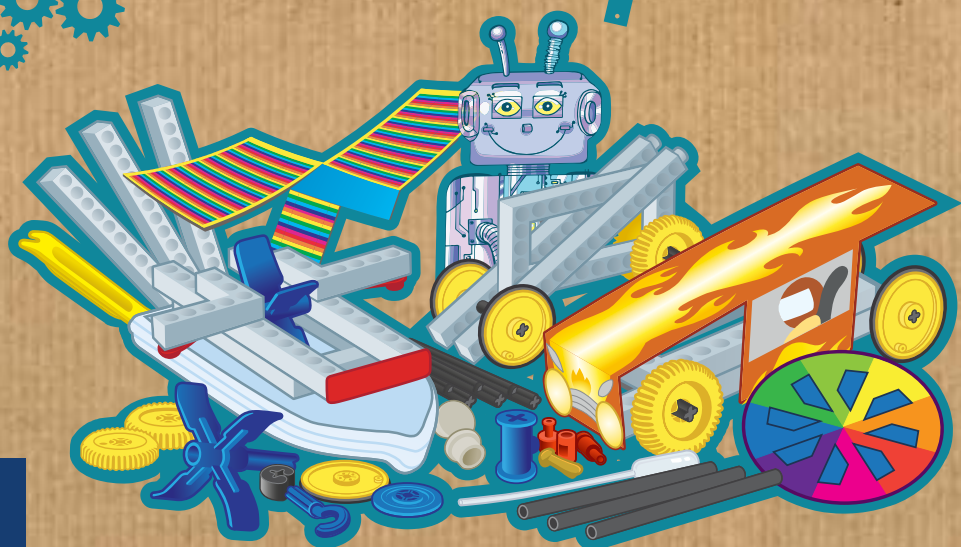


# INTRO TO ENGINEERING

SCIENCE KIT



THAMES & KOSMOS

## >>> KIT CONTENTS

### GOOD TO KNOW!

>>> If you are missing any parts, please contact Thames & Kosmos customer service.



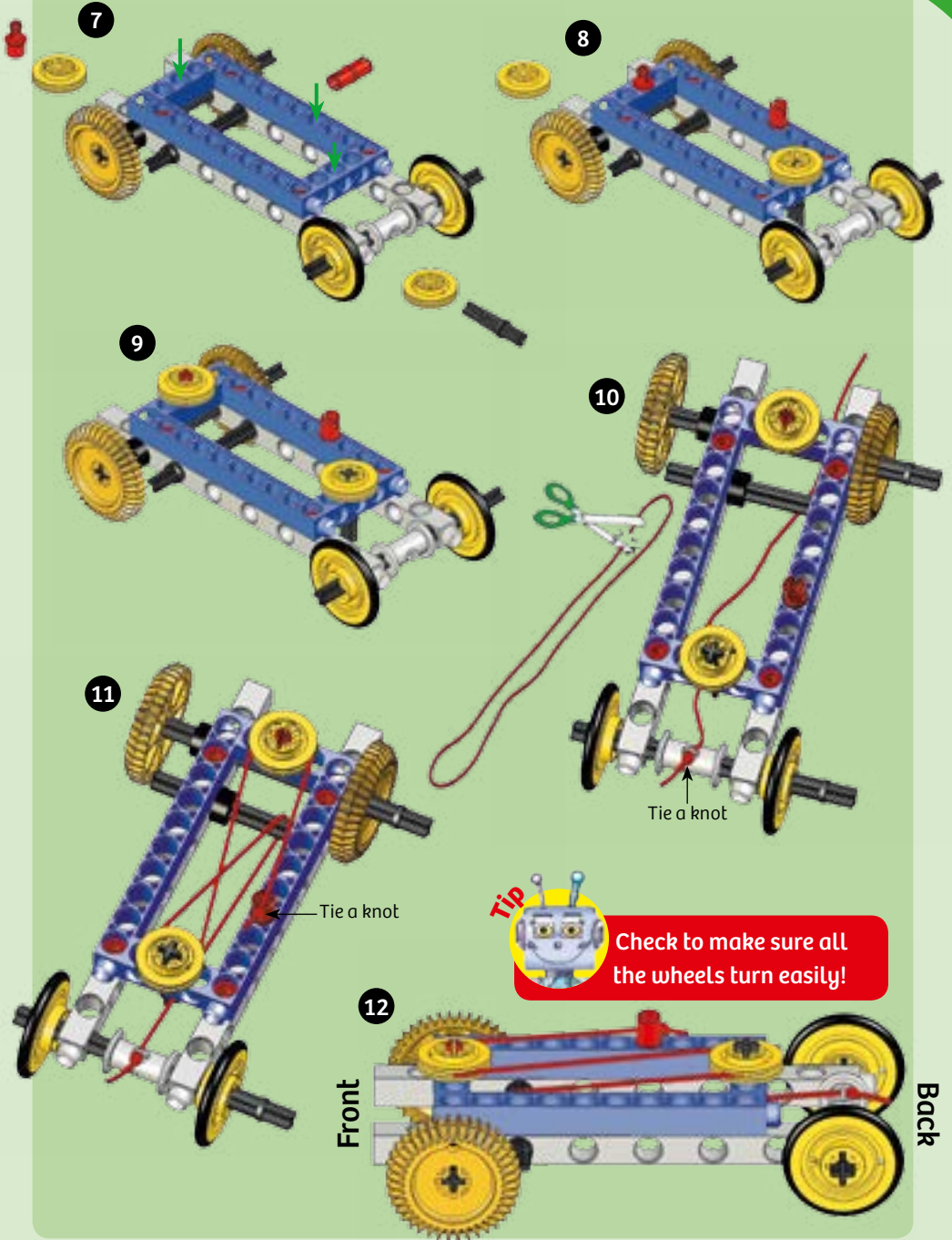
## Checklist: Find – Inspect – Check off

| ✓ No.                 | Description               | Qty. | Item No. | ✓ No.                 | Description                 | Qty. | Item No. |
|-----------------------|---------------------------|------|----------|-----------------------|-----------------------------|------|----------|
| <input type="radio"/> | 1 Flip-book paper sheet   | 1    | 715 766  | <input type="radio"/> | 20 Long rod                 | 2    | 703 235  |
| <input type="radio"/> | 2 Printed paper sheet     | 1    | 716 557  | <input type="radio"/> | 21 5-hole rod               | 2    | 704 063  |
| <input type="radio"/> | 3 Glider paper sheet      | 1    | 715 765  | <input type="radio"/> | 22 3-hole rod               | 2    | 705 015  |
| <input type="radio"/> | 4 Die-cut cardboard sheet | 1    | 714 451  | <input type="radio"/> | 23 Medium gear              | 2    | 702 505  |
| <input type="radio"/> | 5 String                  | 1    | 706 761  | <input type="radio"/> | 24 Medium pulley            | 2    | 707 010  |
| <input type="radio"/> | 6 Clear film sheet        | 1    | 000 587  | <input type="radio"/> | 25 Small pulley             | 2    | 707 011  |
| <input type="radio"/> | 7 Drinking straw blue     | 1    | 707 448  | <input type="radio"/> | 26 O-ring for medium pulley | 2    | 703 251  |
| <input type="radio"/> | 8 Drinking straw black    | 2    | 701 375  | <input type="radio"/> | 27 Long axle                | 2    | 703 234  |
| <input type="radio"/> | 9 Pipette                 | 1    | 708 761  | <input type="radio"/> | 28 Medium axle              | 1    | 703 238  |
| <input type="radio"/> | 10 Parachute material     | 1    | 706 535  | <input type="radio"/> | 29 Short axle               | 1    | 703 236  |
| <input type="radio"/> | 11 Push pin               | 1    | 706 642  | <input type="radio"/> | 30 Crane hook               | 1    | 706 533  |
| <input type="radio"/> | 12 Mounting stand         | 2    | 701 384  | <input type="radio"/> | 31 String spool             | 1    | 706 854  |
| <input type="radio"/> | 13 Paper clip             | 3    | 263 132  | <input type="radio"/> | 32 Connection bridge        | 1    | 703 231  |
| <input type="radio"/> | 14 Small rubber band      | 2    | 161 412  | <input type="radio"/> | 33 Anchor pin               | 14   | 702 527  |
| <input type="radio"/> | 15 Large rubber band      | 4    | 708 271  | <input type="radio"/> | 34 Shaft plug               | 1    | 702 525  |
| <input type="radio"/> | 16 Paddle wheel           | 1    | 706 540  | <input type="radio"/> | 35 Joint pin                | 1    | 702 524  |
| <input type="radio"/> | 17 Axle                   | 1    | 706 803  | <input type="radio"/> | 36 Button pin               | 4    | 704 062  |
| <input type="radio"/> | 18 Anchor pin lever       | 1    | 702 590  | <input type="radio"/> | 37 Axle lock                | 2    | 702 813  |
| <input type="radio"/> | 19 Small frame            | 1    | 710 113  |                       |                             |      |          |

Any materials not included in the kit are marked with this symbol **+** under the "You will need" heading.

### You will also need:

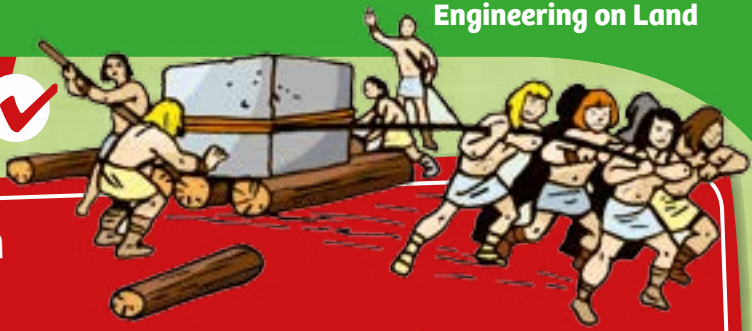
Paper, pen, tape, glue, scissors, knife, coin, glass, plastic cups, mixing bowl, two small empty, yogurt cups, 2 cooking spoons, thin rope, paper towels, water, sink, bathtub, long wooden board for ramp, books, toys like building blocks, marbles, toy figure



CHECK IT OUT



## The invention of the wheel



The invention of the wheel was a **revolutionary development** in human history. Wheels allow heavy loads to be transported with ease from one location to another. Before wheels existed, people did things like laying logs on the ground, placing the load on them, and pulling it forward with ropes. The logs had to be continually moved from the back to the front in order to pull the load a few more meters. A laborious task, for sure!



## AIR RESISTANCE

The size and shape of a vehicle's body determine its air resistance. A **tall truck** with lots of corners and edges has more resistance. **Racing cars**, on the other hand, are low to the ground and expose only a small surface area to the wind, so the air glides easily around their streamlined shapes. That is one reason they can go so fast.



Not a Streamlined Shape



Streamlined Shape