

SNAP CIRCUITS

STEM

AGES  
7+  
YEARS

# SOCCER SHOT

INSTRUCTIONAL  
VIDEO



BUILD  
THE FIELD

WIRE UP  
THE GAME

**PLAY!**

2  
PLAYER  
GAME!



# SNAP CIRCUITS

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### Installing batteries:

- Remove the safety cover from the battery holder (if your holder has one) with a Phillips head screwdriver
- Insert three (3) 1.5V AA batteries (not included) in the holder. Be sure to orient the battery “+” as marked in the holder.
- Replace the cover (if your holder had one). When installing a battery, be sure the spring is compressed straight back, and not bent up, down, or to one side.
- Battery installation should be supervised by an adult.

**Batteries:**  
**x3**



- Use only 1.5V AA type, alkaline batteries (not included).
- Insert batteries with correct polarity.
- Do not mix old and new batteries.
- Remove batteries when they are used up.
- Do not mix alkaline, standard (carbon-zinc), or rechargeable batteries.
- Do not connect batteries or battery holders in parallel.
- Do not short circuit the battery terminals.
- Never throw batteries in a fire or attempt to open its outer casing.
- Batteries are harmful if swallowed, so keep away from small children.
- Non-rechargeable batteries should not be recharged.
- Rechargeable batteries should only be charged under adult supervision, and should not be recharged while in the product.

# SOCCER SHOT

The penalty kick (PK) is soccer's most thrilling moment—and now, with Soccer Shot, you can bring that excitement home! Experience the rush of aiming the perfect shot or pulling off a game-saving block.

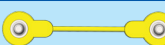
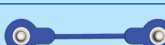
Hear the crowd roar with every electrifying goal. It's time to kick off the fun for soccer fans of all ages!

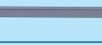
## LET'S PLAY!

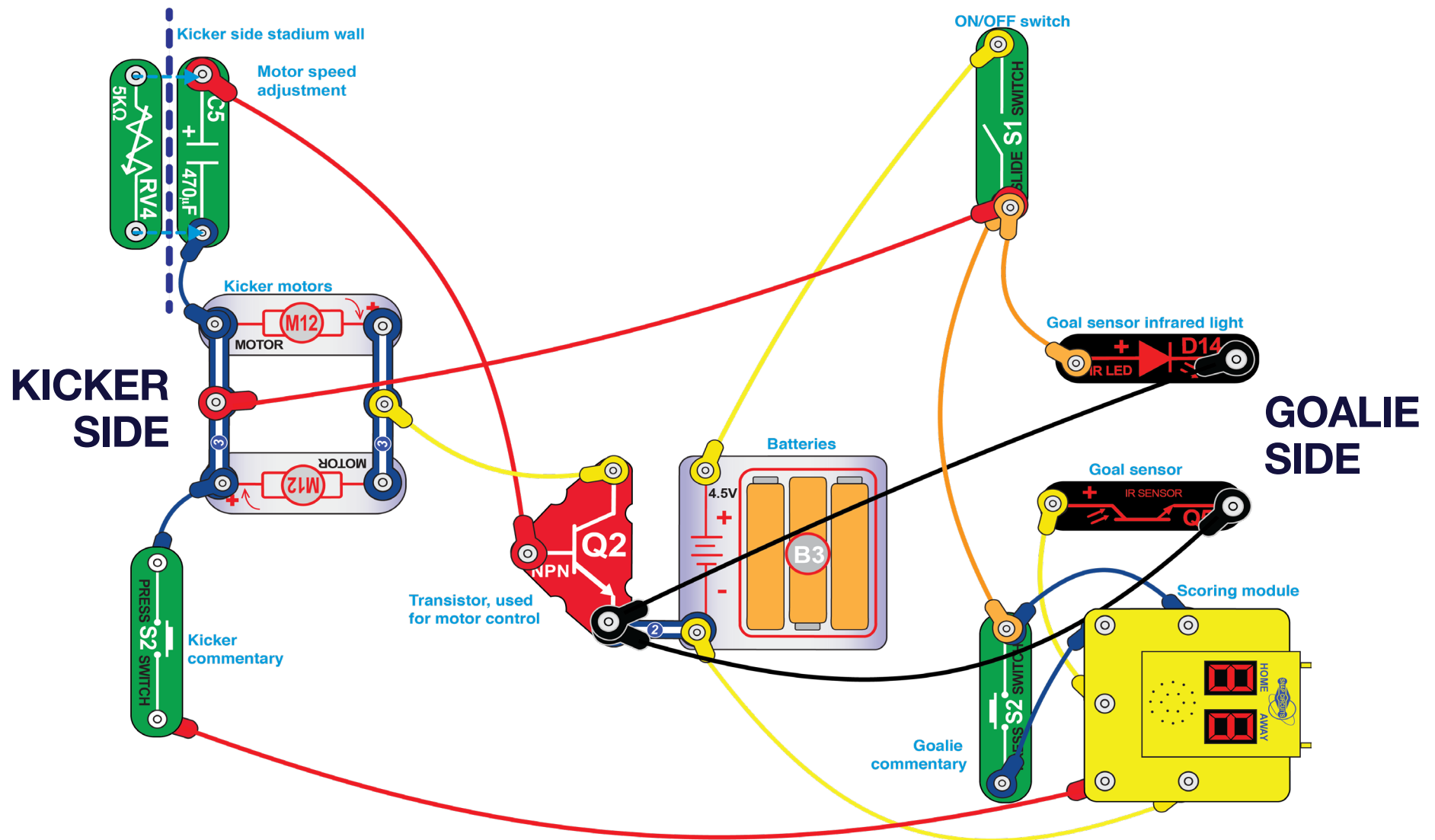


# Parts List

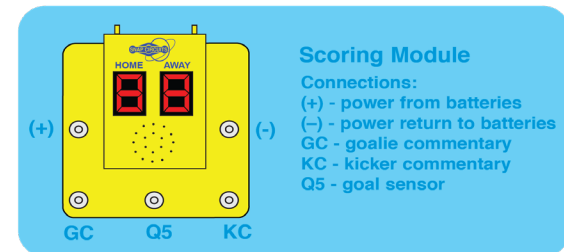
See page 15 for parts reference

| Qty  | Symbol                                                                              | Name                    | Part #    |
|------|-------------------------------------------------------------------------------------|-------------------------|-----------|
| ○ 1  |    | 2-Snap Wire             | 6SC02     |
| ○ 2  |    | 3-Snap Wire             | 6SC03     |
| ○ 1  |    | Battery Holder          | 6SCB3B    |
| ○ 1  |    | 470µF Capacitor         | 6SCC5     |
| ○ 1  |    | Infrared (IR) LED       | 6SCDD14   |
| ○ 2  |    | Black Jumper Wire       | 6SCJ1     |
| ○ 3  |    | Red Jumper Wire         | 6SCJ2     |
| ○ 2  |    | Orange Jumper Wire      | 6SCJ3A    |
| ○ 4  |    | Yellow Jumper Wire      | 6SCJ3B    |
| ○ 4  |    | Blue Jumper Wire        | 6SCJ4     |
| ○ 2  |    | Motor                   | 6SCM12    |
| ○ 1  |    | NPN Transistor          | 6SCQ2     |
| ○ 1  |    | IR Sensor               | 6SCQ5     |
| ○ 1  |  | 5KΩ Adjustable Resistor | 6SCRV4    |
| ○ 1  |  | Slide Switch            | 6SCS1     |
| ○ 2  |  | Press Switch            | 6SCS2     |
| ○ 2  |  | Soccer Balls            | 6SCSCRBAL |
| ○ 4  |  | Corner                  | 6SCSCRCOR |
| ○ 1  |  | Components Parts Tray   | 6SCSCRCPT |
| ○ 20 |  | Fastener                | 6SCSCRFAS |
| ○ 1  |  | Light Shield            | 6SCFMB    |

| Qty | Symbol                                                                                | Name                        | Part #    |
|-----|---------------------------------------------------------------------------------------|-----------------------------|-----------|
| ○ 1 |    | Goal Bottom                 | 6SCSCRGB  |
| ○ 1 |    | Goalie Bar Support          | 6SCSCRGBS |
| ○ 1 |    | Goalie Control Bar          | 6SCSCRGCB |
| ○ 2 |    | Goalie                      | 6SCSCRGOA |
| ○ 1 |    | Goal Side Plastic           | 6SCSCRGSP |
| ○ 1 |    | Goal Top                    | 6SCSCRGT  |
| ○ 1 |    | Goal Back                   | 6SCSCRNFB |
| ○ 1 |    | Kicker Control Bar          | 6SCSCRKCB |
| ○ 1 |    | Kicker Side Plastic         | 6SCSCRKSP |
| ○ 1 |    | Plastic Nut                 | 6SCSCRNUT |
| ○ 1 |    | Plastic Screw               | 6SCSCRSCR |
| ○ 1 |    | Field                       | 6SCSCRPF  |
| ○ 4 |    | Rubber feet (Pre-installed) | 6SCSCRFFT |
| ○ 2 |   | Rubber Trim, Long           | 6SCSCRRL  |
| ○ 1 |  | Rubber Trim, Medium         | 6SCSCRMM  |
| ○ 2 |  | Rubber Trim, Short          | 6SCSCRSS  |
| ○ 1 |  | Stadium Cardboard           | 6SCSCRSC  |
| ○ 4 |  | Wire Hub                    | 6SCSCRWH  |
| ○ 1 |  | Scoring module              | 6SCU35    |
| ○ 1 |  | 3 Sticker-Parts Sheet       | 6SCSCRLS3 |
| ○ 1 |  | Multi-Sticker Sheet         | 6SCSCRSTK |

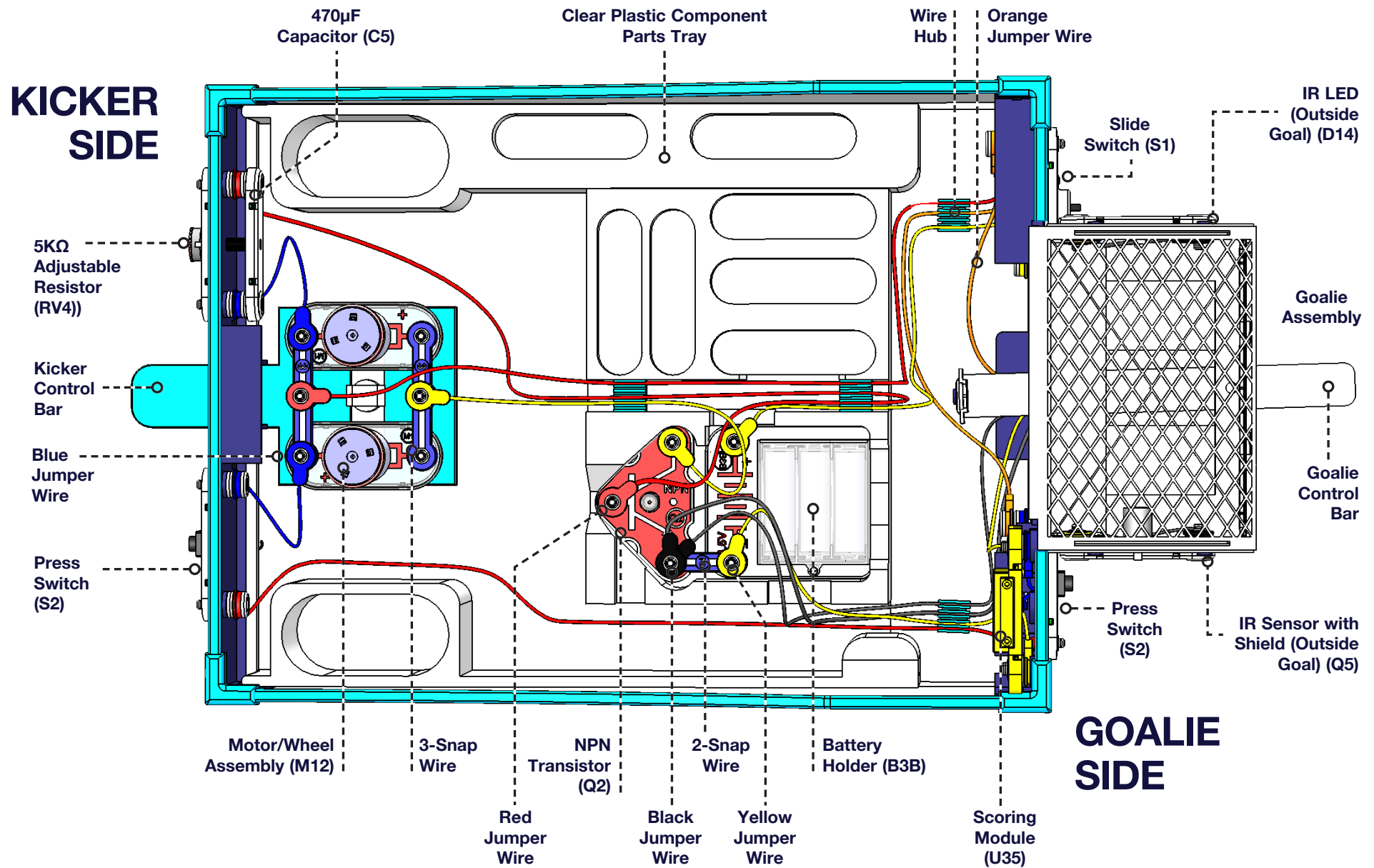


# Wiring Diagram





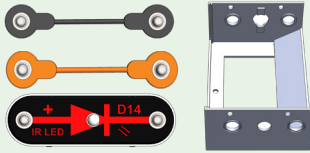
# Parts Layout



# STEP 1 Build the Net

## 1a PARTS NEEDED:

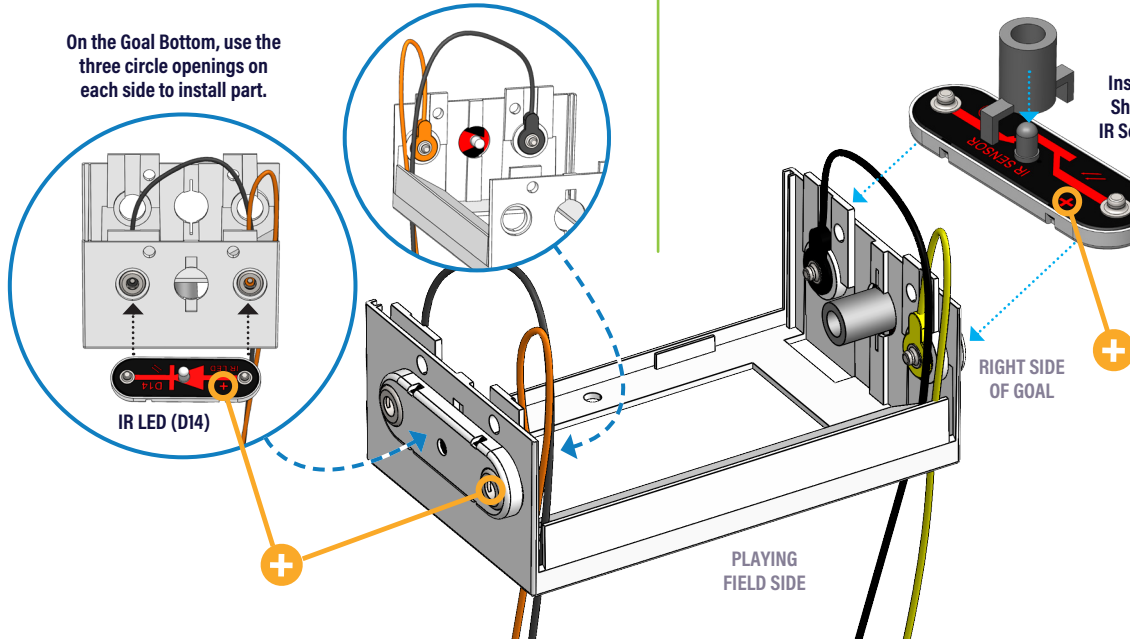
Black Jumper Wire  
Orange Jumper Wire  
IR LED (D14)  
Goal Bottom



- Mount the **IR LED (D14)** into the left side of Goal Bottom using the **Orange** and **Black jumper wires** as shown.
- Connect **Orange Jumper Wire** to the "+" side and a **Black Jumper Wire** to the other side.
- Leave the other ends of the jumper wires loose, they will be connected later.

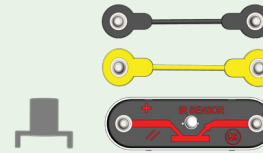
INSIDE VIEW

On the Goal Bottom, use the three circle openings on each side to install part.



## 1b PARTS NEEDED:

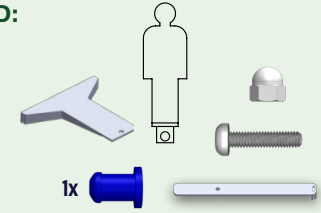
Black Jumper Wire  
Yellow Jumper Wire  
IR Sensor (Q5)  
Light Shield



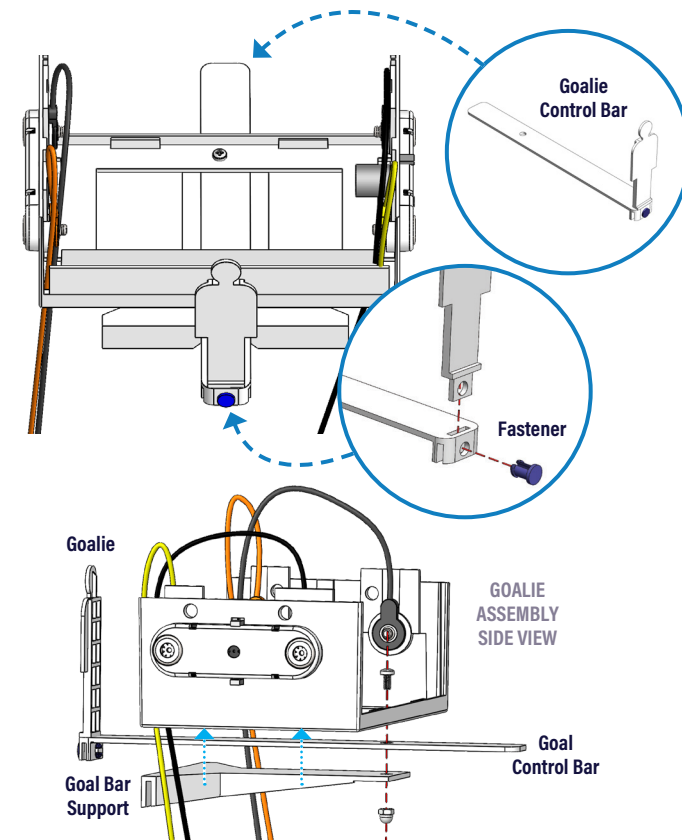
- Place the light shield on the **IR Sensor (Q5)**.
- Mount the **IR Sensor (Q5)** into the right side of Goal Bottom using the **Yellow** and **Black Jumper Wires** as shown.
- Connect a **Yellow Jumper Wire** to the "+" side and a **Black Jumper Wire** to the other side.
- Leave the other ends of the jumper wires loose, they will be connected later.

## 1c PARTS NEEDED:

Goal Bar Support  
Goalie Control Bar Fastener  
Goalie  
Plastic Screw  
Plastic Nut

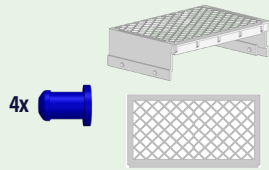


- Attach the **Goalie** to the **Goalie Control Bar** and secure with a **Fastener**. This is the **goalie assembly**.
- Be sure the Goalie Control Bar is straight, and not bent.
- Attach the **goalie assembly** to the **Goal bottom** and **Goal Bar Support** using a screw and nut as shown.

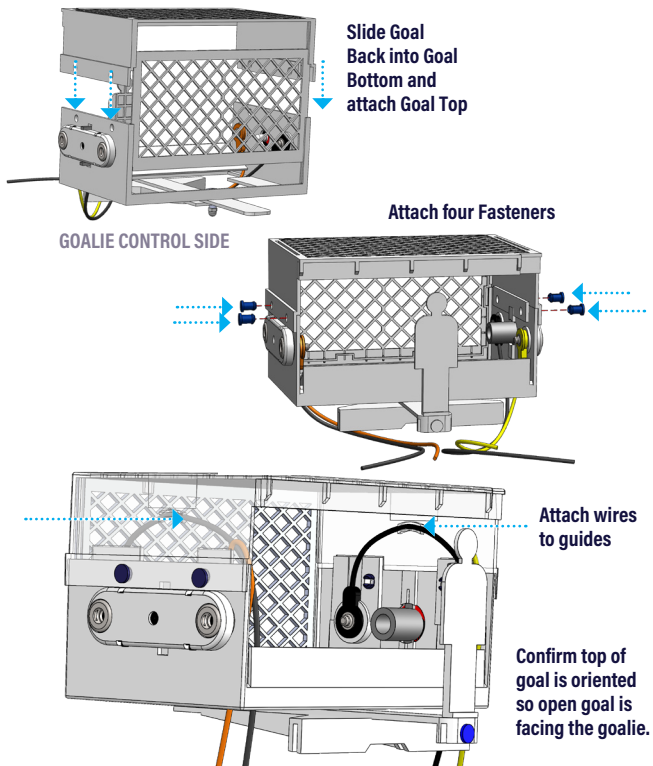


## 1d PARTS NEEDED:

Goal Bottom  
Goal Back  
Goal Top  
Fasteners



- Slide the **Goal Back** into the **Goal Bottom** as shown.
- Attach the **Goal Top**.
- Attach the four **Fasteners** on **Goal Back**.

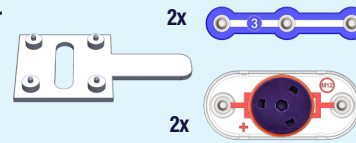


✓ Goal assembly complete

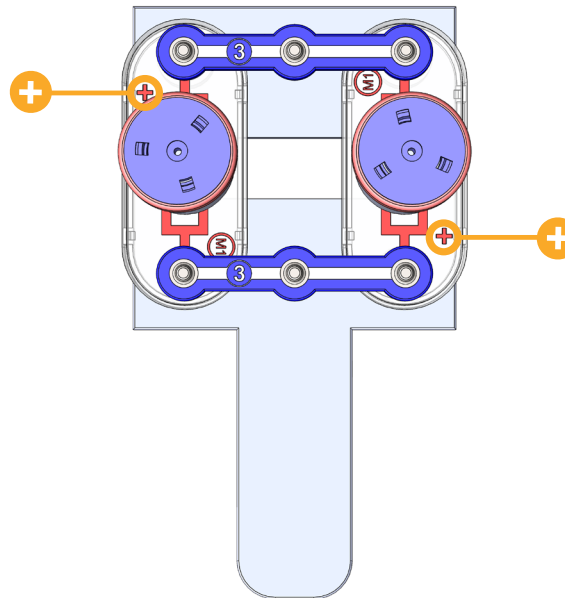
# STEP 2 Build the Kicker Assembly

## 2a PARTS NEEDED:

Kicker Control Bar  
3-Snap Wire  
Motor (M12)

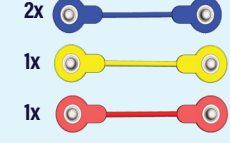


- Mount two **Motors** on the **Kicker Control Bar**, then connect them with two **3-Snap Wires**.
- Be sure the motor "+" sides are positioned as shown.

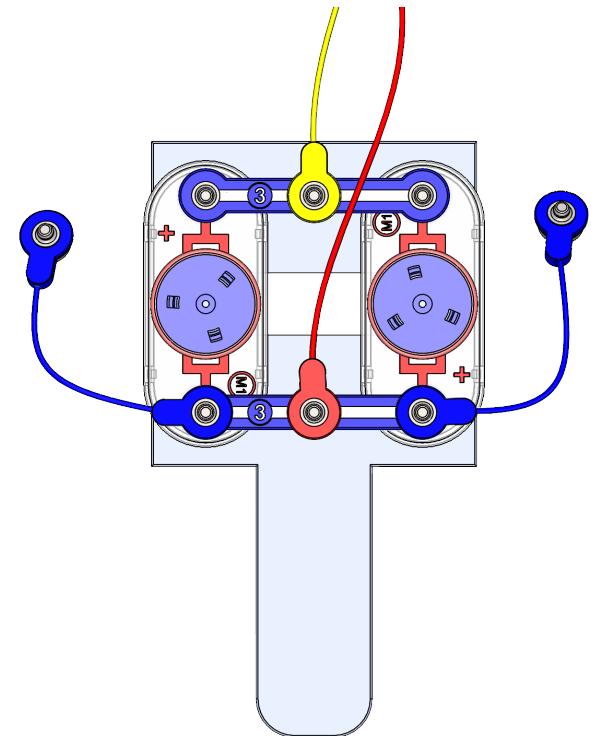


## 2b PARTS NEEDED:

Blue Jumper Wires  
Yellow Jumper Wire  
Red Jumper Wire



- Attach one **Red**, one **Yellow**, and two **Blue Jumper Wires** as shown.



✓ Kicker motor assembly complete



# STEP 3 Build the Stadium

## 3a PARTS NEEDED:

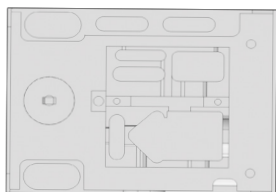
Stadium Cardboard  
Components Tray (Clear Plastic)  
Kicker Side Panel  
Goalie Side Panel

- Fold the **Stadium Cardboard** and insert into the **Goal Side Plastic**.
- The Stadium Cardboard should be oriented as shown.

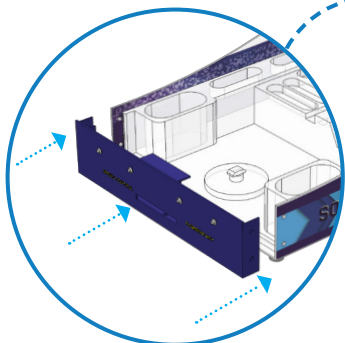


Add Plastic Goal side

- ## 3b
- Place the **Components Parts Tray** in the stadium as shown.



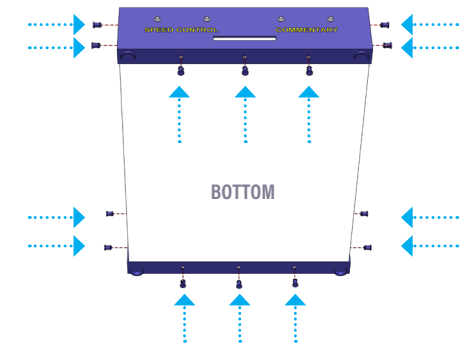
- ## 3c
- Attach the **Kicker Side Plastic** to the **Stadium Cardboard**.



## 3d PARTS NEEDED:

Fasteners 14x

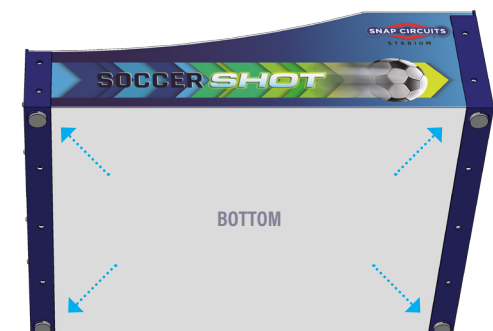
Secure the plastic sides to the cardboard with fourteen **Fasteners**.



## 3e PARTS NEEDED:

Rubber Feet 4x

Confirm the four **Rubber Feet** are attached on the bottom near the four corners.

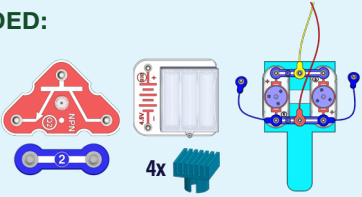


# STEP 4 Prepare for and Connect the Circuits

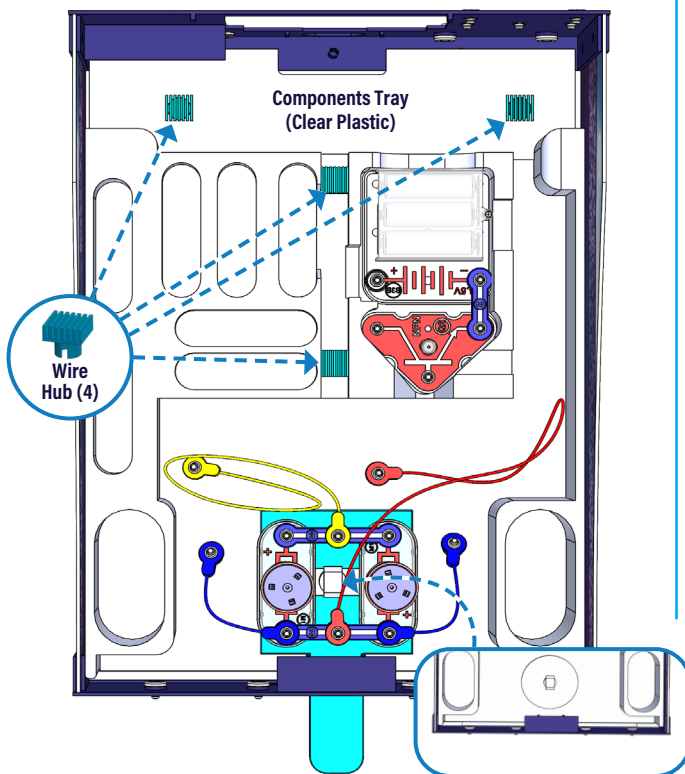
Refer to the Wiring Diagram on page 4 for enlarged Circuit Layout

## 4a PARTS NEEDED:

2-Snap wire  
Battery Holder (B3B)  
NPN Transistor (Q2)  
Wire Hub  
Kicker Motor Assembly (from Step 2b)



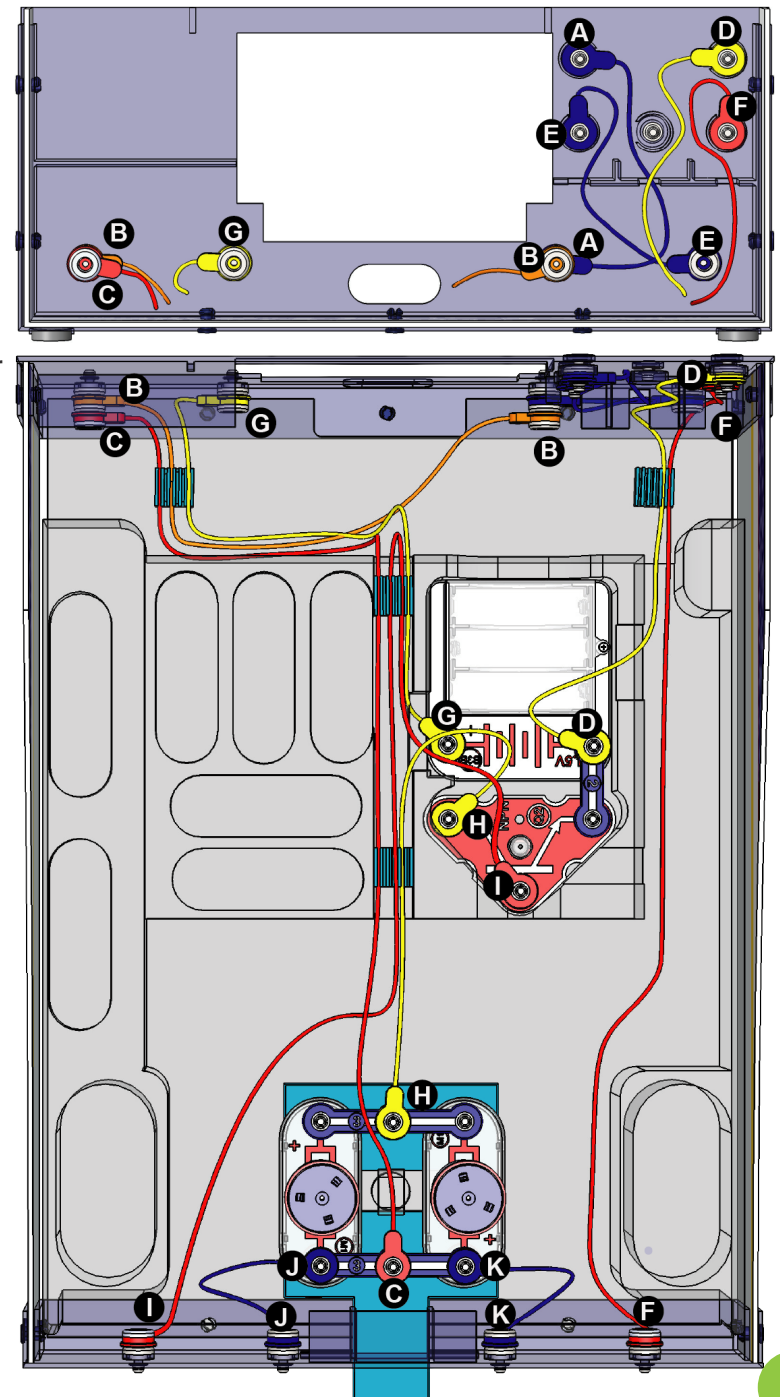
- Install the **Battery Holder (B3B)**, **NPN Transistor (Q2)**, a **2-Snap Wire**, four **Wire Hubs**.
- Mount the **Kicker Motor Assembly** from Step 2b on its base in the tray.
- The **Kicker Control Bar** should stick out through the **Kicker Side Plastic**, and should be able to slide and pivot both left and right.



## 4b PARTS NEEDED:

Orange Jumper Wire 1x  
Red Jumper Wires 2x  
Yellow Jumper Wires 2x  
Blue Jumper Wires 2x

- Install the two **Blue**, two **Red**, two **Yellow**, and one **Orange** Jumper Wire.
- Connect four wires from the **Kicker Motor Assembly**.
- The wires should lay in the slots, and some should be secured in the **Wire Hubs**, as shown.

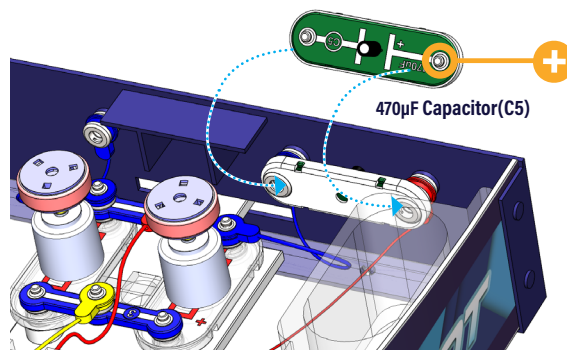


#### 4c PARTS NEEDED:

470 $\mu$ F Capacitor (C5)



- Attach the **470 $\mu$ F Capacitor (C5)**.
- Position the “+” side of C5 as shown.



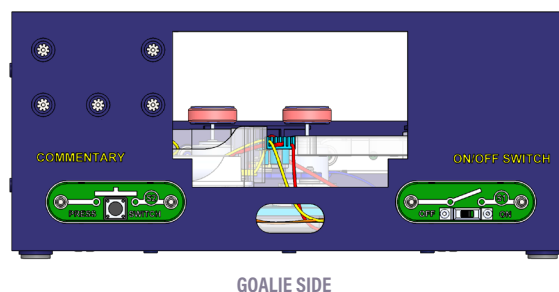
#### 4d PARTS NEEDED:

Slide Switch (S1)

Press Switch (S2)



Attach the **Press Switch (S2)** and **Slide Switch (S1)** to the **Goalie Side Plastic**, as shown.



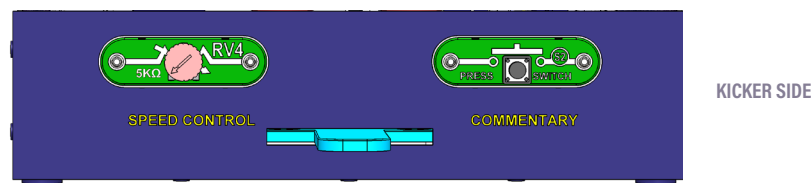
#### 4e PARTS NEEDED:

5K $\Omega$  Adjustable Resistor (RV4)

Press Switch (S2)



Attach the **5K $\Omega$  Adjustable Resistor (RV4)** and the **Press Switch (S2)** to the **Kicker Side Plastic**, as shown.

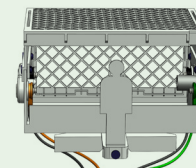


## STEP 5

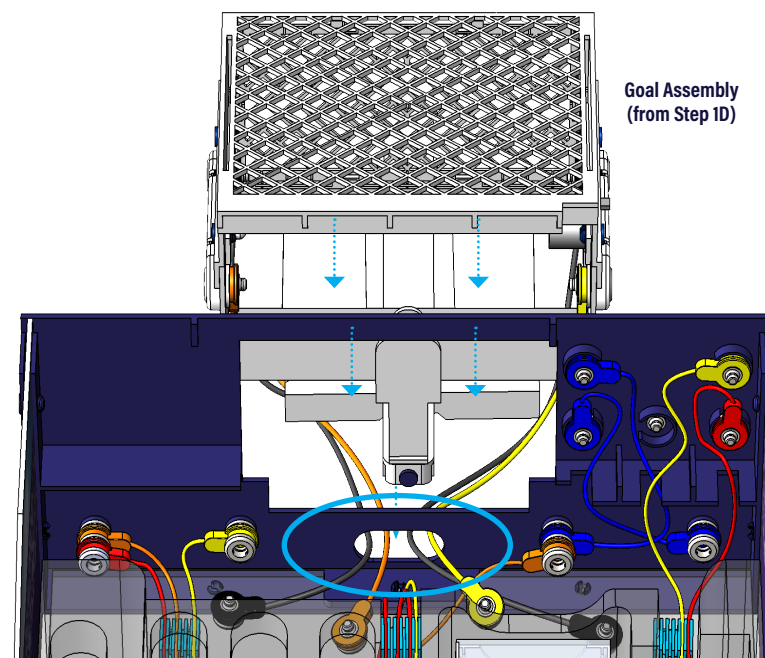
# Attach the Goal and Goal Jumper Wires

#### 5a PARTS NEEDED:

Goal Assembly  
(from Step 1d)

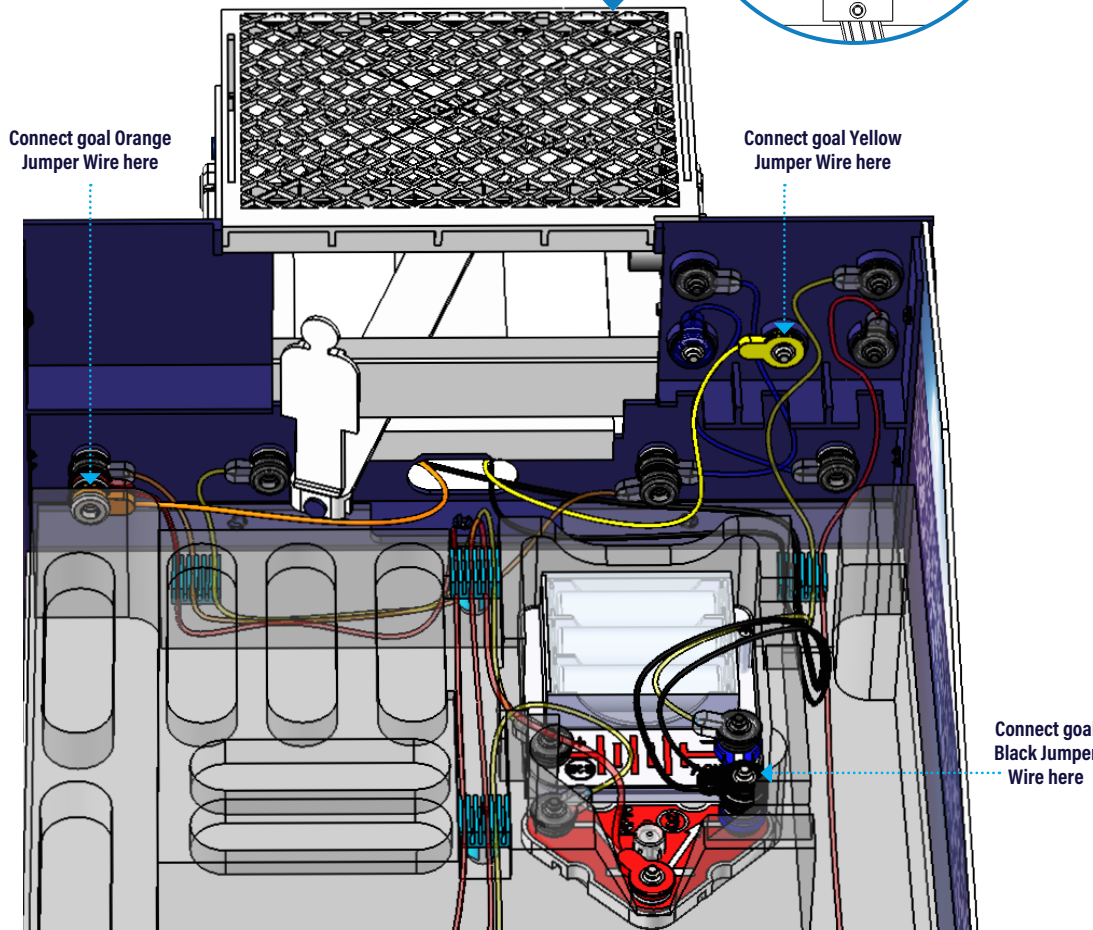
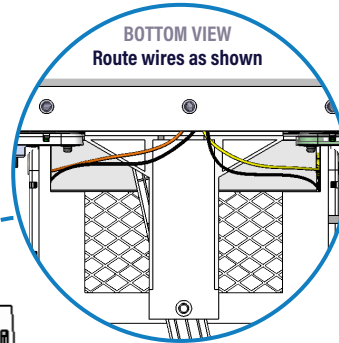


- Bring the loose ends of the **Jumper Wires** from the Goal assembly from step 1d through the hole in the **Goal Side Plastic**, as shown.
- Slide the top of the goal onto the top of **Goal Side Plastic**.



5b

- Connect the **four wires** from the **goal assembly** as shown. **Slide Switch (S1)** should be off.
- The wires must not interfere with the soccer ball moving in the goal to activate the D14-Q5 goal sensor, they must not prevent the ball from falling out the bottom of the goal, and they must not stop the Goalie Control Bar from moving left and right.



## STEP 6

# Install Rubber Trim

### PARTS NEEDED:

Short Rubber Trim

2x

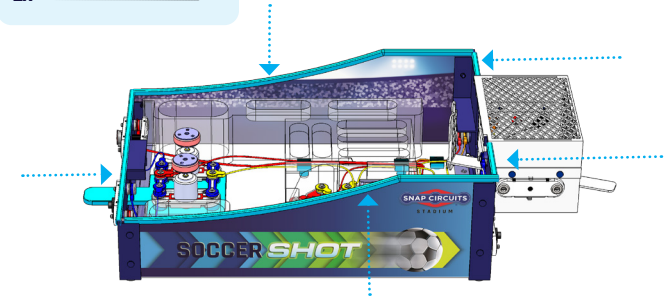
Medium Rubber Trim

1x

Long Rubber Trim

2x

- Attach five **Rubber Strips** on the Stadium Cardboard, Goal Side Plastic, and Kicker Side Plastic, as shown.
- There are 3 lengths of Rubber Trim.
- Use scissors to cut any excess molding.



## STEP 7

# Install Corners

### PARTS NEEDED:

Corner 4x



Mount four **Corner** pieces over the **Rubber Trim** on the stadium corners.





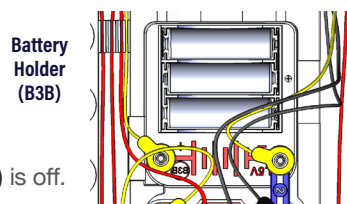
## STEP 8

# Install Batteries

### PARTS NEEDED:

3 AA Batteries (not included)

Screwdriver (not included)



- Make sure the **Slide Switch (S1)** is off.
- Remove the **safety cover** from the **Battery Holder (B3B)** with a screwdriver.
- Insert **three (3) 1.5V AA batteries** (not included) in the **Battery Holder**. Be sure to orient the battery "+" as marked in the holder.
- Replace **Battery Holder** cover.
- See proper Battery installation on page two.
- Battery installation should be supervised by an adult.

## STEP 9

# Install Score Board

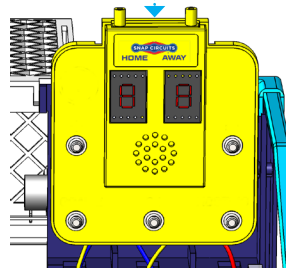
### PARTS NEEDED:

Scoring Module

Scoring Module Sticker



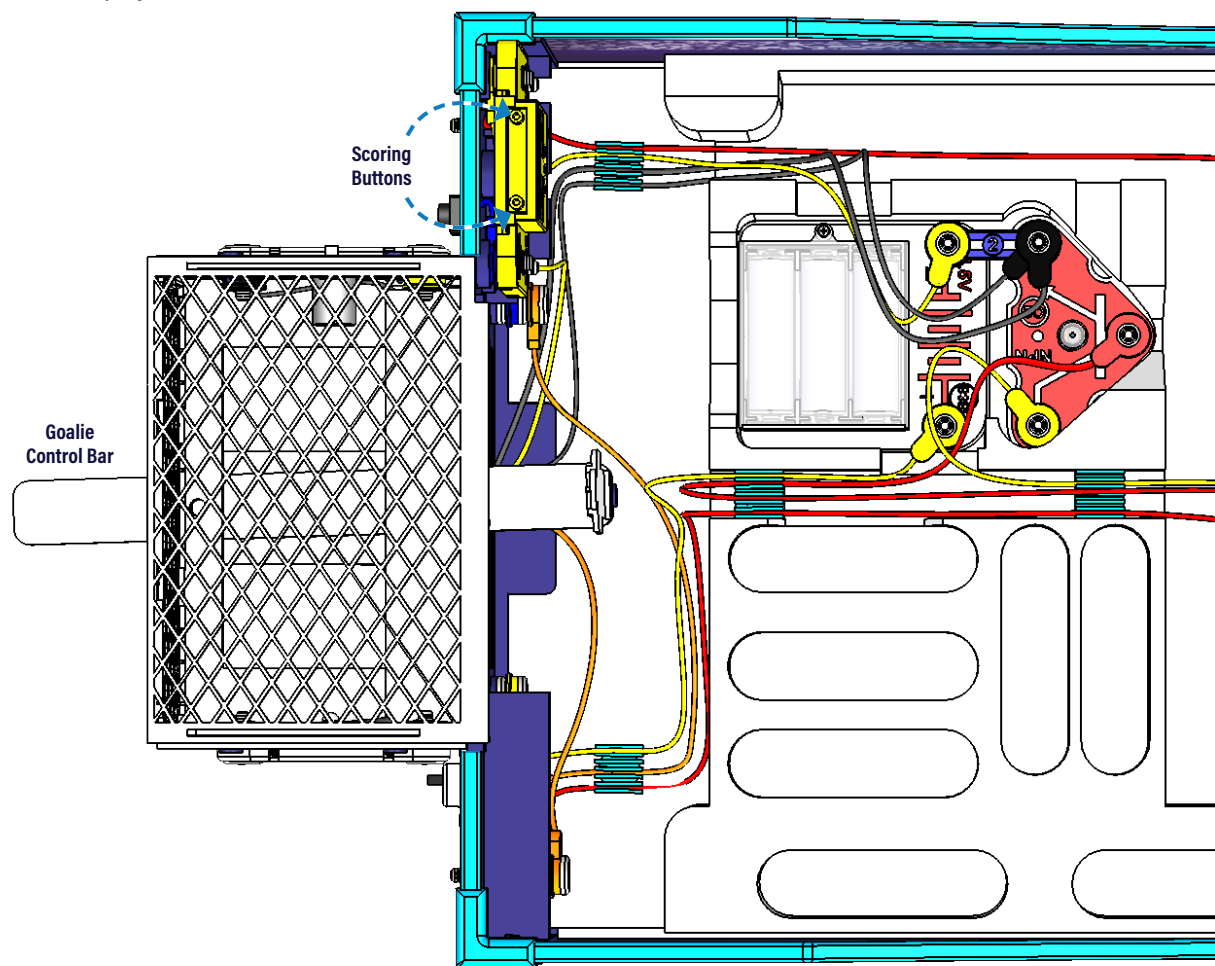
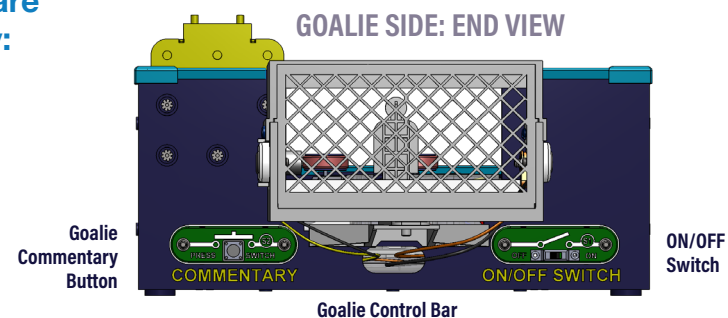
- Place the **Scoring Module Sticker** on the **Scoring Module**, then attach the Scoring Module to the **five snaps** in the corner near the goal, as shown.
- Be sure that the wires do not interfere with attaching to the snaps, and that all five snaps are securely snapped.



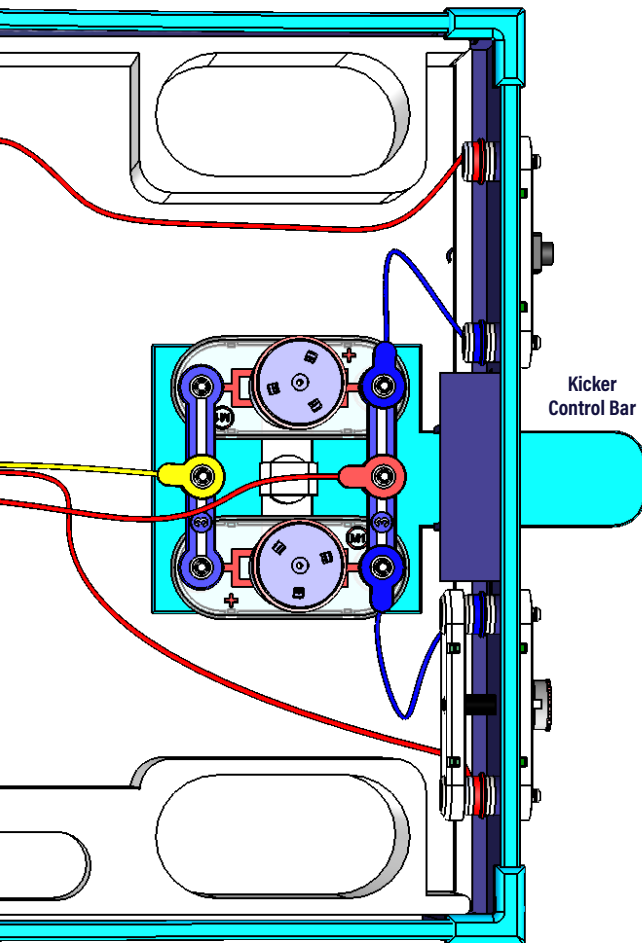
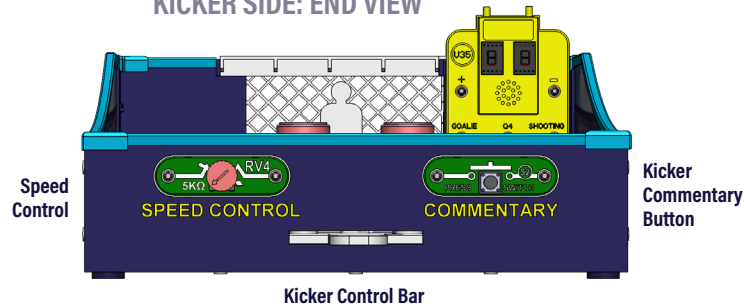
## STEP 10 Testing

Check that all features are working before you play:

- Turn on the **ON/OFF Switch**. Confirm the **Motors** are spinning, and **Scoring Module** displays 0-0.
- Push the buttons on the Scoring Module to change each player's score.



KICKER SIDE: END VIEW



- Confirm the **Kicker Control Bar** can move the kicking motors left, right, and pivot to aim left and right.
- Confirm the **Goalie Control Bar** can adjust the goalie position to cover the net.
- Place your finger between inside the goal to block the light between the **IR LED (D14)** and **IR Sensor (Q5)**. This simulates a goal, and will activate a cheering sound.
- Confirm the **SPEED CONTROL** knob adjusts the Motors' speed.
- Each side has a **Press Switch (S2) COMMENTARY** button, press it to play one of several phrases.
- Check your assembly or see the Troubleshooting section if any of these functions do not work.
- Contact Elenco® if you need assistance.

## STEP 11

# Install the Field

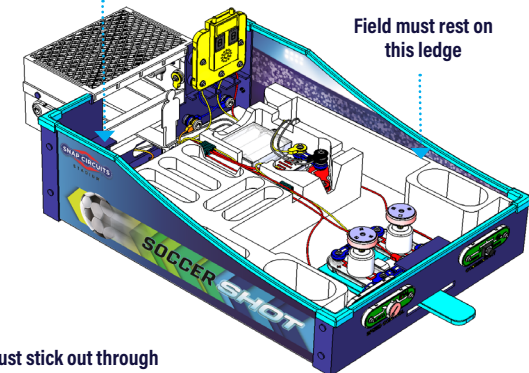
### PARTS NEEDED:

Field



- Check that all the wires and Wire Hubs are in their slots and not sticking up above the Parts Tray, then lay the Field onto the Components Parts Tray.
- Be sure that the **Field** lays flat, with the **Goalie** and **Motor Wheels** rising though it.

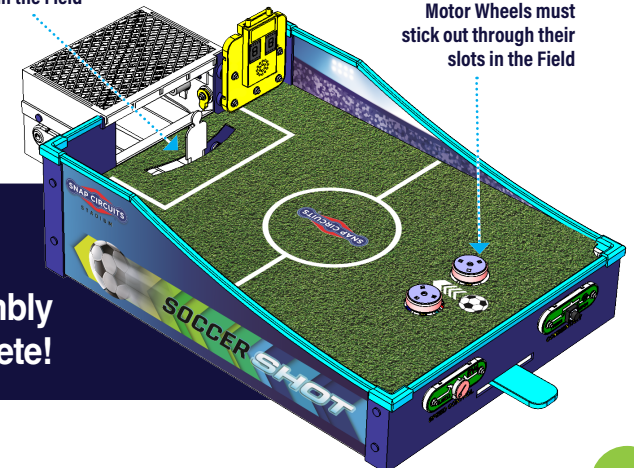
Field must rest on these tabs, and wires must be in the wire slots



Field must rest on this ledge

Goalie must stick out through its slot in the Field

Motor Wheels must stick out through their slots in the Field



✓  
Assembly complete!

## STEP 12

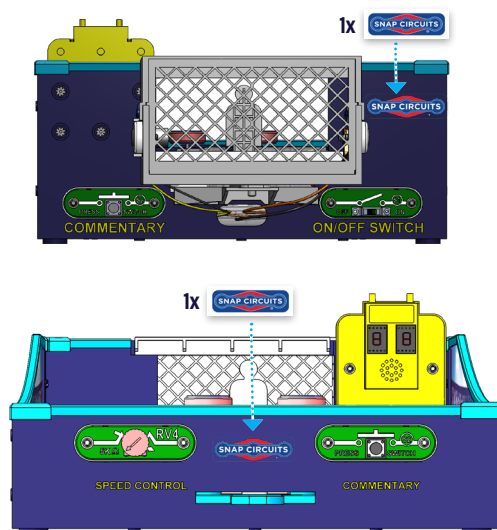
# Apply Decals

### PARTS NEEDED:

Goalie and Kicker Side Stickers



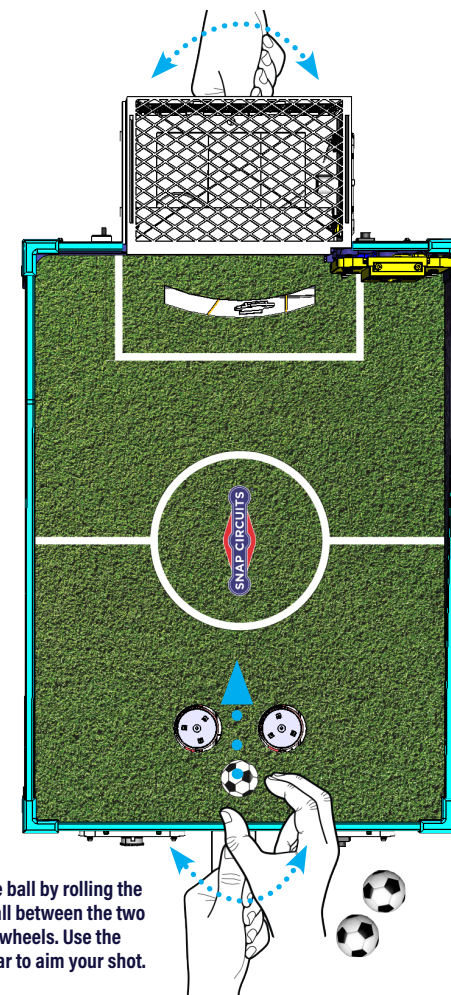
Place stickers on the Goalie and Kicker Side Plastics, as shown.



# How to Play

- 1. Set up the game:** Assemble the game and test it to make sure everything's running smoothly.
- 2. Choose sides:** Decide who kicks first and who plays goalie, then pick your sides—one player is Home and the other is Away.
- 3. Get the action going:** Activate the commentary for some game-day excitement before each shot!
- 4. Take the shot:** The kicker lines up, adjusts the shot speed, and feeds the ball into the spinning wheels to fire off a powerful strike.
- 5. Defend the goal:** The goalie springs into action, ready to make a big save and keep the ball out of the net.
- 6. Keep score:** Each time a goal is scored, mark it on the scoreboard.
- 7. Switch it up:** After three shots, swap roles: the kicker becomes the goalie, and the goalie takes a turn as kicker.
- 8. Claim victory:** The first player to score 9 goals is crowned the Soccer Shot champion!

*Please note: Ball speed will slow with extended game play.*



"Kick" the ball by rolling the soccer ball between the two spinning wheels. Use the control bar to aim your shot.

# Troubleshooting

- Most problems are due to incorrect assembly, always double-check your assembly and wiring using pages 3 and 4.
- Ensure that parts with positive/negative markings are positioned as per the drawing.
- Check that all connections are securely snapped.
- Try replacing the batteries. (Note: if your batteries are weak then the goal cheering sound plays when you turn on the Slide Switch (S1) to start the game; replace your batteries if any game functions do not operate properly.)
- If the Soccer Ball does not activate the cheering sound when a goal is scored: In rare cases bright room lighting or sunlight may disrupt operation of the goal sensor. Move the set to where there will be less room light on the IR (Q5).
- If the goal cheering sound plays continuously, is distorted, or plays at random, check your assembly wiring and/or replace the batteries.
- If the kicking motor wheels stop turning, spin with your finger or briefly increase the speed control knob to start rotation.

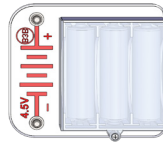


# How it Works

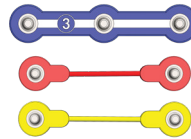
See the full electrical circuit  
Parts Layout on page 5.

**Electricity:** Nobody really knows what electricity is. We only know how to produce it, understand its properties, and how to control it. Electricity is the movement of sub-atomic charged particles (called electrons) through a material due to electrical pressure across the material, such as from a battery.

**Batteries:** The **batteries (B3B)** create electrical pressure through a chemical reaction. This pressure pushes electricity through the circuit like a pump pushes water through pipes. The amount of pressure (or push) a pump puts on the water inside a pipe is measured in PSI (pounds per square inch). The amount of pressure a battery (or other power source) puts on the electrons inside a wire is measured in V (volts) and is called the voltage. Notice the “+” and “-” signs on the battery; these indicate which direction the battery will “pump” the electricity.



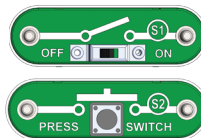
**Wires:** Wires carry electricity, like pipes carry water. The electric current is a measure of how fast electricity is flowing in a wire, just as the water current describes how fast water is flowing in a pipe. It is expressed in amperes (A) or milliamps (mA, 1/1000 of an ampere).



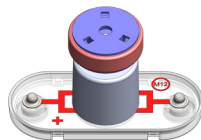
**Resistance:** The resistance of a component or circuit represents how much it resists the electrical pressure (voltage) and limits the flow of electric current. It is like a blockage in a clogged pipe slowing down the flow of water through it. The relationship is Voltage = Current x Resistance. When the resistance increases, less current flows. Resistance is measured in ohms ( $\Omega$ ), or kilo ohms ( $k\Omega$ , 1000 ohms). This set includes an **adjustable resistor (RV4)**.



**Switches:** The **Slide Switch (S1)** is like a valve that turns the electricity to the circuit on and off. The **Press Switches (S2)** are similar, and make electric current flow to their inputs on the Scoring Module, telling it when to play the goalie and kicker commentary recordings. Switches have almost no resistance when on, and nearly infinite resistance when off.



**Motors:** Each **Motor (M12)** contains a coil of wire that acts like an electronic magnet, and uses magnetism to spin a shaft with a wheel. The wheels on the two motors grab the soccer ball and fling it towards the goal.



**Motor speed control:** The **5K $\Omega$  Adjustable Resistor (RV4)** is used to adjust the motor speed, but its resistance is too high to control the motors directly, so it needs a transistor to help.



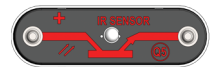
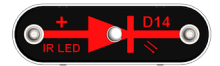
The NPN Transistor (**Q2**) uses a small electrical current to control a large electrical current. In Soccer Shot, RV4 supplies a small current to Q2, which uses that current to adjust a large current through the motors. A larger current makes the motors spin faster.



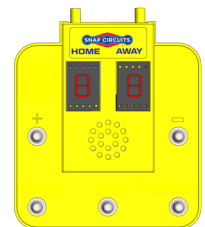
The motors need more current to get started than when they are already spinning. At its highest resistance setting the 5K $\Omega$  Adjustable Resistor may not provide the motor with enough current to start spinning, so the 470 $\mu$ F Capacitor (**C5**) is used to help it. When you turn on the circuit, the capacitor gets a surge of current through it to charge it up. This surge bypasses the adjustable resistor, to help the motors start spinning.



**Scoring a goal:** The **IR LED (D14)** is an infrared light emitting diode that uses electricity to produce infrared light, and shines it on the **IR Sensor (Q5)**. The IR Sensor uses light to control a current, so has more current as the light increases. The IR Sensor is connected to the Scoring Module, which monitors it to see if a goal was scored. When a goal is scored, the Soccer Ball blocks the light between the IR LED and IR Sensor, so the IR Sensor is darker and has a lower current, which activates a cheering sound in the Scoring Module.



**Scoring and Sound:** The Scoring Module buttons control an LED lighting display, to show each player's score. The module also contains a speaker and the pre-recorded commentary and goal-cheering sounds. Circuitry in the module monitors the player commentary buttons and the goal sensor (the Q5 IR Sensor), then sends an electrical signal to its speaker when a sound must be played. The speaker converts the electrical signal into mechanical vibrations, which create variations in air pressure, which travel across the room. You “hear” sound when your ears feel these air pressure variations.





## If you have any problems, contact: Elenco® Electronics, LLC

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Model: SCSCR1 | Part #753362



### **WARNING: CHOKING HAZARD**

Toy contains small parts. Not for children under 3 years old.

**WARNING:** This toy products flashes that may trigger epilepsy in sensitised individuals.

**ADULT SUPERVISION:** Because children's abilities vary so much, even with age groups, adults should exercise discretion as to which experiments are suitable and safe (the instructions should enable supervising adults to establish the experiment's suitability for the child). Make sure your child reads and follows all of the relevant instructions and safety procedures, and keeps them at hand for reference. This product is intended for use by adults and children who have attained sufficient maturity to read and follow directions and warnings.



### **WARNING: SHOCK HAZARD**

Never connect Snap Circuits® to the electrical outlets in your home in any way!

**WARNING:** Always check your wiring before turning on a circuit.

Never leave a circuit unattended while the batteries are installed. Never connect additional batteries or any other power sources to your circuits.

Please keep this instruction manual since it contains important information.

### **IMPORTANT:**

If any parts are missing or damaged, DO NOT RETURN TO RETAILER.

Email us at support@elenco.com.

You may order additional/replacement parts at [elenco.com/replacement-parts](https://elenco.com/replacement-parts)