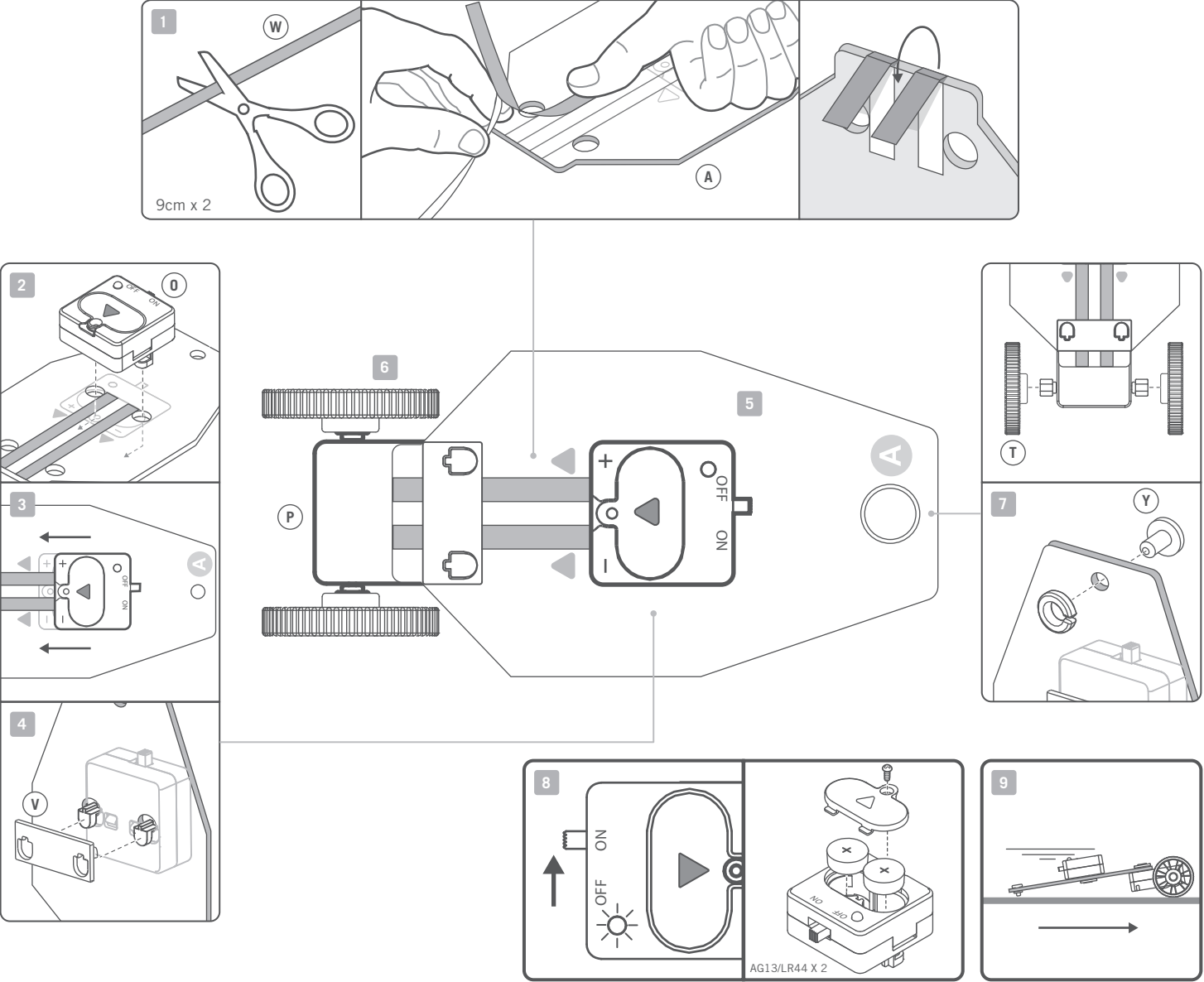


D. DART RACER: Build a cool circuit to create a powerful electrical engine!



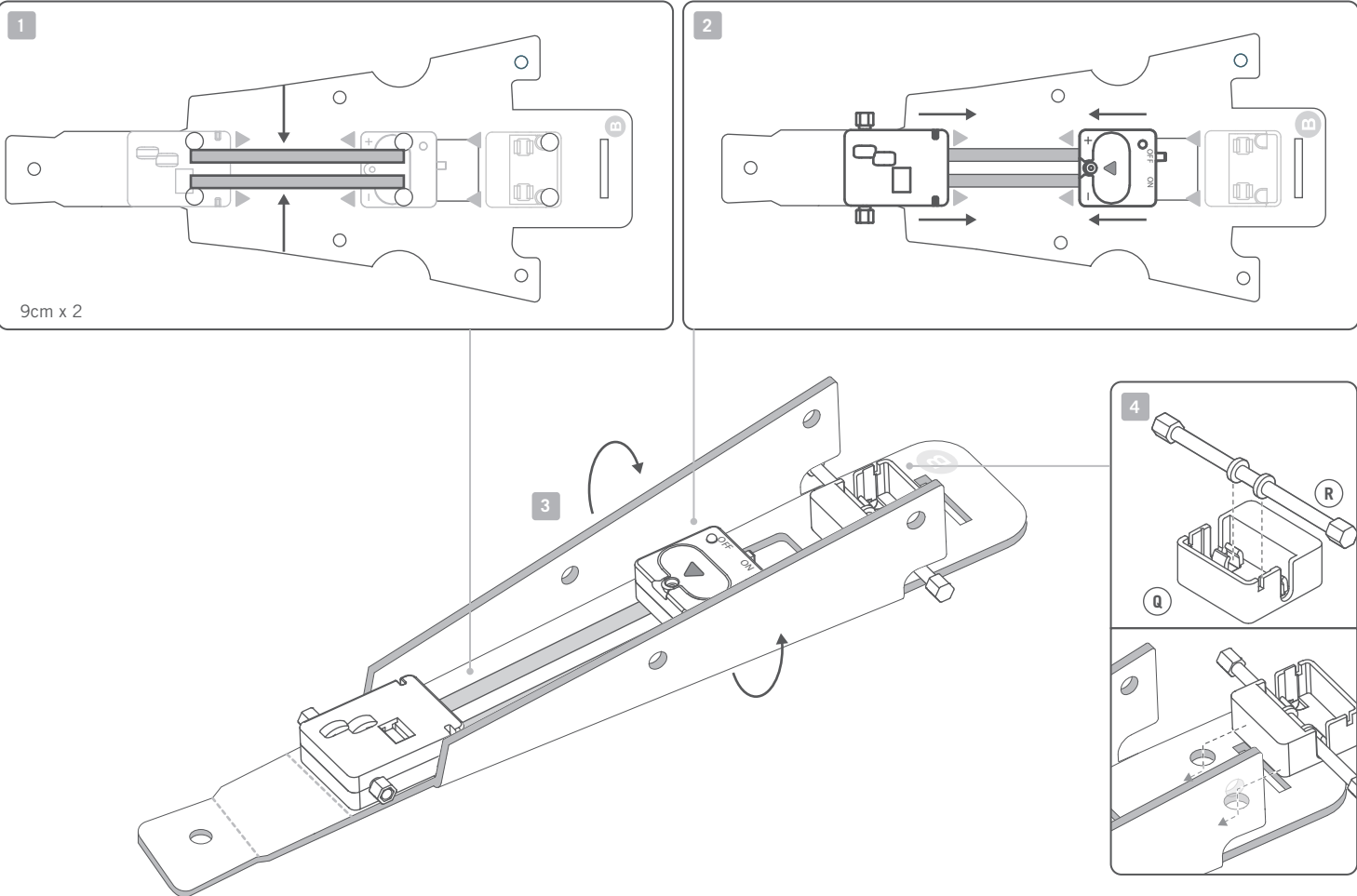
1. Thick and thin conductive tape are provided for the different projects in this kit. Take out the roll of thin conductive tape (W) for this project. Use the ruler printed on the instructions below. to measure out and cut off two 9cm strips of thin conductive tape. Stick the strips onto the Dart Racer base's (A) white shaded areas. Remember to wrap the tape around the end of the base and stick each strip to the bottom of the racer as shown.
2. Align the Battery Module (O) with the module outline and direction arrows on Dart Racer's base to make sure it is inserted in the correct direction.
3. Insert and slide the module towards the middle of the cardboard.
4. Flip the base over to secure the module with a module clip (V).
5. Align the Motor Module (P) with the white shaded areas on the cardboard before inserting into the Dart Racer's base.
6. Insert the small wheels (T) onto the Motor Module's axle joints.
7. Secure a peg in place with a C-ring (U) at the end of the Dart Racer's base. This will help the car run steadily along any surface.
8. Turn the Battery Module on.(Unscrew the battery case cover to replace exhausted batteries.)
9. The wheels will start to turn and the Dart Racer will speed away the moment the battery is turned on.

HOW IT WORKS

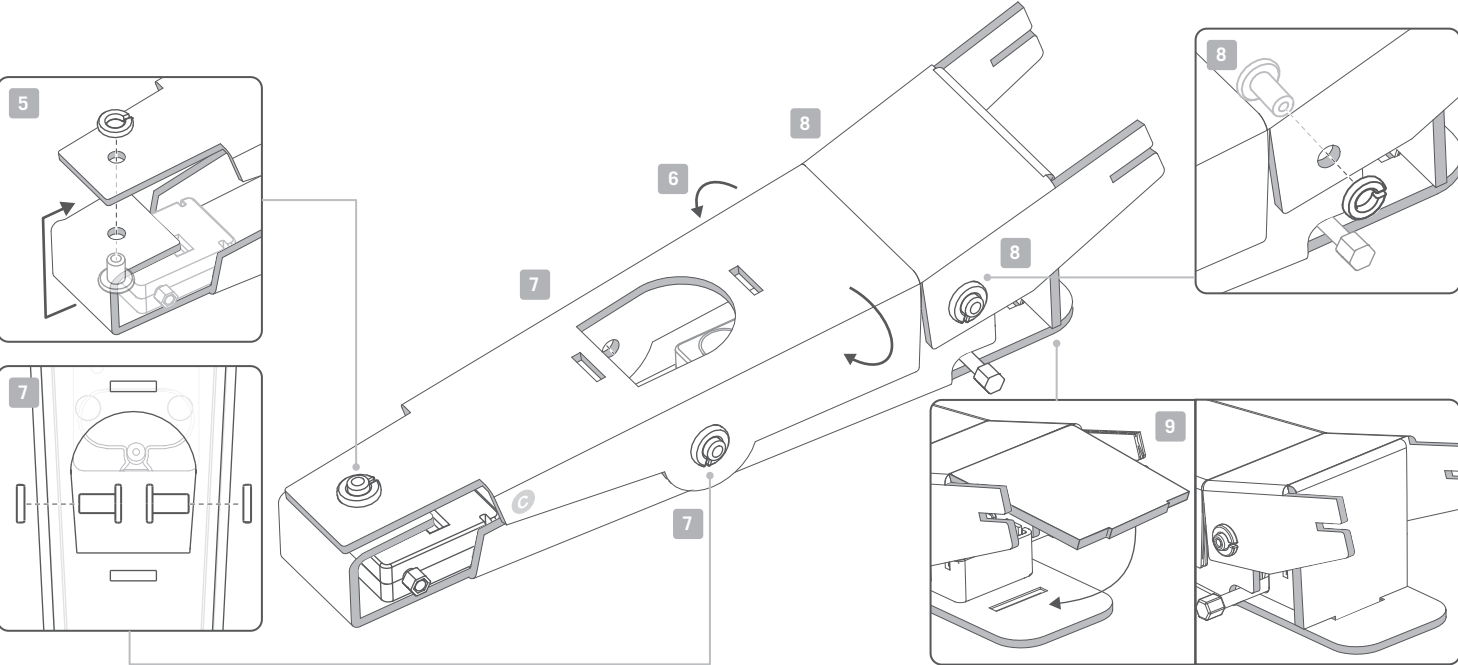
A battery creates potential energy by producing more electrons at one end and less electrons at the other end (creating the positive and negative ends). Once the two ends are connected by a complete circuit, electrons(negatively charged) naturally flow to the positive end of the circuit where there are less electrons. This creates an electrical current which provides electrical energy. The electrical current is more powerful when the amount of electrons is greater in one place than in another.



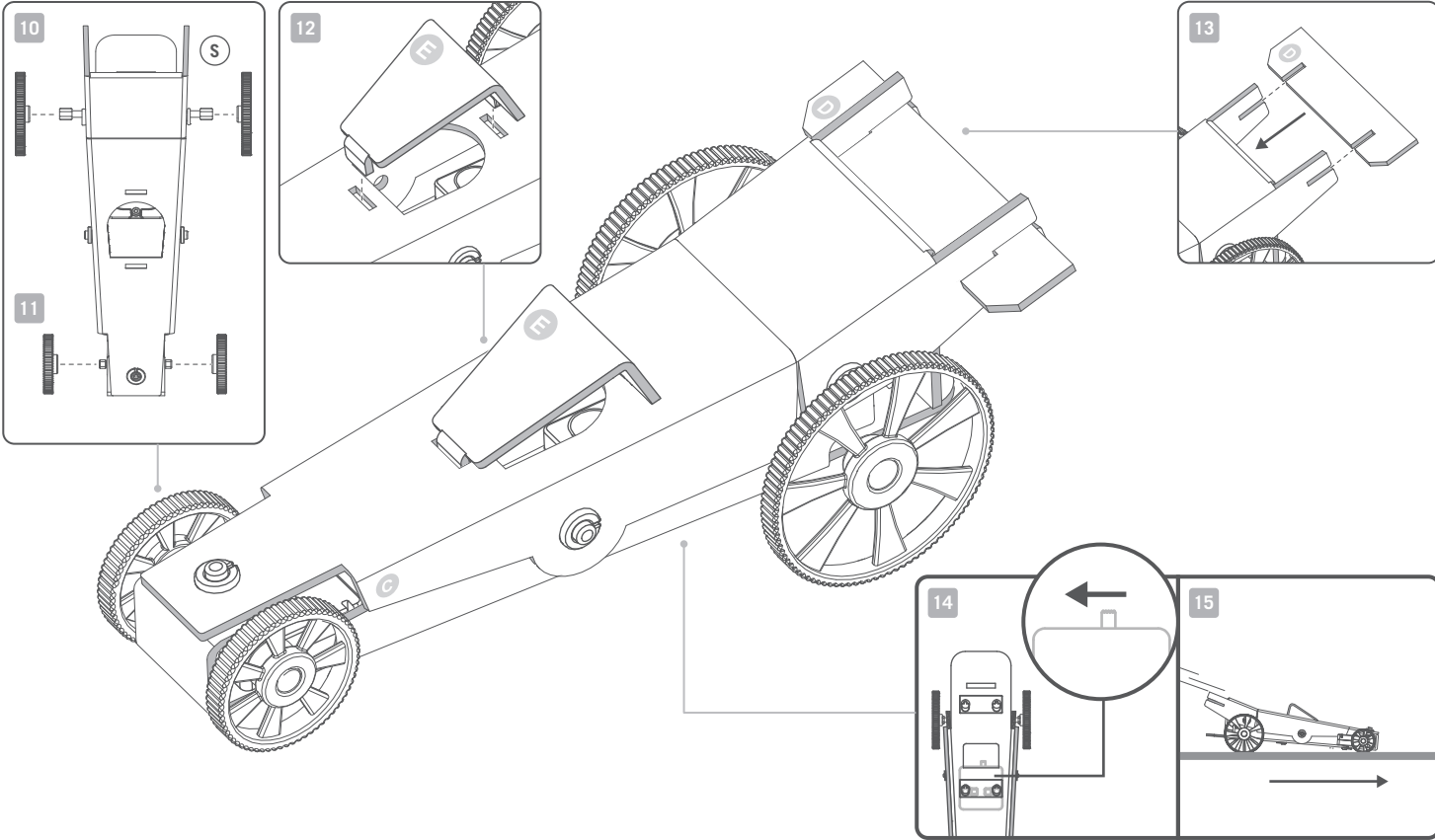
E. RADICAL RACER: Use your engineering skills to build a more powerful race car. Now TWO wheel modules will be installed to create a more life-like racer.



1. Measure out and cut two 9cm strips of thin conductive tape. Stick the strips onto the Radical Racer base's (B) white shaded areas as shown.
2. Insert the Motor and Battery Modules according to the direction arrows and outlines. Secure the modules in place from the back with a module clip as done previously.
3. Fold the sides of the base to create a 90 degree angle on each side.
4. Clip the rear wheel axle (R) into the wheel hub (Q). Slide the wheel hub into the holes at the end of the base.

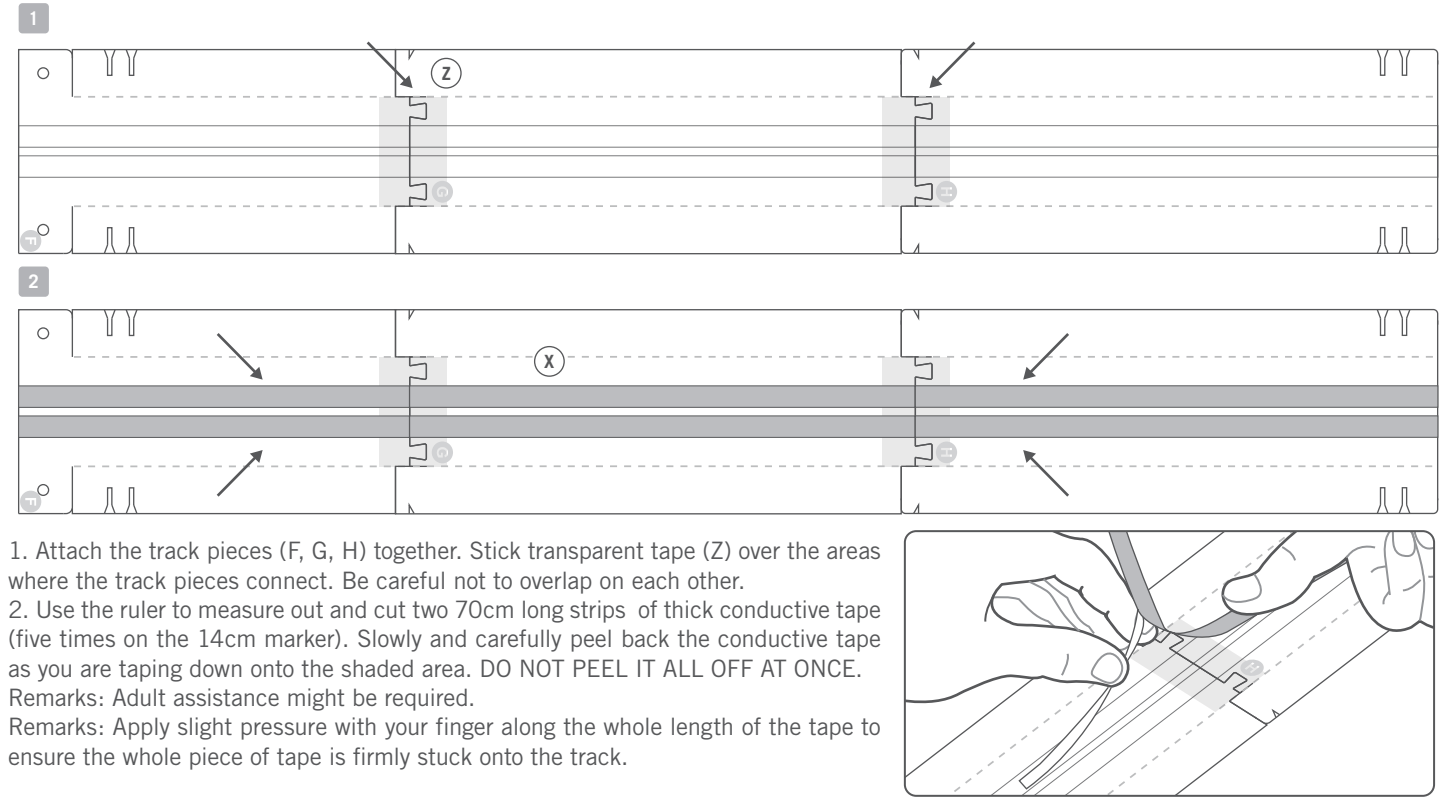


5. Fold the front of the racer and attach the hole at the end of base (B) to the hole at the end of racer's top (C) with a C-ring and peg.
6. Fold the racer top's (C) side flaps down.
7. Attach the side flaps to the racer's base (B) with C-rings and pegs.
8. Attach the back flaps of (B) to (C) with C-rings and pegs as shown.
9. Fold down the top back flap at the end of (C) and insert it into the slot at the back end of (B).



10. Slot a large wheel (S) onto each end of the rear wheel axle.
11. Insert the small wheels (T) onto the Motor Module.
12. Fold and insert the cockpit cover (E) into the two slots in the middle of the racer's top (C) to create the cockpit.
13. Slide the car tail (D) into the slots as shown.
14. Flip over the racer to turn the Battery Module on.
15. The Radical Racer's wheels will start to turn the moment the battery is turned on. Place the Radical Racer on a smooth floor and watch it zoom away.

F. CIRCUIT TRACK RACER: Use your knowledge of circuits to construct this racetrack! Transforming paper into an amazing toy is a structural engineering exercise you won't forget.



1. Attach the track pieces (F, G, H) together. Stick transparent tape (Z) over the areas where the track pieces connect. Be careful not to overlap on each other.
2. Use the ruler to measure out and cut two 70cm long strips of thick conductive tape (five times on the 14cm marker). Slowly and carefully peel back the conductive tape as you are taping down onto the shaded area. DO NOT PEEL IT ALL OFF AT ONCE. Remarks: Adult assistance might be required.

Remarks: Apply slight pressure with your finger along the whole length of the tape to ensure the whole piece of tape is firmly stuck onto the track.

QUESTION AND COMMENTS: We value you as a customer and your satisfaction with this product is important to us. If you have comments or questions, or you find any part of this kit missing or defective, please do not hesitate to contact our distributor in your country. You will find the address printed on the package. You are also welcome to contact our Marketing Support Team: Email: infodesk@4m-ind.com, Fax (852) 25911566, Tel: (852) 28936241, Web site: WWW.4M-IND.COM

TECHCRAFT
MOTOR RACER

PLEASE SCAN THE QR CODE FOR VIEWING MULTI-LANGUAGE INSTRUCTIONS.

⚠ WARNING:
CHOKING HAZARD - Small parts.
Not for Children under 3 years.

TO PARENTS: PLEASE READ THROUGH THESE INSTRUCTIONS BEFORE GIVING GUIDANCE TO YOUR CHILDREN.

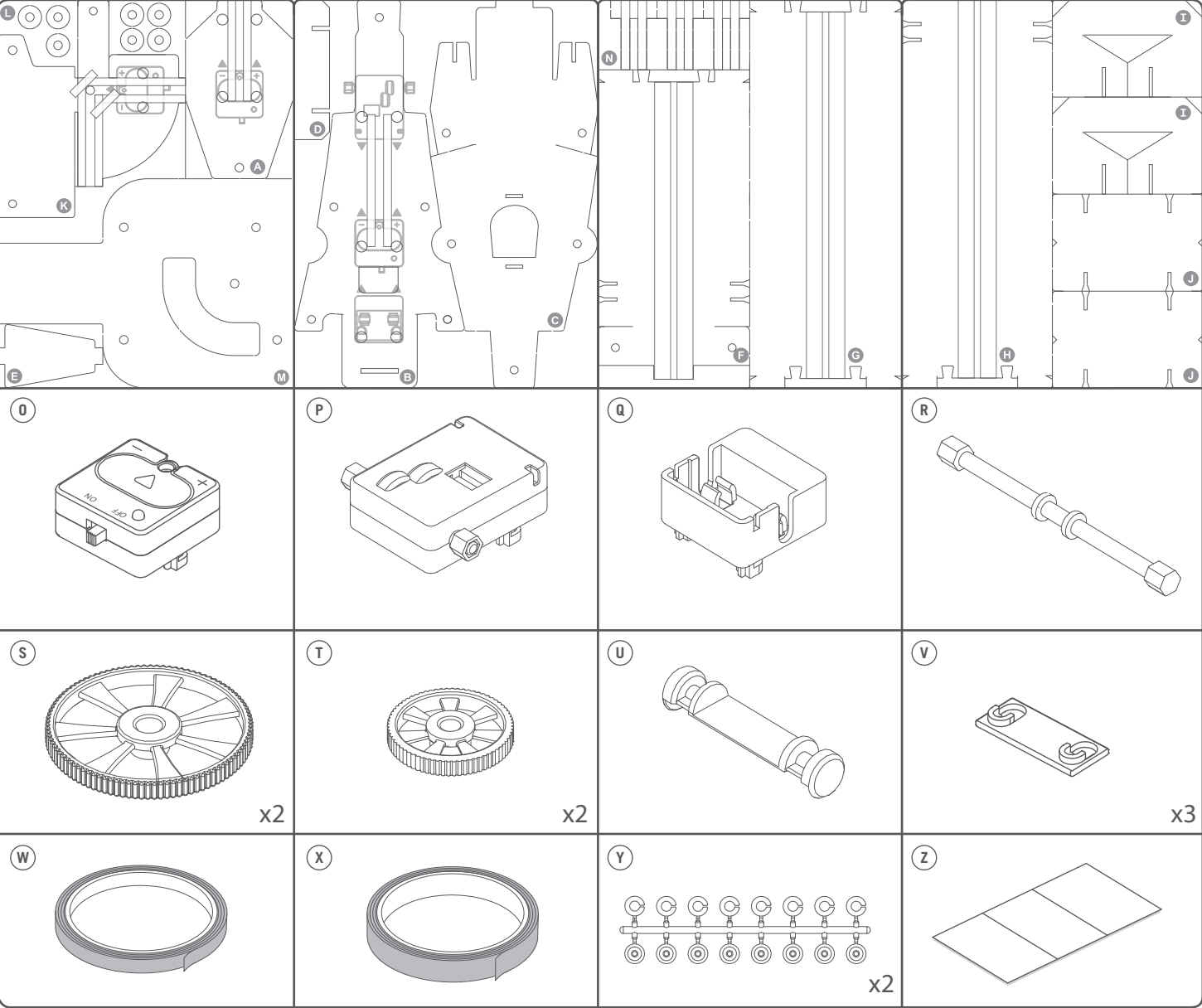
A. SAFETY MESSAGES

1) Adult assistance and supervision are required at all times. 2) This kit is intended for children over the age of 5. 3) This kit and its finished product contain small parts which may cause choking if misused. Keep away from children under 3 years old. 4) Turn the Battery Module off when it is not in use. 5) Never touch the conductive tape with any metal objects to avoid possible short circuit. 6) Adult supervision is required when using scissors. 7) The toy is not to be connected to more than the recommended number of power supplies.

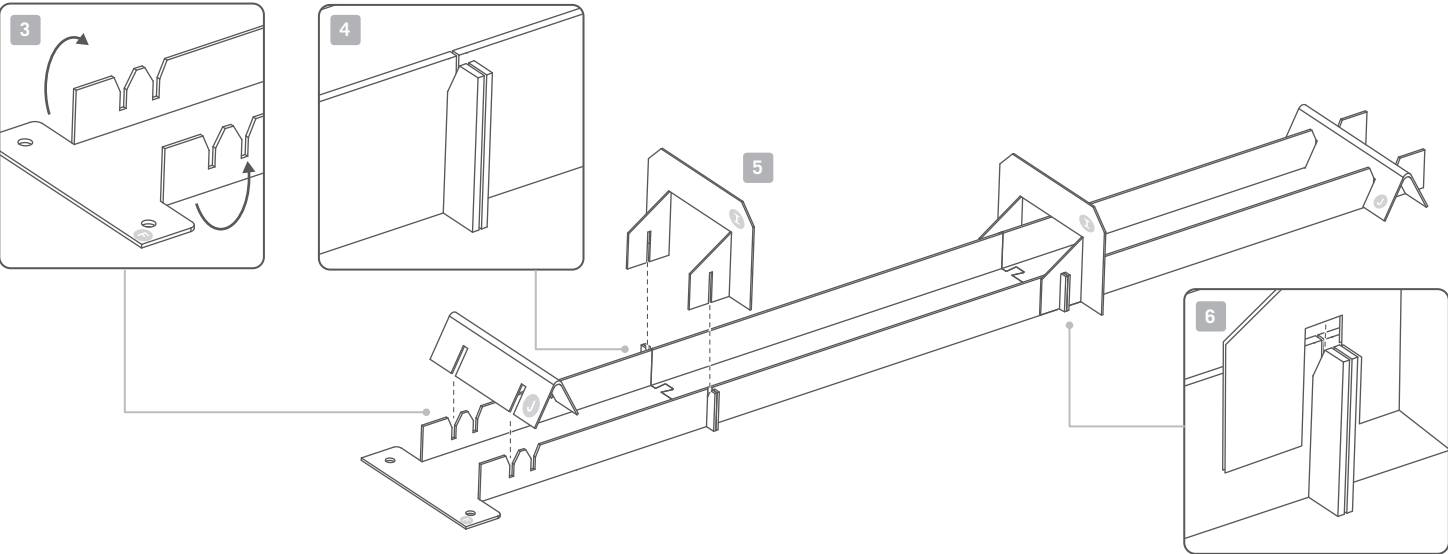
B. USE OF BATTERIES

1) Use 2 x 1.5V button cell batteries (Model AG13/LR44). 2) For best results, always use fresh batteries. 3) Make sure you insert the batteries with the correct polarities (+ and -). 4) Remove the batteries from the kit when not in use. 5) Replace exhausted batteries straight away to avoid possible damage to the kit. 6) Rechargeable batteries must be removed from the kit before recharging. 7) Rechargeable batteries should be recharged under adult supervision. 8) Make sure that the supply terminals in the battery case are not short-circuited. 9) Do not attempt to recharge a non-rechargeable battery. 10) Do not mix old and new batteries. 11) Do not mix alkaline, standard (carbon-zinc), or rechargeable batteries. 12) Unscrew the battery case cover to replace batteries. Adult supervision is required. 13) **WARNING:** Dispose of used batteries immediately. Keep new and used batteries away from children. If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.

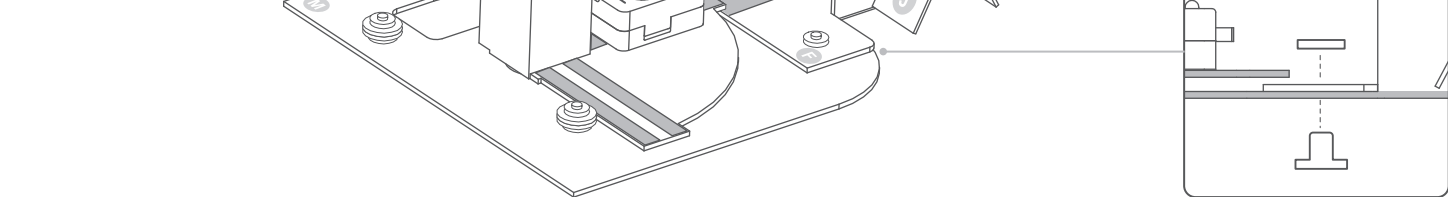
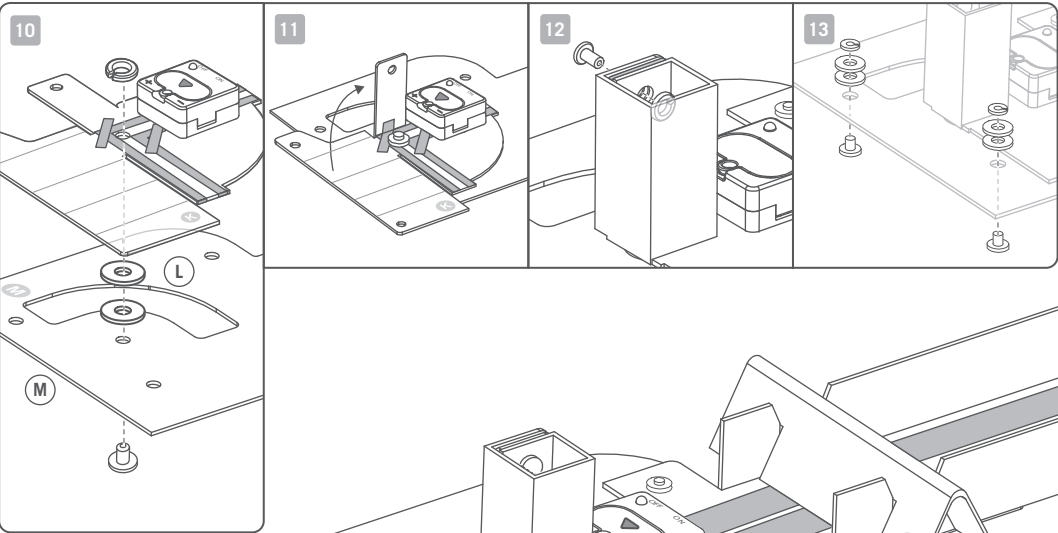
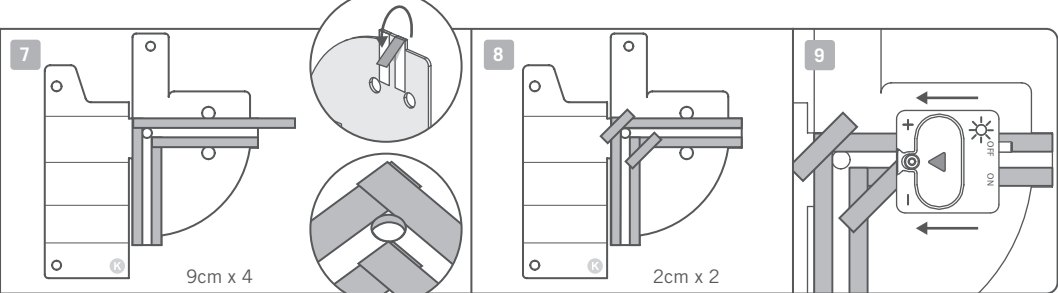
C. CONTENTS



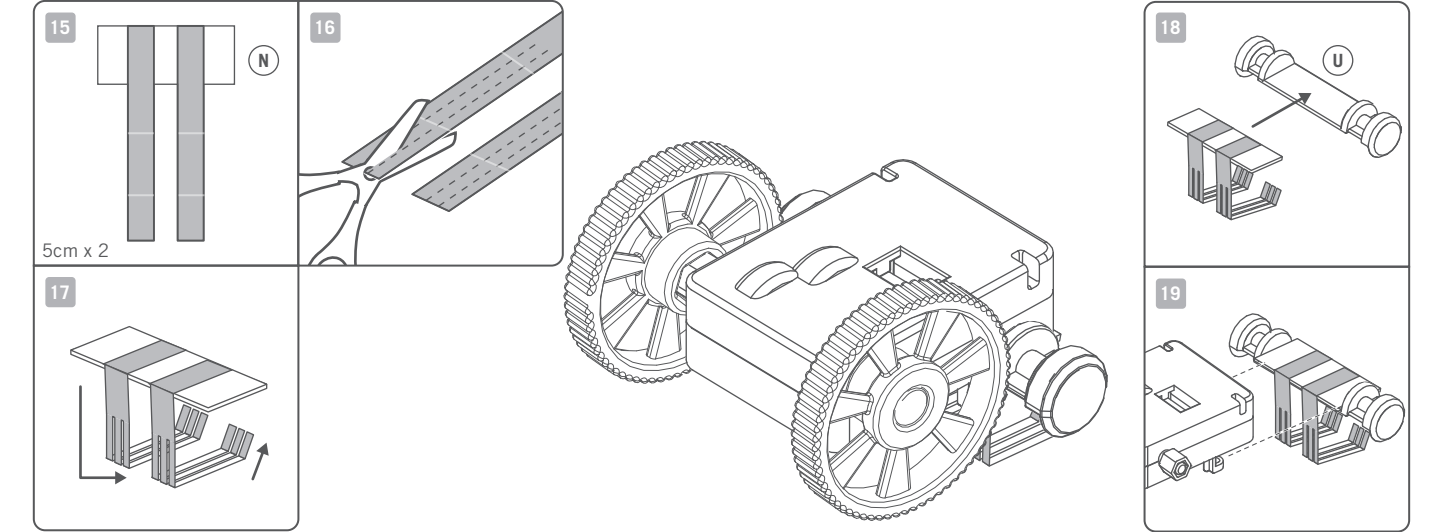
Parts; A-N: Templates x4 (Parts A-N), O: Battery Module x 1, P: Motor Module x 1, Q: Wheel hub x 1, R: Rear wheel axle x 1, S: Large wheel x 2, T: Small wheels x 2, U: Racer connector joint, V: Module clip x 3, W: Thin conductive tape x 1, X: Thick conductive tape x 1, Y: C-ring & pegs x 2, Z: Transparent tape x 1. Required but not included in this kit: Scissors, a small crosshead screw driver.



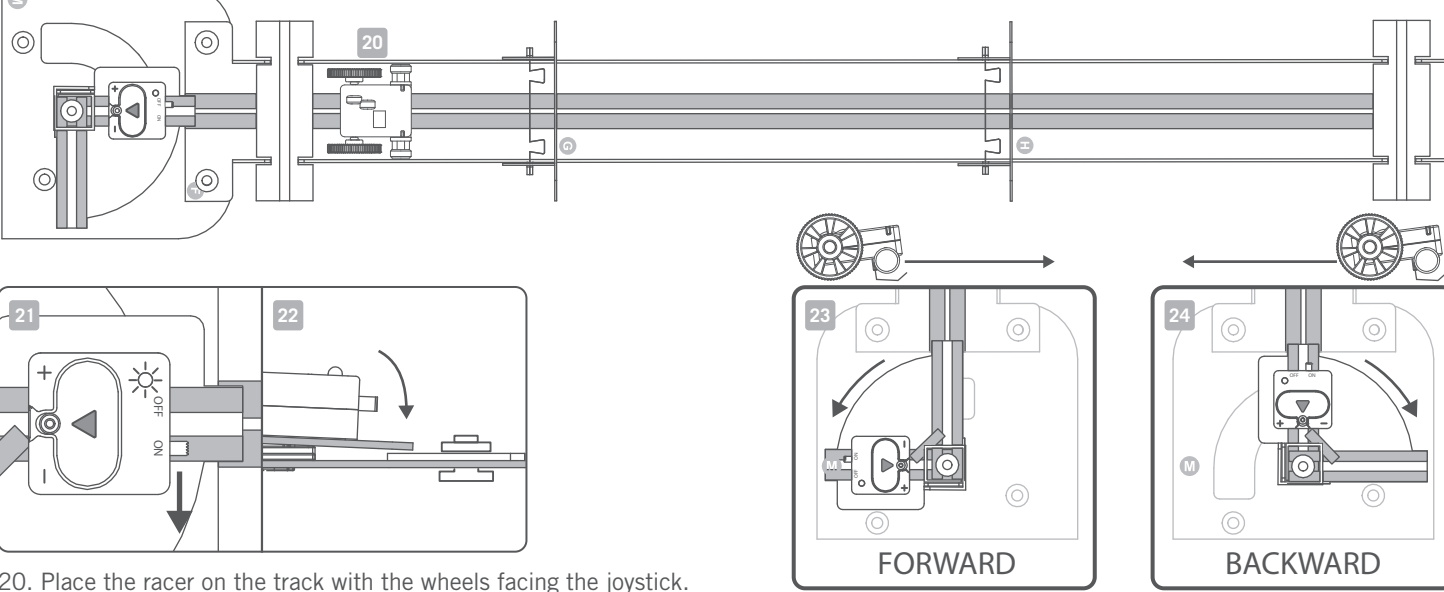
3. Fold both sides of the track up to create a 90 degree angle on each side. Make sure the protruding flaps at the end of each racetrack piece are folded outwards.
4. Fold and align the protruding flaps at the end of each track piece together.
5. Place the race markers (I) and race barriers (J) on top of the protruding flaps and slots at the track ends as shown.
6. The race markers should slot into the small indent beside the track's flaps as shown.



7. Measure out and cut four 9cm strips of thin conductive tape. Stick the strips onto the shaded areas of the joystick (K). The conductive tape should overlap at the two shaded corners of the joystick. Make sure extra tape hangs off each end of the switch. Wrap the extra tape around to the back and stick the tape onto the white shaded areas at the bottom of the switch as shown.
8. Measure out and cut two 2cm strips of thin conductive tape. Stick the short strips of conductive tape diagonally over each corner. This will help create a more stable circuit.
9. Insert the Battery Module over the conductive tape on the switch as shown. Secure the module with a module clip.
10. Place two stoppers (L) in between the joystick to the joystick platform (M). Secure them together with a C-ring and peg.
11. Fold the joystick's small rectangular flap upwards. Then fold joystick's big rectangular flap upwards as shown.
12. Use the crease lines on the joystick as a guide when folding the flaps and then attach them together with a C-ring and peg.
13. Create stoppers to limit joystick rotation using C-rings, pegs and stoppers as shown.
14. Slide the track made earlier in between the joystick and the joystick platform. Connect the pieces together with two C-rings and pegs.



15. Take out one racer connector (N). Measure out and cut two 5cm strips of thin conductive tape. Stick the strips onto the white shaded areas as shown.
16. Cut the ends of the racer connector with conductive tape into three thin strips as shown. Remark: Adult assistance might be required.
17. Fold the racer connector according to the crease lines. Refer to the diagram to create a "hook" shape with the conductive tape. The connector's "hook" connects with the conductive tape on the race track to complete the circuit. If the racer does not move when the joystick is pressed down on the track, adjust the connector's hook by bending the thin strips back and forth so it touches the race track. There are also two spare racer connector templates in case you need to re-do the connector for better performance.
18. Attach the racer connector to the racer connector joint (U).
19. Slide the racer connector joint into the front hooks of the Motor Module. The racer for your track is now complete!



20. Place the racer on the track with the wheels facing the joystick.
21. Turn the Battery Module on.
22. Rotate the joystick to connect its conductive tape with the track's conductive tape. Gently push the joystick down onto the track to create a strong connection.
23. Turn the joystick to the left to move the car forwards.
24. Turn the joystick to the right to move the car backwards.

FUN FACTS

- Ever wondered why birds that sit on power lines don't get electrocuted? If a bird sits on only one power line it's safe. If the bird touches any part of its body to another line, it creates a circuit for an electrical current to flow, causing electrocution.
- Electricity travels at the speed of light -- more than 186,000 miles per second! That's why it's so hard to see all the electrical currents moving around us every day.
- Electricity is a fundamental force of nature. Without it, our world would not exist at all. After all, the atoms and molecules out of which all the world's material are composed are held together by electrical forces. Electrons, those particles that make up electrical currents can be found everywhere in nature.
- Lightning bolts are one of nature's greatest phenomena and is an example of an electrical current. Inside a thundercloud there are areas with a huge excess of electrons, and other areas where there are too few. So, just like between the poles of a battery, there exists electrical tension, or voltage, between these areas. In a thundercloud, though, the voltage doesn't amount to just a few volts. Often, it will be over 100 million volts. So it discharges itself over and over again in the form of lightning bolts.

TROUBLESHOOTING

If any of the cars do not move: Check if the modules are clipped on securely. Make sure the modules have been inserted according to the direction arrows on the templates. Check if the conductive tape on the joystick overlaps at the corner for electricity to flow smoothly. Press down on the overlapping tape to strengthen the connection. Tape an extra piece of conductive tape on top of the existing conductive tape if needed. Check if the conductive tape on the racer connector is touching the race track.