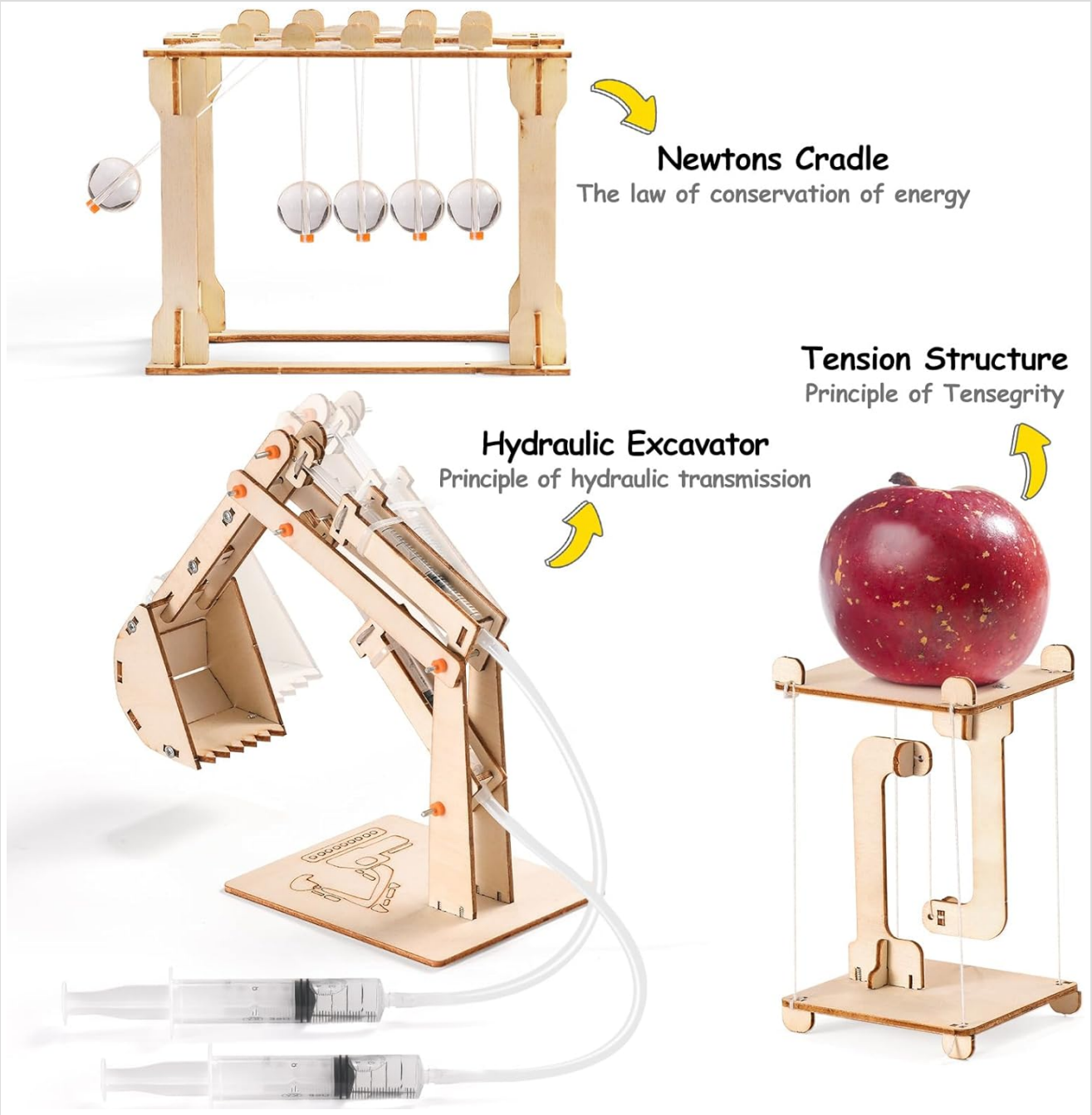


Image: The assembled Tension Structure, demonstrating the concept of Tensegrity where compression and tension elements create a stable form. This image also shows the Newton's Cradle and Hydraulic Excavator.

3. Hydraulic Excavator Assembly

Learn about hydraulic transmission. Assemble the excavator arm and base using the wooden pieces. Connect the syringes with tubing to create the hydraulic system that controls the arm's movement.



Image: A child proudly displaying the assembled Hydraulic Excavator model, which uses syringes and tubing to demonstrate hydraulic principles.

4. Sun-Earth-Moon Model Assembly

Explore the relative positions and trajectories of the sun, earth, and moon. Assemble the gear system and attach the planetary spheres to their respective arms.



Image: The assembled Sun-Earth-Moon Model, showing the gears and spheres representing celestial bodies, used to illustrate their relative movements. This image also shows the Mini Telegraph.

5. Mini Telegraph Assembly

Understand information transmission. Assemble the base and attach the electrical components, including battery holders, wires, and signal lights. Ensure all connections are secure for proper function.



Image: The assembled Mini Telegraph model, featuring battery connections and signal lights, demonstrating basic electrical communication. This image also shows the Sun-Earth-Moon Model.

Operating Instructions

Newton's Cradle:

Gently pull back one or two spheres from one end and release them. Observe how the same number of spheres swing out from the opposite end, demonstrating momentum and energy transfer.

Tension Structure:

Once assembled, gently press down on the top platform to observe its stability and the interplay of tension and compression forces.

Hydraulic Excavator:

Press the plungers of the syringes to move the excavator arm and bucket. Experiment with different pressures to

control the movement.

Sun-Earth-Moon Model:

Rotate the main gear or crank (if applicable) to observe the synchronized movement of the Earth and Moon around the Sun, illustrating orbital mechanics.

Mini Telegraph:

With batteries installed (not included), press the button on one unit to send a signal, and observe the corresponding light illuminate on the other unit, demonstrating basic electrical communication.

Maintenance

- **Cleaning:** Wipe wooden parts with a dry, soft cloth. Avoid using water or chemical cleaners.
- **Storage:** Store the assembled models or disassembled parts in a dry place away from direct sunlight and extreme temperatures to prevent warping or damage.
- **Inspection:** Periodically check for loose connections, especially for the telegraph's wires or the hydraulic excavator's tubing.
- **Splinter Prevention:** If any wooden edges feel rough, gently sand them with fine-grit sandpaper.

Troubleshooting

- **Model is unstable/falls apart:** Ensure all connections are secure and screws are tightened. Double-check the assembly steps against the manual.
- **Hydraulic Excavator not moving:** Check for air bubbles in the syringes or tubing. Ensure tubing is securely attached and not kinked. Verify syringes are properly filled.
- **Mini Telegraph not working:** Ensure batteries are correctly installed and charged. Check all wire connections for tightness and proper contact. Verify the switch/button is functioning.
- **Difficulty with small parts:** Adult assistance is recommended for intricate steps or very small components.

Specifications

Feature	Detail
Model Number	YT1003
Brand	YUTIN
Material	Non-toxic Plywood
Number of Models	5 (Newton's Cradle, Tension Structure, Hydraulic Excavator, Sun-Earth-Moon Model, Mini Telegraph)
Recommended Age	6 years and up (Adult supervision recommended for 6-8 years)
Assembly Required	Yes

Batteries Required	No (except for Telegraph, which may require user-supplied AA batteries if not included)
Product Dimensions (Box)	22.86 x 19.05 x 5.59 cm
Item Weight	0.46 Kilograms

Warranty and Support

For any questions, missing parts, or support regarding your YUTIN STEM Science Kits, please contact the seller or manufacturer through your purchase platform. Please refer to your purchase receipt for specific warranty details.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question

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