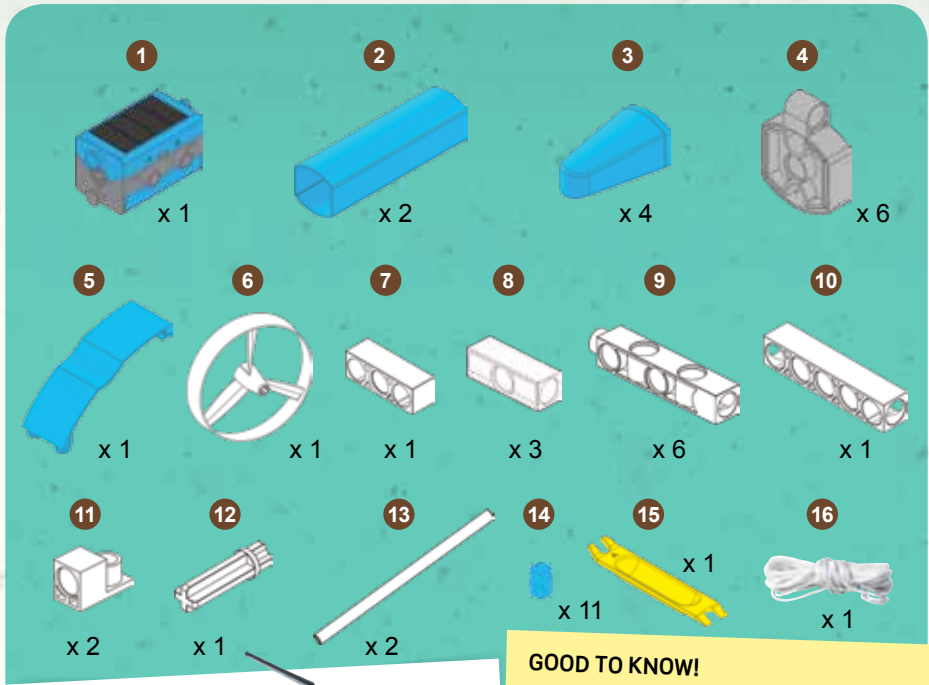




# SOLAR BOAT | The parts in your kit



### You will also need:

Source of energy (sunlight, 1 x 1.5-volt battery, type AAA/LR03, or 1 x 1.2-volt rechargeable battery, min. 800 mAh/type AAA, light bulb (only halogen energy-saving bulb, 42 W or above)), bathtub or wading pool, hair dryer, sheet of letter-sized paper, pencil, scissors, ruler, 2 chairs, weight, tape

### GOOD TO KNOW!

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

Any materials not included in the kit are indicated in **italic script** under the "You will need" heading.

No.	Description	Qty.	Item No.	No.	Description	Qty.	Item No.
1	SOLAR MODULE with Motor	1	714009	9	5-HOLE DUAL-ROD	6	714126
2	FLOAT	2	714010	10	5-HOLE ROD	1	714179
3	FLOAT COVER	4	714011	11	90-DEGREE CONVERTER - R	2	714128
4	BASE	6	714012	12	MOTOR SHAFT	1	702801
5	BODY PANEL, large	1	714013	13	TUBE	2	714014
6	PROPELLER	1	714005	14	ANCHOR PIN	11	714129
7	3-HOLE ROD	1	714125	15	ANCHOR PIN LEVER	1	702590
8	3-HOLE DUAL-ROD	3	714127	16	STRING	1	714130
						Total	44



Safety information ..... inside front cover

Experiment to hit the ground running ..... 1

The parts in your kit ..... 2

Contents ..... 3

Tips and Tricks ..... 4

**MODELS AND EXPERIMENTS**

Solar Boat ..... 5  
**Experiment 1:** Powering along in shallow water? Find out how the solar boat does it.

Solar Windmill ..... 9  
**Experiment 2:** Wind energy and solar energy — your windmill brings the two together.

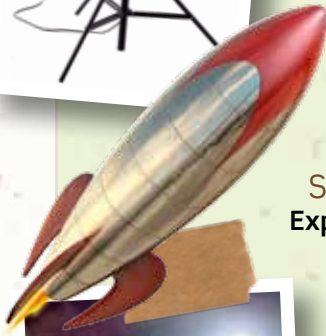
Solar Plane ..... 13  
**Experiment 3:** Flying with nothing but sunlight? Your solar plane shows you how to do it.

Solar Fan ..... 17  
**Experiment 4:** Want to cool off? Then build a solar fan to get a fresh breeze blowing.

Solar Rocket ..... 21  
**Experiment 5:** Ready for lift-off? Your solar rocket is sure to get some attention.

Solar Spaceship ..... 25  
**Experiment 6:** The spaceship will race along the string with minimum friction.

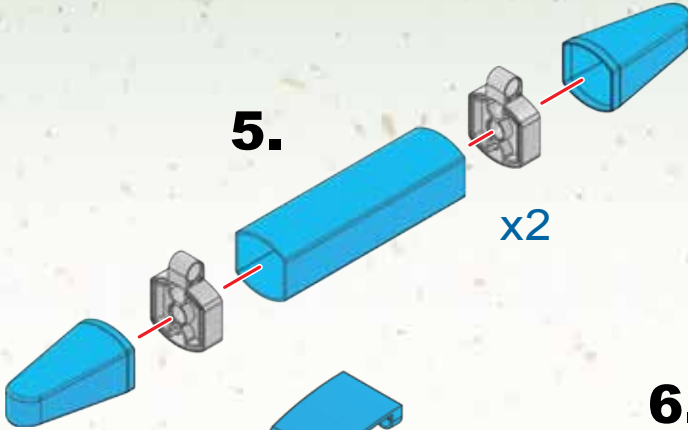
Copyright page ..... inside back cover



**TIP!**  
 You will find additional information here: "Check It Out" Pages 29, 30, 31, and 32

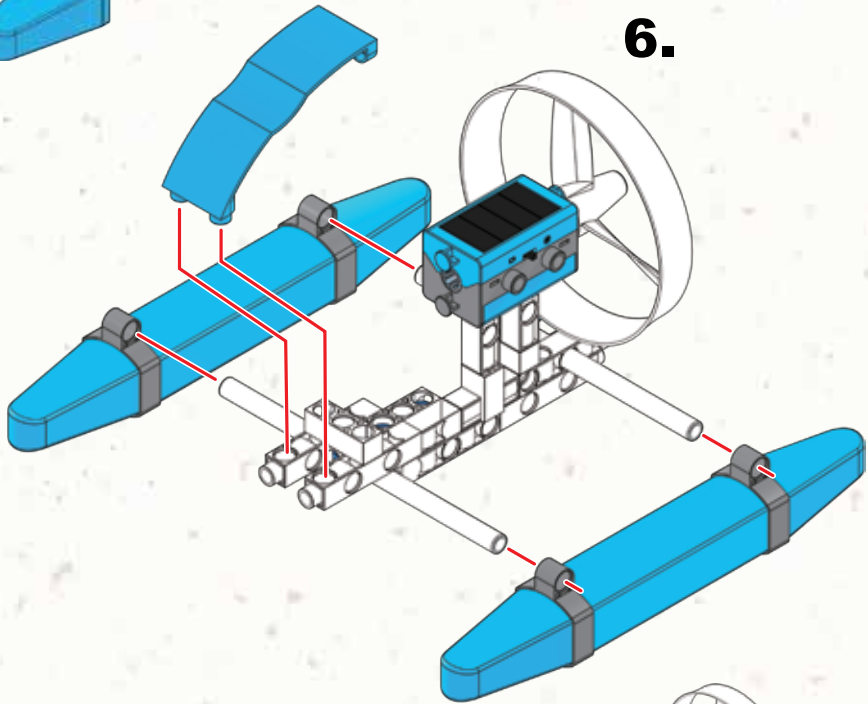


5.

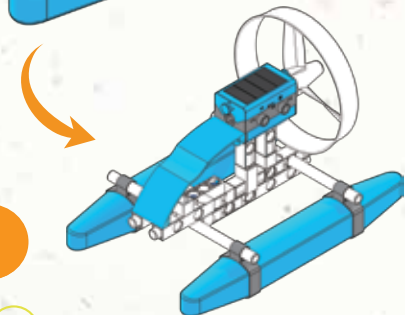


x2

6.



Completed





## EXPERIMENT 1

### When does your solar boat run?

#### YOU WILL NEED

- › The assembled solar boat
- › Energy source (battery)
- › Bathtub



#### HERE'S HOW

1. Set your boat in a dry tub. Push the switch to the battery power setting to turn on the motor.
2. Gradually fill the tub with cold water. How high does the water level have to get for the boat to float? When that happens, does it start moving right away?

#### WHAT'S HAPPENING?

The two floats help the solar boat float on the water. The motor powers the propeller or fan, which creates a strong push of air behind the boat, moving the boat forward. Unlike in an ordinary boat, this propeller is positioned above the water rather than sticking down into it. That means that the boat can even move through shallow water.

#### WARNING!

Never place an electric lamp anywhere near water or near a bathtub! Use only the battery power or sunlight when operating in water.

#### TIP!

If you want to use the boat outside, set it in a shallow basin or wading pool. Dry off all the pieces after use!

#### DID YOU KNOW ...

Airboats (also known as fanboats) have no brakes, and they can't drive in reverse. So the person piloting an airboat has to steer carefully in order to get it to the right destination. Along with rubber rafts, airboats are often used in flooded areas.

