

## 4 SIRENS CODING

Build the circuit shown here, note that the blue jumper wire is connected beneath the NPN transistor (Q2). Turn on the switch (S1). Open the Snap Circuits® Coding app, connect to the SC Controller, and use Circuit Control mode to activate sirens. See project 1 and pages 34-42 to review how to use the app.

Next, put the app in BOTCode™ mode and create some code to sound different sirens. Experiment with changing parameters for commands, such as the time duration.

The alarm IC (U2) can produce four siren sounds, as shown in project 11. Those sirens can be produced by controlling the SC Controller outputs as follows:

- Siren 1. D1 on, others off.
- Siren 2. D1 and D2 on, others off.
- Siren 3. D1 and D3 on, others off.
- Siren 4. D1 and D4 on, others off.

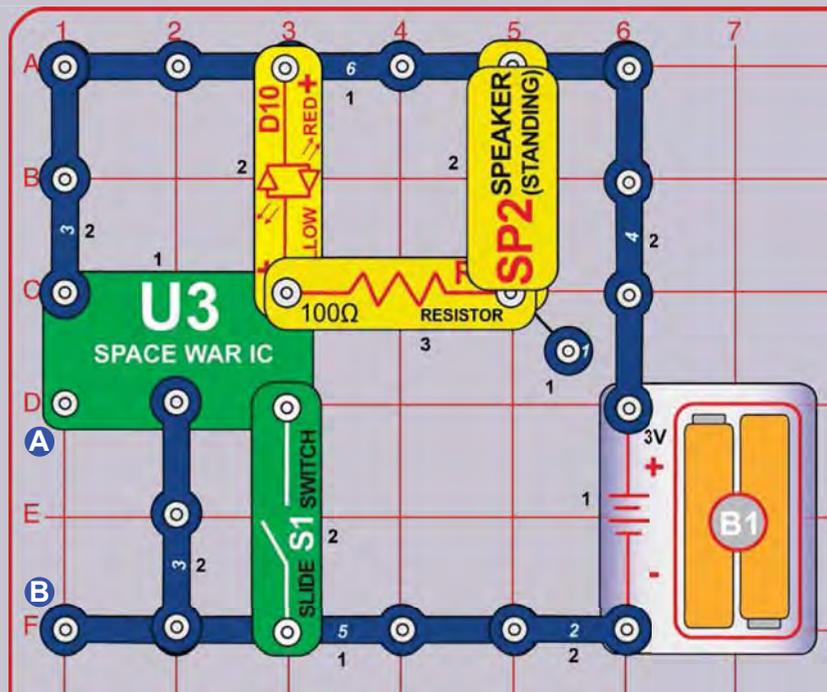
What do you think the NPN transistor (Q2) is used for in this circuit?



### CODING CHALLENGE

- Play different sirens for different durations in the same program.





## SPACE WAR

Build the circuit as shown. Activate it and change the sound by turning the slide switch (S1) on and off repeatedly. The red/yellow LED (D10) also lights.

Next add a 3-snap wire across the points marked A & B; connect and disconnect it several times, and do it in combination with the slide switch. You will hear an exciting range of sounds, as if a space war is raging!

You can make the sound louder by replacing the 100Ω resistor (R1) with the blue jumper wire, or make it softer by replacing R1 with the 1kΩ resistor (R2).

**NOTE:** See projects 15-16 to control the space war IC using coding, and see how much more control coding gives you.

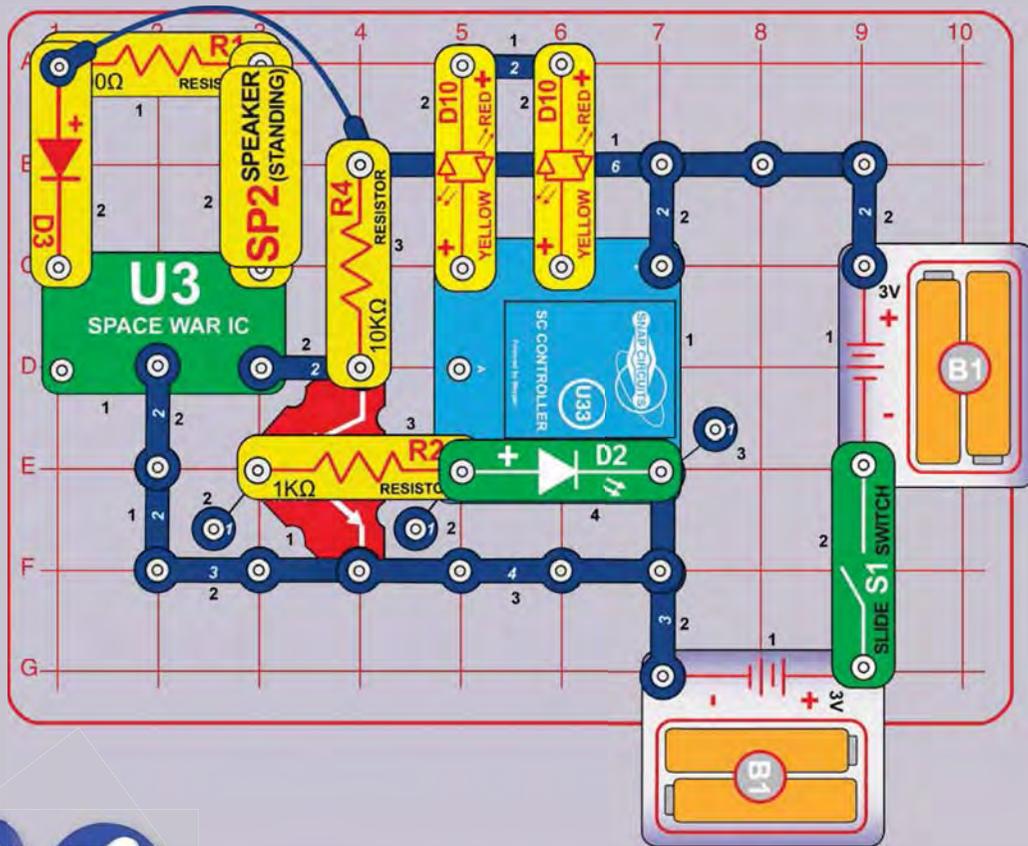
Like the other integrated circuits, the space war IC is a super-miniaturized electronic circuit that can play a variety of cool sounds stored in it by using just a few extra components.

In movie studios, technicians are paid to insert these sounds at the precise instant a gun is fired. Try making your sound occur at the same time an object hits the floor. It is not as easy as it sounds.

The upper-right snap of the space war IC is like an electrical gate, opening and closing quickly to let small bursts of electric current flow in. The bursts of electric current also flow through the speaker (which produces sound). The space war IC produces the different sounds by adjusting the pattern of two separate current bursts through the speaker.



# PROJECT 15



What do you think the NPN transistor (Q2) is used for in this circuit?

## CODING CHALLENGE

- Play a space war sound for a second, then wait 5 seconds and play another.

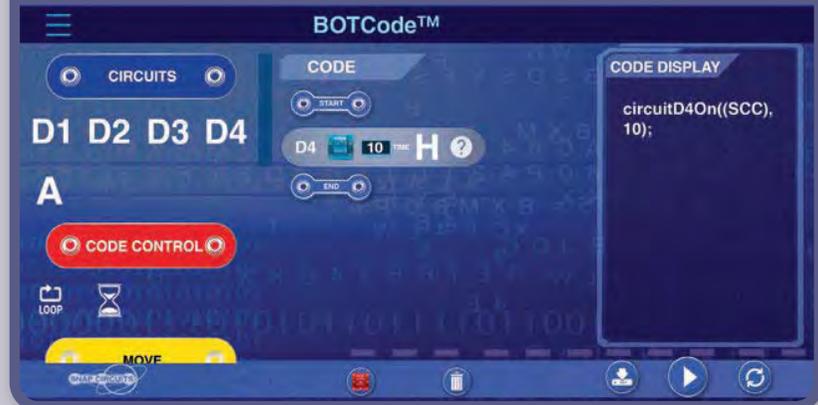
## SPACE WAR CODING

Build the circuit shown here and turn on switch (S1). Open the Snap Circuits® Coding app, connect to the SC Controller, and use Circuit Control mode to activate and change the sound. See project 1 and page 34-42 to review how to use the app.

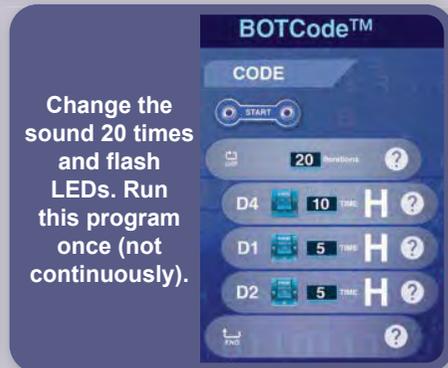
Next, put the app in BOTCode™ mode and create code to sound different sirens. Experiment with changing parameters for commands, such as the time duration.

You can make the sound louder by replacing the 100Ω resistor (R1) with a 3-snap wire or make the sound softer by replacing R1 with an LED (“+” on left).

BOTCode™ Screen: Change Sound [Run this program continuously.]

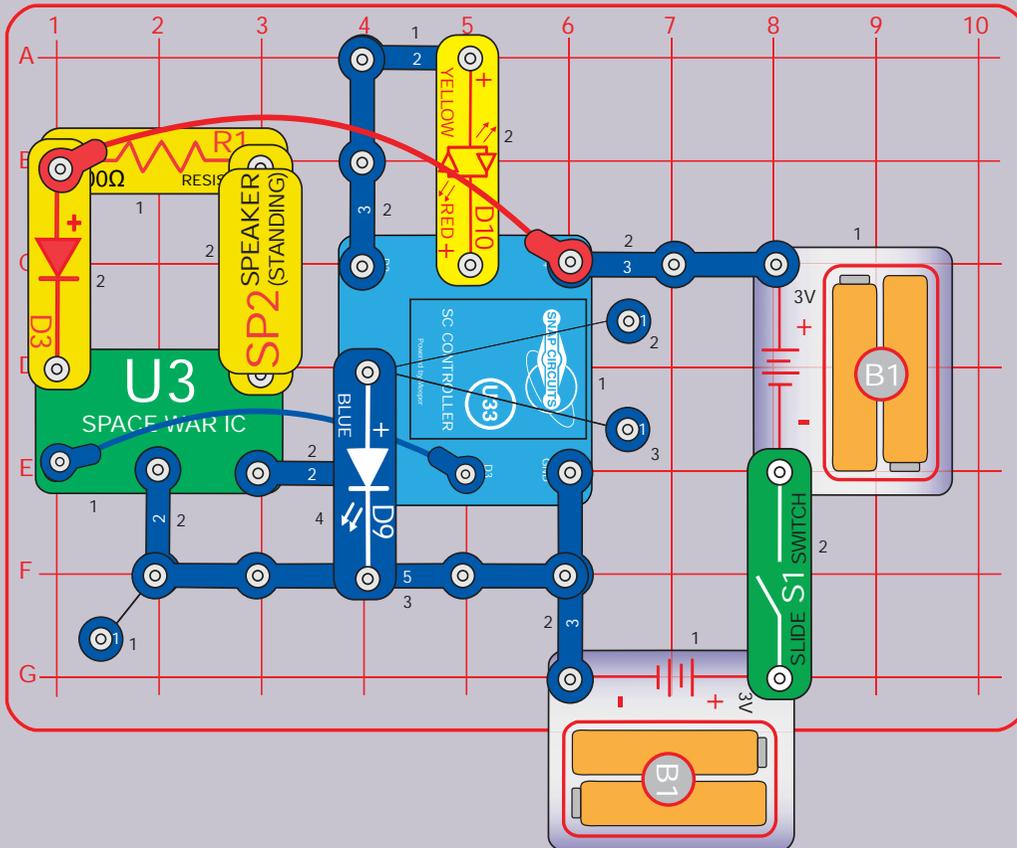


Control Screen in Circuit Mode



Change the sound 20 times and flash LEDs. Run this program once (not continuously).

PROJECT 16



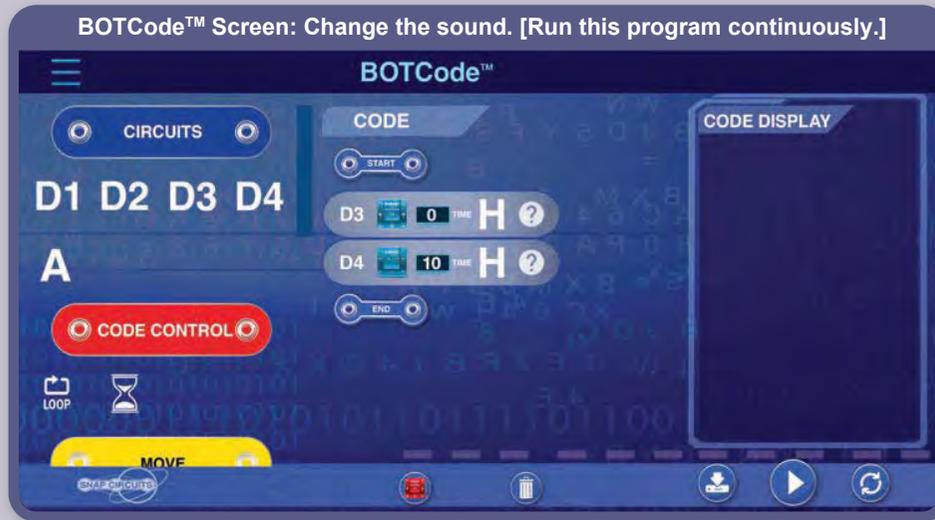
## SPACE WAR CODING UPSIDE DOWN

This project uses the SC Controller (U33) to control the space war IC (U3) like the preceding project but does not include the NPN transistor (Q2). It works almost the same way, but here there are two connections between the SC Controller and the space war IC, and the SC Controller control is opposite - when you turn the circuit on, the sound is on unless you use the SC Controller to turn the sound off.

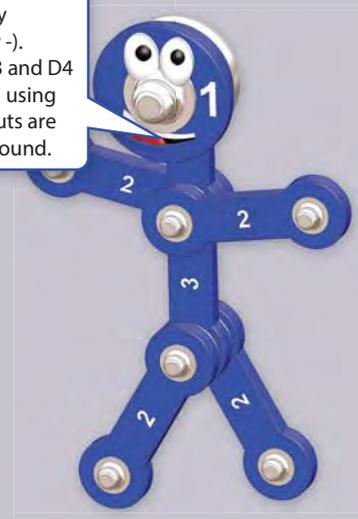
Build the circuit shown here and turn on the switch (S1). Open the Snap Circuits® Coding app, connect to the SC Controller, and use Circuit Control mode to activate and change the sound. Note that here the sound will begin immediately, so you must turn on D3 and D4 to stop the sound. See project 1 and pages 34-42 to review how to use the app.

Next, put the app in BOTCode™ mode and create code to sound different sirens. Experiment with changing parameters for commands, such as the time duration. Note that here the sound will begin immediately, so you must turn on D3 and D4 to stop the sound. You may want to disconnect the speaker (SP2) while you are writing code.

You can make the sound louder by replacing the 100Ω resistor (R1) with a jumper wire, or make the sound softer by replacing R1 with the 1kΩ resistor (R2) or an LED (“+” on left).

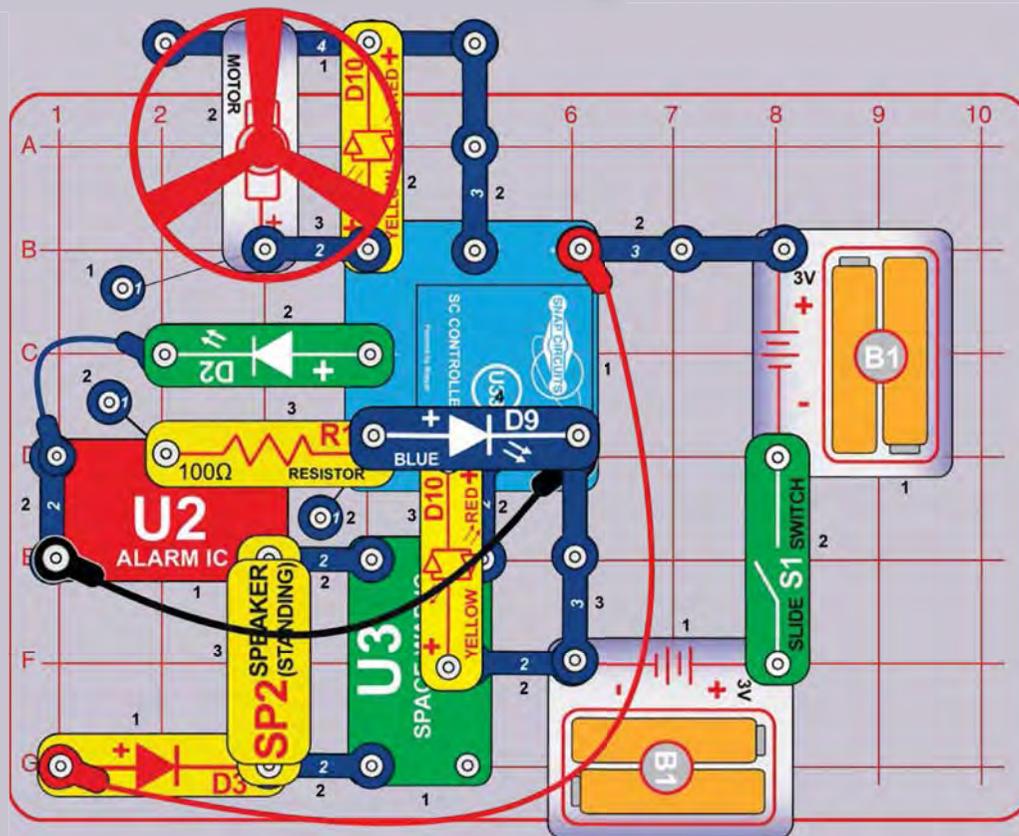


The space war IC (U3) sound is activated by connecting its control snaps to 0V (battery -). When the SC Controller is turned on, its D3 and D4 outputs are off (0V) until you turn them on using the app. So when the SC Controller's outputs are off, they are activating the space war IC's sound.



### CODING CHALLENGES

- Play sounds for only a short time each. How short can you make them?
- Play each sound for 5 seconds or longer.
- Count how many different space war sounds there are.



**⚠ WARNING:** Moving parts. Do not touch the fan or motor during operation. Do not lean over the motor. Fan may not rise until switch is released. Eye protection is recommended for this circuit.

## BOX COVER CIRCUIT

This project combines most of your set's features into one circuit. Build the circuit shown (it is also pictured on the cover of your box and this booklet) and turn on the switch (S1). Open the Snap Circuits® Coding app, connect to the SC Controller, and use Circuit Control mode to activate sirens. See project 1 and pages 34-42 to review how to use the app.

Next, put the app in BOTCode™ mode and create some code to sound different sirens. Experiment with changing parameters for commands, such as the time duration.

Note: In this circuit the space war sounds begin immediately, so you must turn on SC Controller output D3 to stop the sound.

Note: If your batteries are weak then turning on the motor (M1)/fan may reset the SC Controller (making the blue Bluetooth light on it flashing instead of staying on); if this happens then replace your batteries.

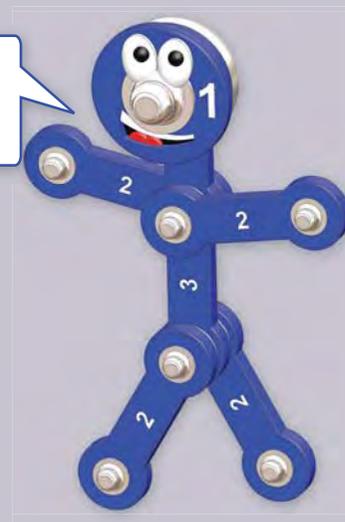
Features controlled by the SC Controller (U33) outputs:

- D1 controls the fan (and can make it fly) and makes the top LED (D10) red.
- D2 controls the fan (but does not make it fly) and makes the top LED yellow.
- The A output controls the green LED (D2).
- D3 controls the space war IC (U3) sounds and makes the bottom LED red. Note that the space war sounds begin on and can only be turned off by turning on D3.
- D4 controls the alarm IC (U2) sound and the blue LED (D9).

If you want to stop the sound while you create code, remove the speaker (SP2) or replace it with your extra green LED (D2, "+" on bottom).

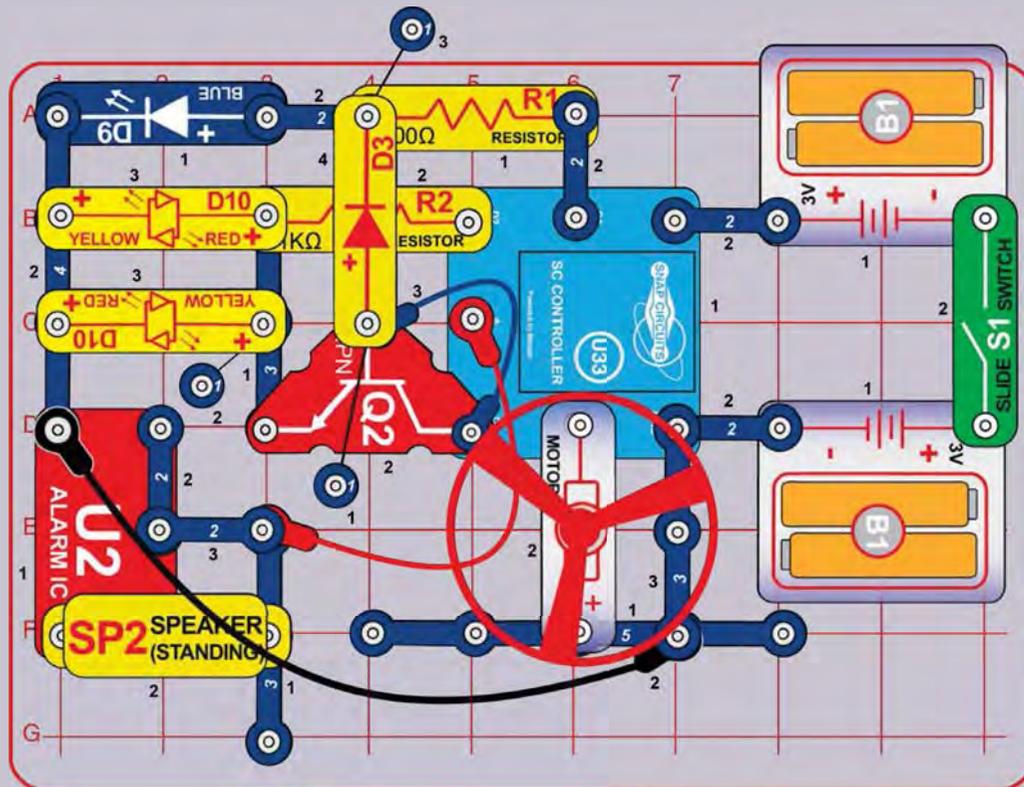


This complex circuit is shown on the cover of your box and manual, use that picture as a guide in building it.



**CODING CHALLENGE**  
- Flash lights and play sounds, then launch the fan.

# PROJECT 18



**WARNING:** Moving parts. Do not touch the fan or motor during operation. Do not lean over the motor. Fan may not rise until switch is released. Eye protection is recommended for this circuit.

**CODING CHALLENGE**  
- Spin the fan, play a siren, and light 3 LEDs at the same time.

## COUNTDOWN

Build the circuit shown here, note that the blue jumper wire is connected beneath the NPN transistor (Q2). Turn on the switch (S1). Open the Snap Circuits® Coding app, connect to the SC Controller, and use Circuit Control mode to activate lights, a siren, or the motor (M1) and fan. See project 1 and pages 34-42 to review how to use the app.

Next, put the app in BOTCode™ mode and create some code to activate lights, sound, or motion, or use the “Countdown” program shown below. Experiment with changing parameters for commands, such as the time duration.

What to do next?  
Repeat the preceding projects using BLOCKLY coding. BLOCKLY is described at the end of project 1.

Now you are ready to code on your own!



**BOTCode™ Screen: Countdown: light 1 LED, then 2 LEDs, then 3 LEDs, then siren, then launch fan**

## SNAP CIRCUITS® CODING APP INSTRUCTIONS:



## MEET THE SC CONTROLLER

The SC Controller module (U33) has 5 outputs (D1, D2, D3, D4, and A) that are controlled through Bluetooth using an app on your device. D1-D2 and D3-D4 are paired so they can each control a motor in both directions and can be set to either of two output voltage levels, called H (Higher) and L (Lower). Output A has low power and cannot control most motors.

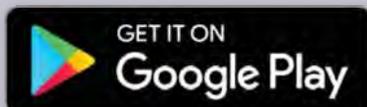
The SC Controller can be controlled from the Snap Circuits® Coding App on your Bluetooth device in three ways:

1. Control (remote control in real-time).
2. BOTCode™ (simple graphical coding).
3. BLOCKLY coding.

### SC CONTROLLER:

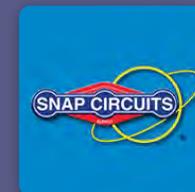
- (+) - power input from batteries
- GND - power return to batteries
- D1 - output connection for a motor, paired with D2, higher & lower levels
- D2 - output connection for a motor, paired with D1, higher & lower levels
- A - output connection for low current uses, 4V output level
- D3 - output connection for a motor, paired with D4, higher & lower levels
- D4 - output connection for a motor, paired with D3, higher & lower levels

## DOWNLOAD THE SNAP CIRCUITS® CODING APP:



Go to the App Store on your device. The most recent version of the Snap Circuits® Coding App is available on iOS and Android, and may also be available on other devices. Check the Discover Coding product page at [www.elenco.com/discover-coding.com](http://www.elenco.com/discover-coding.com) for more information on what devices support the Snap Circuits® Coding App.

Search for 'Snap Circuits Coding'. Look for a page like the one shown here. Download the app, install it, and open it. Contact Elenco® if you have any problems.



# CONNECT TO THE SNAP CIRCUITS® CODING APP:

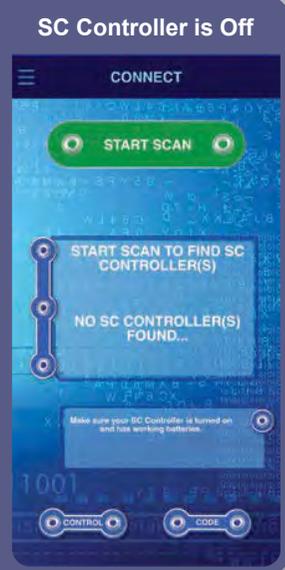
1. Open the Snap Circuits® Coding App, it should be showing the connect screen. (If you already had the app open then tap the icon in the upper-left corner and tap "Connect" on the menu.)



2. Make sure Bluetooth is turned on your device; If it's off, the app should prompt you to turn it on.

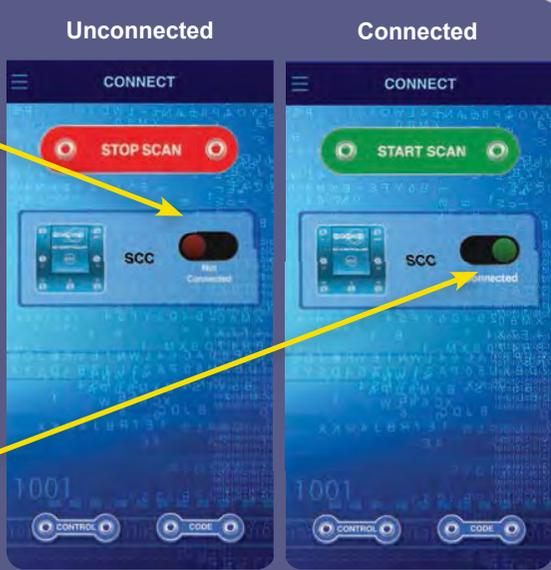


3. Turn on the slide switch (S1) in your circuit to turn on the SC Controller (U33). The Bluetooth connection light indicator on the top of the SC Controller will flash blue to indicate the SC Controller has power and the SC Controller's Bluetooth chip is waiting to be connected to a device.



4. The connect screen of the app will scan for available SC Controllers and within moments yours should appear as "Not Connected".

5. Tap on the red "Not Connected" dot to connect the app to your SC Controller. The red dot on the app should turn green, indicating your SC Controller module is now connected to the app. The Bluetooth indicator light on your SC Controller will now be a solid blue, indicating it is connected. You are now ready to Control or Code.



6. If connecting for the first time, by default your SC Controller name will be SCC. You can change your SC Controller name and other settings in the MY SCC screen. See page 39 for more details on personalizing your SC Controller.

7. You may select multiple SC Controllers (up to 8) to Connect to on this screen.

**To Disconnect:** Turn the SC Controller circuit off with the slide switch **OR** return to the Connect screen and tap the Connected button next to your SC Controller's name. This will disconnect your device from the SC Controller and someone else can now connect.

**How to Reconnect:** Turn on your SC Controller. Return to the Connect screen and select the SC Controller you wish to reconnect.

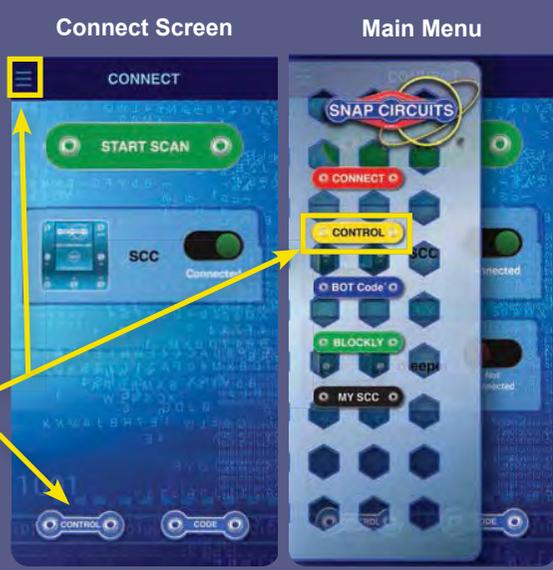


# CONTROL:

The easiest way to use your SC Controller is with Control mode, which uses your device as a remote control.

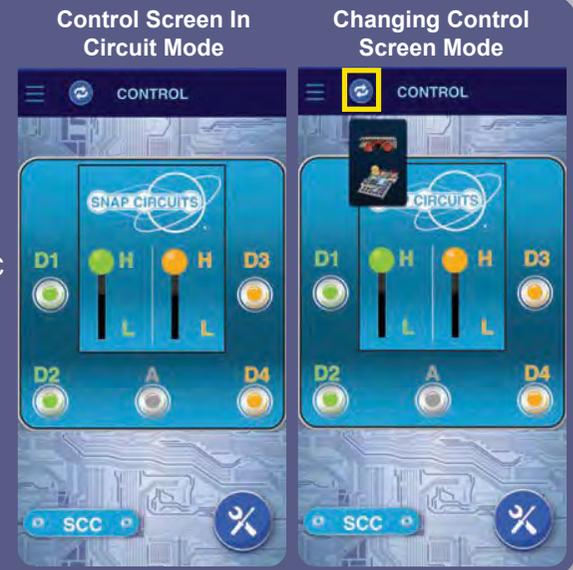
1. The Snap Circuits® Coding App should be open on your device and your SC Controller module should be connected to it as described above.

2. From the Connect screen, tap the Control button. (You can also use the navigation menu to go to the Control screen from anywhere in the app.)



3. The Control screen begins in Circuit mode, you can switch to Drive mode using the mode icon. Circuit mode will be emphasized for the projects in this booklet. Drive mode is primarily intended for using your SC Controller with vehicles using two motors, which may be available in other sets. Drive Control mode is described on page 40.

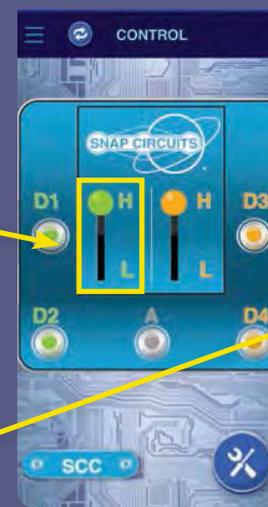
4. Use the controls to turn the LEDs in your circuit on and off.



## CIRCUIT MODE FEATURES:

- 5 outputs for controlling your circuits: D1, D2, D3, D4 and A. Simply press the button to turn on/off the circuit output. Use these to turn the LEDs in your circuit on and off.
- D1-D4 have Higher and Lower Voltage Level Controls (typically 5V and 3V but varies depending on your battery voltage). Select Higher (H) or Lower (L) voltage to change the output voltage level. D1 & D2, and D3 & D4, are paired and must always be the same voltage level (H or L). Use H and L to change the brightness of LEDs in your circuit that are turned on.
- The A output is 4V but can only supply low currents, so it cannot be used to control the motor (M1) directly.
- You can Control & Code circuit paths independently or together. You can turn on all 5 circuit outputs (controlling 5 LEDs in this circuit) at a time or turn them on/off individually.
- You can control 2 SC Controllers in the App at once (for up to 10 outputs).

## Control Screen In Circuit Mode



## 2 SC Controllers Can Be Controlled At Once

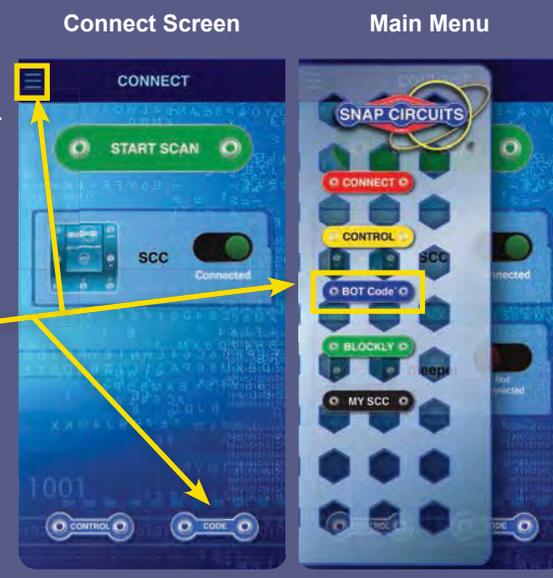


# CREATE BOTCODE™:

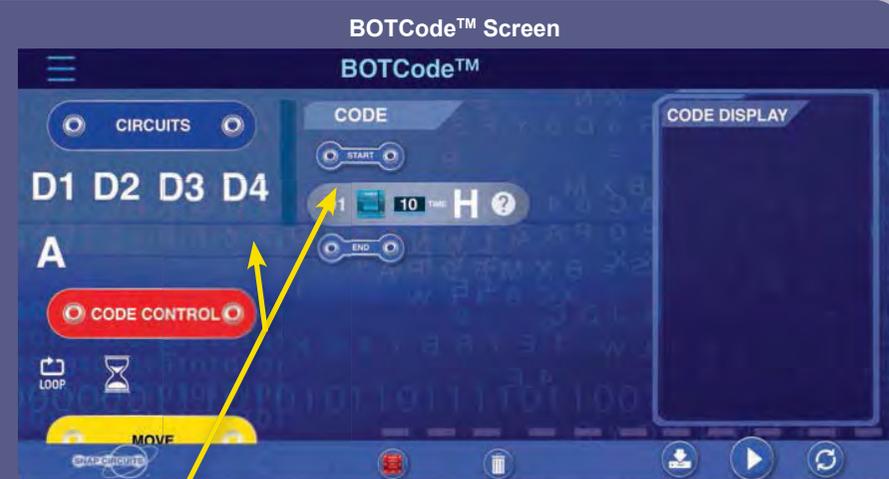
BOTCode™ uses Scratch-like drag and drop coding to make it easy to program the SC Controller. You can turn on lights, sounds, or motors, in any order or for different durations.

1. The Snap Circuits® Coding App should be open on your device and your SC Controller module should be connected to it as described earlier.

2. From the Connect screen, tap the Code button to get to the BOTCode™ screen. (You can also use the navigation menu to go to the Code screen from anywhere in the app.) With BOTCode™ you can program sequences of actions for your SC Controller and see them in action. Turn your device sideways – BOTCode™ will always be locked in landscape mode.



3. To start, tap & drag one of the actions from Code Control to the Code section.
4. If you want to rearrange actions in the sequence, just tap-n-drag those, too!
5. Now, tap the Button with the Play icon in the lower right hand corner. The SC Controller activates the LEDs in this circuit as per the program you entered.
6. Watch your Code execute in the BOTCode™ section.
  - a. The command that is running will be highlighted in the BOTCode™ section.
  - b. The Java code that is generated for that command is displayed in the Code Display section. Learn real Java Code with your BOTCode™ programs.
7. To repeat running the Code, hit the Loop Sequence button next to the Start button. To stop repeatedly running the Code hit the Loop Sequence button again.
8. Utilize different types of commands:
  - a. Circuits Control: commands to turn on and off the SC Controller outputs.
  - b. Code Control: commands to loop or delay your code.
  - c. Move & Turn Controls. commands for Forward, Reverse, Turns, & Spins for time durations or by rotations. These will mostly be used with vehicles.



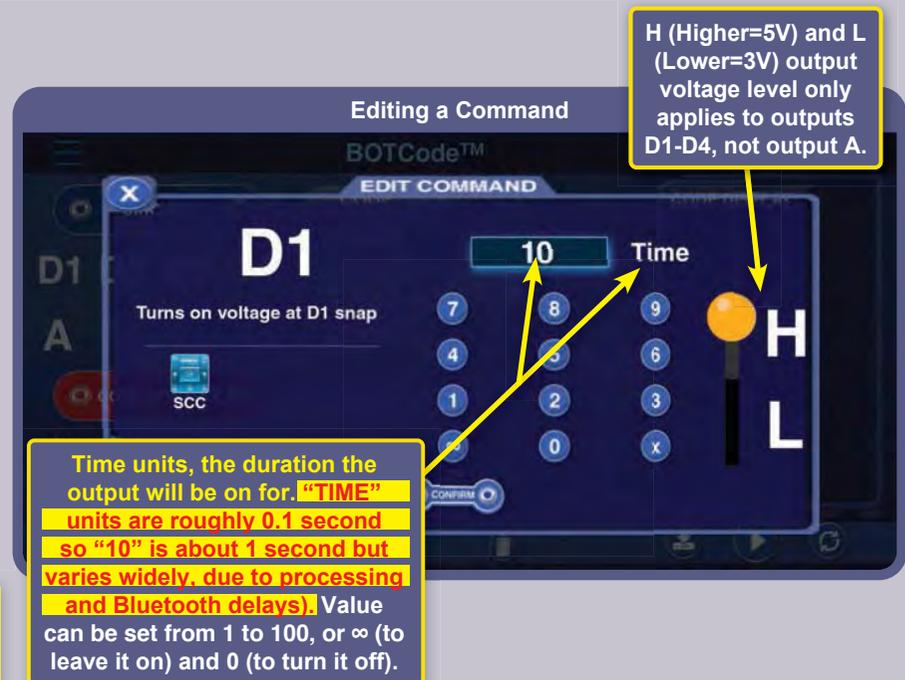
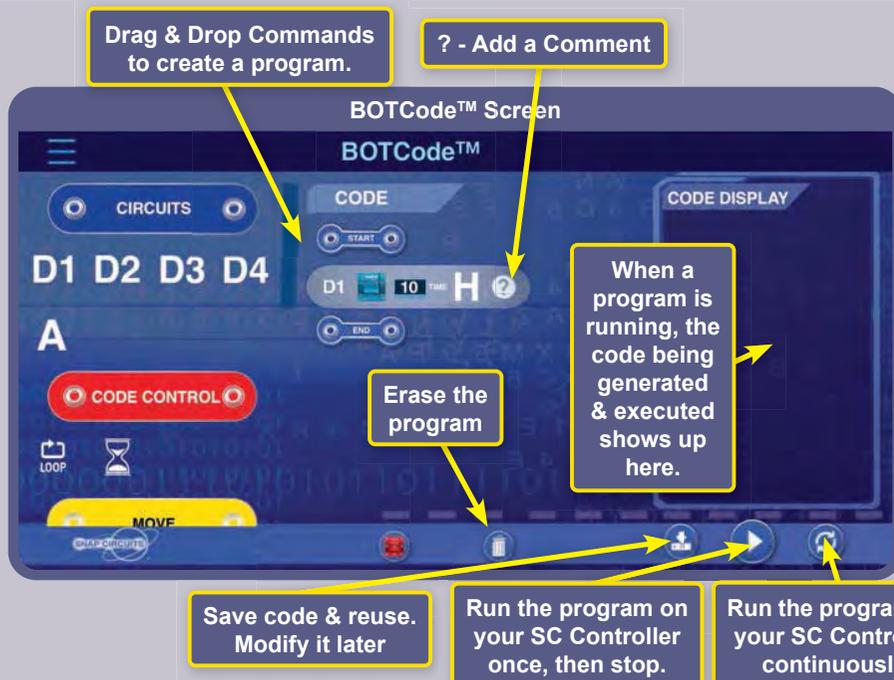
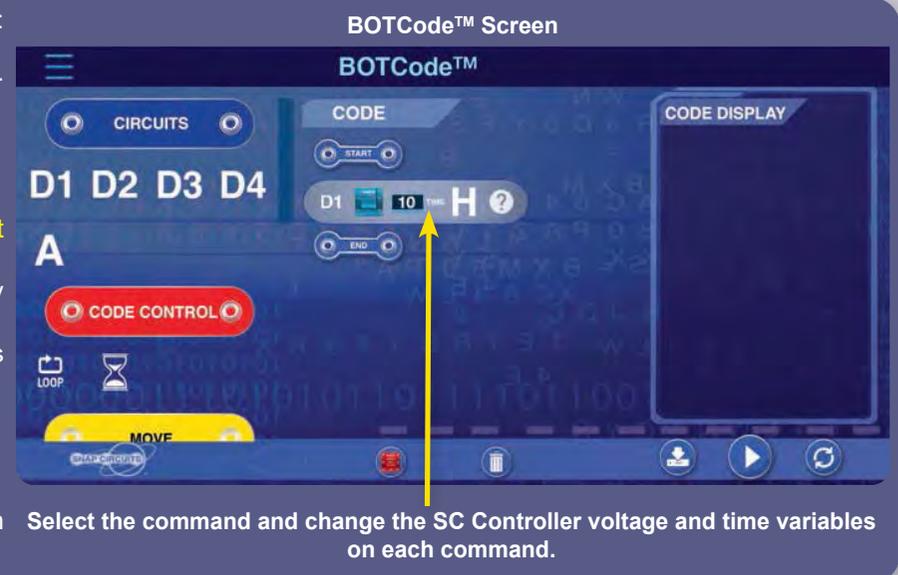
Drag & Drop Commands from the choices at the left to the CODE area in the center to create a program routine.

# EDITING & SAVING BOTCODE™

You can change the duration or output voltage level for your BOTCode™ commands:

1. The App should be open to the BOTCode™ screen with some commands entered.
2. Tap that command in the CODE section.
3. The Edit Command screen will appear.
  - a. Change the duration of the command. "TIME" units are roughly 0.1 seconds but varies due to processing and Bluetooth delays.
  - b. Change whether the output voltage level is H (Higher) or L (Lower). This only applies to outputs D1-D4, not output A.
  - c. If you are running more than one SC Controller then select the SC Controllers that will run this command.
  - d. Press 'Confirm' to save your changes.
8. Run your code.

**Note:** You must be connected to your SC Controller in order to program it with commands.



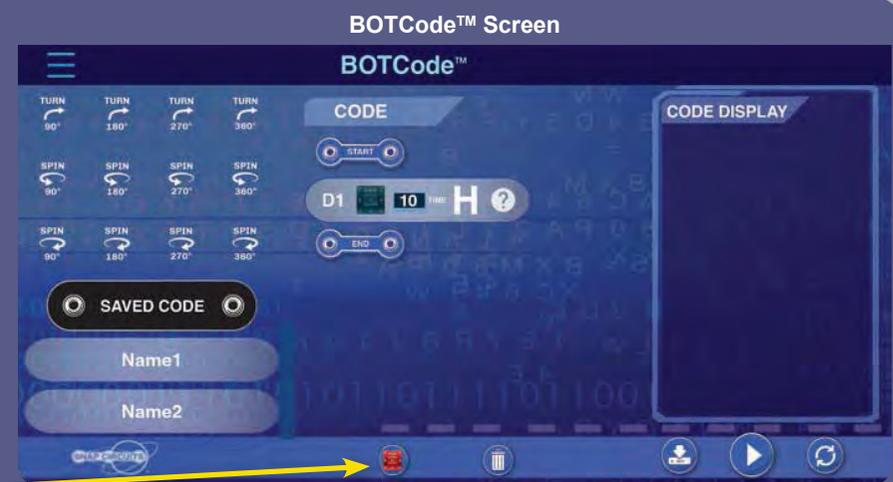
### To Save your programs:

1. Tap the 'Save' Button in the lower right corner. Enter in the Name for your routine, then tap 'Save'. You have now saved your new routine to your device.
2. To find your newly saved masterpiece, go to the bottom of the commands menu (where you drag commands from). Your program will appear under the 'Saved Code' banner.

### To run previously saved programs:

Drag the saved routine in to the CODE section, just like any other command. To save changes you make to a previously saved program, be sure that you call it the exact same name when you tap 'Save' again.

**Note: Re-assign commands** - if you do not have the same SC Controller connected when a command was added to the program (or if no SC Controller was connected) then BOTCode™ will ask you to reassign commands. What this does is take all connected SC Controllers and assign them to any unassigned commands. You can also press the Reassign Commands button.



Saved programs are below the commands menu

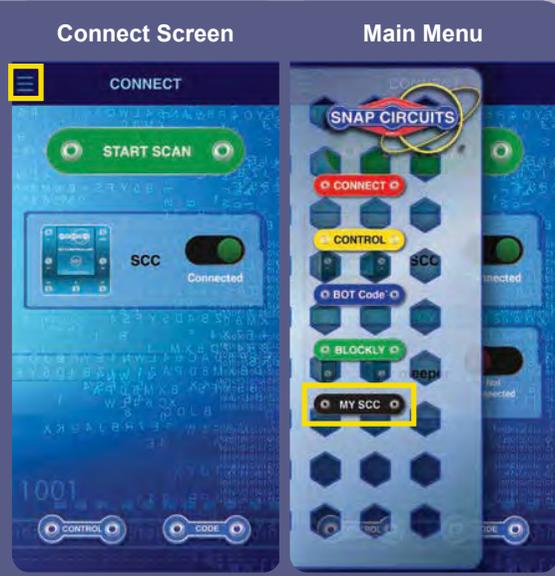
**CODE SHARING:** For instructions on how to import BOTCode™ programs that other people created, or to export your programs to others, go to [www.elenco.com/discover-coding](http://www.elenco.com/discover-coding). Some of the sample programs in this booklet are available there.

# PERSONALIZING YOUR SC CONTROLLER

You can change the name used for your SC Controller in the app, as well as change the icons and colors. This is not necessary, but makes it easy to know which SC Controller is which when multiple SC Controllers are nearby.

1. Open the SC Controllers app and connect your SC Controller module. (NOTE: In order to personalize any SC Controller you must be connected to it.

2. Navigate to the MY SCC screen using the icon in the upper left hand corner.



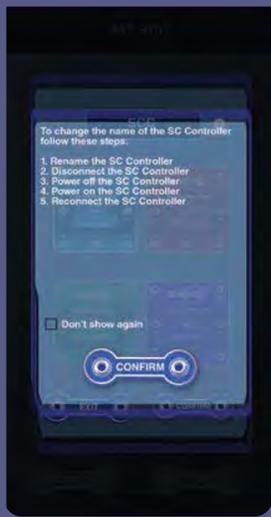
3. Your SC Controller should show up with an icon and name. If several SC Controllers are connected then all will be shown.

4. Tap your SC Controller to pull up the Edit instructions.



5. Read the instructions and tap "Confirm" button to proceed.

## Change Instructions



6. Tap the icon color you like and rename it.

7. To save your changes, tap the "Confirm" button.

8. To ensure that the changes were saved, disconnect the SC Controller, then turn off the SC Controller, then turn on the SC Controller, and then reconnect the SC Controller.

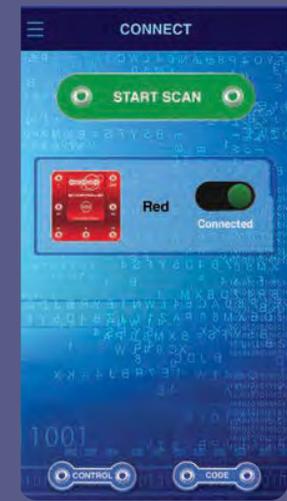
## Personalize Screen



9. Your new SC Controller's name will now be displayed in the Connect, Control, and MY SCC screens.

10. Other users will see your SC Controller's new name when they return to the Connect screen in their app.

## MY SCC Screen After Personalizing



# DRIVE CONTROL MODE

The Control screen will usually be used in Circuit Control mode, but a Drive Control mode is also available. Drive Control mode is primarily intended for using your SC Controller with vehicles using two motors, which may be available in other sets. All the projects in this book use only Circuit Control mode, however Drive mode can be used with your Discover Coding set to turn on several outputs at once and produce some interesting effects.

1. The Control screen begins in Circuit mode, you can switch to Drive mode using the landscape icon.



2. There are 3 different Drive modes. You can experiment by having these control the 5 LEDs in project 1 circuit and others.

- Command Drive, is the easiest mode. Great to get started.
- Tank Drive, a two-handed drive control which gives you direct control over each of the back motors.
- Touch Drive, a super-responsive, joystick-like controller which lets you touch and drag where you want the vehicle to go (touch the center of the controls area and drag it in the direction you want to go).

3. The Driving Controls provide the commands for Forward/Reverse, Left/Right Turn and Left/Right Spin, replacing the D1-D4 controls in Circuit mode. The A output is available to control other functions, such as a horn.

4. Switch Drive modes using the left and right arrows above the Driving Controls.



Select which SC Controller (if more than one)

Odometer

Speed

A Output Control

Select which Drive mode (Command, Tank, or Touch)

Command Drive Controls



**VEHICLE CONTROL WITH THE SC CONTROLLER (U33):** Vehicle commands assume that D1-D2 outputs on the SC Controller are connected to a vehicle's left motor (motor "+" or forward to D1), and that the D3-D4 outputs on the SC Controller are connected to a vehicle's right motor (motor "+" or forward to D3). The A output on the SC Controller is free to be used for sound, a light, or other functions.



### Driving two or more vehicles:

1. Open the Snap Circuits® Coding App, connect two (or more) SC Controllers, and go to the Drive Control mode screen.
2. Once on the Drive screen (and with your vehicles on a safe surface), try to drive your vehicles. Each of them now drive in perfect sync with one another! Note: In DRIVE mode all SC Controllers receive the same control signals - they cannot be controlled independently at the same time.
3. If you want to select specific SC Controller vehicles to drive at once, simply tap that SC Controller's icon to Stop/Start driving it. The other SC Controller(s) will remain connected, but if it's faded, it won't receive a signal.
4. You can connect up to eight SC Controller vehicles and see what kinds of synchronized builds you can create!



SC Controllers not receiving Drive commands

SC Controllers receiving Drive commands

## BOTCODE™ WITH MULTIPLE SC CONTROLLERS

If you have several sets then you can code multiple SC Controllers (which could be on separate vehicles of some form) to do the same or different commands.

The app should be open to the Code screen, with some commands entered, and the app connected to your SC Controllers.

1. When you edit a command to change the time or voltage level, you can also select which SC Controller(s) the command will apply to.
2. Assign one command to one SC Controller and another to your other SC Controller – tap their portrait to choose which SC Controllers execute the command.
3. Try running the code and watch your SC Controllers start to work in tandem!



Select which SC Controllers to command, up to 8 may be controlled at once

# DESCRIPTION OF BOTCODE™ COMMANDS

**D1**

Turn on D1 output (similar for D2, D3, D4) for the time duration shown and at the voltage level (H or L) shown.

**A**

Turn on A output for the time duration shown.

**LOOP**

Set up a group of commands to be executed for the specified number of times (1-100).

Wait for the time duration shown before executing any more commands. **Time units are roughly 0.1 seconds (varies widely, due to processing and Bluetooth delays). Value can be set from 1 to 100.**

H (Higher=5V) and L (Lower=3V) output voltage level only applies to outputs D1-D4, not output A.

Editing a BOTCode™ Command

**Time units, the duration the output will be on for. "TIME" units are roughly 0.1 second so "10" is about 1 second but varies widely, due to processing and Bluetooth delays. Value can be set from 1 to 100, or ∞ (to leave it on) and 0 (to turn it off).**

**VEHICLE COMMANDS WITH THE SC CONTROLLER (U33):** Vehicle commands assume that the D1-D2 outputs on the SC Controller are connected to a vehicle's left motor (motor "+" or forward to D1), and that the D3-D4 outputs on the SC Controller are connected to a vehicle's right motor (motor "+" or forward to D3). The A output on the SC Controller is free to be used for sound, a light, or other functions.

**NOTE:** Turning on D1-D4 and A for a set time means the program will turn that output on, wait for that duration, then turn that output off before moving on to the next command. Set the duration to ∞ to turn an output on and leave it on (while the program performs other commands), then later set the duration to 0 if you want to turn it off later in the program.

NOTES:

NOTES:

## CREATE YOUR OWN CHALLENGES:

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## **FCC Regulatory Compliance**

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.

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

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.

## **ISED Regulatory Compliance**

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions: (1) This device may not cause interference.(2) This device must accept any interference, including interference that may cause undesired operation of the device.

## **RF Exposure Compliance**

This equipment complies with FCC/IC radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

## **CAN ICES-3 (B)/NMB-3(B)**

# Other Snap Circuits® Products!

For a listing of local toy retailers who carry Snap Circuits® visit [elenco.com](http://elenco.com) or call us toll-free at 800-533-2441.  
For Snap Circuits® accessories or additional parts visit [elenco.com](http://elenco.com).

## SNAP CIRCUITS® GREEN ENERGY

Model SCG-225

Let's help the environment and have fun learning about alternative energy, conserving energy, and how the electricity in your world works.

- Includes 45 parts build over 125 projects.
- Easy-to-follow color manual diagrammed like no other Snap Circuits® Kit.



## SNAPINO

Model SC-SNAPINO

Snapino is an introduction to the open source Arduino® Hardware software environment. Learn to code and utilize your Snap Circuits modules at the same time!

- A great introduction to coding and the Arduino platform
- Arduino is a microcontroller used in robotics and other applications
- Includes over 15 parts build over 20 projects.



## RC SNAP ROVER®

Model SCROV-10

Have FUN building your own RC Snap Rover®. This innovative kit offers a fun, hands-on education in electronics, allowing kids to create rovers and other fun devices by snapping together working circuitry. Guide your Snap Rover® with the easy-to-use remote control.

- Over 40 experiments & over 50 parts
- Run up to three Rovers at once
- Wireless Remote Control included



## SNAP CIRCUITS® 3D ILLUMINATION

Model SC-3Di

SNAP CIRCUITS® 3D Illumination uses building blocks with snaps to build the different electrical and electronic circuits in the projects. Each block has a function: there are switch blocks, light blocks, battery blocks, different length wire blocks, etc.

- 3-Color Light Tunnel, Mirrors & Reflecting Circuits
- Projector With 6 Images



## SNAP CIRCUITS® ARCADE

Model SCA-200

Snap Circuits® Arcade is an exciting introduction to problem solving, following directions and the satisfaction of a job well done.

- 30 Snap Modules included
- More than 200 projects
- Enjoy completing projects using a programmable Word Fan, Dual LED Display and a pre-programmed microcontroller.



## SNAP CIRCUITS® LIGHT

Model SCL-175

- Contains over 55 parts. Build over 175 exciting projects.
- Color organ controlled by smart-phone, voice or finger.
- Enjoy your music as the lights change to the beat.
- Snap-together parts require no tools and ensure correct connections.
- Clear and concise illustrated manual included & available online



Smart-phone shown not included.

## SNAP CIRCUITS® PRO

Model SC-500

- Over 75 parts and over 500 projects



## SNAP CIRCUITS® MOTION

Model SCM-165

- Over 50 parts and over 165 projects



## SNAP CIRCUITS®

Model SC-300

- Over 60 parts and over 300 projects



## SNAP CIRCUITS® EXTREME

Model SC-750

- Over 80 parts and over 750 projects





**Important:** If any parts are missing or damaged, **DO NOT RETURN TO RETAILER.** Call toll-free at: (800) 533-2441 or e-mail us at: help@elenco.com.

**Customer Service**  
150 Carpenter Ave.  
Wheeling, IL 60090 U.S.A.

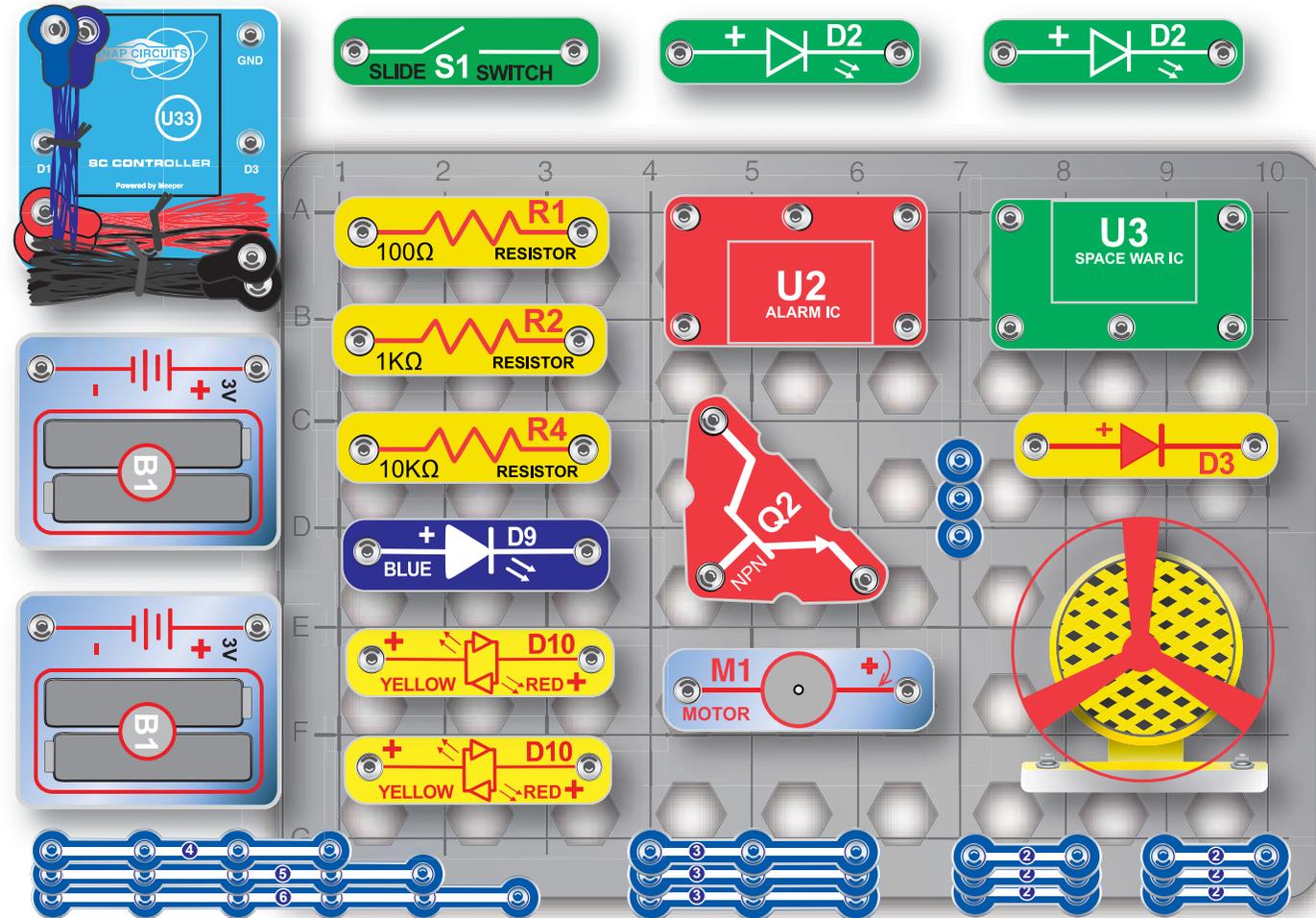
**Note:** A complete parts list is on pages 2 in this manual.

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# SCD-303 Discover Coding Parts Layout



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