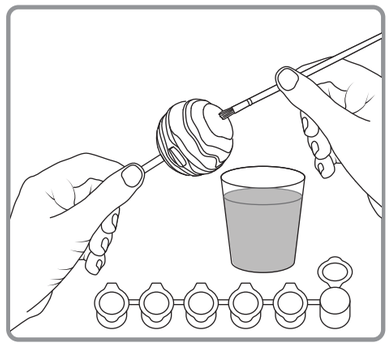
COLOURING THE SOLAR SYSTEM

Paint your own choice of colours on each planet or check the images on the package for colour ideas.



PAINTING TIPS

1. Prepare a small bowl of clean water.
2. Always wet your paintbrush before mixing or applying paint with it.
3. Don't let paint dry on the brush.
4. Keep paint containers tightly closed when you're not using them, to stop the paint drying up.
5. If the paint goes dry, try to make it liquid again with a few drops of water on your brush.
6. It is always easier to paint a darker colour on a lighter colour background than the opposite.
7. For best results – if you want to apply more than one coat, wait until the first layer is completely dry before applying a second coat.

MIXING TIPS

1. Using a mixing tray to mix your paints in is a good idea.
2. Mix colours without water on the mixing tray at first.
3. Follow the colour-mixing guide below to produce extra colours:

Green = Yellow + Blue
Orange = Yellow + Red
Purple = Blue + Red
Brown = Red + Yellow + (just a little) Black
Pink = Red + White
Sky blue = Blue + White

4. Making colours darker or lighter

a. You can mix your base colours with white to make them lighter or with black to make them darker.

b. Be careful! It only takes a TINY bit of a dark colour to change a light colour, but it takes HEAPS more of a light colour to change a dark one. So, for example, use white as your base colour and gradually add a little blue to darken it, instead of trying to lighten a lot of blue by adding white. That way you won't end up mixing more colour than you want.

5. Be careful with mixing lots of colours together, as too many colours blended together will often produce a 'muddy' final colour.

AHA!

- The Solar System formed around 4.6 billion years ago.
- The Sun makes up 99.86 percent of the Solar System's mass, with Jupiter and Saturn making up most of the rest. The small inner planets – Mercury, Venus, Earth and Mars make up a very small percentage of the Solar System's mass.
- There are eight planets in the Solar System. In order of distance from the Sun, they are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune (furthest).
- The four smaller inner planets – Mercury, Venus, Earth and Mars – sometimes called the 'terrestrial planets', are mostly made up of rock and metal.
- The four outer planets – Jupiter, Saturn, Uranus and Neptune – also called the 'gas giants' because they are made up mainly of gases, are much larger and more massive than the inner planets.
- Jupiter and Saturn are the largest of the four, and are made up mainly of hydrogen and helium gas.
- The two outermost gas giants, Uranus and Neptune, are mostly made up of ices – frozen water, ammonia and methane – and are also called the 'ice giants'.
- Since 2008, we have known there are also five 'dwarf' (tiny) planets – Pluto, Ceres, Eris, Makemake & Haumea.
- For thousands of years, we humans didn't know about the Solar System and believed that Earth was at the centre of the Universe.
- The wind on Jupiter blows faster than a hurricane – travelling faster than 400mph!
- Saturn's largest moon, Titan, has a nitrogen-rich atmosphere very similar to how the Earth's atmosphere used to be.
- Jupiter is so massive that planet Earth could fit inside it more than 1000 times!
- Driving at 75 miles per hour, it would take 258 Earth days to drive around one of Saturn's rings!
- Over 40 spacecrafts have visited Venus, and in the early 1990s the Magellan mission mapped around 98% of the planet's surface!

You'll find some more fun facts about our solar system that will totally amaze you in the following table of statistics:

FUN FACTS ABOUT THE SOLAR SYSTEM

Statistics	Mercury	Venus	Earth	Mars	Jupiter	Saturn	Uranus	Neptune
Distance to Sun (miles)	36,000,000 miles	67,200,000 miles	93,000,000 miles	141,600,000 miles	483,600,000 miles	886,700,000 miles	1,784,000,000 miles	2,794,400,000 miles
Distance to Sun (km)	57,900,000 km	108,200,000 km	149,600,000 km	227,900,000 km	778,300,000 km	1,427,000,000 km	2,871,000,000 km	4,497,100,000 km
Orbit time around Sun	88 Earth days	224 Earth days	365 Earth days	687 Earth days	4,332 Earth days	10,748 Earth days	30,685 Earth days	60,155 Earth days
Period of Rotation	58 Earth days	242 Earth days	1 Earth day	1.029 Earth days	0.415 Earth day	0.44 Earth day	0.75 Earth day	0.67 Earth day
Diameter (miles)	3030 miles	7517 miles	7925 miles	4190 miles	88693 miles	74867 miles	31750 miles	30765 miles
Diameter (km)	4,878 km	12,102 km	12,760 km	6,746 km	142,796 km	120,536 km	51,118 km	49,532 km
Size relative to Earth	0.38	0.95	1	0.53	11.19	9.45	4	3.88
Mass relative to Earth	0.06	0.81	1	0.11	317.83	95.1	14.5	17.1
Avg Day Temp (°C)	400 °C	460 °C	20 °C	-5 °C	-145 °C	-178 °C	-224 °C	-218 °C
Avg Day Temp (°F)	752 °F	860 °F	68 °F	23 °F	-229 °F	-288.4 °F	-371.2 °F	-360.4 °F
Avg Night Temp (°C)	-170 °C	460 °C	10 °C	-85 °C	-145 °C	-178 °C	-224 °C	-218 °C
Avg Night Temp (°F)	-274 °F	860 °F	50 °F	-121 °F	-229 °F	-288.4 °F	-371.2 °F	-360.4 °F
Number of moons	0	0	1	2	79	63	27	14

M 36041 V1 ENG

LIGHTENED-UP SOLAR SYSTEM ASSEMBLY KIT

NOTE: FOR AGES 8 AND UP

WARNING! Not suitable for children under 36 months due to small parts. Choking hazard. Use with care and only under adult supervision. Always keep packaging for future reference and safety reasons.

ADVICE FOR SUPERVISING ADULTS:

1. Read and follow these instructions and the safety rules and keep them for reference.
2. This kit is for use only by children over 8 years.
3. The supervising adult should discuss the warnings and safety information with the child or children before commencing this kit.

BATTERY SAFETY INFORMATION:

1. Batteries required: 2 AAA (not included).
2. Only adults should install and replace batteries and bulbs.
3. Alkaline batteries are recommended.
4. Non-rechargeable batteries are not to be recharged.
5. Rechargeable batteries are to be removed from the toy before being charged.
6. Rechargeable batteries are only to be charged under adult supervision.
7. If the toy has not been used for a long time, remove the batteries.
8. Do not mix old and new batteries.
9. Do not mix alkaline, standard (carbon zinc) or rechargeable (nickel-cadmium) batteries.
10. Exhausted batteries are to be removed from the toy.
11. The supply terminals are not to be short-circuited.
12. Only batteries of the same or equivalent type as recommended are to be used.
13. Batteries are to be inserted with the correct polarity.
14. Do not dispose of batteries in fire, batteries may explode or leak.
15. Batteries may explode or leak if misused.

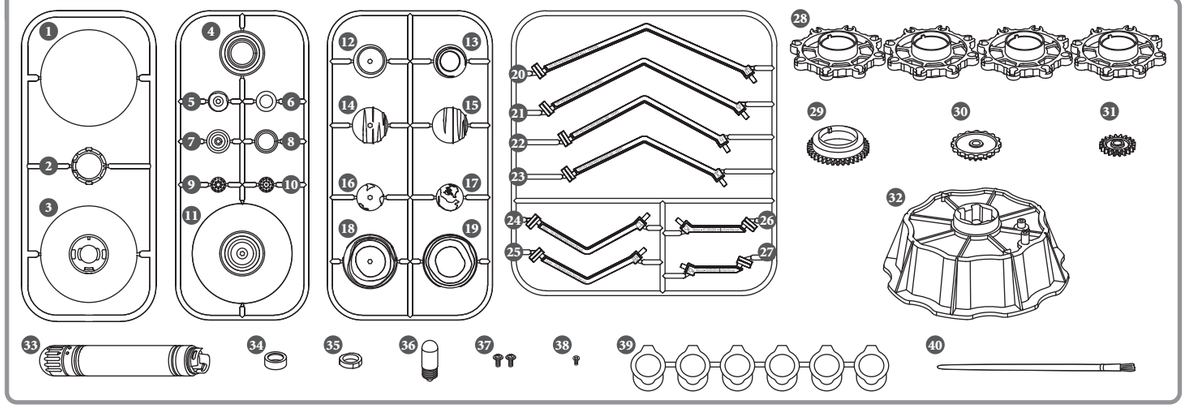
ASSEMBLY TIPS

- Carefully read the instructions before assembling your kit.
- You will need to use scissors for cutting/trimming parts. Remember – you need help/supervision from an adult (such as a parent or teacher) when using scissors.
- Examine the contents of the kit and check the part numbers before you start assembling things.
- Since there are many pieces in this kit, we suggest you wait until you need each piece before you cut it from the holding frame. This will help you keep the pieces tidy, and help you check the parts and their numbers while you are building your kit.
- Carefully detach the plastic pieces from the holding frames as you need them. Cut them as carefully and cleanly as you can with scissors. Scissors are also useful to trim away excess plastic from the parts, to smooth uneven edges and make assembly easier.
- The best and safest place to work is on a solid, level, working surface with plenty of room for all your bits and pieces. It's also a good idea to keep your workspace neat and tidy so you don't lose things or get confused.
- Remember – be EXTRA careful when handling sharp points and edges. It's easy to hurt yourself if you're not paying attention.
- If you accidentally get paint on your clothes, wash it off IMMEDIATELY. Dried paint may leave stains on clothing even after you wash them. Put on an apron or wear old working clothes if you want to be really careful.

Tel: (852) 2333-6688

Imported by: Eastcolight (Hong Kong) Ltd. 67 Mody Road, Kowloon, Hong Kong

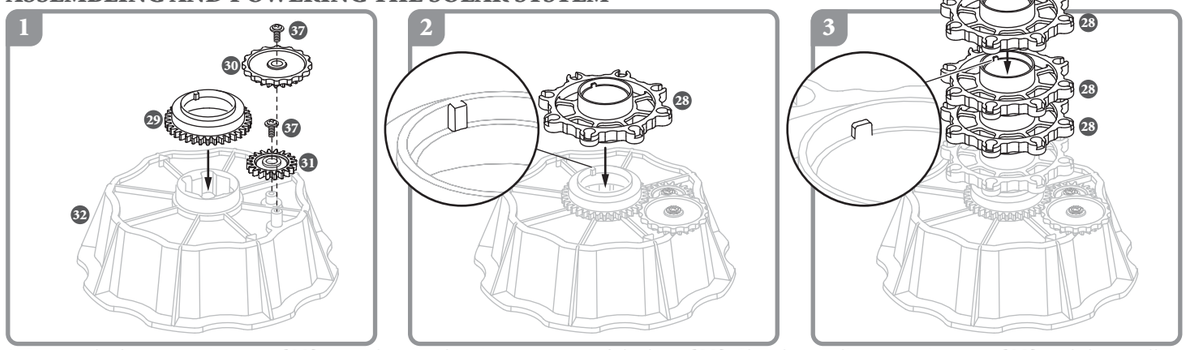
PACKAGE CONTENTS



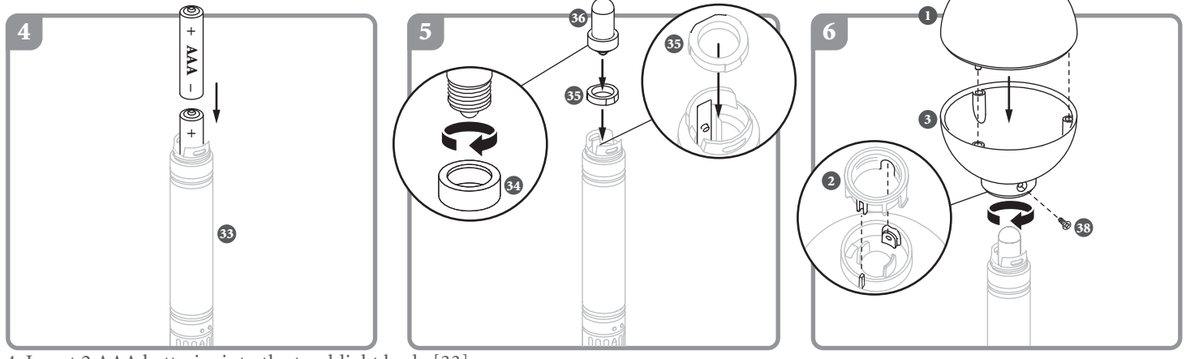
1. Sun lampshade upper half
2. Torch adapter
3. Sun lampshade lower half
4. Saturn upper half
5. Mars lower half
6. Mars upper half
7. Venus lower half
8. Venus upper half
9. Mercury lower half
10. Mercury upper half
11. Saturn lower half
12. Neptune lower half
13. Neptune upper half
14. Uranus lower half
15. Uranus upper half
16. Earth lower half
17. Earth upper half
18. Jupiter lower half
19. Jupiter upper half
20. Neptune rotating arm
21. Uranus rotating arm
22. Saturn rotating arm
23. Jupiter rotating arm
24. Mars rotating arm
25. Earth rotating arm
26. Venus rotating arm
27. Mercury rotating arm
28. Rotating wheel x 4
29. Large rotating gear
30. Medium rotating gear
31. Small rotating gear
32. Base
33. Torchlight body
34. Conductor ring
35. Battery stopper
36. Light bulb
37. Washer-headed screw x 2
38. Small screw
39. 6 colour paint pots
40. Paint brush

You will also need: a small crosshead screwdriver, a pair of scissors, a mixing tray (for paints), a bowl of clean water (for painting)

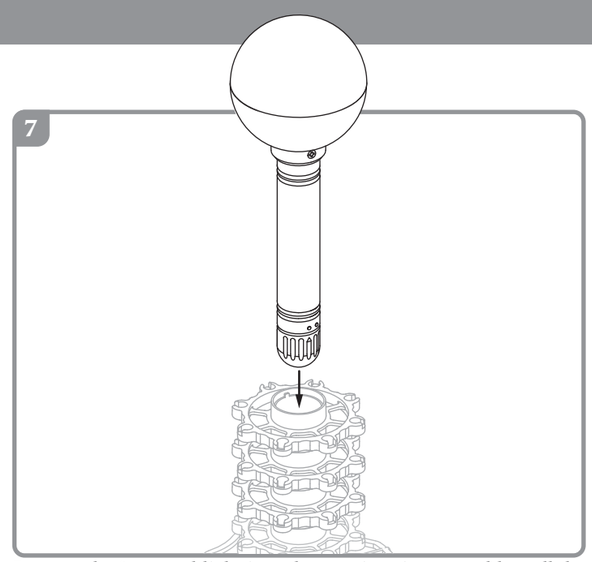
ASSEMBLING AND POWERING THE SOLAR SYSTEM

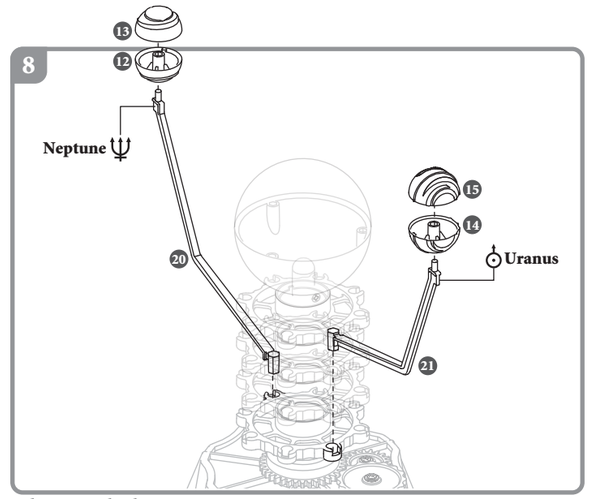


1. Locate the large rotating gear [29] onto the circular ring at centre of the base [32]. Slot the medium rotating gear [30] and the small rotating gear [31] into the uprights on the base and secure them with the two washer-headed screws [37].
2. Push one rotating wheel [28] into place on the large rotating gear in line with the holding tab as shown.
3. Repeat the above step [step 2] three more times, putting the other 3 rotating wheels in place.

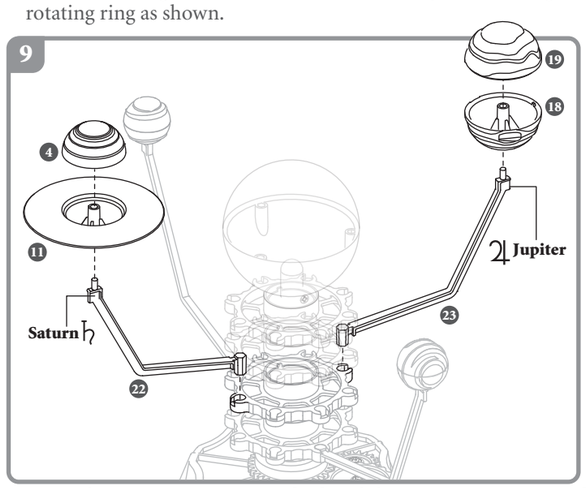


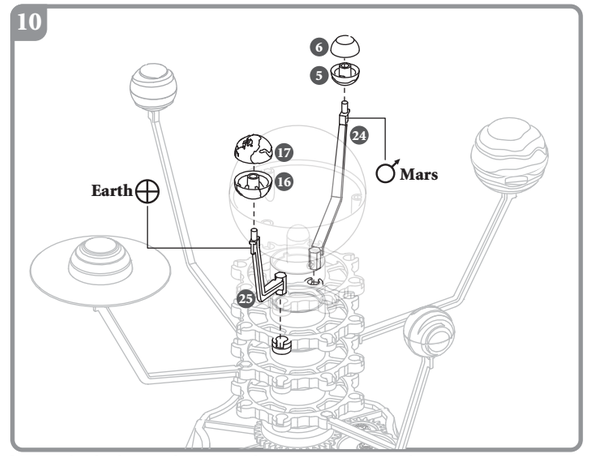
4. Insert 2 AAA batteries into the torchlight body [33].
5. Place the battery stopper [35] over the batteries and line up the flat edge of the battery stopper with the conductor strip inside the torch body as shown. Screw the light bulb [36] into the conductor ring [34]. Push the light assembly with conducting ring into place on the top of the battery stopper.
6. Click the torch adapter [2] into the bottom of the sun lampshade lower half [3] as shown. Fit the Sun lampshade upper half [1] in place on the Sun lampshade lower half. Screw the Sun lampshade onto the torchlight body and secure it with the small screw [38]. The Sun torchlight is ready.



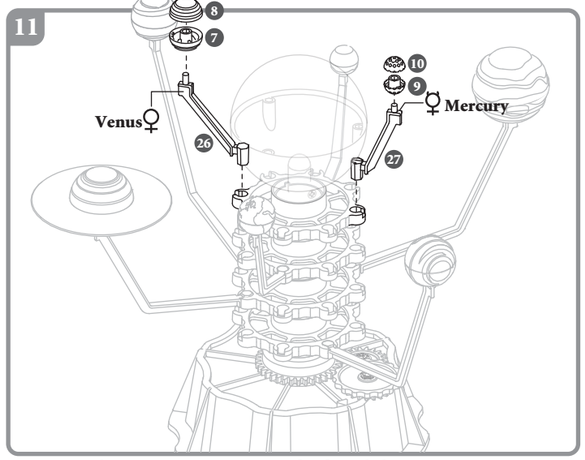


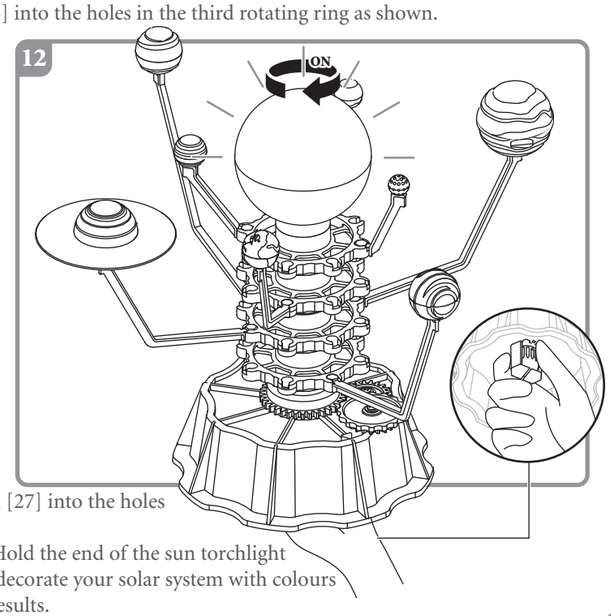
7. Insert the Sun torchlight into the rotating ring assembly – all the way down to the bottom.
8. Clip together all the planets' upper and lower halves and locate them on the matching rotating arms that have their symbols on them as shown in diagrams 8, 9, 10, 11. Insert the Neptune rotating arm [20] and the Uranus rotating arm [21] into the holes in the first rotating ring as shown.





9. Insert the Saturn rotating arm [22] and the Jupiter rotating arm [23] into the holes in the second rotating ring as shown.
10. Insert the Earth rotating arm [25] and the Mars rotating arm [24] into the holes in the third rotating ring as shown.





11. Insert the Venus rotating arm [26] and the Mercury rotating arm [27] into the holes in the fourth rotating ring as shown.
12. Well Done! Your solar system is ready to move around the sun. Hold the end of the sun torchlight and switch on the sun by rotating it clockwise. You may want to decorate your solar system with colours from the paint pots. Please follow our paint tips to get the best results.