Engino ENG-STEM01

Engino STEM Mechanics Levers & Linkages Kit

MODEL: ENG-STEM01 - INSTRUCTION MANUAL

Introduction

The Engino Mechanics Levers & Linkages kit provides an engaging platform for exploring the principles of levers. This kit enables the construction of 16 distinct, functional models, such as a seesaw, various linkages, and a parking gate. Through hands-on building and experimentation, users will learn the fundamental concepts of how levers amplify force to lift objects and modify motion direction. This set offers a practical learning experience designed to foster interest in STEM fields, particularly mechanical engineering. The kit includes comprehensive, easy-to-follow instructions, high-quality components, and encourages critical thinking and problem-solving skills.

Safety Information

WARNING: CHOKING HAZARD - Small parts. Not for children under 3 years.
Always supervise children during assembly and play. Ensure all small parts are kept away from young children to prevent accidental ingestion. Inspect all components regularly for damage. Discontinue use if any parts are broken or compromised.

What's Included

Your Engino STEM Mechanics Levers & Linkages kit contains the following items:

- Instruction Manual (for one model)
- Quiz Book
- Experiments Booklet
- Theory Book
- Access to Free 3D Interactive App
- Various Engino building components (rods, connectors, wheels, etc.)

Setup and Assembly

Before beginning construction, unpack all components and verify that all parts listed in the kit contents are present. Familiarize yourself with the different types of Engino parts and their connection methods.

Understanding the Engino Connecting System

The Engino system features a patented snap-fit design allowing for versatile connections. Rods can be connected to other rods or blocks at various angles. The system also includes an extraction tool for easy disassembly.

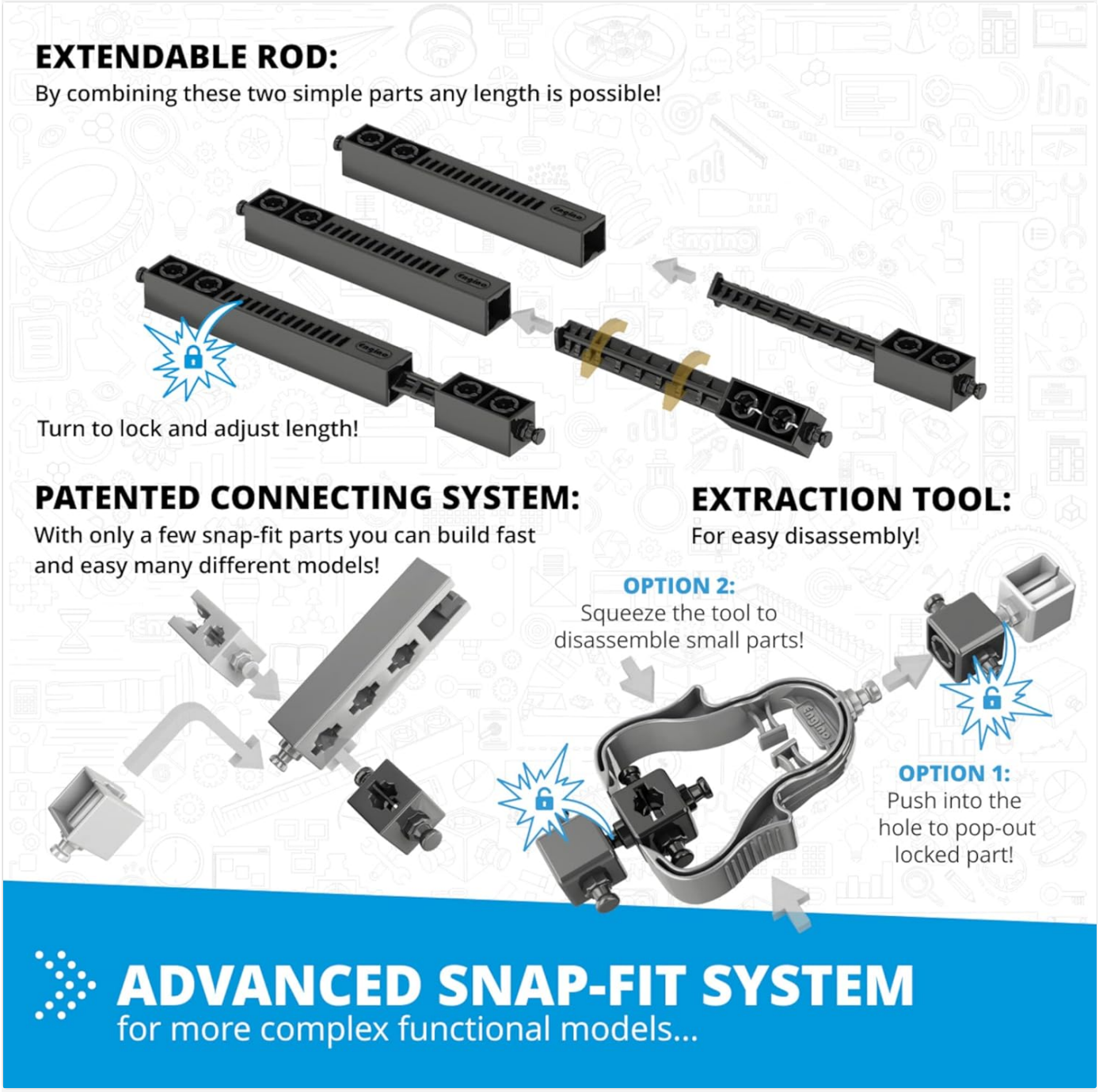

Figure 1: Engino's Advanced Snap-Fit System. This image illustrates how the extendable rods work and the use of the extraction tool for easy disassembly of parts.

Using the 3D Interactive App

For enhanced building experience, download the free Engino kidCAD 3D Viewer app from Google Play or the Apple App Store. This app provides interactive 3D instructions for all 16 models, allowing you to rotate, zoom, and explore models in virtual reality.

Figure 2: The Engino kidCAD 3D Viewer app provides interactive 3D instructions for building models.

Official Product Video

Watch the official Engino Discovering STEM Mechanics Levers & Linkages Construction Kit video for an overview of the product and its features.

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Video 1: Engino Discovering STEM Mechanics Levers & Linkages Construction Kit. This video provides a visual introduction to the kit's components and potential models.

Operating Instructions

This kit allows you to build 16 different models. One model includes printed instructions, while the remaining 15 models can be built using the interactive 3D app.

Figure 3: The kit includes printed instructions for one model, with 3D instructions available for others via the app.

Building Models

Follow the step-by-step instructions provided in the manual or the 3D app. Each step clearly indicates which parts to use and how to connect them. Pay close attention to the orientation of parts for correct functionality.

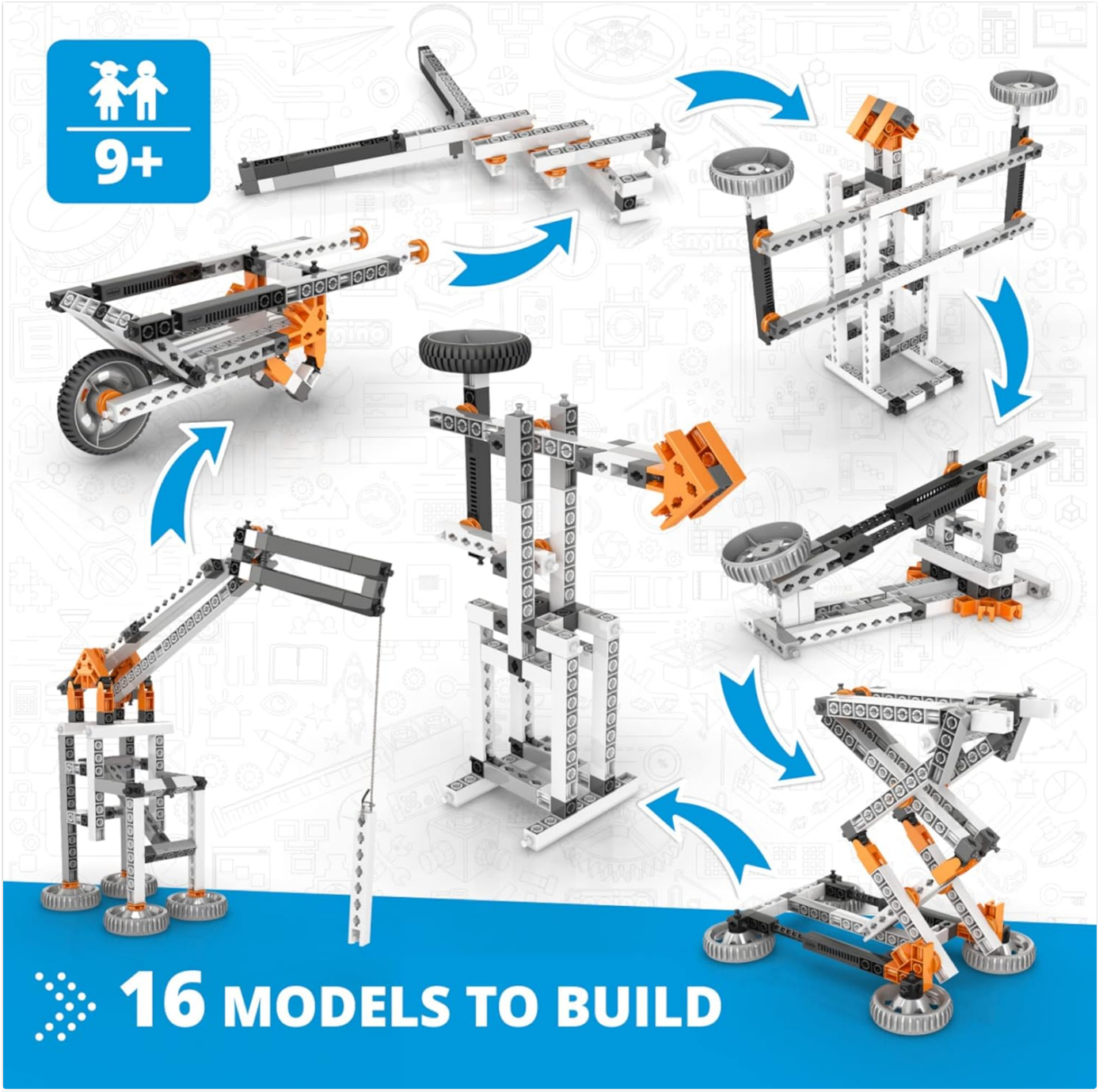

Figure 4: Examples of the 16 models that can be constructed using this kit, demonstrating various applications of levers and linkages.

Theory and Experiments

The kit includes a Theory Book and an Experiments Booklet to deepen understanding of mechanical principles. The Theory Book explains scientific concepts related to levers and linkages, while the Experiments Booklet guides you through practical activities to test these concepts.

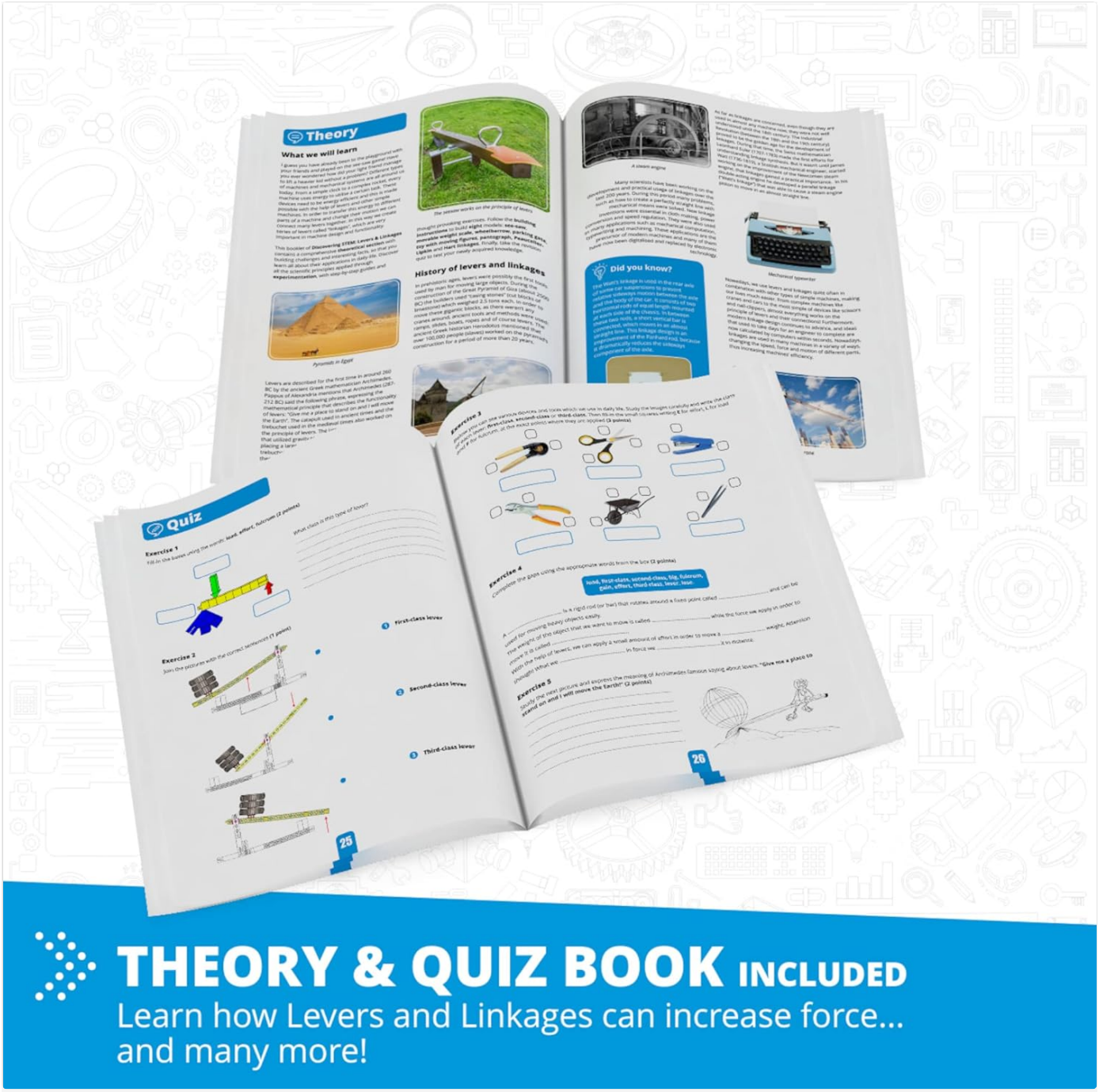

Figure 5: The Theory and Quiz books provide educational content to complement the building experience.

Figure 6: The Experiments section includes step-by-step scientific activities, such as building a parallel scale to understand linkages.

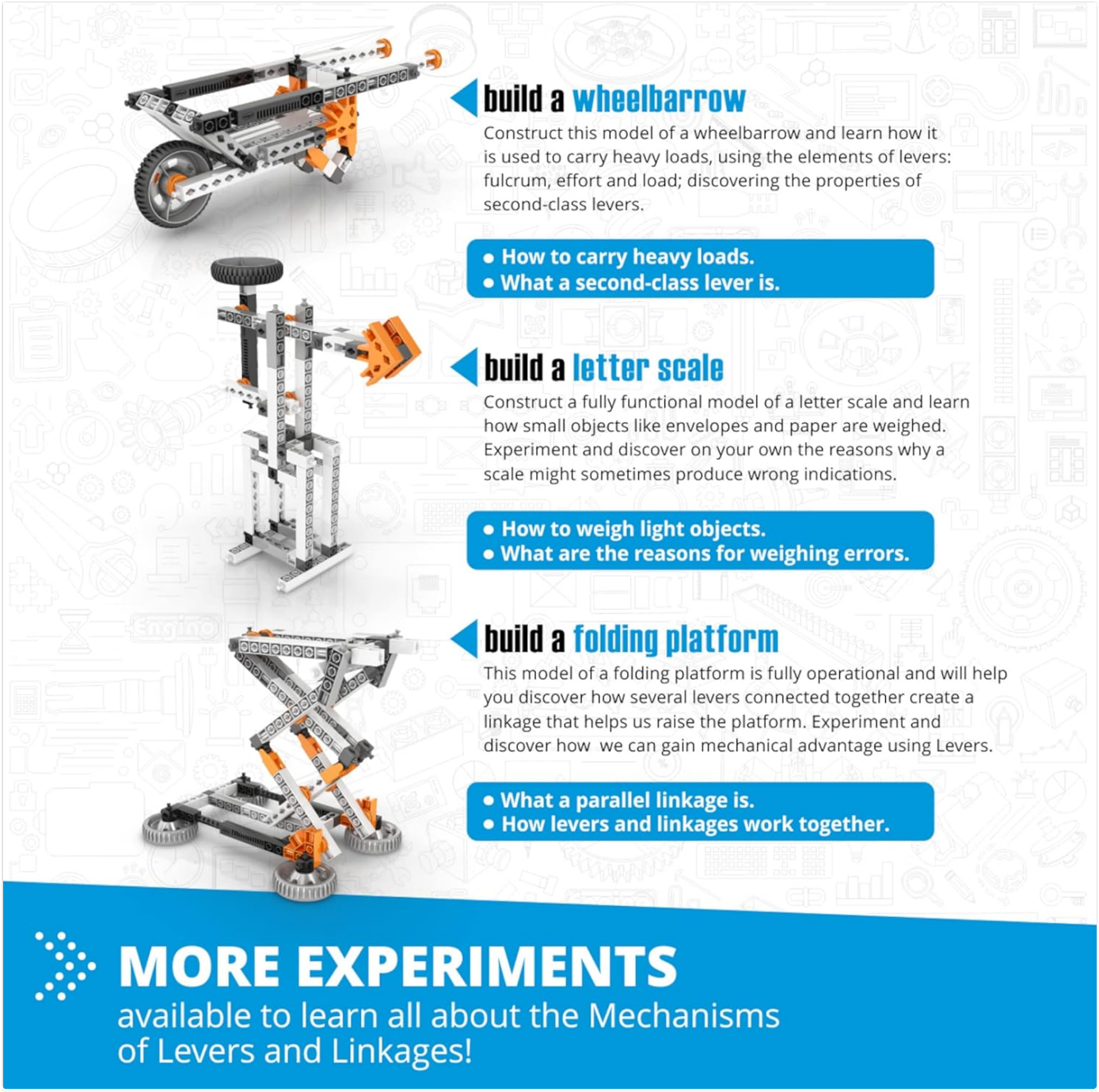

Figure 7: Additional experiments are available to explore mechanisms of levers and linkages, including building a wheelbarrow, letter scale, and folding platform.

Maintenance

To ensure the longevity of your Engino kit, follow these maintenance guidelines:

- **Cleaning:** Wipe parts with a damp cloth if they become dirty. Avoid harsh chemicals or abrasive cleaners.
- **Storage:** Store all components in their original packaging or a suitable container to prevent loss and damage. Keep the kit in a cool, dry place away from direct sunlight.
- **Inspection:** Periodically check all parts for wear and tear. Replace any broken or severely damaged components to maintain optimal functionality and safety.

Troubleshooting

If you encounter issues during assembly or operation, consider the following:

- **Difficulty Connecting Parts:** Ensure parts are aligned correctly. The snap-fit system requires a firm push. If a part

is stuck, use the provided extraction tool.

- **Model Not Functioning:** Double-check all connections against the instructions. A misplaced or incorrectly oriented part can affect the model's movement.
- **Missing Parts:** Refer to the kit contents list. If a part is genuinely missing, contact customer support.
- **App Issues:** Ensure your device meets the app's system requirements and that the app is updated to the latest version. Try restarting the app or your device.

Product Specifications

Feature	Detail
Brand	Engino
Model Number	ENG-STEM01
Item Type Name	Mechanics: Levers & Linkages
Age Range	9+ years (Manufacturer Minimum Age: 108 months)
Educational Objective	STEM (Science, Technology, Engineering, Mathematics)
Material Type	ABS Plastic
Item Dimensions	14.6 x 2.7 x 10.6 inches
Item Weight	1.25 Pounds
Assembly Required	Yes
Batteries Required	No
UPC / GTIN	756619011424

Warranty Information

This Engino product is warranted against manufacturing defects. For specific details regarding warranty claims and duration, please refer to the packaging or contact Engino customer support.

Customer Support

For further assistance, technical support, or inquiries regarding your Engino STEM Mechanics Levers & Linkages kit, please visit the official Engino website or contact their customer service department.
You can also visit the Engino Store on Amazon for more information and product details.