EXPERIMENT MANUAL

ROBOTICS
SMART MACHINES
SIDEKICK

THAMES & KOSMOS

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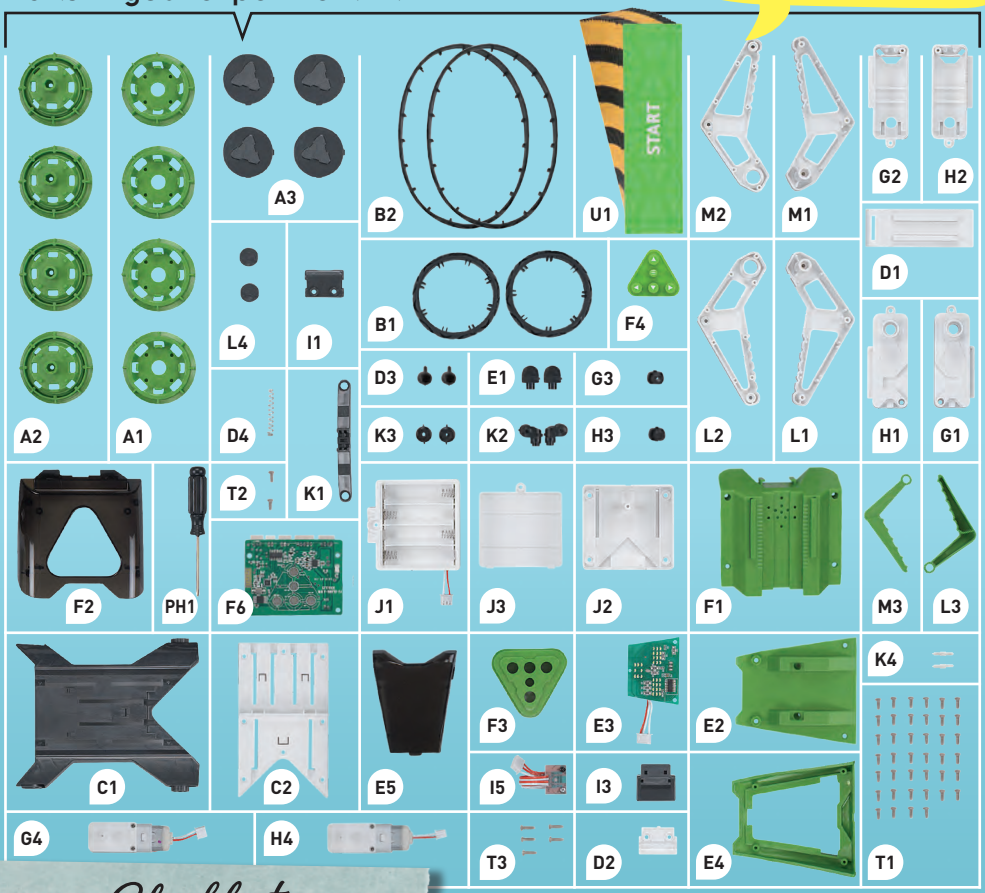
KIT CONTENTS

Do you have any questions?
Our tech support team will be glad to help you!
USA: support@thamesandkosmos.com
or 1-800-587-2872

Parts in your experiment kit



Checklist:

✓	No.	Description	Quantity	Part No.
○	A1	Inner wheel half	4	724186
○	A2	Outer wheel half	4	724186
○	A3	Wheel caps	4	724192
○	B1	Rubber tires	2	724193
○	B2	Rubber chain	2	724194
○	C1	Upper chassis	1	724213
○	C2	Lower chassis	1	724214
○	D1	Module support	1	724211
○	D2	Module support holder	1	724219
○	D3	Axle cover	2	724191

✓	No.	Description	Quantity	Part No.
○	D4	Metal spring	1	724199
○	E1	Front module support	2	724191
○	E2	Housing front	1	724200
○	E3	LED board	1	724216
○	E4	Housing front frame	1	724201
○	E5	Front cover	1	724189
○	F1	Speaker with housing	1	724204
○	F2	Rear housing cover	1	724189
○	F3	Key housing	1	724195
○	F4	Keys	1	724196

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TIP

ADDITIONAL INFORMATION CAN BE FOUND IN THE CHECK IT OUT SECTIONS ON PAGES 15, 24, AND 25.

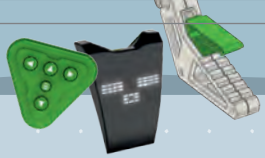
YOU WILL ALSO NEED:

Scissors or diagonal cutters, nail file, 4 AA batteries (1.5-volt, type LR6). For the free app: Smart phone or tablet. See the app stores for details.

Checklist:

✓	No.	Description	Quantity	Part No.
○	F6	Main board	1	724215
○	G1	Left-hand drive housing type A	1	724205
○	G2	Left-hand drive housing type B	1	724206
○	G3	Axle adapter	1	724191
○	G4	Engine, left	1	724197
○	H1	Right-hand drive housing type A	1	724207
○	H2	Right-hand drive housing type B	1	724208
○	H3	Axle adapter	1	724191
○	H4	Engine, right	1	724197
○	I1	Sensor cover	1	724190
○	I3	Sensor housing with axle	1	724188
○	I5	Infrared sensor board	1	724216
○	J1	Battery compartment	1	724209
○	J2	Battery housing	1	724239
○	J3	Battery compartment lid	1	724210
○	K1	Axle	1	724190

✓	No.	Description	Quantity	Part No.
○	K2	Wheel mounting	2	724191
○	K3	Small wheel	2	724191
○	K4	Metal axle, short	2	724199
○	L1	Outer right arm	1	724187
○	L2	Inner right arm	1	724187
○	L3	Right gripping pliers	1	724202
○	L4	Connector	2	724190
○	M1	Outer left arm	1	724187
○	M2	Inner left arm	1	724187
○	M3	Left gripping pliers	1	724203
○	PH1	Phillips-head screwdriver	1	719309
○	T1	Short screws	40	724198
○	T2	Wide-head screws	2	724199
○	T3	Long screws	5	724199
○	U1	Cardboard strips for maze game	17	724217
○	U2	Sticker sheet (not shown)	1	724218



SAFETY INFORMATION

WARNING! Not suitable for children under 3 years. Choking hazard — small parts may be swallowed or inhaled. Store the experiment material and assembled models out of the reach of small children.

WARNING: This toy is only intended for use by children over the age of 8 years, due to accessible electronic components. Instructions for parents or caregivers are included and shall be followed.

Keep packaging and instructions as they contain important information.

Assembly must be performed under adult supervision.

SAFETY FOR EXPERIMENTS WITH BATTERIES

- The wires are not to be inserted into socket-outlets. Never perform experiments using household current! The high voltage can be extremely dangerous or fatal!
- To operate the models, you will need four AA batteries (1.5-volt, type LR6), which could not be included in the kit due to their limited shelf life.
- The supply terminals are not to be short-circuited. A short circuit can cause the wires to overheat and the batteries to explode.
- Different types of batteries or new and used batteries are not to be mixed.
- Do not mix old and new batteries.
- Do not mix alkaline, standard (carbon-zinc), or rechargeable (nickel-cadmium) batteries.
- Batteries are to be inserted with the correct polarity (+ and -). Press them gently into the battery compartment. See page 13. This page shows how the batteries are inserted, removed, and changed.
- Always close battery compartments with the lid.
- Non-rechargeable batteries are not to be recharged. They could explode!
- Rechargeable batteries are to be removed from the toy before being charged.
- Exhausted batteries are to be removed from the toy.
- Dispose of used batteries in accordance with environmental provisions, not in the household trash.
- Avoid deforming the batteries.
- The toy is not to be connected to more than the recommended number of power supplies.
- As all of the experiments use batteries, have an adult check the experiments or models before use to make sure they are assembled properly. Always operate the motorized models under adult supervision. After you are done experimenting, remove the batteries from the device compartments.

NOTES ON DISPOSAL OF ELECTRICAL AND ELECTRONIC COMPONENTS

The electronic components of this product are recyclable. For the sake of the environment, do not throw them into the household trash at the end of their lifespan. They must be delivered to a collection location for electronic waste, as indicated by the following symbol:

Please contact your local authorities for the appropriate disposal location.

IMPORTANT INFORMATION

Dear Parents and Supervising Adults,

Children want to be amazed and understand new things. They want to learn from grown-ups, try things on their own, and, in turn, create amazing things themselves. They can do all of this with Thames & Kosmos STEM experiment kits. We hope you and your junior programmer have an exciting time experimenting with your robotic Sidekick!

— Before building and experimenting, read the instructions with your child and discuss the safety instructions together. The experiments both encourage and challenge children. Stand by to assist your child with any challenging steps of assembly or usage.

— If your child is working on a table, give them something to work on to prevent damage to the furniture.

— Particular care must be taken when cutting out the plastic parts, as sharp points can be created. These can be removed with the help of a nail file and a diagonal cutter, which should only be used under your supervision.

— The finished robots can be controlled without a smart device. For app control and programming, we ask that you provide your child with a device (tablet or smart phone) and install the free app on it together (see page 28).

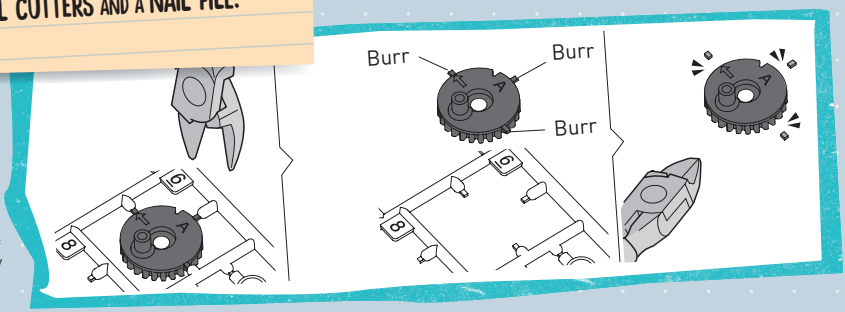
ASSEMBLY AND DISASSEMBLY

Some components are required for both robot models, but some are only required for one of the two robots. If your child wants to assemble a new model, help them to ensure that no parts are lost during disassembly by providing them with a storage container.

TIP

IMPORTANT:

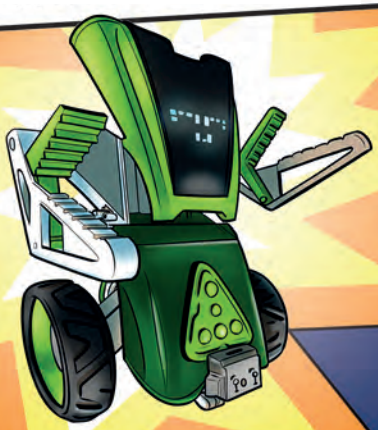
DO NOT SEPARATE THE PARTS UNTIL THEY ARE NEEDED. REMOVE EXCESS MATERIAL (BURRS) BEFORE ASSEMBLY USING DIAGONAL CUTTERS AND A NAIL FILE.



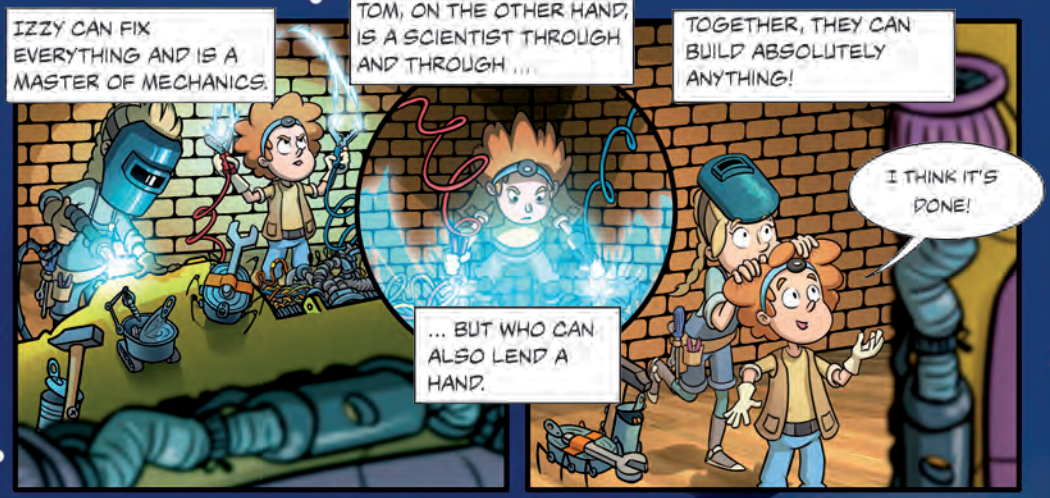
Note: The part shown here is just shown for the purpose of explaining how to remove any part from any frame; it is not an actual part in this kit.

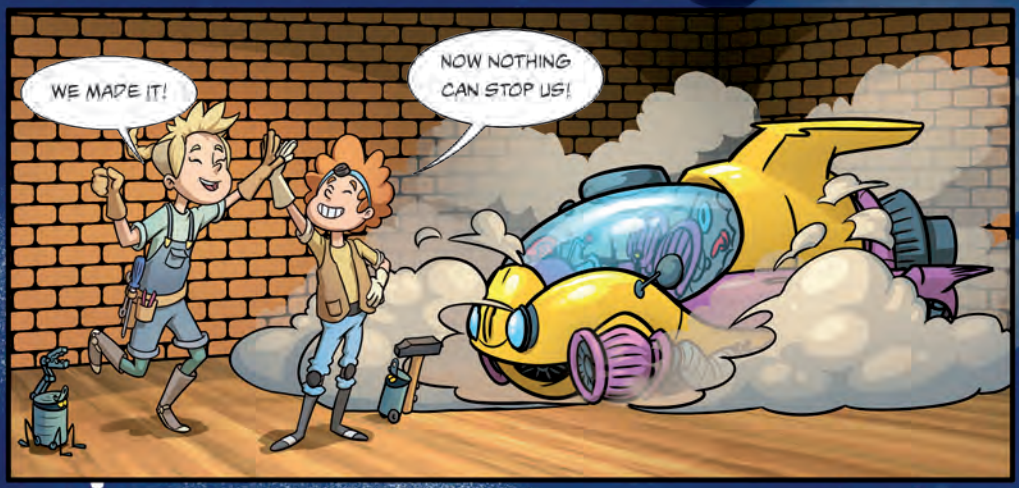
MAZZY!

... AND THE GALACTIC CONTEST

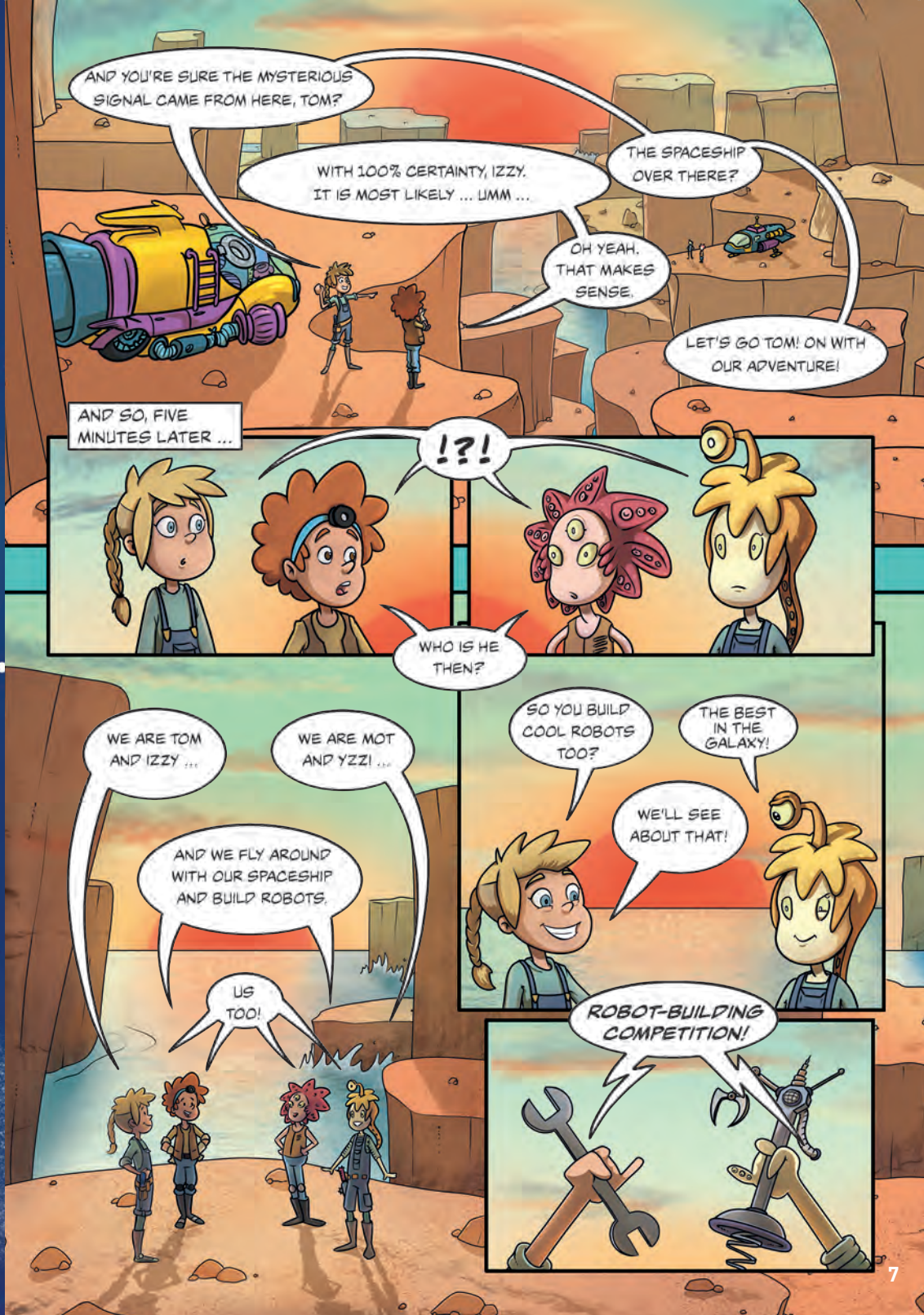



TOM & IZZY
WHILE EVERYONE ELSE IS SLEEPING, TOM AND IZZY ARE STILL BUSY.
WHERE OTHER PEOPLE SEE ONLY JUNK, OUR HEROES SEE ENDLESS POSSIBILITIES ...
THE THRUST MUST BE INCREASED BY A FACTOR OF TEN ...
I FOUND SOMETHING!
THE MISSING PART!
WE NEED MORE BOOST!
...TO COUNTERACT GRAVITY!
HMM ... THAT COULD WORK ...
... AS LONG AS IT ISN'T BROKEN.
DON'T WORRY! THE SMALL LEAK CAN EASILY BE PLUGGED.
WELL THEN ... TO WORK!


IZZY CAN FIX EVERYTHING AND IS A MASTER OF MECHANICS.
TOM, ON THE OTHER HAND, IS A SCIENTIST THROUGH AND THROUGH ...
... BUT WHO CAN ALSO LEND A HAND.
TOGETHER, THEY CAN BUILD ABSOLUTELY ANYTHING!
I THINK IT'S DONE!


WE MADE IT!
NOW NOTHING CAN STOP US!

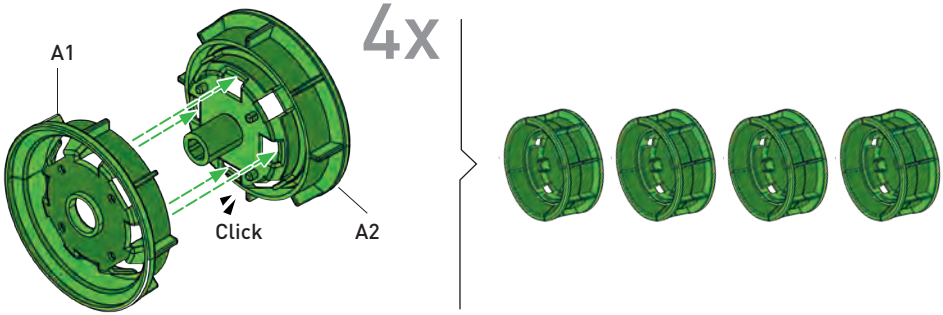

WHERE SHOULD WE FLY FIRST?
WELL, WE'RE RECEIVING A WEIRD SIGNAL FROM FAR AWAY...
LET'S GO CHECK IT OUT AND SEE IF THEY NEED HELP!


AND YOU'RE SURE THE MYSTERIOUS SIGNAL CAME FROM HERE, TOM?
WITH 100% CERTAINTY, IZZY. IT IS MOST LIKELY ... UMM ...
THE SPACESHIP OVER THERE?
OH YEAH. THAT MAKES SENSE.
LET'S GO TOM! ON WITH OUR ADVENTURE!
AND SO, FIVE MINUTES LATER ...
!?!
WHO IS HE THEN?
WE ARE TOM AND IZZY ...
WE ARE MOT AND YZZI ...
AND WE FLY AROUND WITH OUR SPACESHIP AND BUILD ROBOTS.
US TOO!
SO YOU BUILD COOL ROBOTS TOO?
THE BEST IN THE GALAXY!
WE'LL SEE ABOUT THAT!
ROBOT-BUILDING COMPETITION!

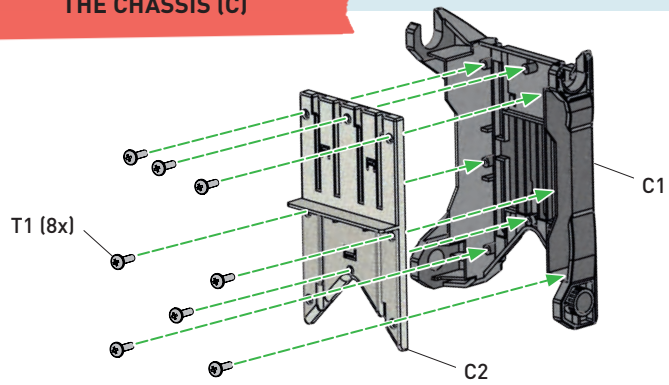
Building the Subassemblies

Are you ready? Because now it's time to assemble your robotic Sidekick. First, you will build the subassemblies that you need for both models. For this, parts with the same letter go together. Then, follow the assembly instructions starting on pages 16 and 20 for the different models.

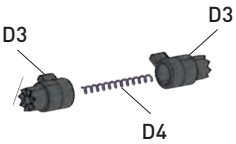
THE WHEELS (A)



THE CHASSIS (C)

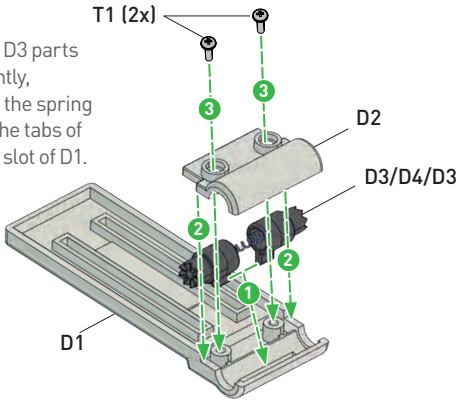


THE CONNECTOR (D)

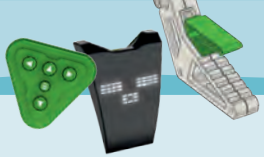


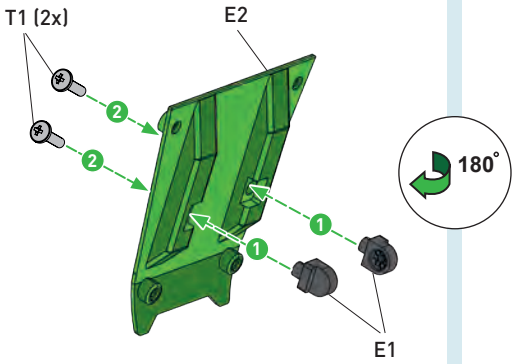
1

Push the two D3 parts together slightly, compressing the spring (D4), so that the tabs of D3 fit into the slot of D1.

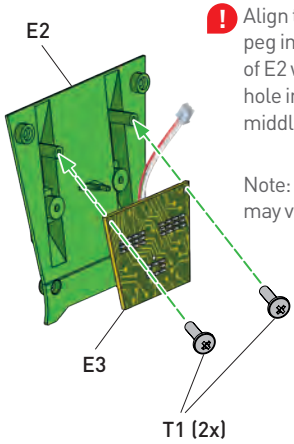


2





1

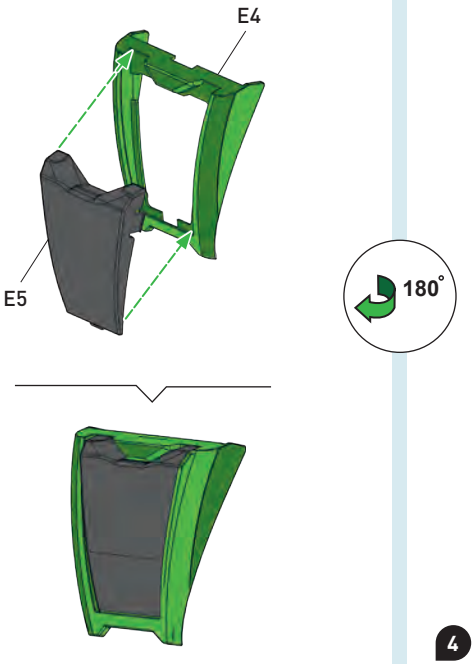


! Align the small peg in the center of E2 with the hole in the middle of E3.

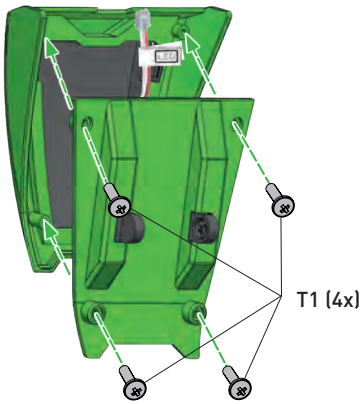
Note: Wire colors may vary.

After tightening the screws, remove the two protective pieces of tape.

2



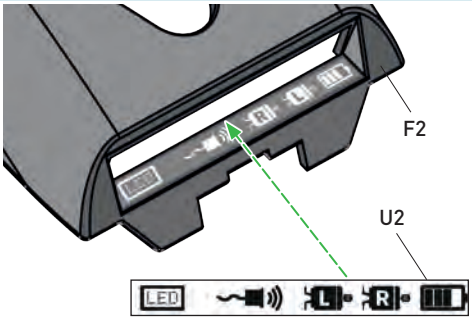
3



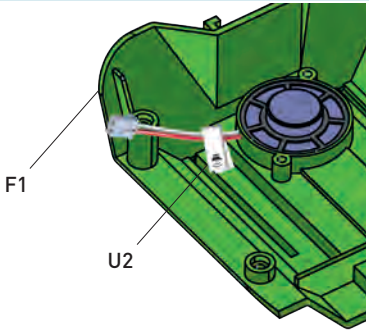
Attach the LED sticker to the cable connected to the LED board (E3). Place the sticker as close as possible to the plug.

4

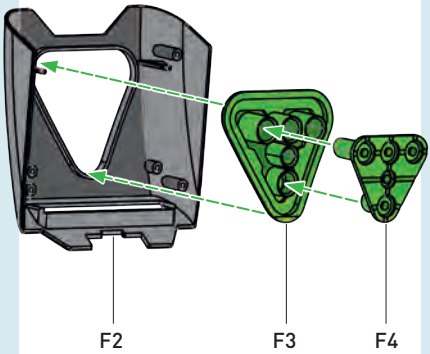
CONTROL UNIT (F)



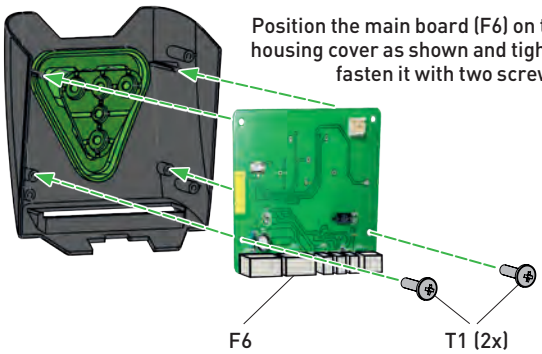
1 Apply the sticker to the rear housing cover (F2) as shown.



2 Attach the sticker to the speaker cable as shown.



3

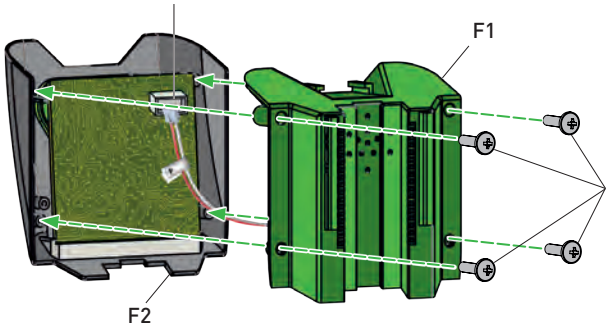


Position the main board (F6) on the housing cover as shown and tightly fasten it with two screws.

4

Be careful not to damage any components on the board while screwing it in.

Plug the speaker cable into the socket on the top right edge of the main board — this only works in one direction, so if it does not fit at first, find the correct orientation.



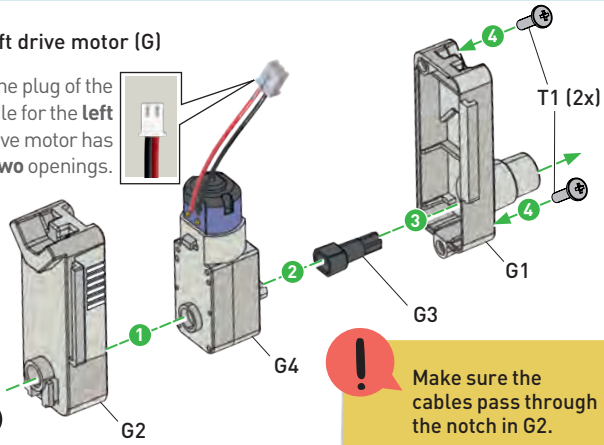
Then use four screws to attach the speaker with housing (F1) to the rear housing cover (F2).

5

DRIVE MOTOR ASSEMBLIES

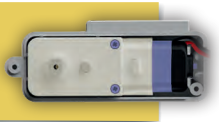
Left drive motor (G)

The plug of the cable for the **left** drive motor has **two** openings.

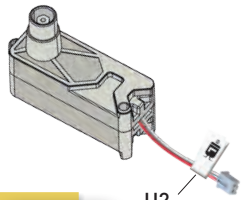


1

Make sure the cables pass through the notch in G2.

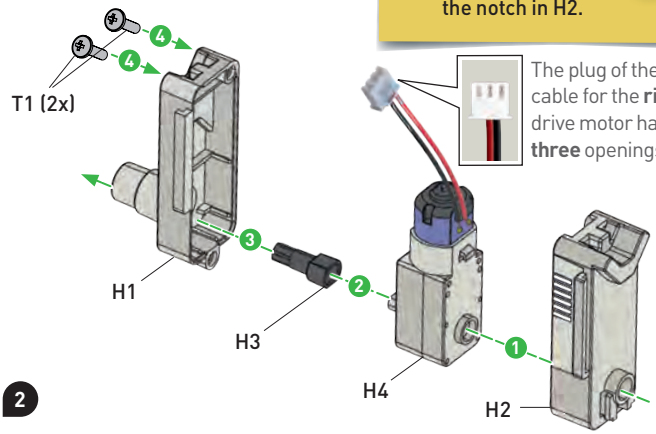


Apply the sticker for the left drive motor (U2) to the cable as shown.



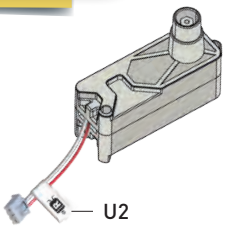
Right drive motor (H)

Make sure the cables pass through the notch in H2.



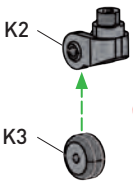
The plug of the cable for the **right** drive motor has **three** openings.

2



Apply the sticker for the right drive motor (U2) to the cable as shown.

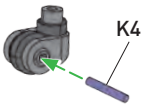
AXLE WHEEL ASSEMBLY (K)



2x

1

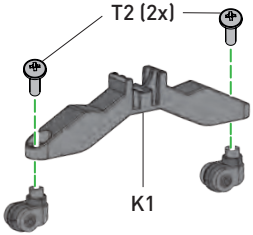
You may need to ask an adult for help with these steps.



2x

2

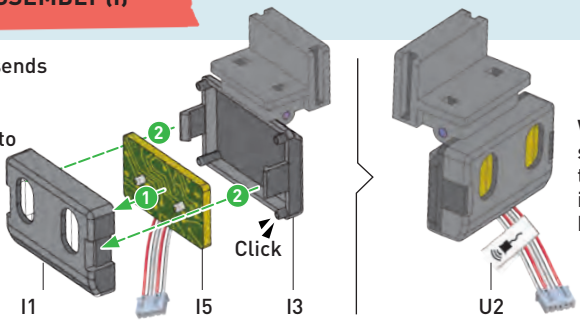
Once you have the parts lined up, you can use a tabletop to gently press K2 and K3 onto K4.



3

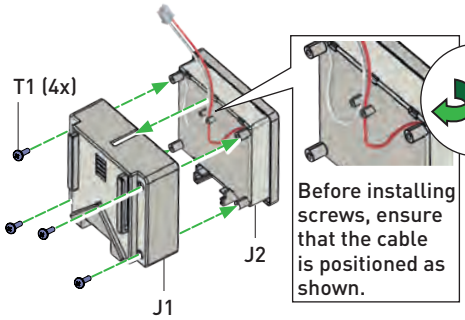
SENSOR ASSEMBLY (I)

The sensor assembly sends and receives infrared light (IR), which enables your Sidekick to avoid obstacles. Infrared light is invisible to the human eye.



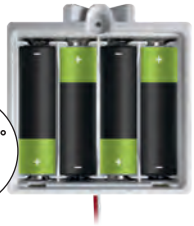
Wrap the sticker (U2) around the cable of the infrared sensor board.

BATTERY ASSEMBLY (J)



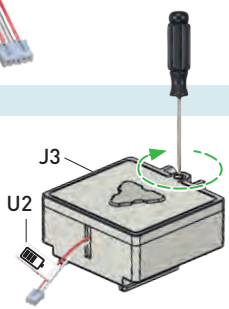
Before installing screws, ensure that the cable is positioned as shown.

1



Before inserting the batteries into the compartment, see the battery handling instructions on page 2.

2



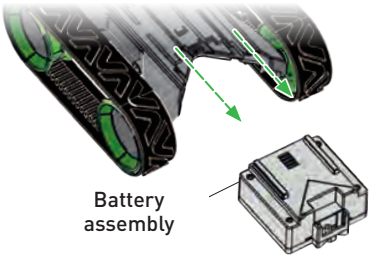
Place the cover (J3) on the battery compartment and screw it into the battery compartment. Then apply the sticker (U2) to the cable.

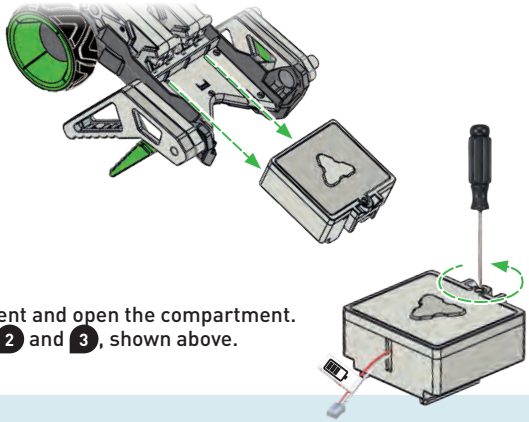
3

BATTERY REPLACEMENT

To change your Sidekick's batteries after it has been assembled, please follow these steps:

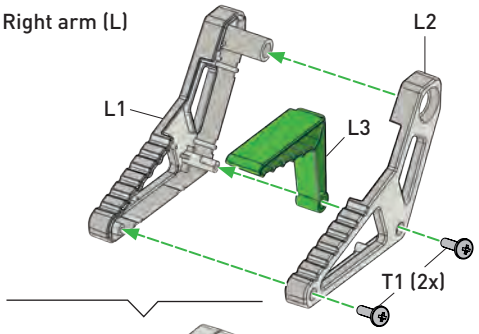
1. First turn off the device and remove the battery compartment cable from the power strip.
2. Remove the battery assembly from the rover or robot.



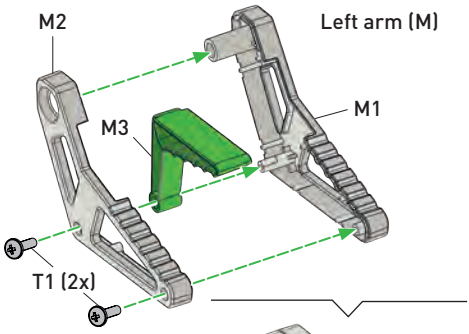


3. Loosen the screw of the battery compartment and open the compartment. Remove the old batteries and follow steps 2 and 3, shown above.

ROBOT ARM ASSEMBLIES

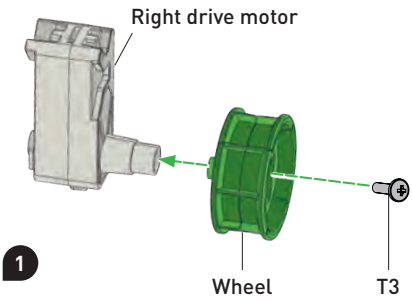


1

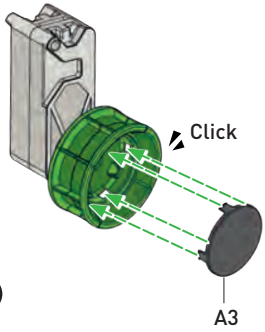


2

DRIVE ASSEMBLIES



1



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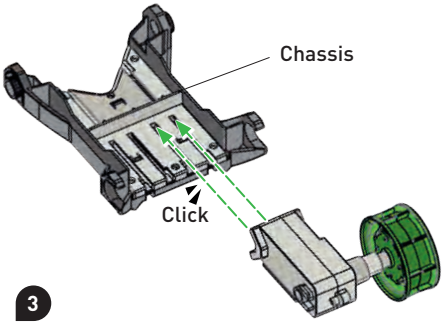
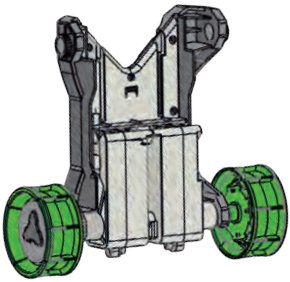


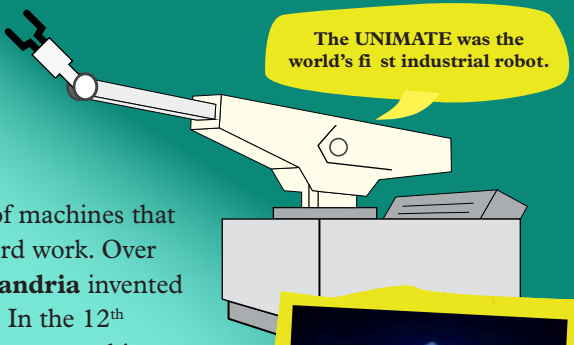
3

Repeat steps 1 – 3 with the left drive motor.

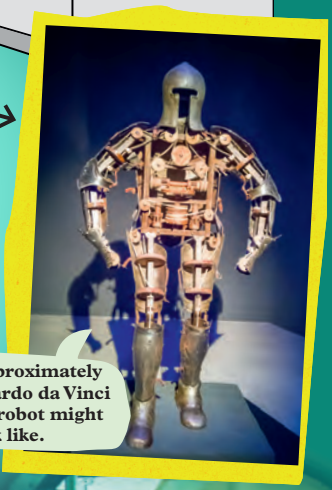


CHECK IT OUT

The History of Robotics

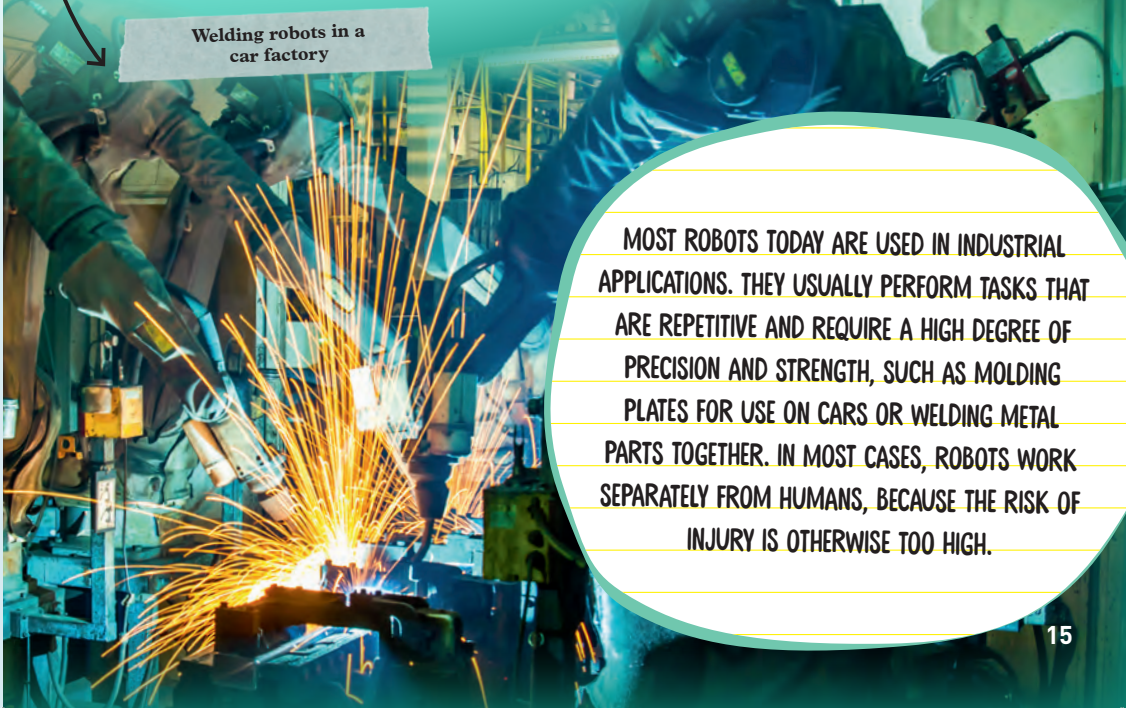


Since antiquity, humans have dreamed of machines that could relieve them of the drudgery of hard work. Over two thousand years ago, **Heron of Alexandria** invented machines for use in the world of theater. In the 12th century, **Ismail al-Jazari** invented elaborate machines to tell time and play music. Renaissance inventor **Leonardo da Vinci** dreamed up a remarkably modern-looking robot, but the technology required to actually build such a machine simply didn't exist.



This is approximately what Leonardo da Vinci thought a robot might look like.

It wasn't until the 1950s that the fi st real robots came into being, and even then they only performed very specific tasks in actories, such as **welding**. And even though today's robot technology is developing rapidly, most robots are still built for very specific tasks and bear little resemblance to how people generally imagine them.



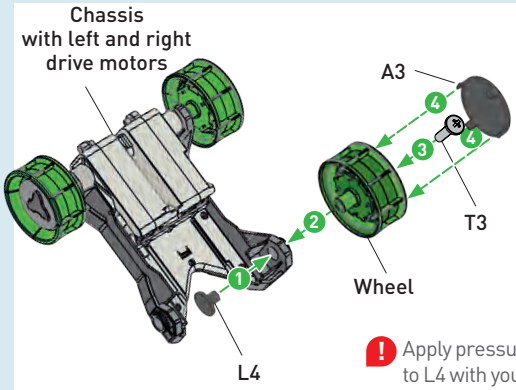
Welding robots in a car factory

MOST ROBOTS TODAY ARE USED IN INDUSTRIAL APPLICATIONS. THEY USUALLY PERFORM TASKS THAT ARE REPETITIVE AND REQUIRE A HIGH DEGREE OF PRECISION AND STRENGTH, SUCH AS MOLDING PLATES FOR USE ON CARS OR WELDING METAL PARTS TOGETHER. IN MOST CASES, ROBOTS WORK SEPARATELY FROM HUMANS, BECAUSE THE RISK OF INJURY IS OTHERWISE TOO HIGH.

Assembling the Rover

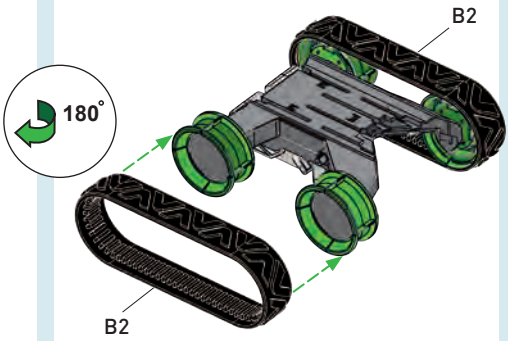
Now that you've put together the most important subassemblies, it's time to build your fi st model. The steps to build the off-road rover model are described on the following pages. If you prefer to start with the robot, you can skip to page 20.

ASSEMBLING THE ROVER

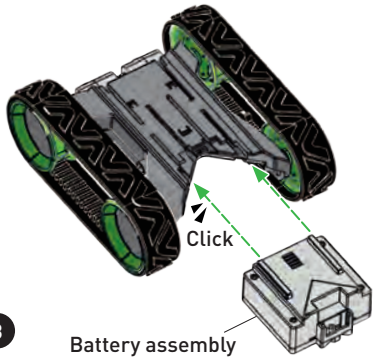


1 Repeat this step with the fourth wheel.

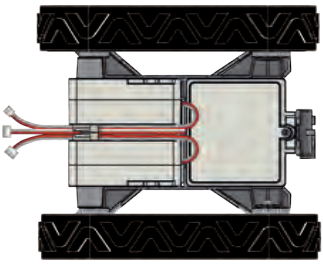
! Apply pressure to L4 with your finger while you tighten the screw.



2

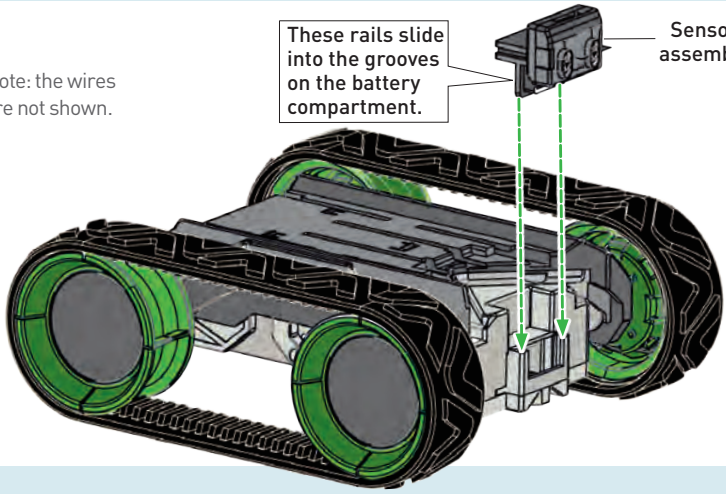


3

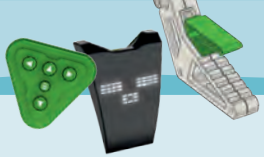


4 Arrange the cables of the battery assembly and the two drive motors as shown.

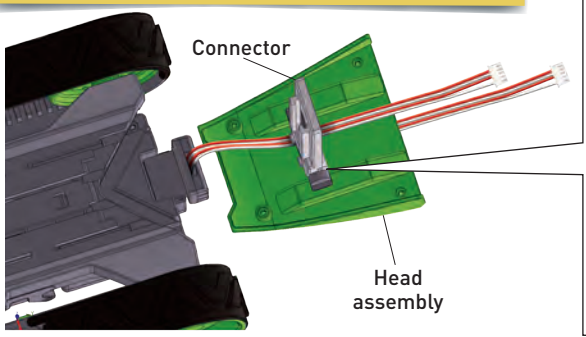
! Note: the wires are not shown.



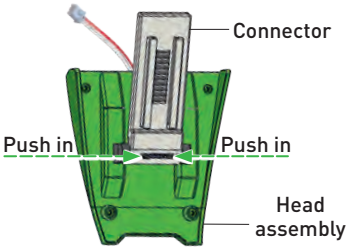
5



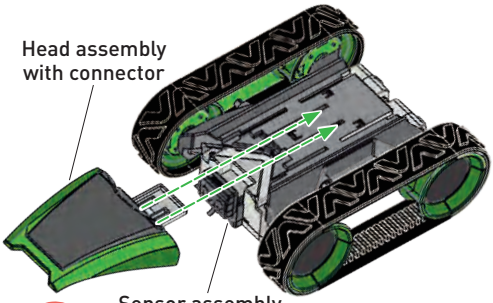
Before attaching the connector to the head assembly, lay the infrared sensor cable down flat across the underside of the head as shown.



6



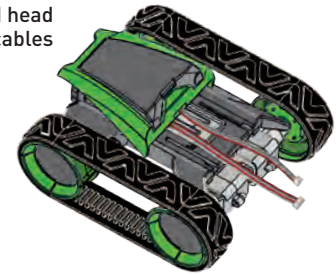
To mount the connector to the head assembly, push the two tabs together, and position the connector between the two supports as shown. Then let the tabs snap outward.



Slide the head assembly onto the rail of the chassis as far as it will go. Make sure that the narrow part of the head assembly faces forward. (The wires are not shown.)

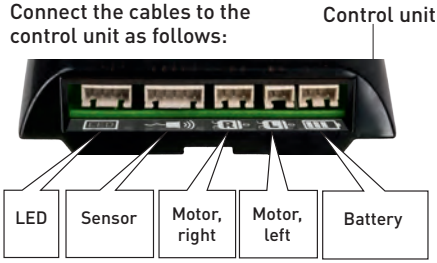
7

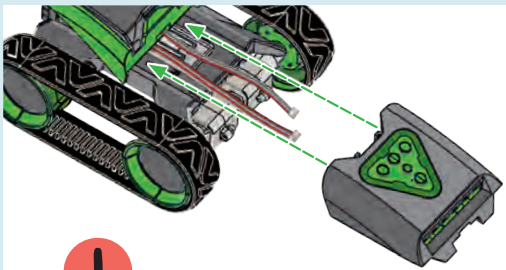
Arrange the sensor and head assembly cables as shown.



8

Connect the cables to the control unit as follows:





Slide the control unit into the rail as far as it will go. Make sure that the ports of the control unit are facing outward.

9

10

Done

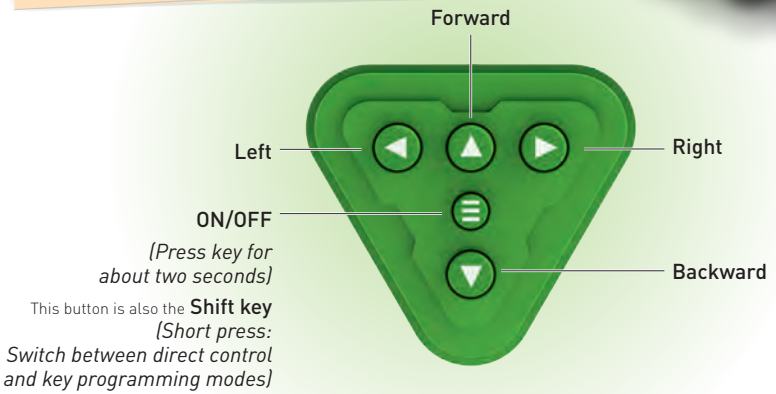
PROGRAMMING VIA THE KEYPAD

On this page you will learn how to use the keypad to control or program your Sidekick in its rover form.

TIP

TO PROGRAM YOUR ROVER USING THE KEYPAD, READ THIS PAGE.

TO LEARN HOW TO CONTROL AND PROGRAM IT WITH THE APP, SEE PAGE 28.



To switch your Sidekick on, you need to press and hold the central button with the three stripes for about two seconds. Your Sidekick will greet you with sounds and a short dance. Now you have two ways to control your Sidekick:

DIRECT CONTROL MODE

This mode is enabled automatically when you power your Sidekick on. Now, if you press one of the arrow keys, your Sidekick will perform the corresponding movement. If you have switched on the key programming mode, you can return to this mode with a short press of the shift key.

KEY PROGRAMMING MODE

When you push the shift key with a short press, your Sidekick is switched into this mode. This will be confirmed by your Sidekick with two beeps. You can now store up to 50 individual movements by pressing the corresponding keys. When you have finished programming, press the shift key once. Your Sidekick will perform the programmed movements.

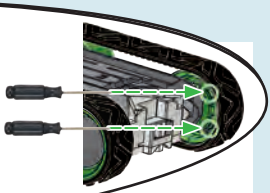
Assembling the Robot

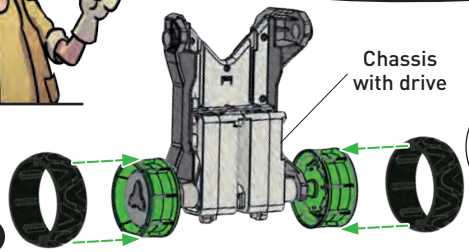
Now it's time to assemble the second model: the robot. You will again start with the subassemblies you built on pages 9 – 14. If you've already built the rover, you will need to fi st remove the subassemblies from the model. Follow the steps on the next page.

ASSEMBLING THE ROBOT

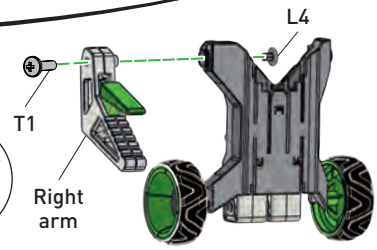
IF YOU ASSEMBLED THE ROVER FIRST, YOU MUST FIRST REVERSE THE STEPS 1-9 FROM THE PREVIOUS SECTION (PAGES 17 AND 18).

TO UNSCREW THE FRONT WHEELS, YOU MUST FIRST REMOVE THE WHEEL CAPS. TO DO THIS, USE THE SCREWDRIVER TO PUSH ON THE TABS OF THE WHEEL CAPS AS SHOWN TO THE RIGHT.



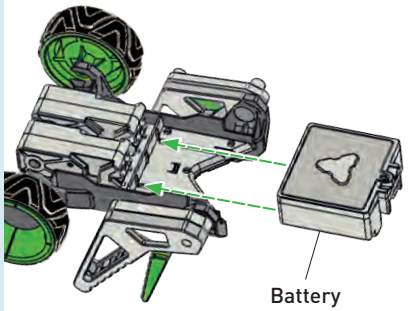


1

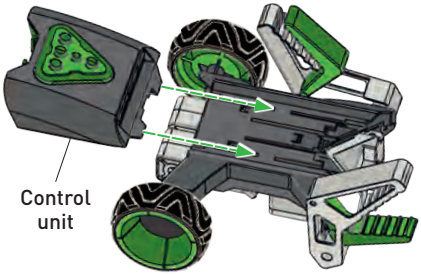


2

Repeat the step for the left arm.

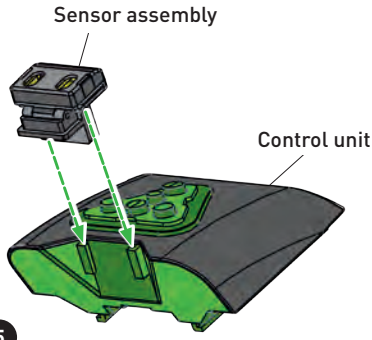


3



Slide the control unit into the chassis rail as far as it will go. Make sure that the connection strip is pointing toward the arms.

4



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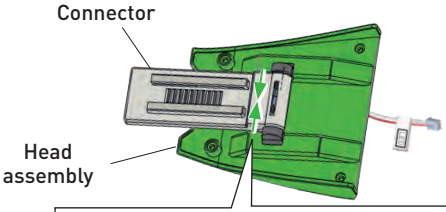
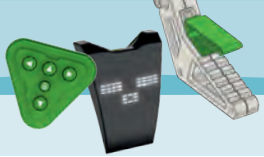
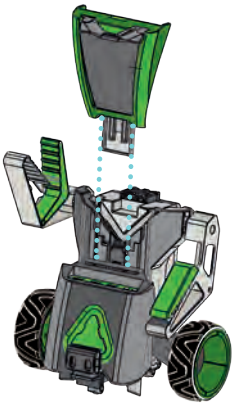


To mount the connector on the head assembly, push the two tabs together and position the connector between the two supports as shown. Then let the tabs snap back.

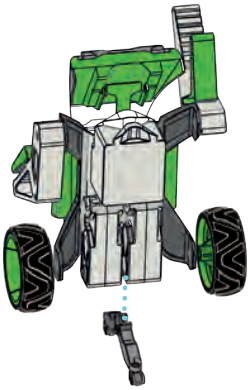
6



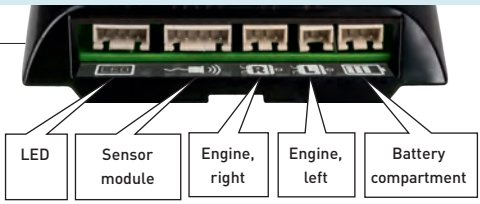


7 Slide the connector on the head module all the way into the rail of the chassis. Make sure that the narrow end of the head module is facing down.

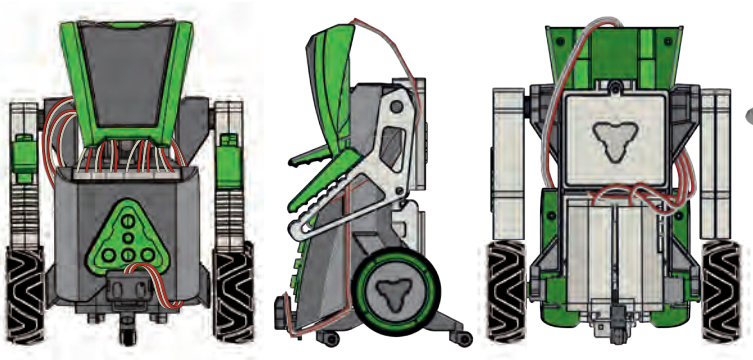
Be sure to push the axle wheel assembly into the model as far as it will go.



8 Slide the axle wheel assembly from below into the mounting between the left and right motor drives.



9 Connect the cables to the matching ports of the control unit.



Here's how to route the cables.

Done

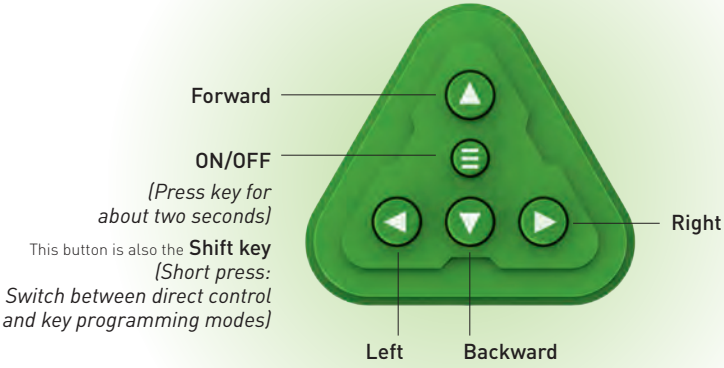
10

PROGRAMMING VIA THE KEYPAD

On this page, you will learn how to use the keypad to control or program your Sidekick in its humanoid robot form.

TIP

TO LEARN HOW TO CONTROL AND PROGRAM YOUR SIDEKICK ROBOT WITH THE APP, SEE PAGE 28.



To switch your Sidekick on, you need to press and hold the central button with the three stripes for about two seconds. Your Sidekick will greet you with sounds and a short dance. Now you have two ways to control your Sidekick:

DIRECT CONTROL MODE

This mode is enabled automatically when you power your Sidekick on. Now, if you press one of the arrow keys, your Sidekick will perform the corresponding movement. If you have switched on the key programming mode, you can return to this mode with a short press of the shift key.

KEY PROGRAMMING MODE

When you push the shift key with a short press, your Sidekick is switched into this mode. This will be confirmed by your Sidekick with two beeps. You can now store up to 50 individual movements by pressing the corresponding keys. When you have finished programming, press the shift key once. Your Sidekick will perform the programmed movements.

Exploring robots

Exploration robots like your rover are among the most exciting of all the different types of robots because they are used in places where it is too dangerous for humans (and even animals) to venture. Robots can also explore places that are simply too difficult for people to reach On this page, you will find some example .

Mars CURIOSITY ROVER

Curiosity began its journey to Mars on November 26, 2011 and reached its destination, our neighboring planet Mars, in August 2012. Curiosity is a good name for this robot, because its job is to search for traces of life. Curiosity can also send selfies from Ma s.

Mine-clearing ROBOTS

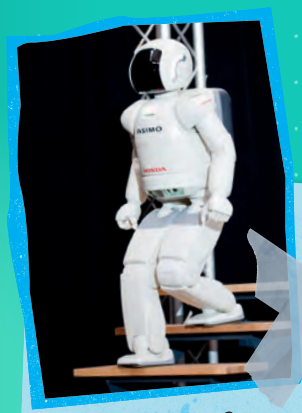
Land mines were laid in many wars, and they still pose a great danger today. Mine-clearing robots are increasingly being used to clear these mines, because they can be operated by remote control at a safe distance. In the picture, you can see two models used for mine clearing.

RESCUE ROBOTS

These robots are used to help rescue people in dangerous situations. They were used after the attacks on the World Trade Center on September 11, 2001 and were also deployed after the earthquake and subsequent tsunami in Japan in 2011.

Humanoid robots

Humanoid robots are robots whose appearance is similar to that of a human being. They have human-like features such as legs, arms, and joints. For many centuries, people have dreamed of creating an artificial person. However, due to the technical complexity of such a project, the fi st humanoid robots didn't appear until the late 20th century.



Asimo

Asimo is one of the first humanoid robots. It was introduced by Honda in 2000. It can run like a human, but at 2.5 km/h, Asimo isn't exactly a speed demon. It was built mainly for research purposes and, unlike newer robots, is not able to learn.

FEDOR

Fedor is a humanoid robot developed in Russia, originally designed for rescue missions. In 2019, it was sent to the International Space Station (ISS) to find out whether it could carry out repairs to the station.

Ai-Da

Ai-Da is an android. This is the name given to artificial beings that are designed to look like humans. Ai-Da has artificial intelligence and is capable of learning. It is even able to express itself artistically, using cameras in its eyes and its robot arm to paint. Here Ai-da is shown with one of its paintings.


TA-DAH! A ROBOT SIDEKICK. WE CALL IT ...
MAZZY!
WAIT, YOUR SIDEKICK IS ALSO NAMED MAZZY?
YES, BUT OURS IS MUCH BETTER THAN YOURS.
OURS HAS GREAT FACIAL EXPRESSIONS!
OURS TOO!
HMMMM...
OUR SIDEKICK CAN BE PROGRAMMED!
OURS CAN BE PROGRAMMED ORRRR CONTROLLED DIRECTLY
OURS TOOOO!


MAZZY CAN PLAY MUSIC!
MAZZY CAN TOO, AAAAANNNNDDD DANCE!
AND IT HAS INFRARED SENSORS!
MAYBE IT'S THE SAME ROBOT ...
... JUST PUT TOGETHER DIFFERENTLY?
OOOOOOH!
YES, MAYBE.
LET'S AGREE ON A TIE.
AND SO ...
THEY WERE ACTUALLY QUITE NICE, TOM.
BUT I STILL THINK OUR MAZZY IS BETTER.
THEY LOOKED STRANGELY FAMILIAR TO ME.
THE TWO MAZZIES WERE LITERALLY THE SAME ROBOT, IZZY.
WOW, WHAT ARE THE CHANCES?

App and Programming

To take advantage of all of the functionality the Sidekick has to offer, you must fi st download the Sidekick app to a smart phone or tablet with help from an adult. Depending on your smartphone or tablet, scan one of the two QR codes on the right, or search the Google Play Store or the Apple App Store for the "Kosmos Sidekick" app to find the app and d wnload it.

Android
(Google Play Store)

iOS
(Apple App Store)

THE APP

When you open the app for the first time after downloading it, you must first accept the privacy statement.

The app then starts with this image:

Now choose the rover or robot, depending on which model you have assembled. You can change your selection in the top left corner of the app at any time:

You can now choose one of the four modes:

In this mode, you can control your Sidekick directly as you would with a remote control or with the gyroscope built into your smart phone or tablet. For more information, see page 31.

DRIVE

Here, you can program your Sidekick to perform different movements and get it to make different facial expressions and sounds. See page 33 for more information.

CODING

BUDDY

In this mode, you can make your Sidekick dance or express different emotions with different facial expressions. More on page 32.

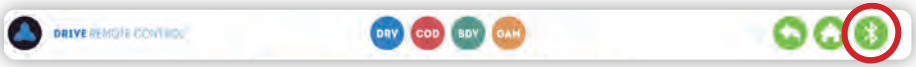
GAME

After you have assembled the maze from the cards provided, you can race your Sidekick through it in this mode. It's most fun when you compete against a friend. See page 36 for details on how to do this.

CREATING THE BLUETOOTH CONNECTION

Now that you have chosen a mode, you will need to establish the Bluetooth connection to your Sidekick. Click the gray Bluetooth icon in the upper right corner of your app.

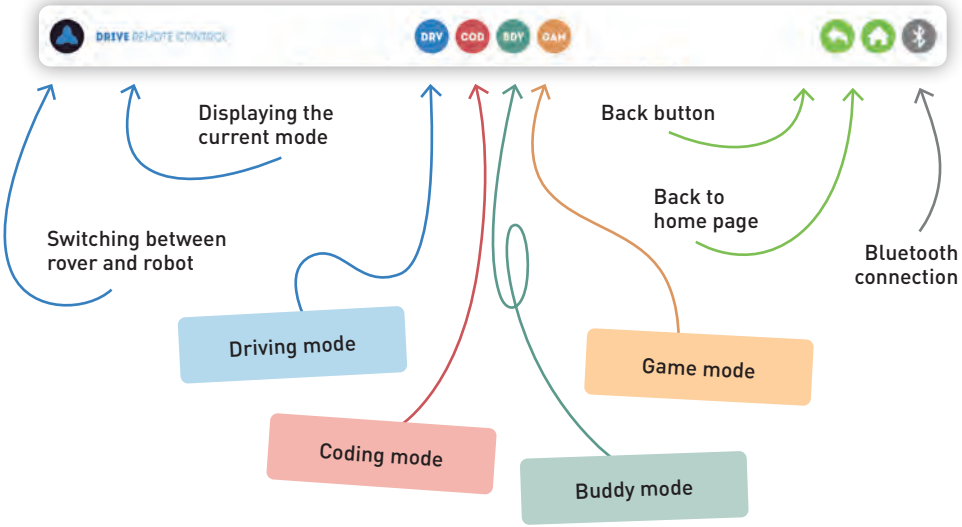
You may need to allow the app to access the device location, or you won't be able to establish the Bluetooth connection. Select the "Allow while using the app" or "Allow once" option. If you decline, you won't be able to connect to your Sidekick.



After a short moment, a pop-up window will appear. Click on the name "MAZZY". (Remember, this was the robot's name from the comic!)

Once this is set up, you can quickly see if your Bluetooth connection is active:

THE OTHER FUNCTIONS AT A GLANCE

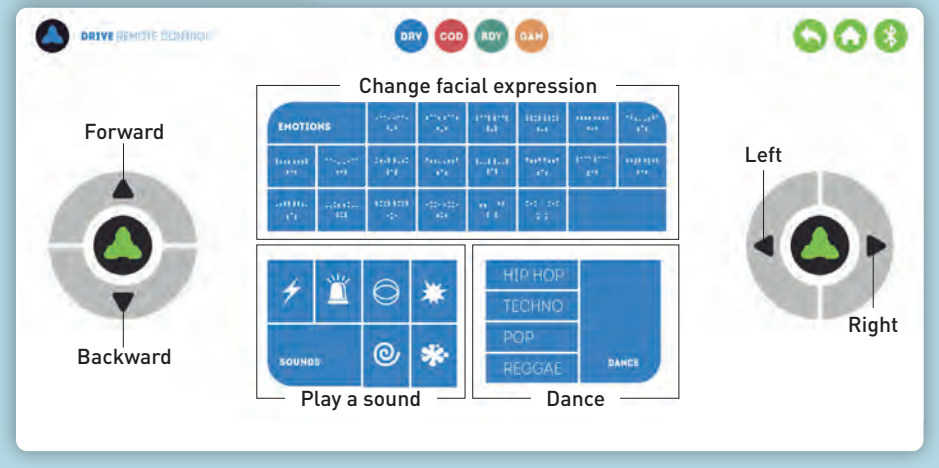


DRIVING MODE

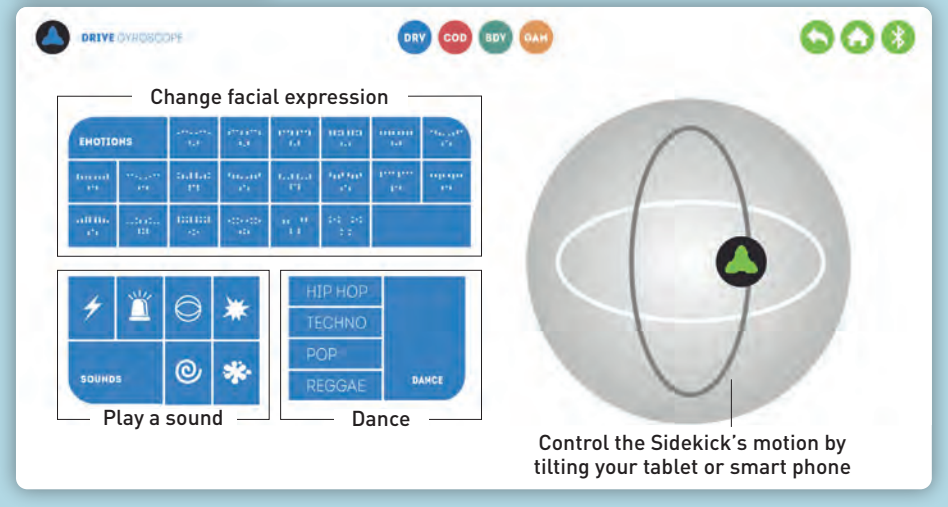
DRIVE

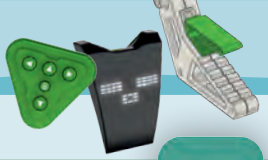
In driving mode, there are two ways to control your Sidekick:

REMOTE



GYROSCOPE

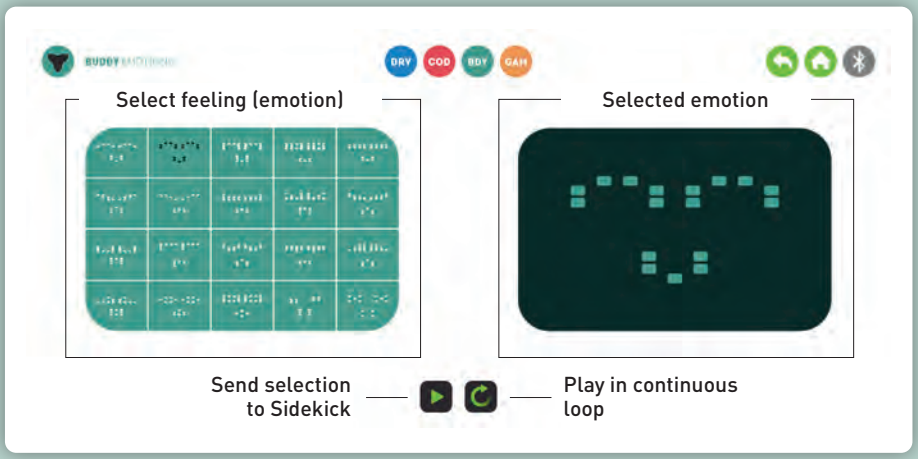




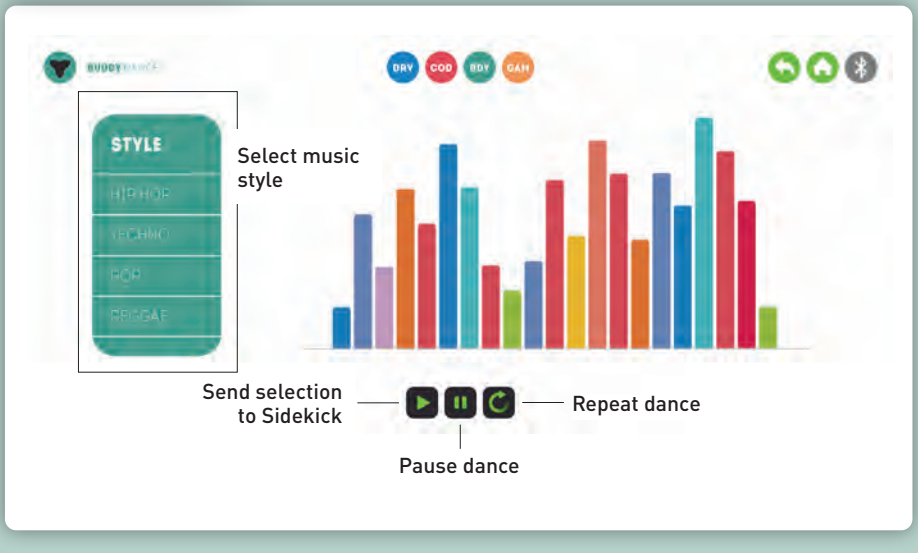
BUDDY

In Buddy mode, the Sidekick shows its feelings and dances:

EMOTIONS



DANCE

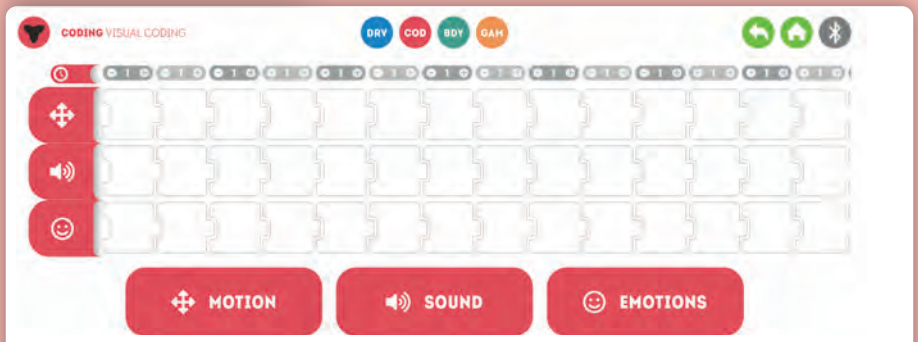


CODING MODE

CODING

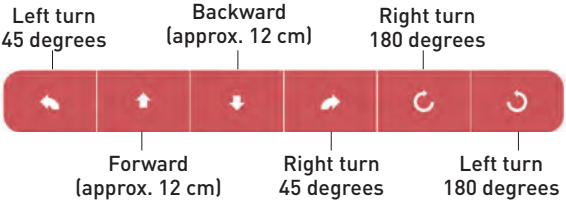
This is the most versatile part of the app for learning coding. Here you can program your Sidekick in many different ways.

VISUAL CODING



The programming matrix is structured like a timeline, which you fill in from left to right. Click on each of the words — motion, sound, and emotions — to open up its selection menu:

Motion:



Sound:

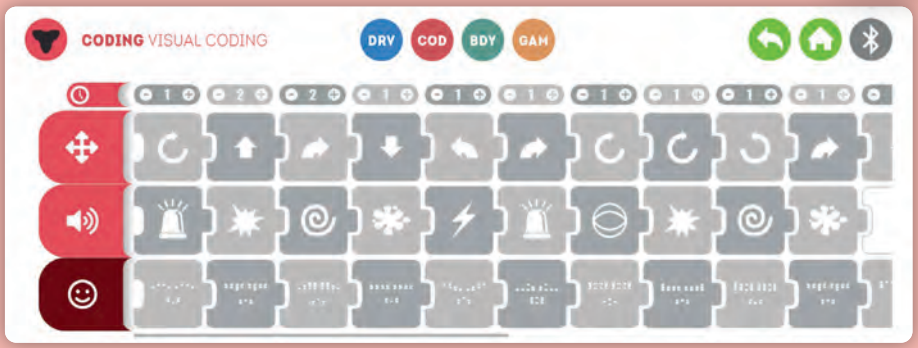
Emotions:

Repeats:

Here, you can set how often the commands in any column are to be repeated. A maximum of eight repetitions can be programmed.

CODING

When you have completed your program, the matrix will look something like this:



Now the icon bar at the bottom of the app is used:

Complete programming: You must always press this button when you have finished programming.

Use the **Play** key when you want the Sidekick to perform your programming steps.

Use the **Pause** key to pause the Sidekick.

The **Loop** key is used to get the Sidekick to repeat the program again and again.

The **Memory** key enables you to store up to three program sequences. After tapping the key, a menu opens asking you to choose the program location where you would like to store the sequence. Click on the small disk icon to save the program. To call up a saved program, press the Memory key, select program number 1, 2, or 3, and press the Memory key again.

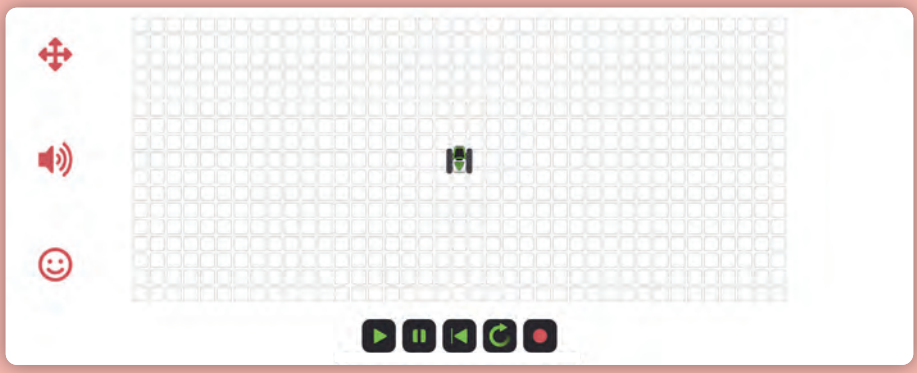
Delete key: If you click on a command and then click this key, it will be removed. If you hold this key for longer, you will delete the entire sequence.

CODING MODE

CODING

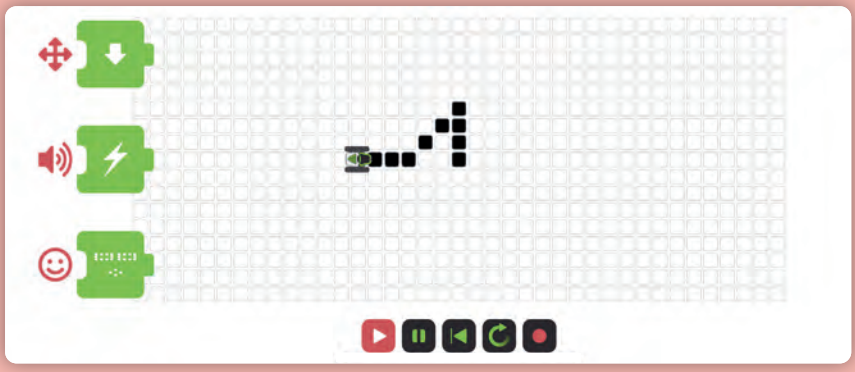
SIMULATOR

In the simulator, you can simulate certain saved programs before transferring it to your Sidekick. It's your testing environment:



The menu that you already know from the visual coding mode of the app appears again in the lower part of the app:

- Use this button to access a program you have previously saved (see page 34).
- If you have called up a program, you can start the simulation here.
- Pause the simulation.
- Start the simulation from the beginning.
- Run the simulation in an infinite loop.



GAME

In this game you build a maze. The aim is to guide your Sidekick through the maze as quickly as possible.

Here's how:

1. In your kit, you will find 15 maze cards and two cards that define the start and end points. Use them to build a maze. Define a start point and an end point, and add in the walls. Your maze could look something like this, for example. (The walls are shown to be lying flat, but you actually need to bend the tabs of the walls and stand them upright.)

2. Now switch to the "Game" tile in the Sidekick app and to the "Game Maze" tab. This window opens:

3. Move your Sidekick to the start point and press the **Play** key. The stopwatch starts, and you must try to steer your Sidekick through the maze as quickly as possible. When you reach the end point, press the **Stop** key. But be careful: during the race, you must not get too close to the maze walls. If you do, the Sidekick will make a sound and a sad face and is blocked for a few seconds (first 5 seconds, then 7 seconds, and finally 10 seconds) before it continues.

6. If your time is one of the top five, you can add your name to the rankings.

7. Now, it's your friend's turn to play. Have fun!

TIP

IF YOU WANT TO BUILD MORE COMPLICATED MAZES AND OBSTACLE COURSES, YOU CAN, USING OBJECTS FOUND IN YOUR HOME. THICK BOOKS ARE PARTICULARLY GOOD FOR THIS.

FCC Part 15 Statement
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC RF Exposure Statement
To comply with the FCC RF exposure compliance requirements, this device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.
For body worn operation, this device has been tested and meets FCC RF exposure guidelines when used with an accessory that contains no metal and that positions the device a minimum of 20 cm from the body. Use of other accessories may not ensure compliance with FCC RF exposure guidelines.

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