

## Ghostbusters\_Ecto-1\_21108 LED Lighting Kit

### Package contents:

9x Warm White 30cm Dot Light

9x Flashing White 30cm Dot Lights 2x

12-port Expansion boards

1x Flat Battery Pack (2x CR2032 Batteries included)

1x 5cm Connecting Cable

### Extra Lego pieces:

6x Lego 1x1 plates with clip (grey) 4x Lego

1x6 plates (white)

4x Lego 1x2 plates (grey)

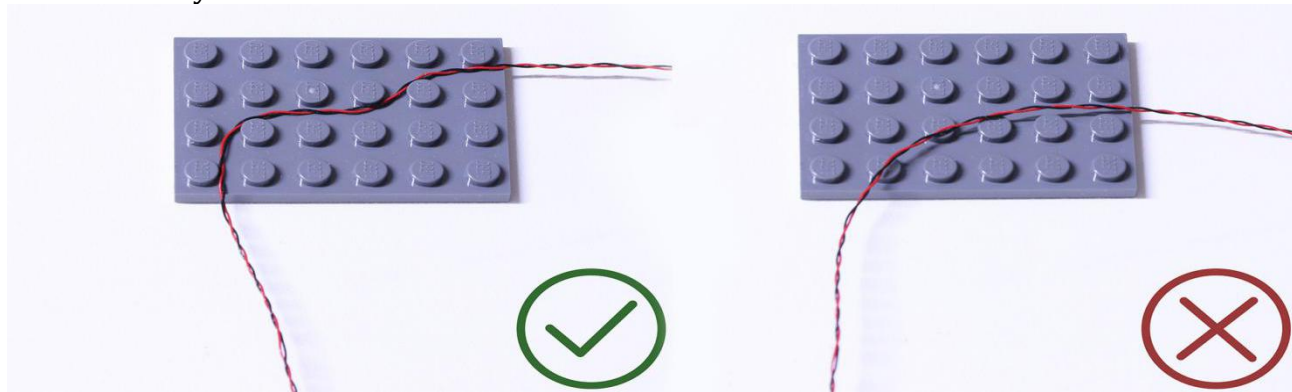
4x Lego 1x2 plates (transparent blue)

1x Lego 1x1 round plate (transparent blue)

### Note:

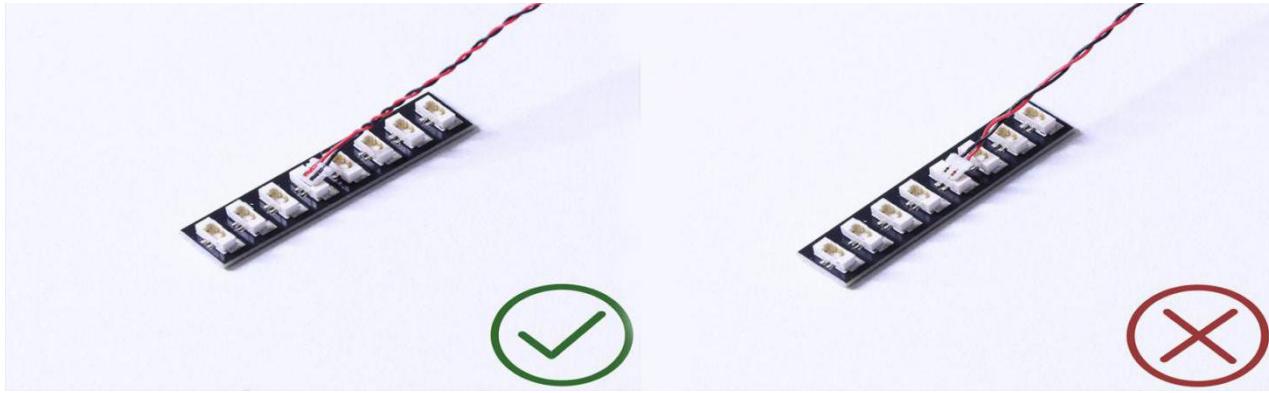
Place wires on the surface or under the LEGO building blocks.

The wire can be placed between the building blocks or under the block, but they should be placed between the studs correctly.

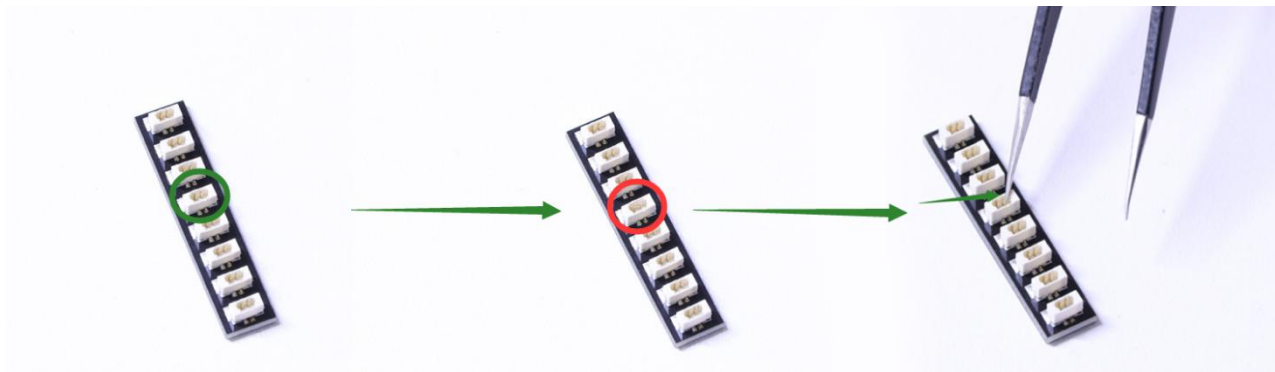


Insert the connectors to the ports.

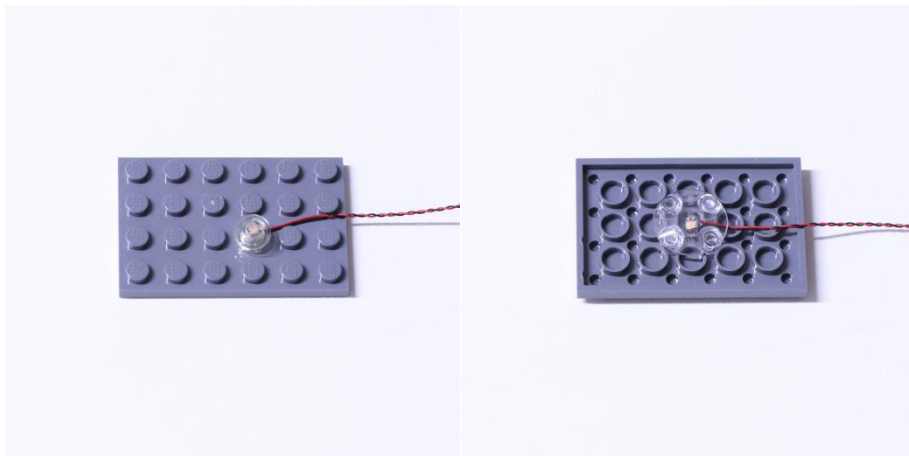
Be careful when you are operating, there's only one correct way to insert, make sure the expansion board is upward, find the soldered "=" sign on the left of the port. When you are inserting, the side which the wires can be seen should be faced to the "=" sign and if you feel hard to insert, please stop, and don't force it, for that may result in bent pins inside the port or overheating of the expansion board.



At this point, use the tweezers to straighten the bent pins.

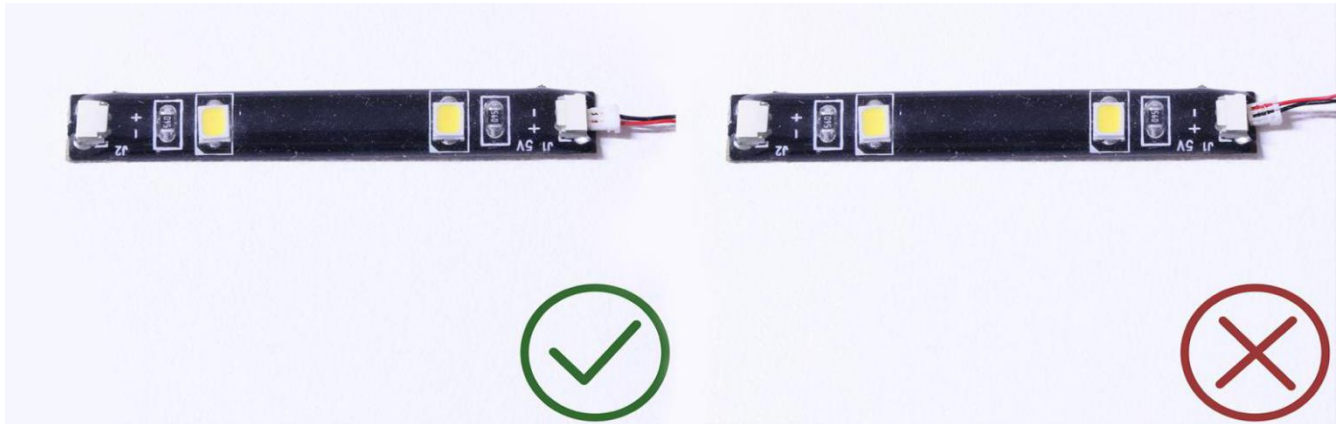


When installing dot lights, make sure they are correctly placed (Yellow LED package is exposed). You can put them either on the top of the studs or between studs.

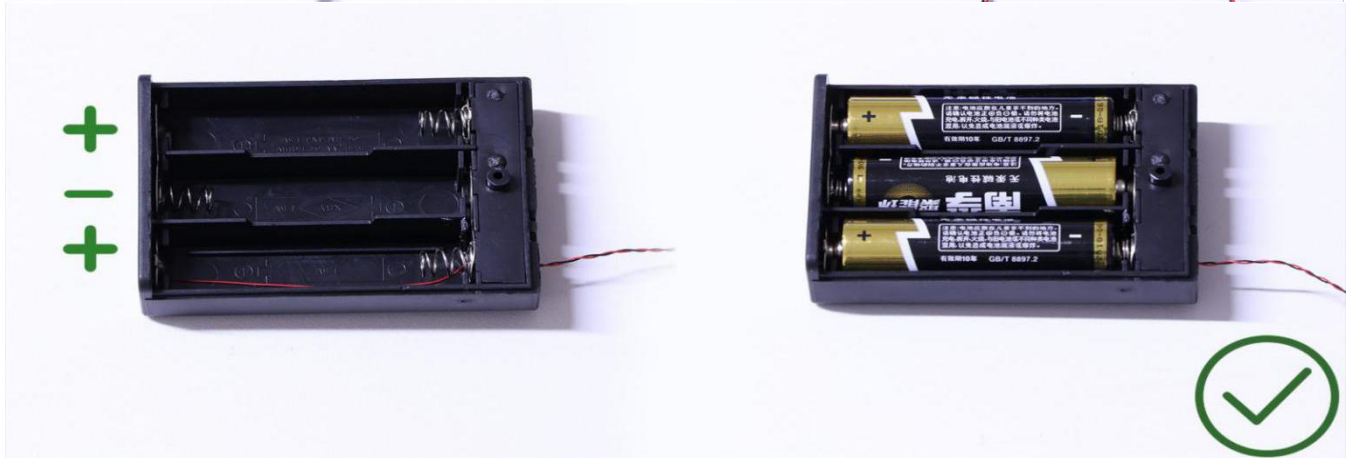


## Connecting cable connectors to Strip Lights

Take extra care when inserting connectors to ports on the Strip Lights. Connectors can be inserted only one way. With the Strip Light facing up, ensure the side of the connector with the wires exposed is facing down. If a plug won't fit easily into a port connector, don't force it. Doing so will damage the plug and the connector.



Finally, please pay attention to the positive and negative terminals of the battery when installing the battery case.



OK, Let's Begin!



## Instructions for installing this kit

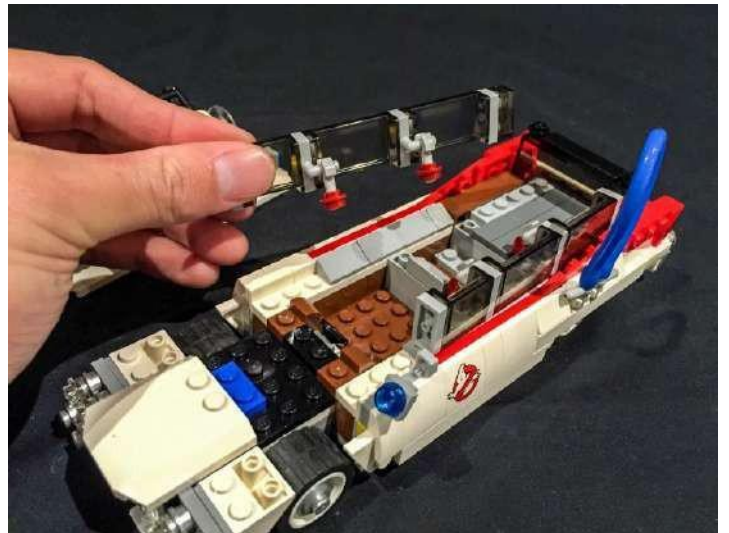
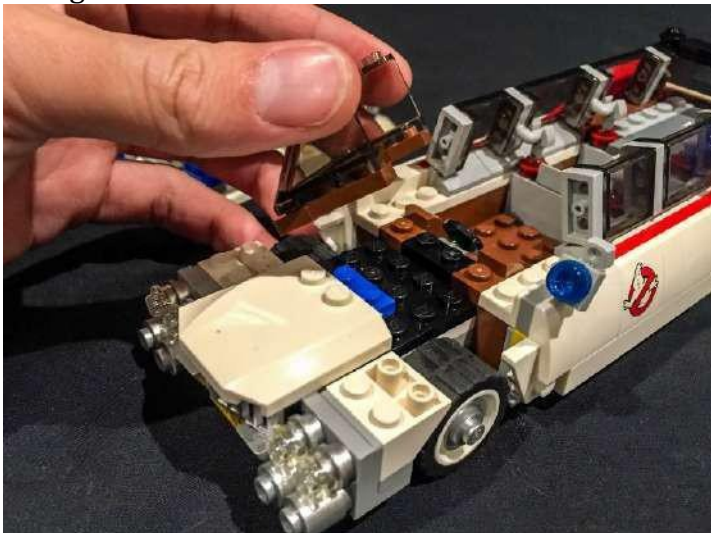
1.) Let's start by removing the roof of the car.

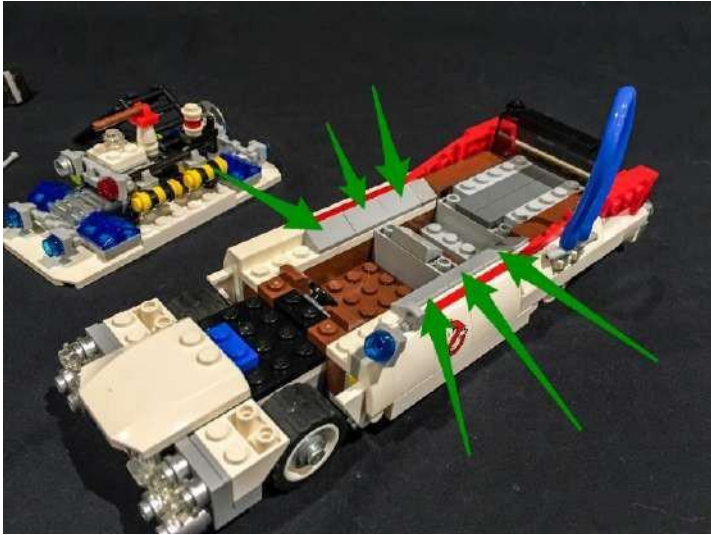


2.) We will be installing lights to the headlights first. To do this, remove the following pieces from the front of the car.

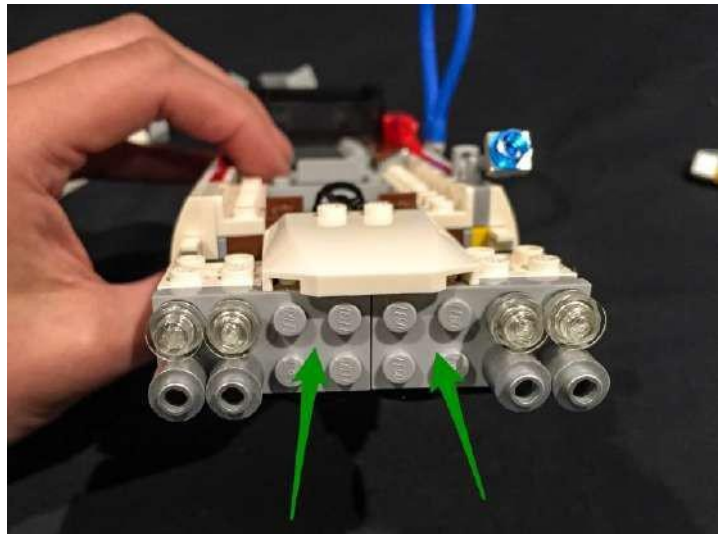
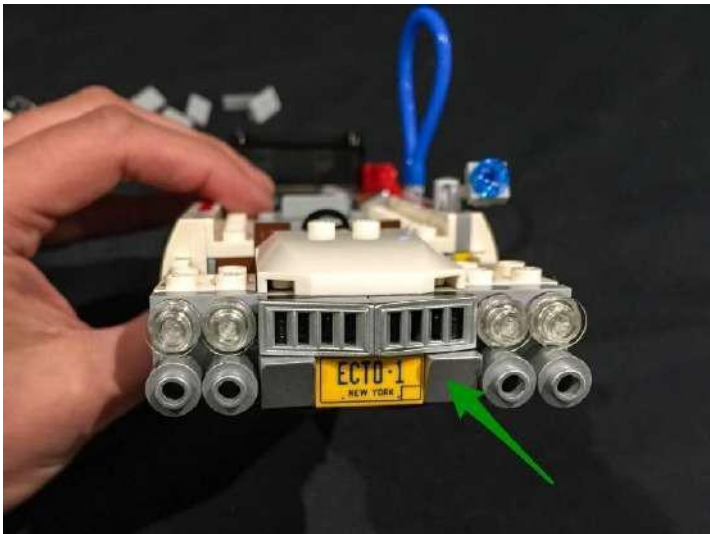


Continue to remove the following pieces which make up the windscreen, side windows, and grey triangular tiles from the sides of the car.





4.) Remove the front section with the grill and number plate attached, followed by the 2 Lego 2x4 plates with light pieces attached.

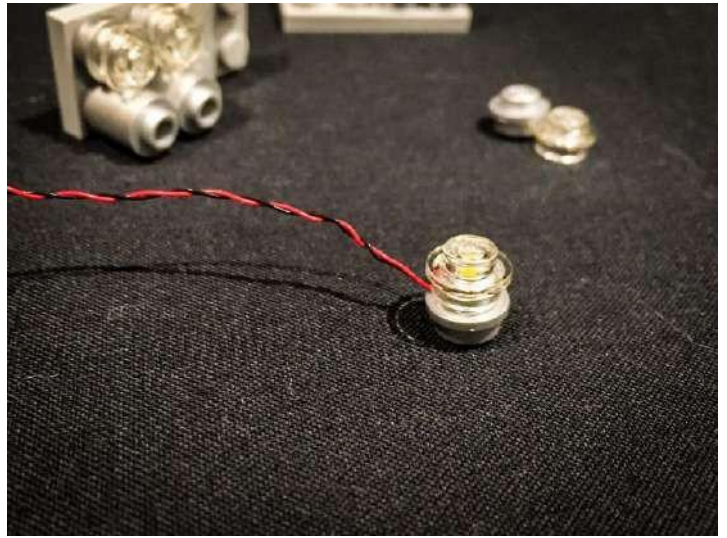
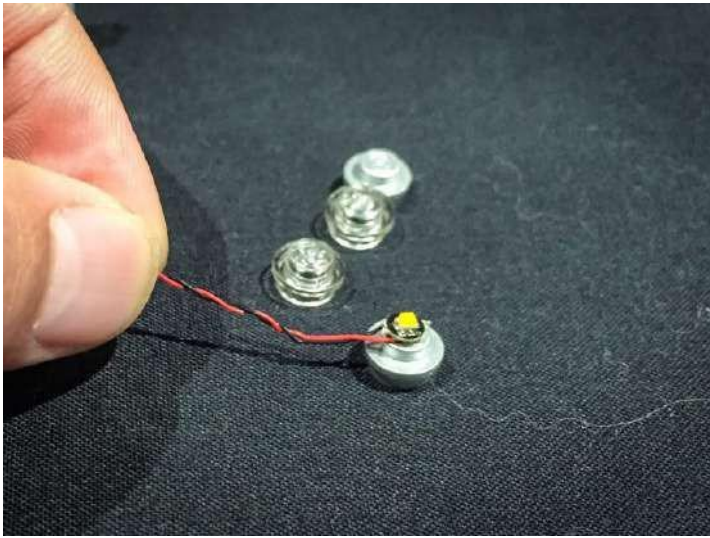


5.) Remove the 2 grey round pieces as well as the transparent round pieces connected to them.

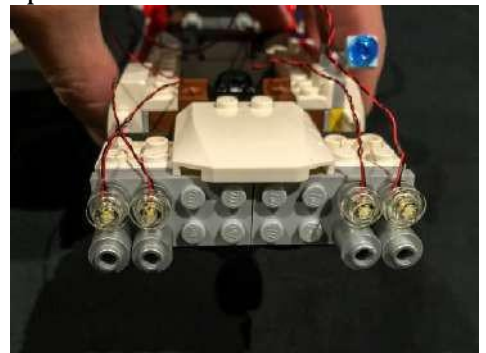
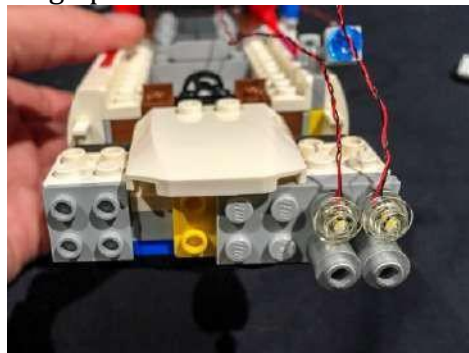
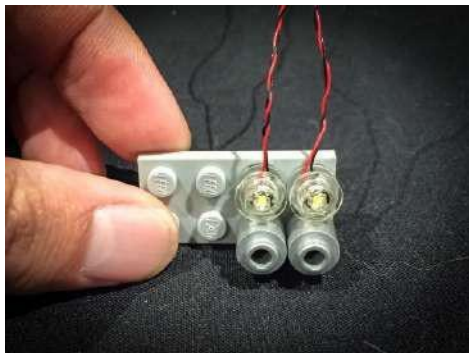




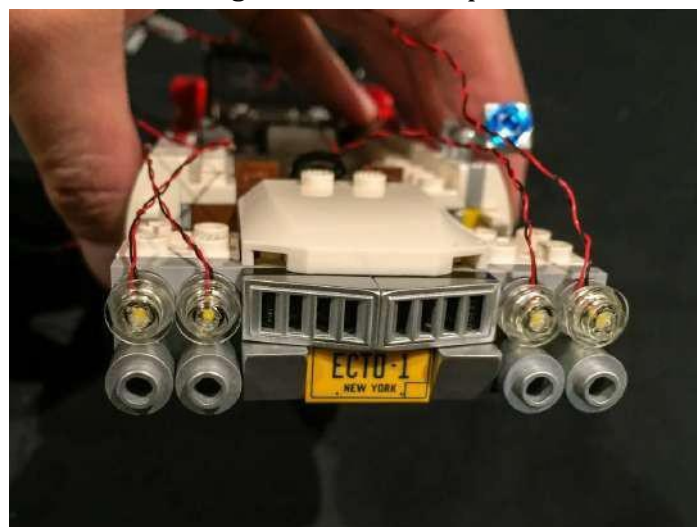
Take 1 standard Dot Light (non kashing) and place it on top of the stud of the grey round plate ensuring the LED component part is facing the correct way up. Secure the LED in place by connecting the transparent Lego plate over the top.



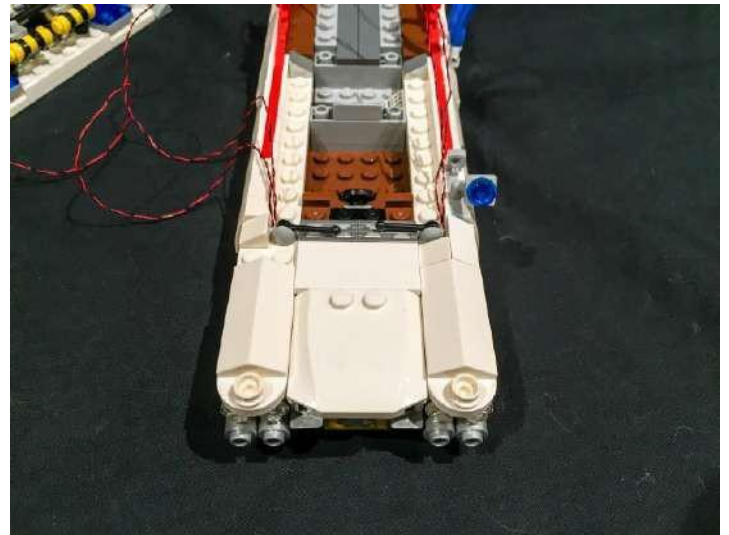
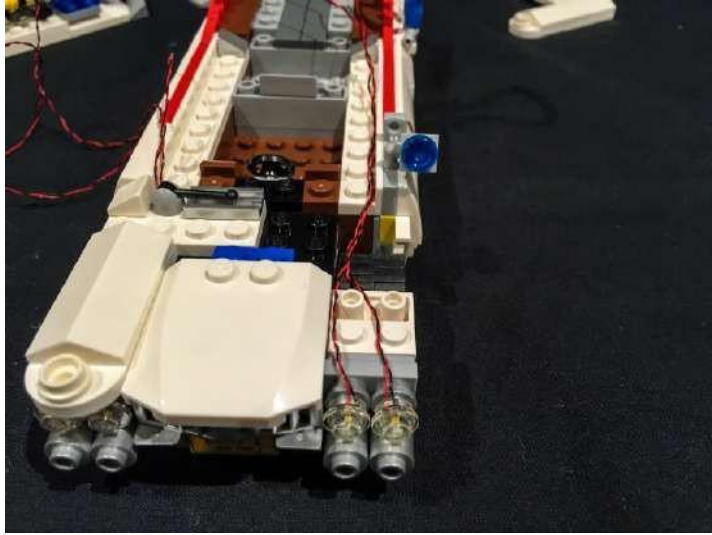
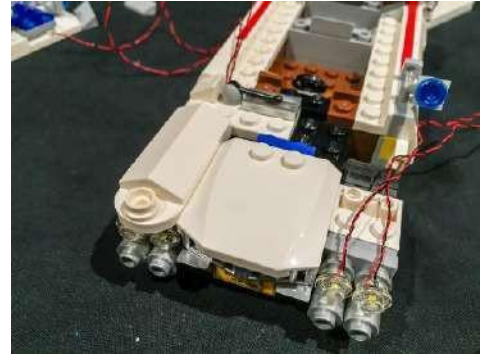
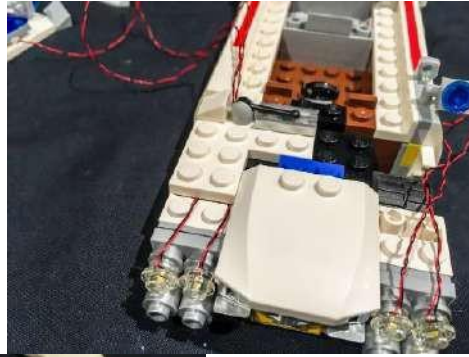
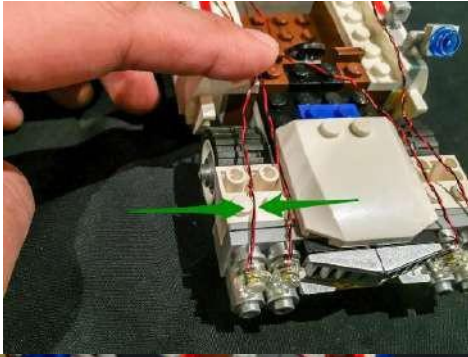
Install the remaining LEDs to all front headlights (2 on each side) using the above process so that we have a total of 4 standard Dot Lights installed. Reconnect the light pieces back to the 2 Lego 2x4 plates ensuring that the cables from the LEDs are facing upward and then reconnect the plates back to the front of the car.



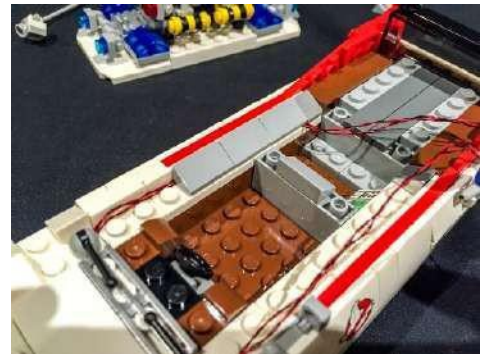
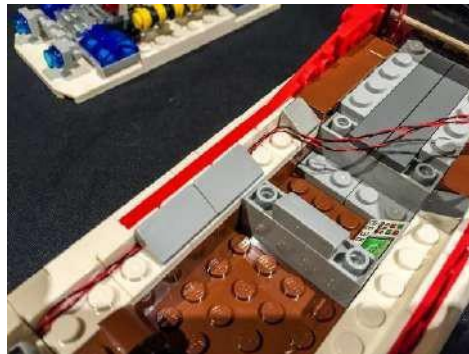
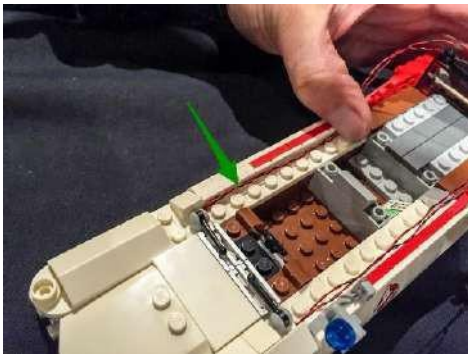
Reconnect the front middle section with the grill and number plate attached.



6.) Before reconnecting the white Lego pieces which make up the front bonnet, ensure that the cables from the LEDs are laid in between the studs of the Lego plates underneath as per below example images.



7.) Hide 2 cables from the lights on the left side of the car (looking from the front) up the left side by laying them in between the white studs and then reconnecting the grey triangular plates over the top of them.

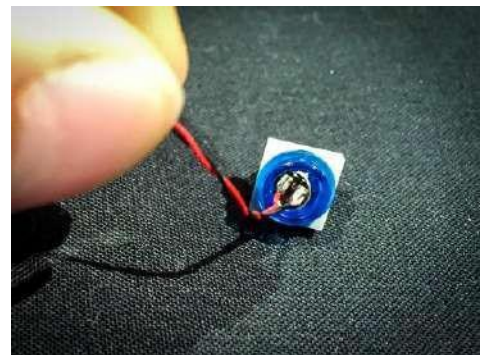


8.) Before we hide the 2 cables from the right we will first install an LED to the blue light at the right side window. To do this, remove this section at the grey stud with clip.

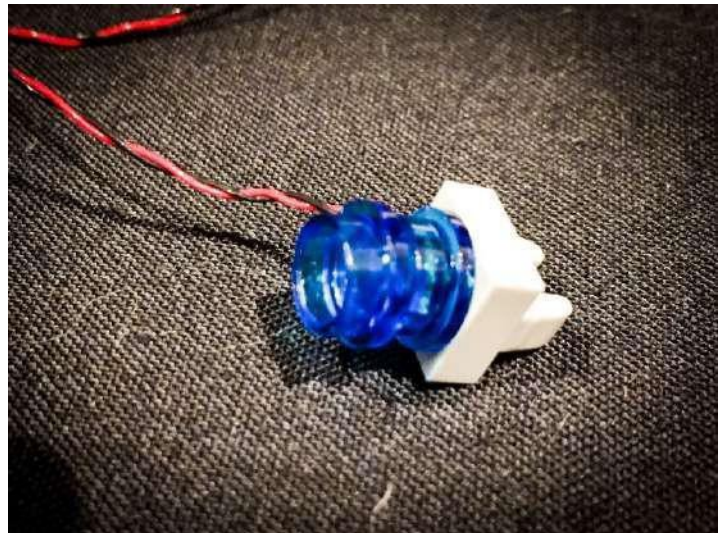
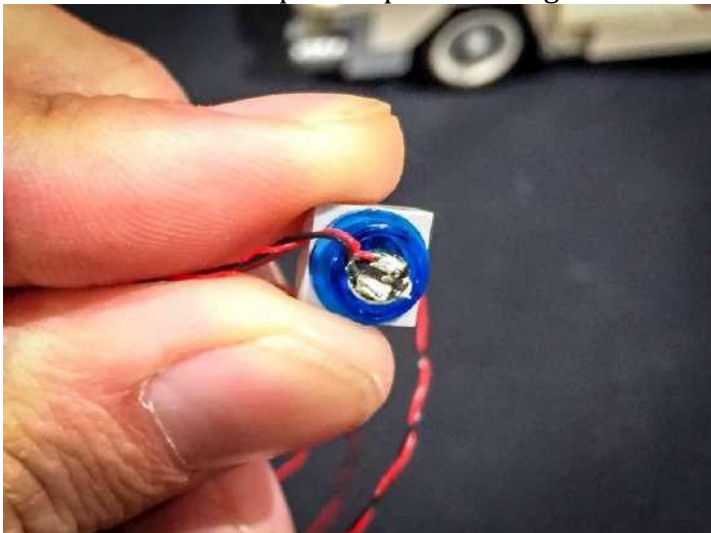




Take another standard Dot Light (non kashing) and install it with the LED component part facing down (as it wont connect with it facing up). Secure this into place by connecting another transparent blue plate (which we have provided) over the top.

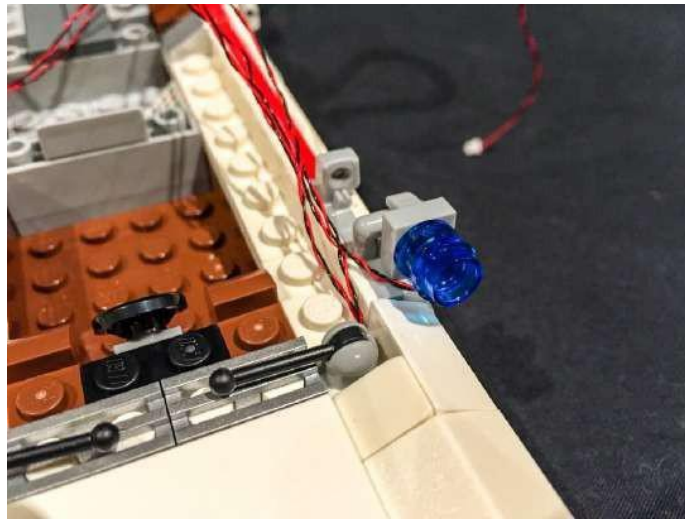


Ensure the LED component part is facing down or inward

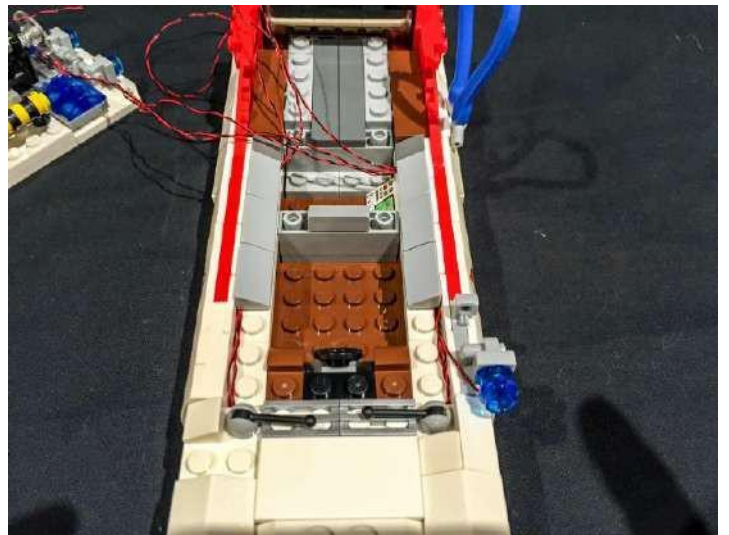
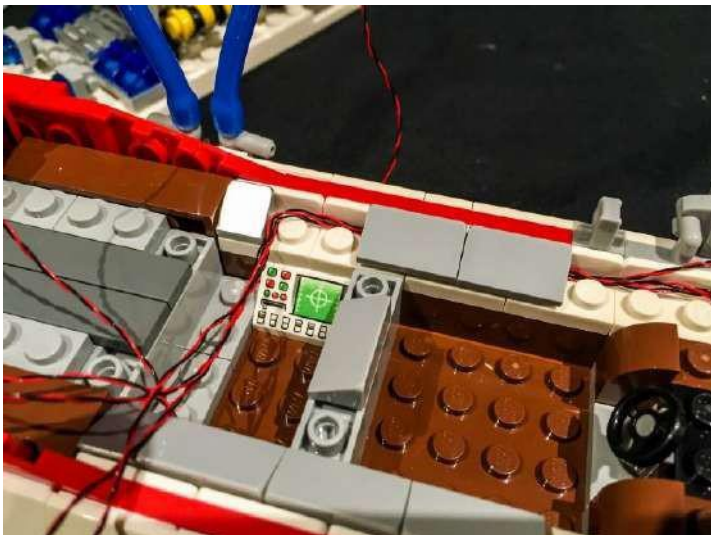
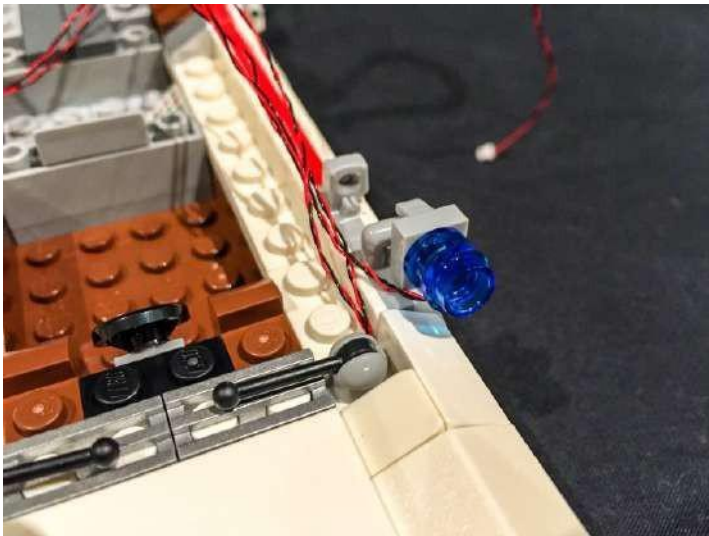


Reconnect this section back to the side of the car ensuring the cable from the LED is on the inside facing the car.



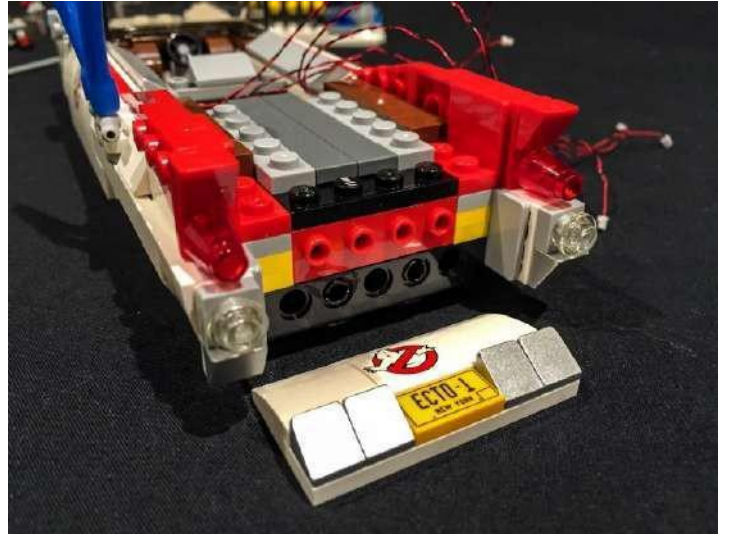
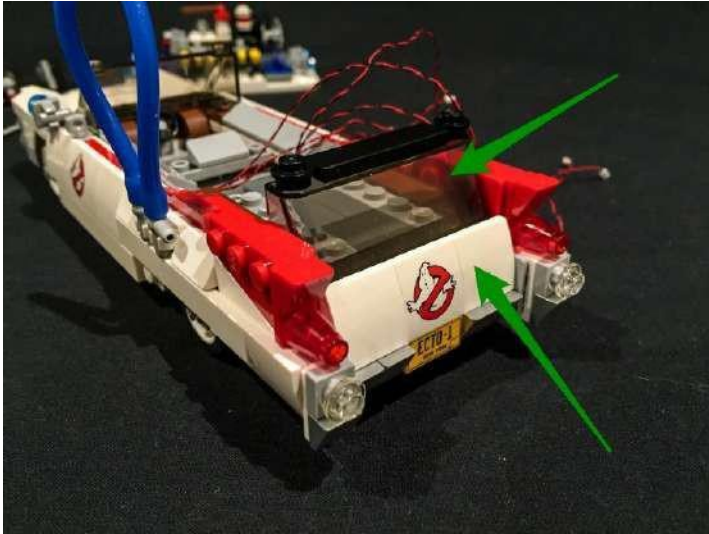


9.) Take the cable from the LED we just installed and the 2 cables from the front right lights and hide them in between studs up the right side of the car by reconnecting the grey triangular plates over the top of them.

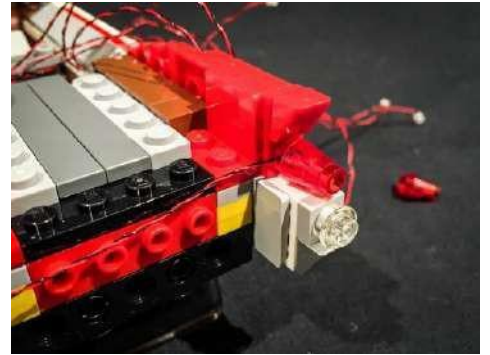
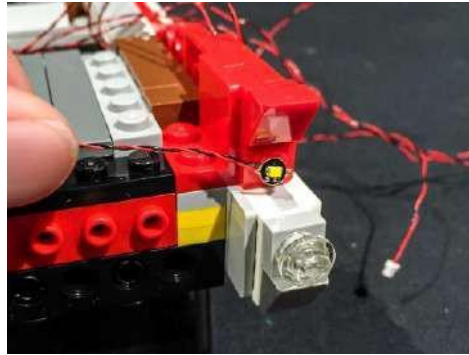
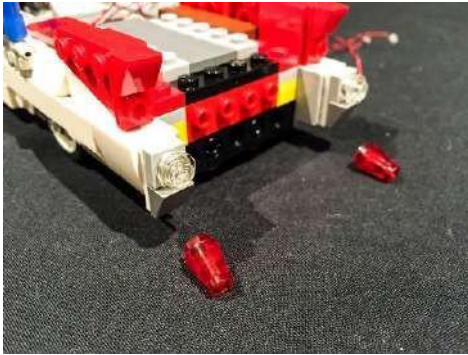


10.) We will now install 2 LEDs to the tail lights. Turn the car to the back and remove the back window and white back section of the car. The back section should remove in one piece.

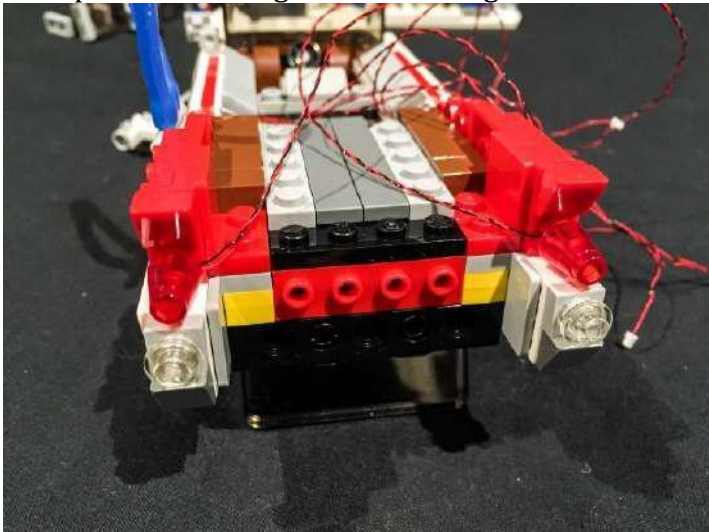




Remove the transparent red cone pieces from each side of the car. Take a standard Dot Light(non kashing) and place it over the top of the red stud on the side of the car ensuring the LED component part is facing the correct way up. Secure the LED in place by reconnecting the transparent red piece over the top of it. Ensure the cable from the LED is facing toward the middle so that we can hide it behind the back piece we removed earlier.

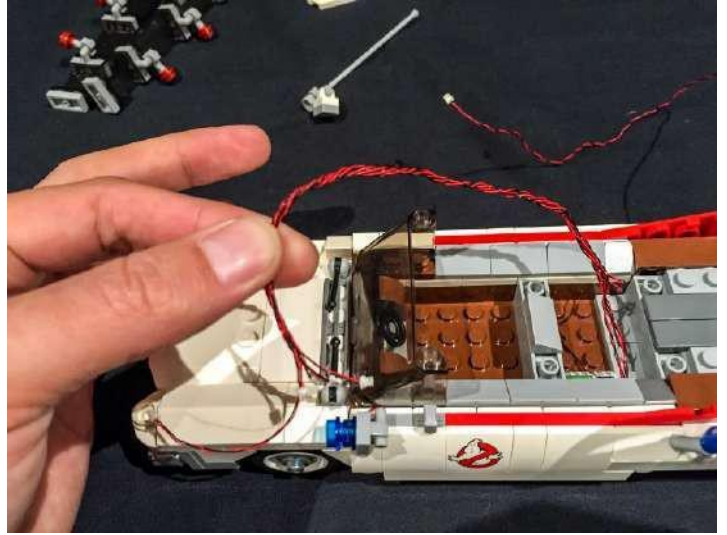
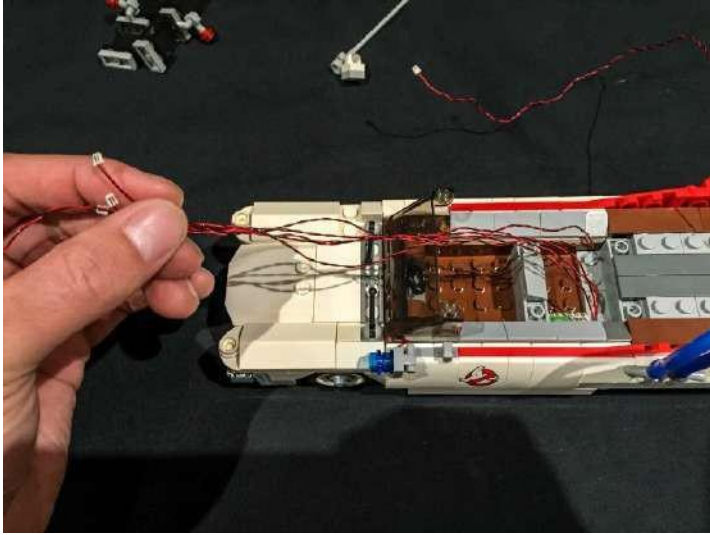


Repeat this step for the tail light on the other side using another standard Dot Light. Reconnect the back piece with the ghostbusters logo on it and ensure the cables from the LEDs are hidden behind.

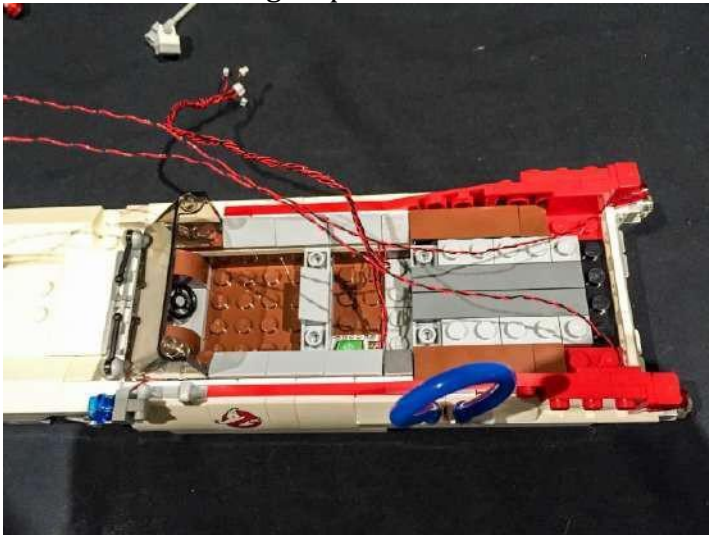


11.) It's time to neaten up all the cabling from the LEDs we have installed so far. Take the 5 cables from the front lights and twist/wind them around each other starting from the base working your way up. They should all come together neatly.

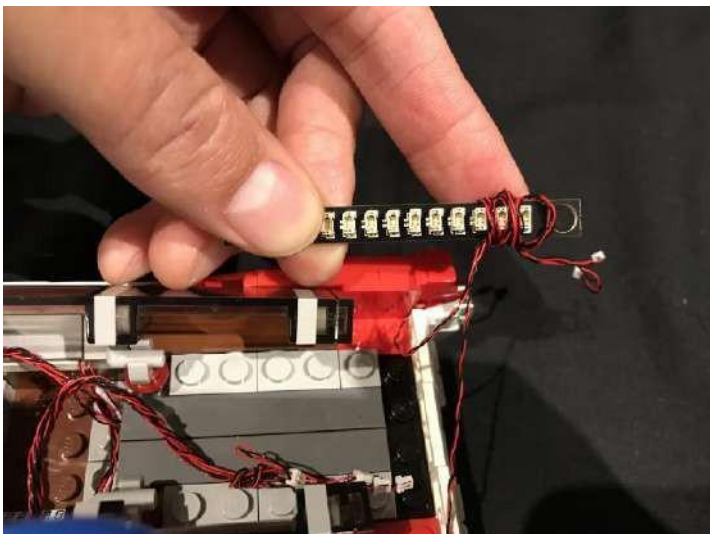




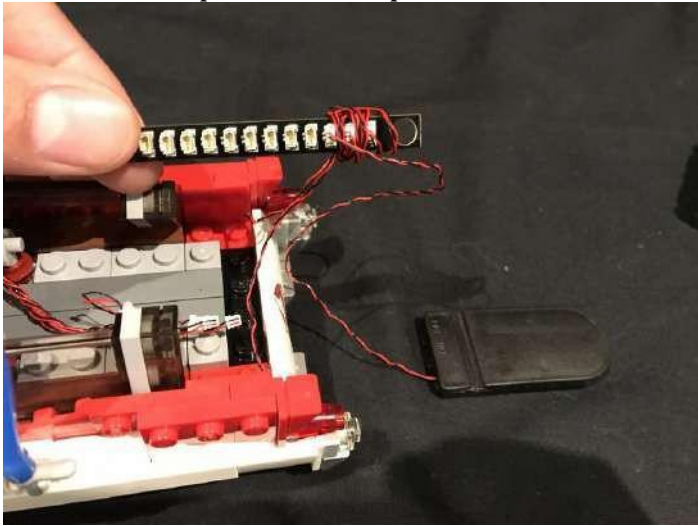
Repeat this step for the cables from the tail lights, twisting/winding them around each other. We should now have 2 groups of cables.



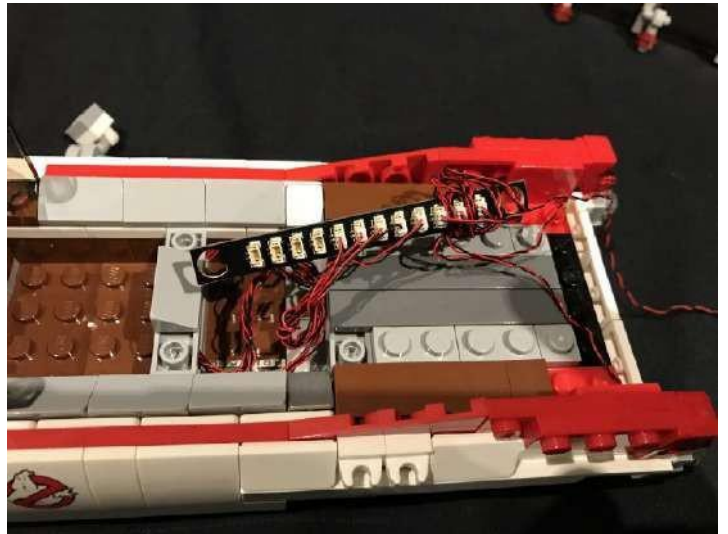
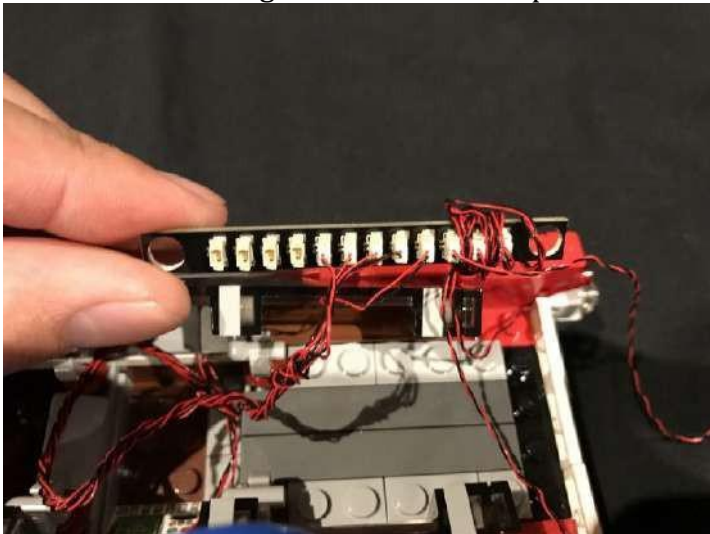
12.) Connect the cables from the tail lights into one of the 12-port expansion boards (expansion board#1) by first winding them around the board before connecting them into the first 2 available ports. We are winding them around the board so that we don't have too much excess cabling to have to hide later on.



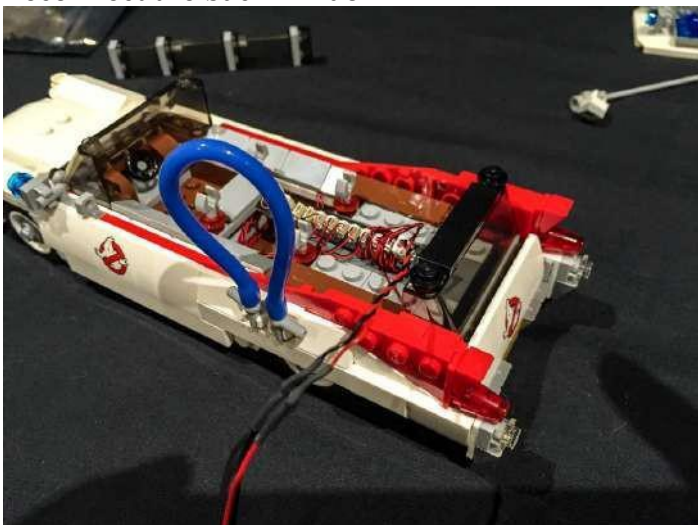
13.) Take the battery pack and insert the 2x CR2032 batteries. Connect the battery pack cable into the next available port on the expansion board.



14.) Connect the cables from the front lights into the next available ports of the expansion board then tuck the cabling underneath the expansion board in the back seat section of the car.



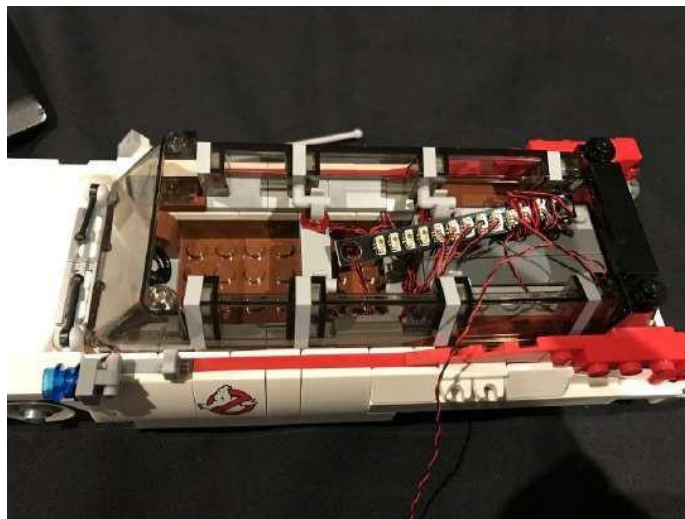
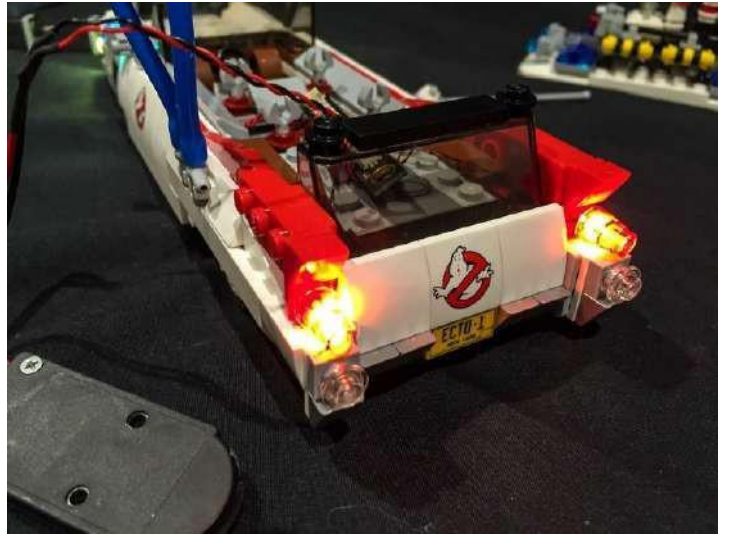
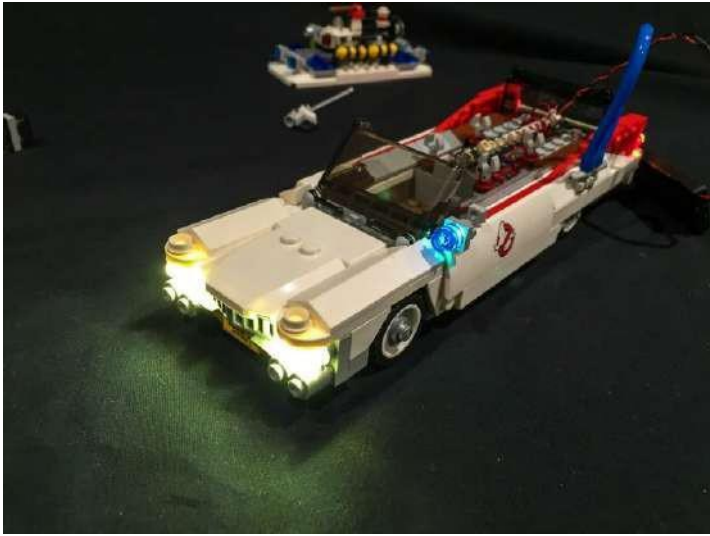
Reconnect the back window.



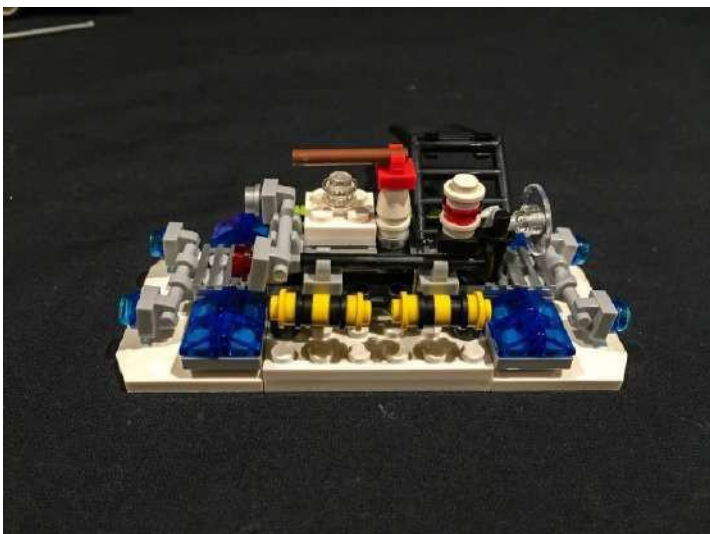
We can now take the time to test the lights we have installed so far by simply turning the battery pack switch to "ON" and verifying all is OK!



Reconnect the side windows.



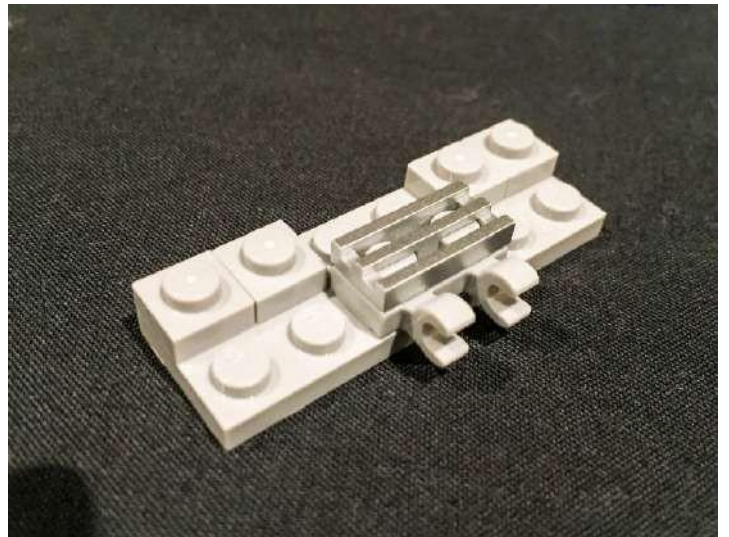
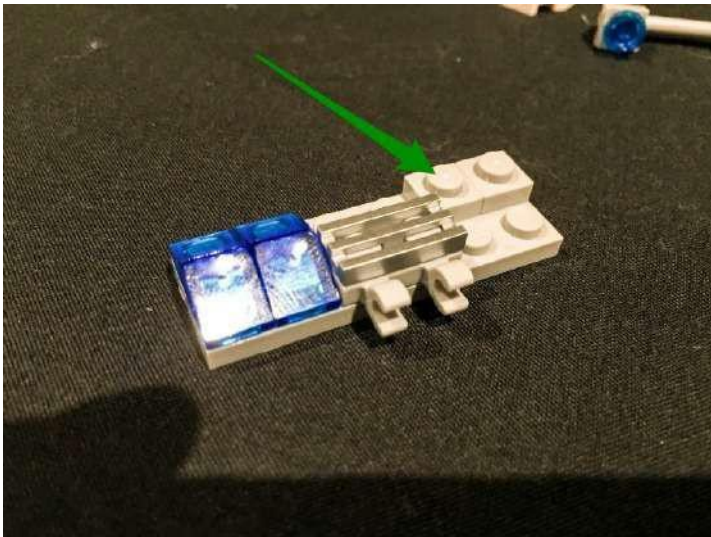
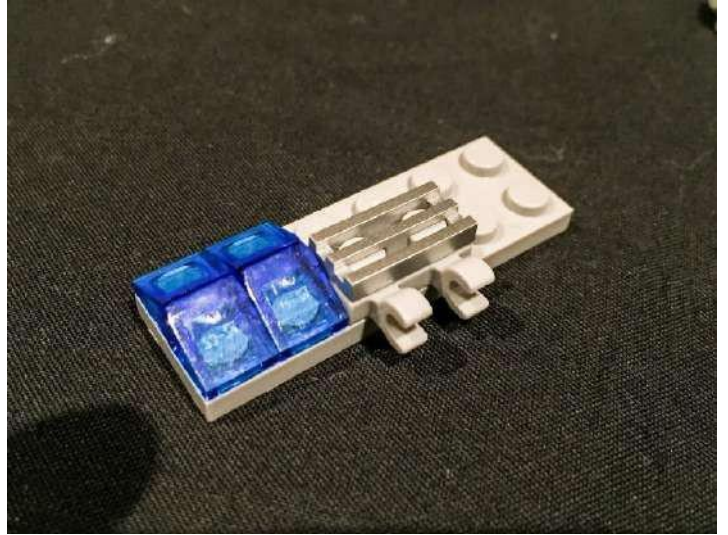
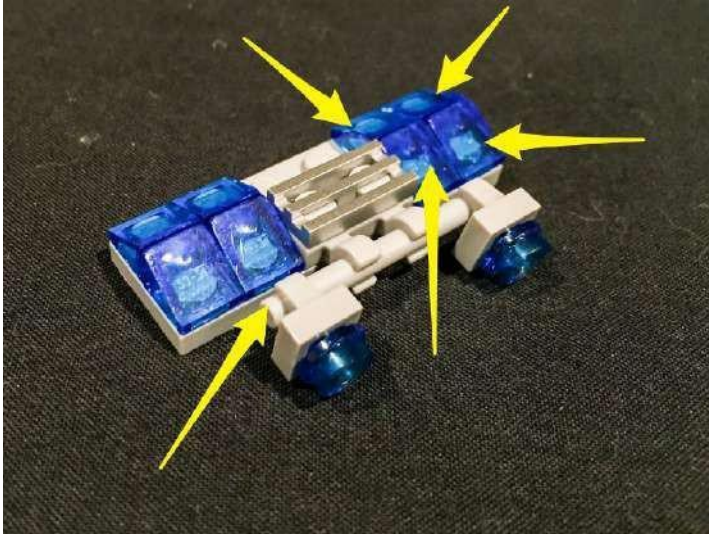
15.) We will now install lights to the roof of the car. The roof is made up of 3 white base plates, front, middle and back. Start by removing the back section, followed by the grey 2x6 plate with blue light pieces connected to it.



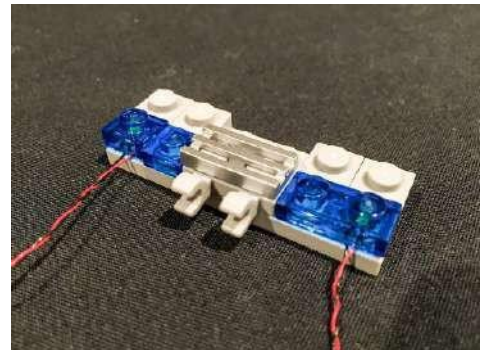
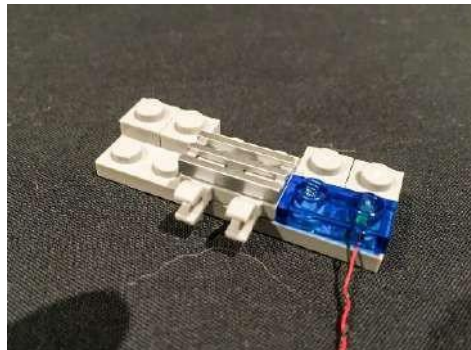
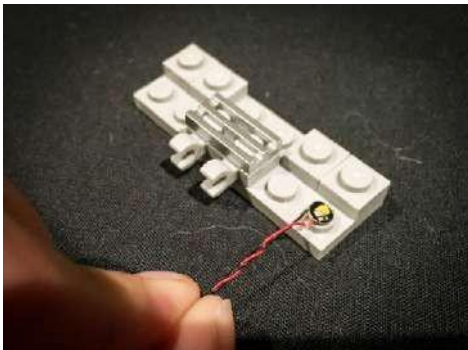
Remove the following pieces from the 2x6 plate and then connect one of the provided grey 1x2 Lego



plates on each side as per below.

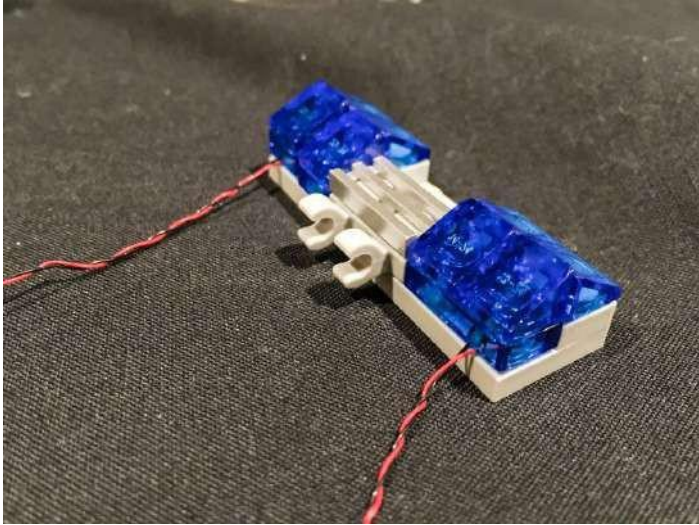


16.) Take 1 Pushing Dot Light and place it on top of the grey stud closest to the outside of the plate ensuring the LED component part is facing the correct way up. Secure this in place by connecting one of the provided transparent blue 1x2 plates over the top. Repeat this for the light on the other side ensuring the LED is installed to the stud closest to the outside and the LED component is facing the correct way up.



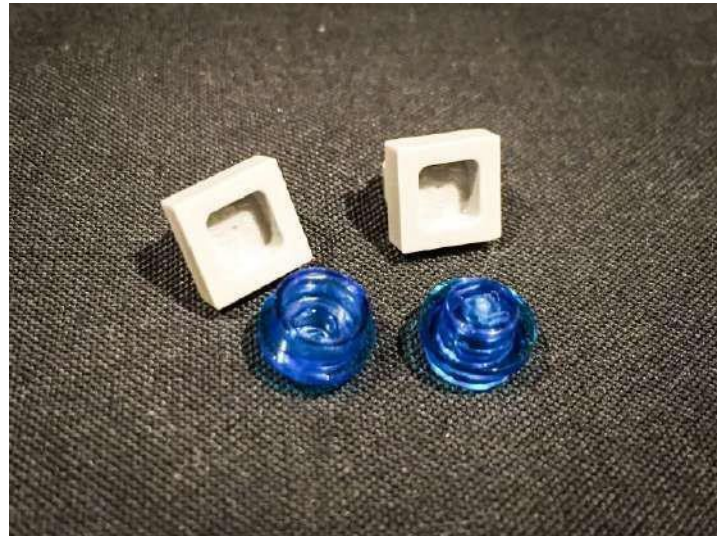


Reconnect the transparent blue triangular plates we removed earlier on top of the additional plates we just installed.



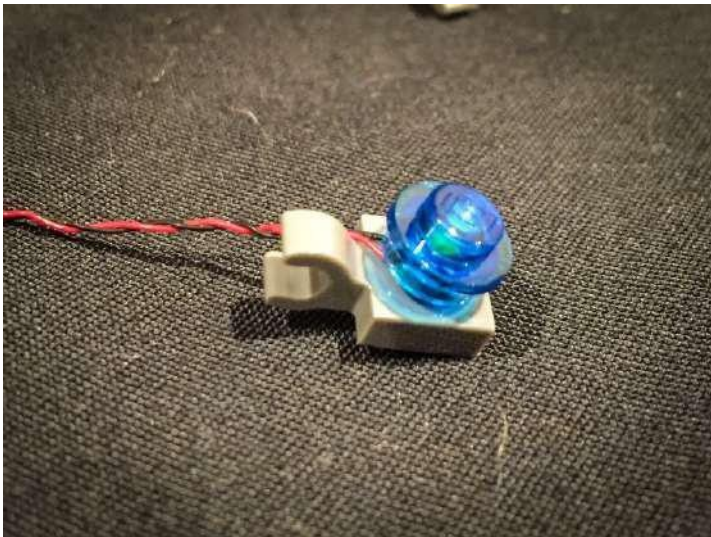
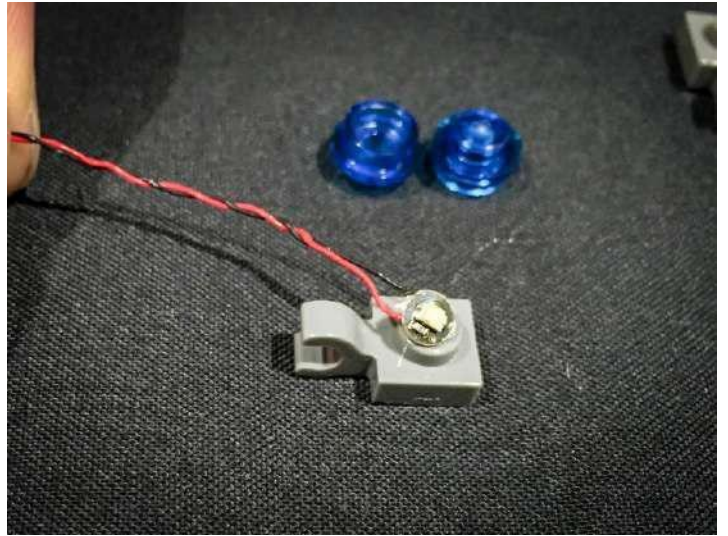
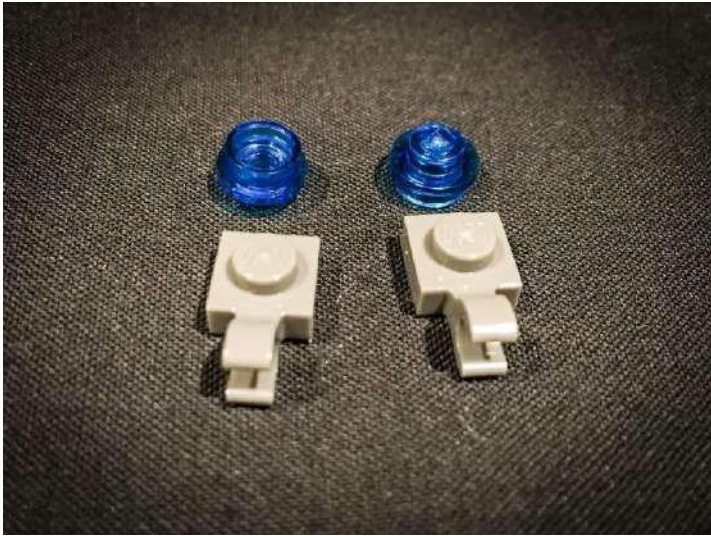
17.) We will now install kasing LEDs to the blue spot lights at the front. Remove the grey plates with clips from the pole and then disconnect the round blue pieces from them.

Note: This may be a little tricky and you may need to use the Lego removal tool for the blue pieces.



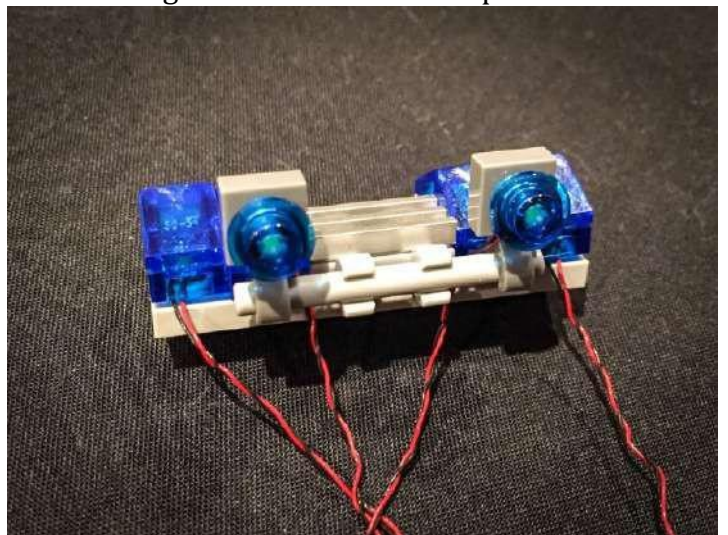
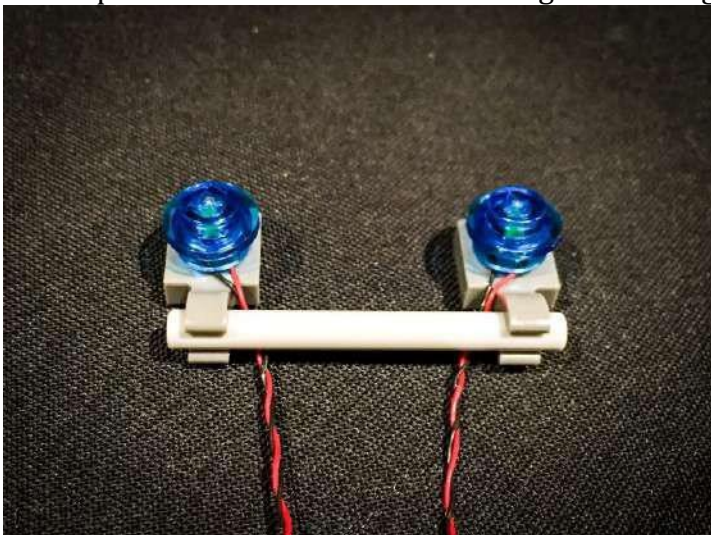
Locate 2 of the provided grey plates with clips as we will be replacing the original ones with these. Take another 2 Pushing Dot Lights and install them by placing them over the studs and connecting the blue transparent round pieces over the top.





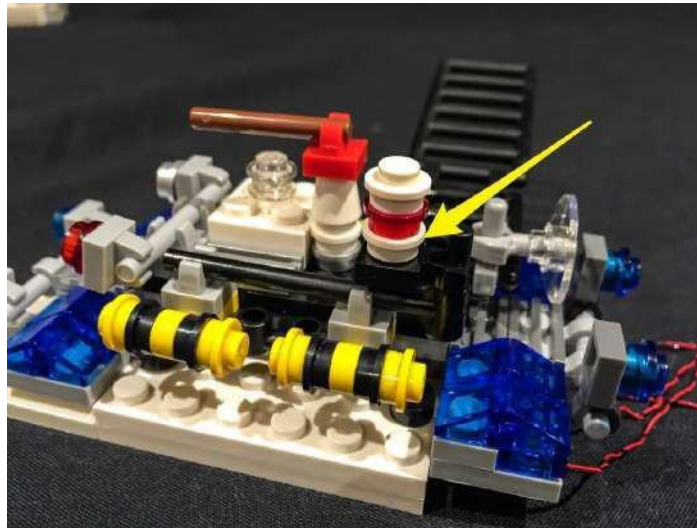
Reconnect these 2 plates to the pole and then reconnect them to the rest of the roof section.

It is important to ensure that the cabling for the 4 lights are facing down and behind the pole.

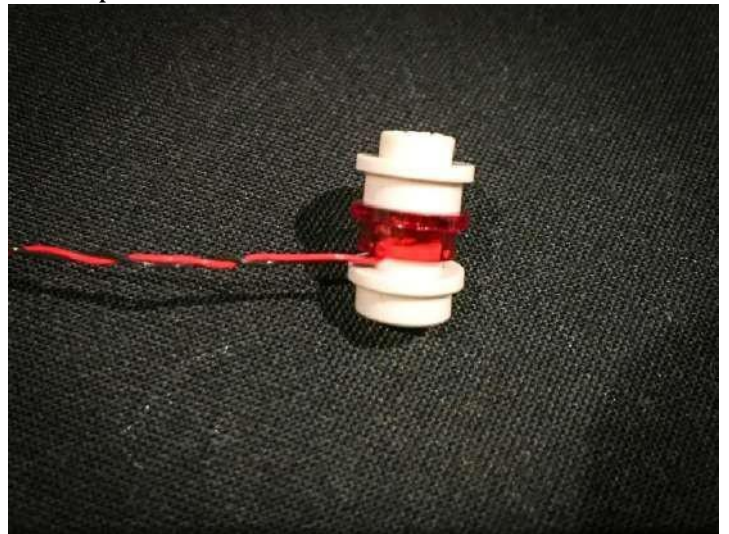




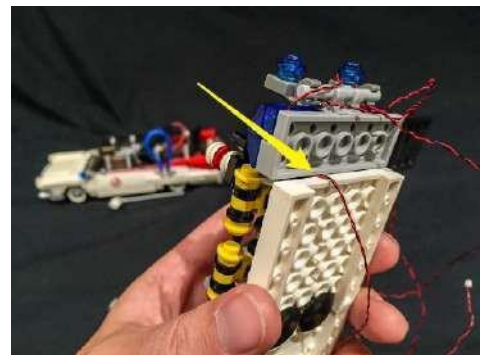
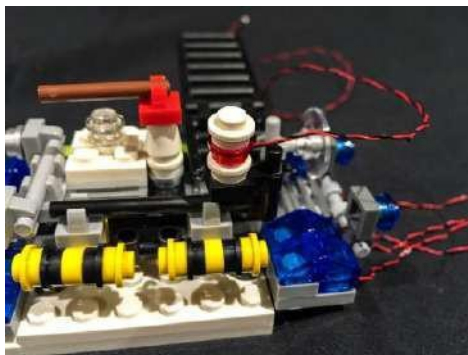
18.) Reconnect the 2x6 plate to the rest of the roof, without the white plate underneath. Then remove the red light with white stud underneath so we can install another kashing Dot Light to it.



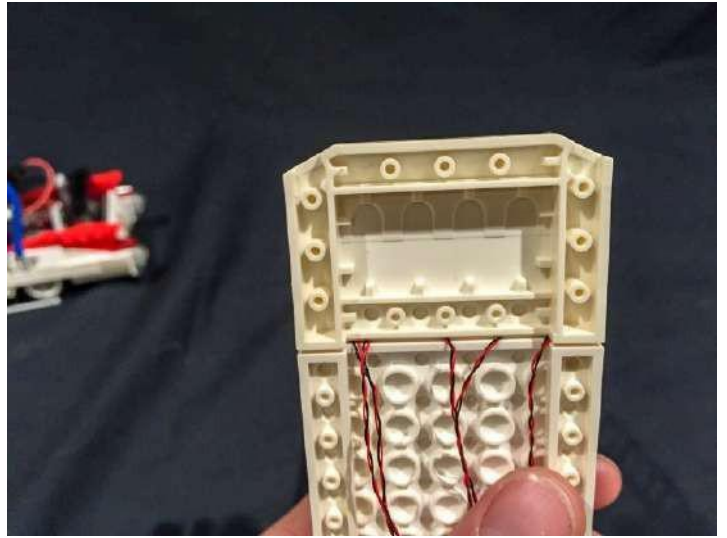
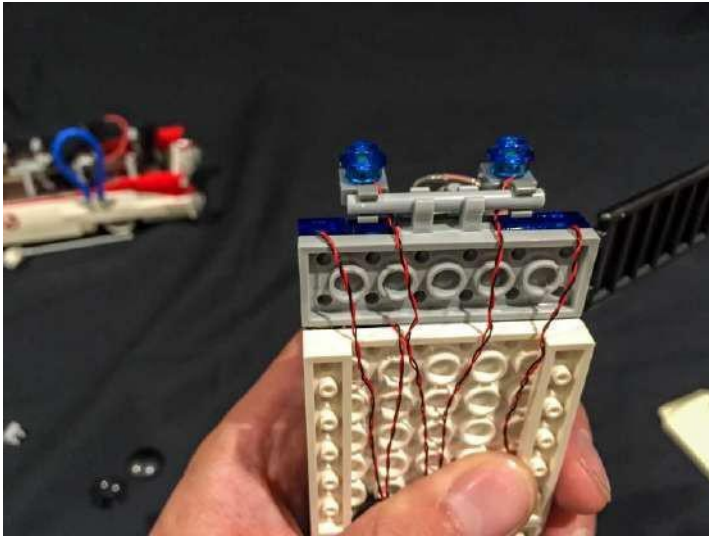
Take another Pashing Dot Light and install it to this section ensuring that the LED is laid over the white stud and secured down by reconnecting the red piece over the top.



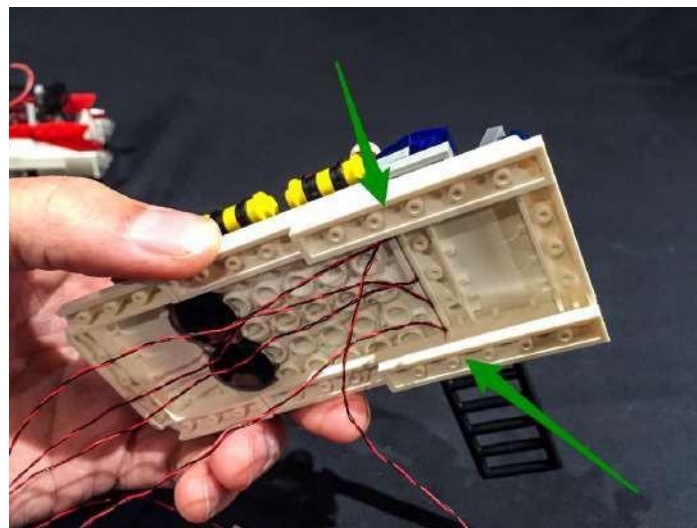
Reconnect this section to the roof of the car ensuring the cable from the LED is threaded behind the black pole and down the middle in between the grey and white plates.



19.) Take all the cables and lay them down the middle of the middle white plate before reconnecting the back white plate underneath.

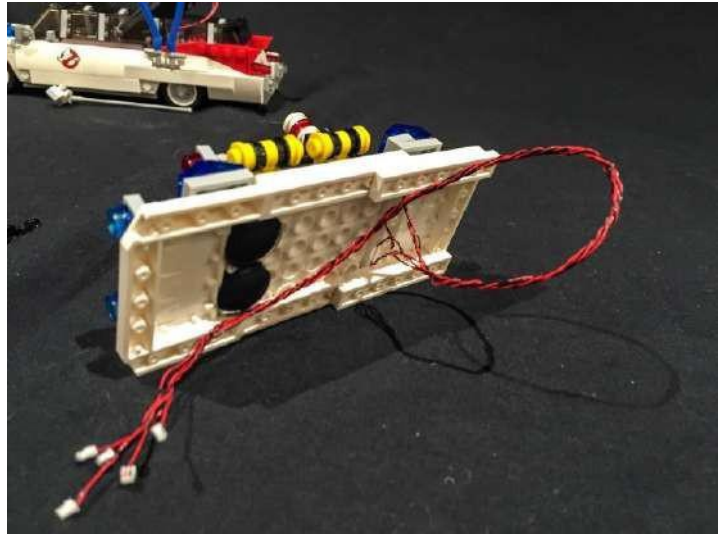
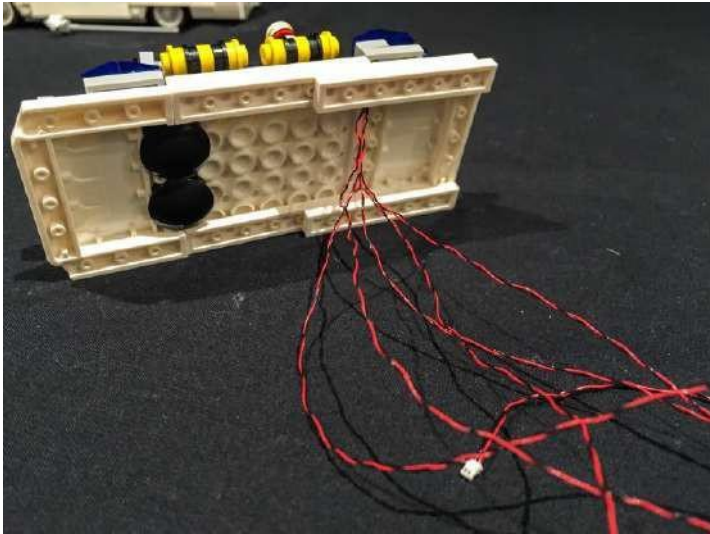


Secure the 2 white base plates of the roof by connecting the provided white 1x6 plates on each side as per below. We will not be reconnecting the original 2 round black pieces so you can discard these.



20.) Take the 5 cables from the back lights and twist/wind them around each other (like we did for the front and tail lights) so they all come together neatly.





21.) Turn the roof around to the front and remove the following sections:

the front roof section

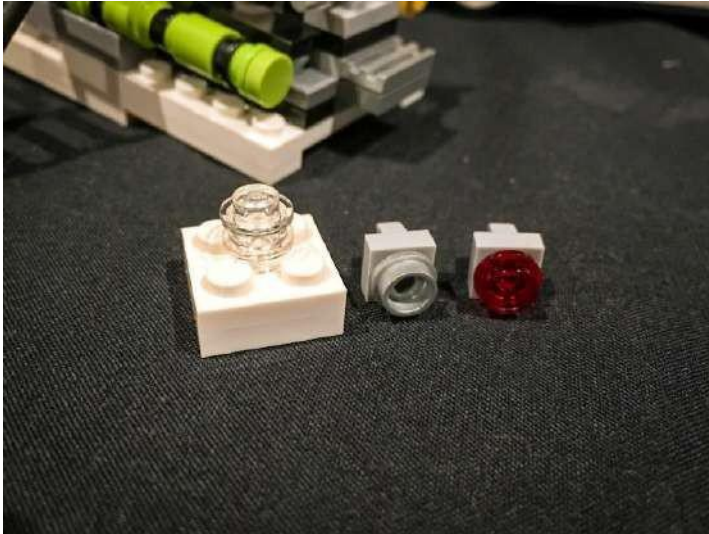
the white 4x4 plate with the clear light piece attached the grey pole with red and grey light pieces attached.



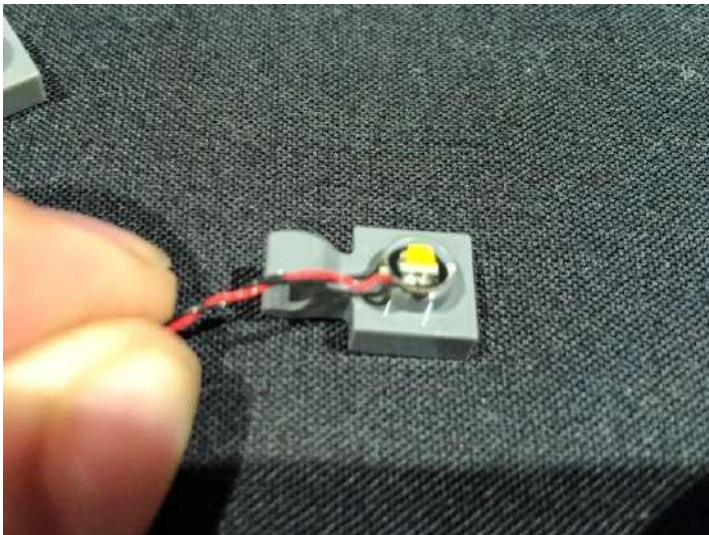
22.) Take the white 4x4 plate with pieces attached and disassemble the pieces as we will be replacing the 2 grey pieces.

Note: This may be a little tricky and you may need to use the Lego removal tool for the red and grey round pieces.

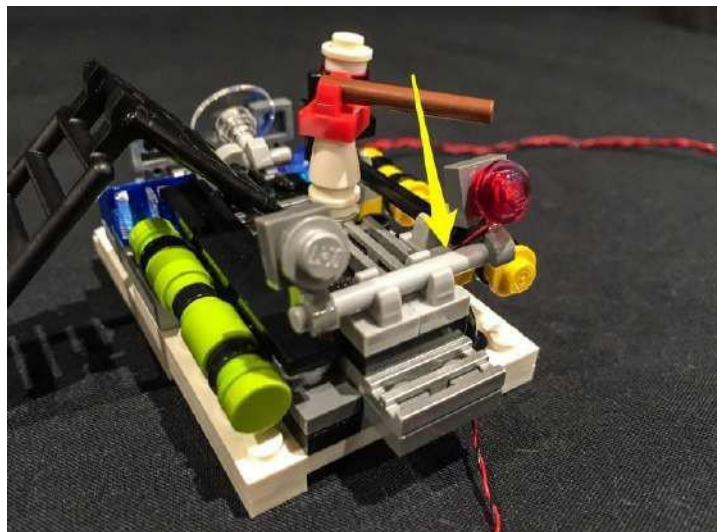
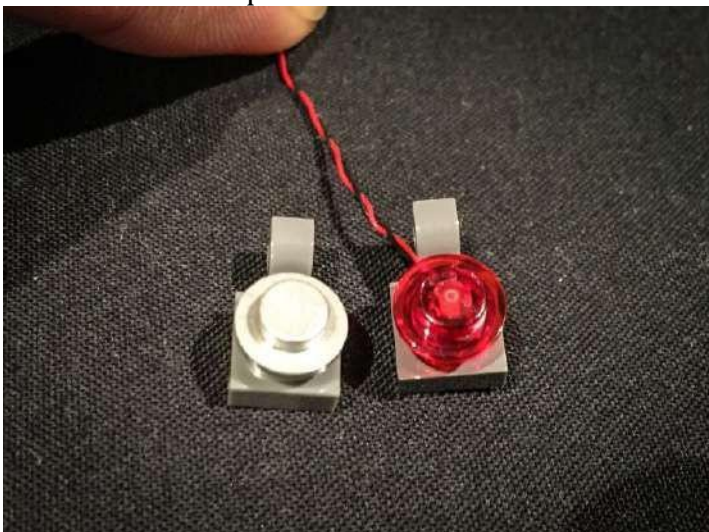




Take one of the provided grey Lego pieces with clip and place 1 standard Dot Light (non kashing) on top of the stud. Secure the LED in place by connecting the transparent red round piece over the top ensuring that the LED component part is facing the correct way up.

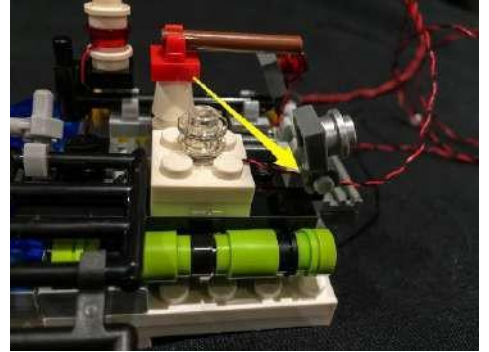
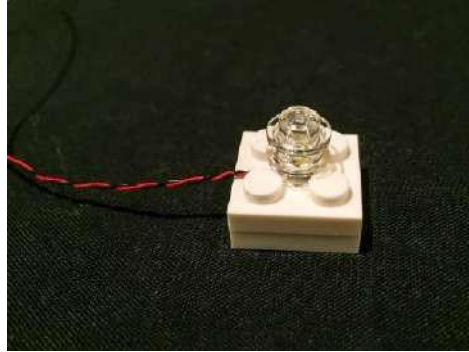
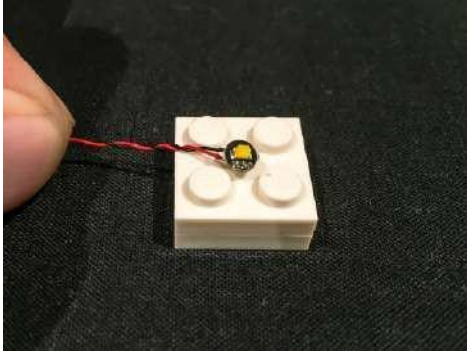


Ensure the cable from the LED is facing the same way the clip underneath is facing  
Reconnect the round grey Lego piece to another provided Lego piece with clip then re-attach the 2 pieces back to the pole before then reconnecting this back to the roof. Ensure that the cable from the red LED is hidden behind the pole.

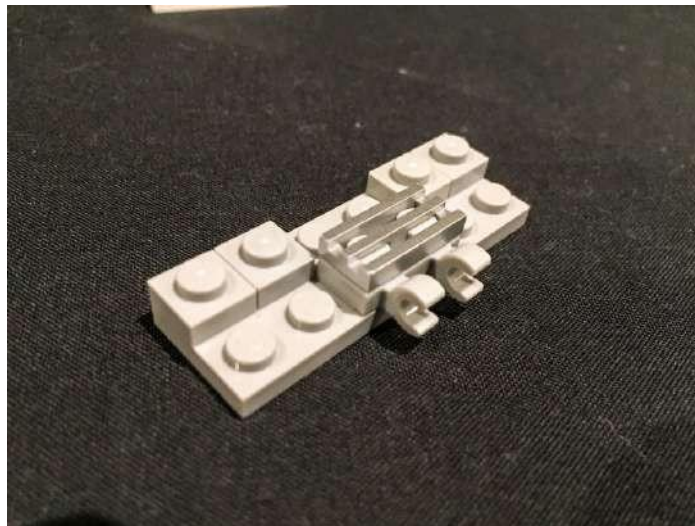
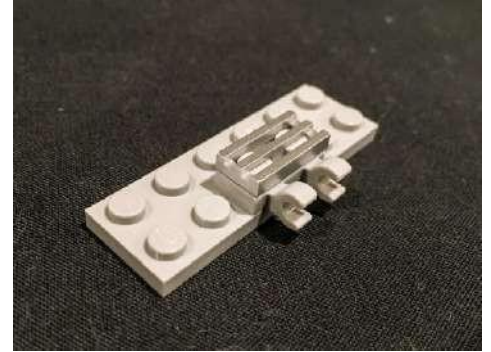




23.) Take another standard Dot Light and place it in the middle of the white 4x4 plate (in between the studs). Reconnect the clear round Lego light pieces over the top to secure the LED in place. Reconnect this section back to the roof of the car ensuring the cable from the LED is facing forward.

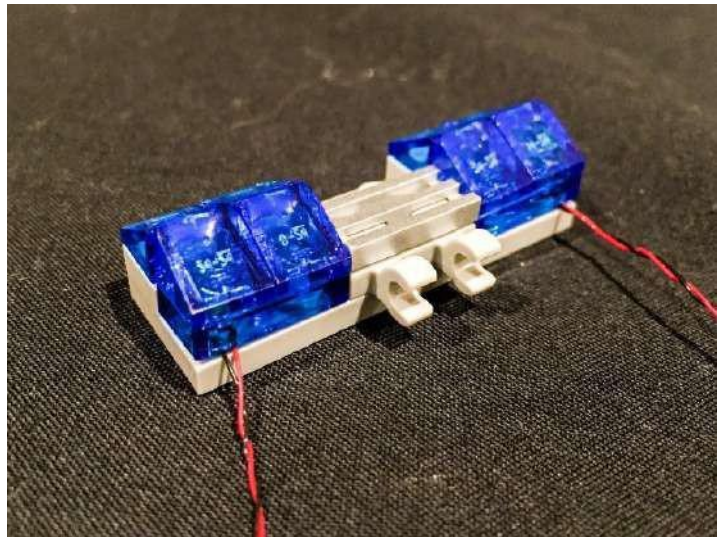
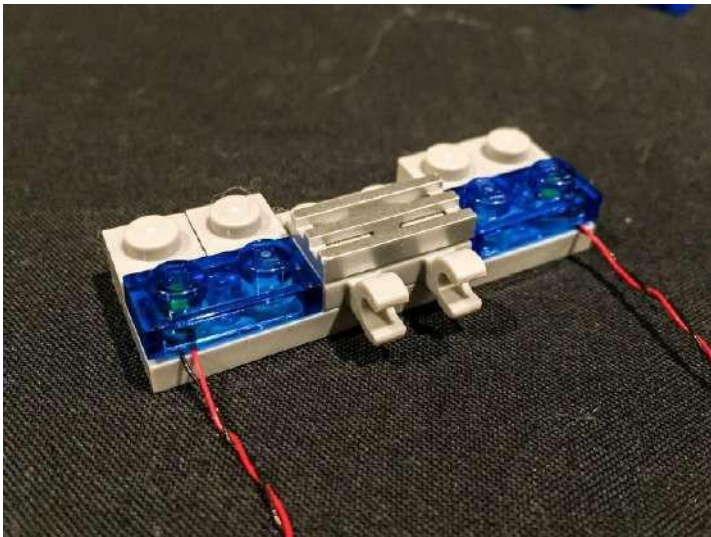
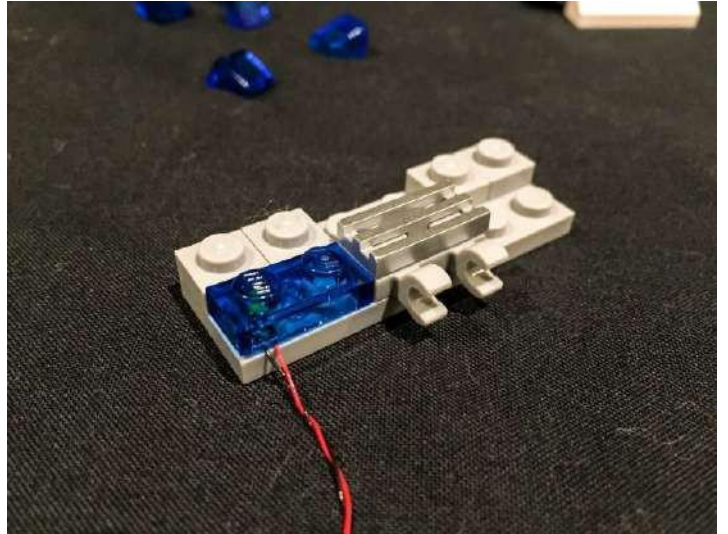
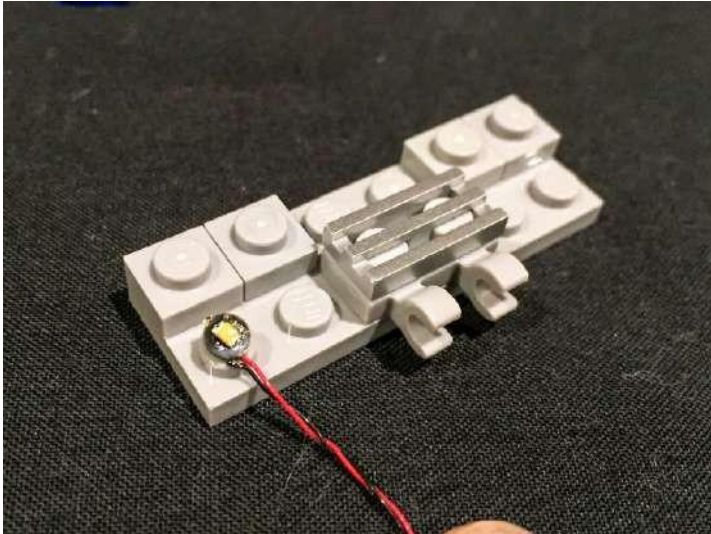


24.) Take the front section of the roof and remove the white roof plate from underneath, then remove the transparent blue triangular pieces, followed by the grey pole with attached light pieces. Connect the 2 provided 2x2 grey Lego plates in the following positions.

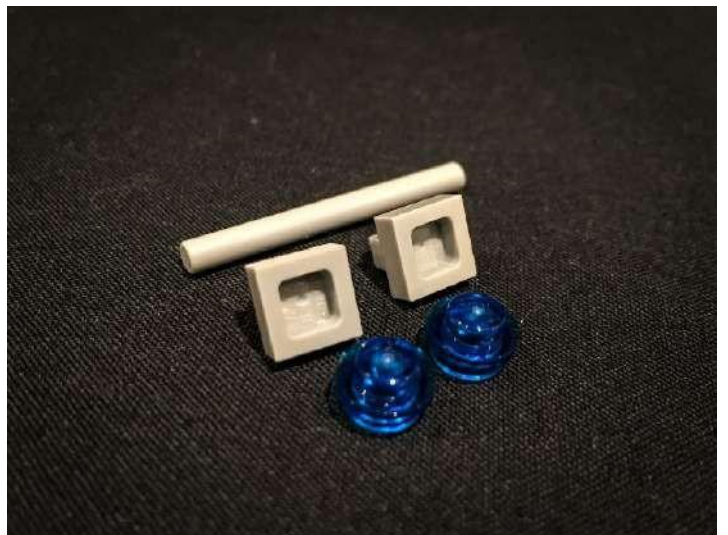


Install 2 Pashing Dot Lights to this section by placing them over the top of studs on each side (furthest away) and connecting the provided 2x2 transparent blue plates over the top, same way as we did for the back kashing lights. Ensure the cables from the 2 LEDs are facing toward the front, then reconnect the triangular pieces over the top.



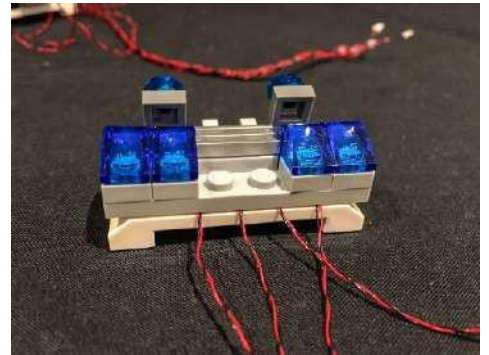
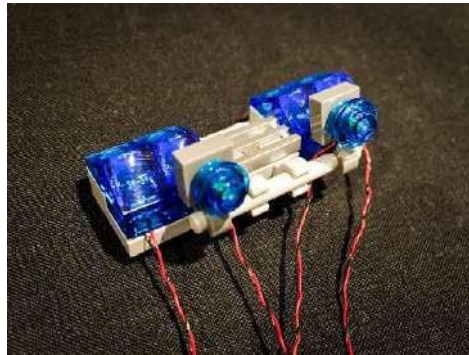
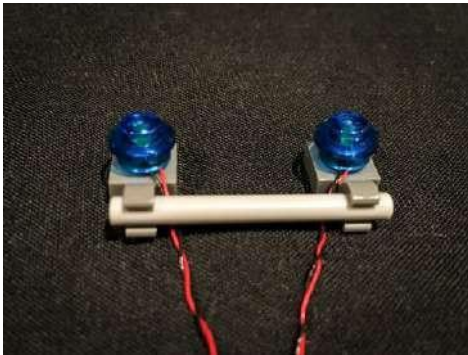


25.) Take the front grey pole with attached lights and disassemble all the pieces as we will be replacing the grey pieces with new pieces (with different clips).  
 Note: This may be a little tricky and you may need to use the Lego removal tool for the blue round pieces.

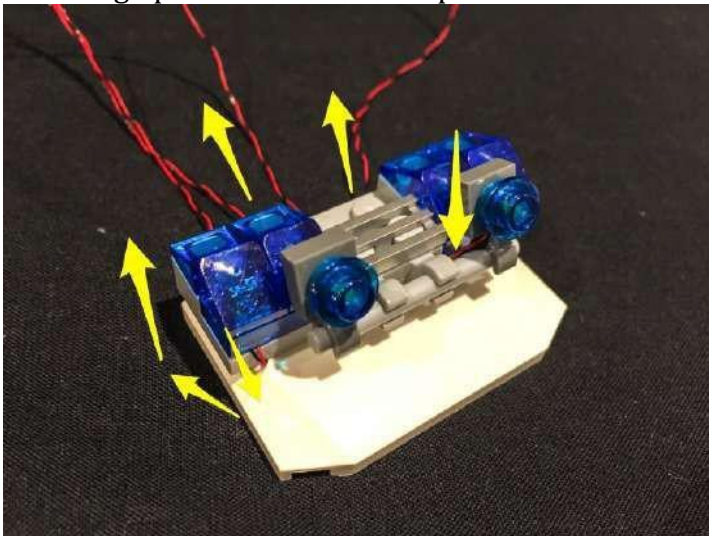


Install the final 2 Pushing Dot Lights to this section by placing them over the studs of the provided grey pieces (with clips) and connecting the transparent blue pieces over the top. Ensure the cables are facing the same way as the clips, then reconnect this section back to the roof.

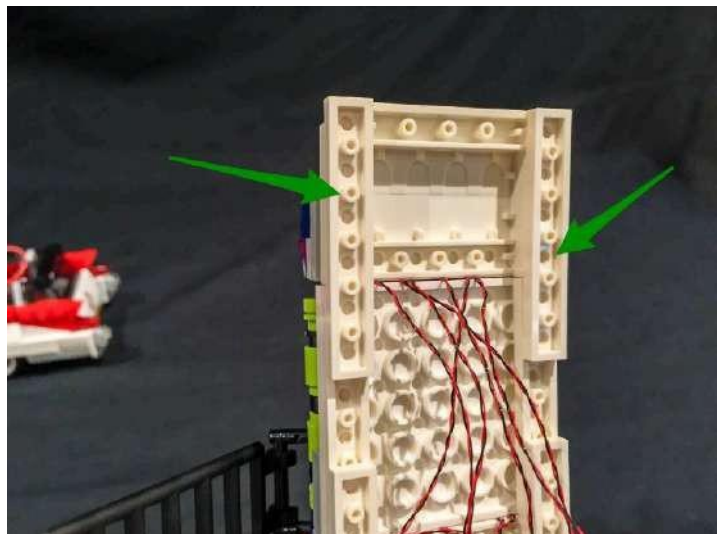
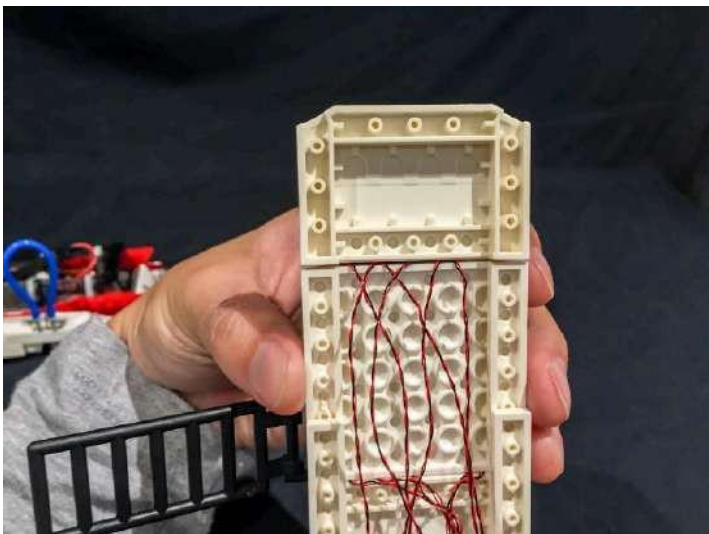




26.) Reconnect the grey 2x6 plate back to the white roof piece ensuring all cables are facing toward the back and hidden behind the grey pole as per below. Reconnect the front roof section to the middle roof section. You may find that this may not connect securely. This is OK as we will be securing the roof sections with extra Lego pieces in the next step.

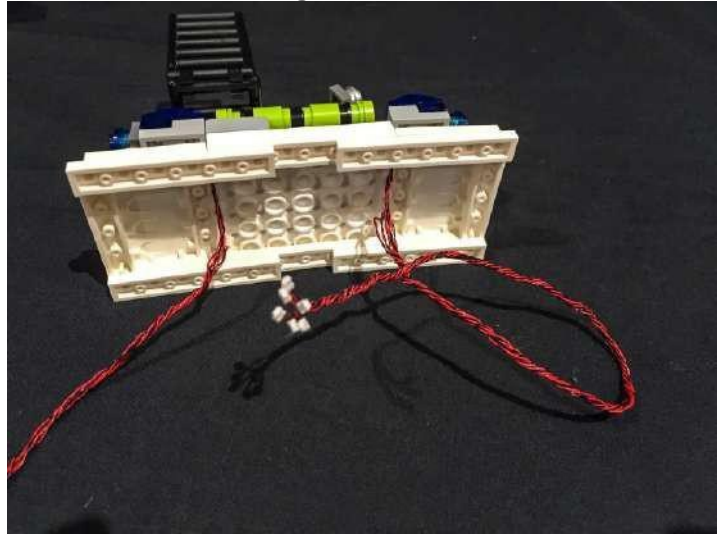
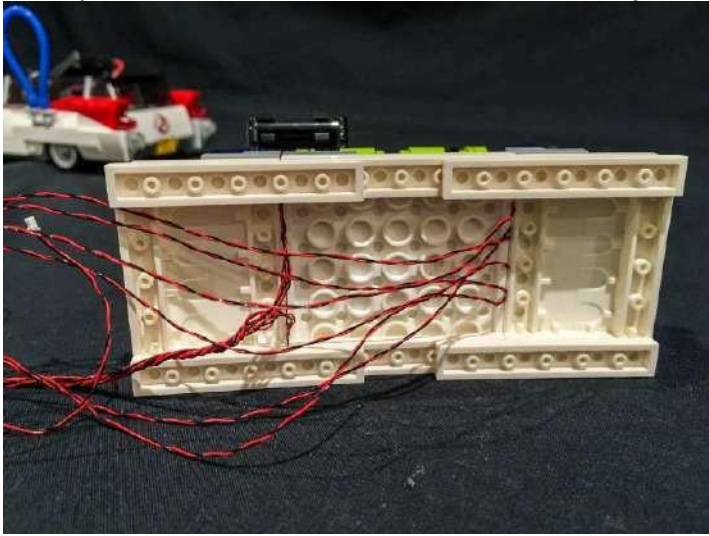


27.) Take the 2 provided Lego 1x6 white pieces and connect them underneath the roof securing the front and middle roof sections together.

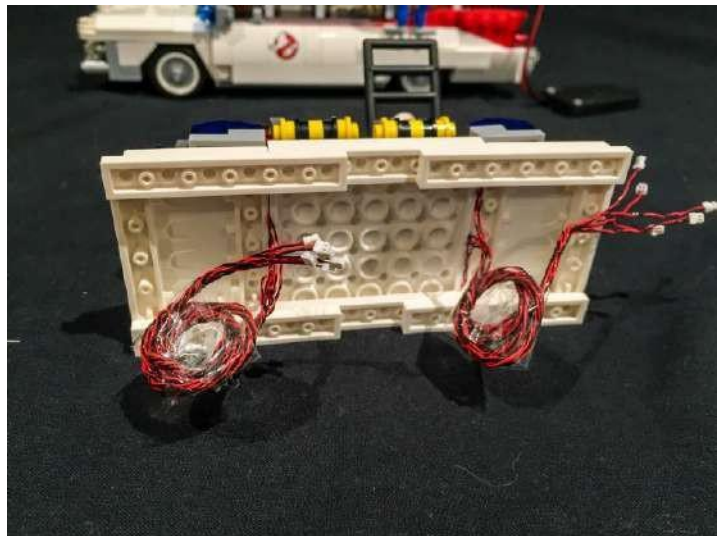
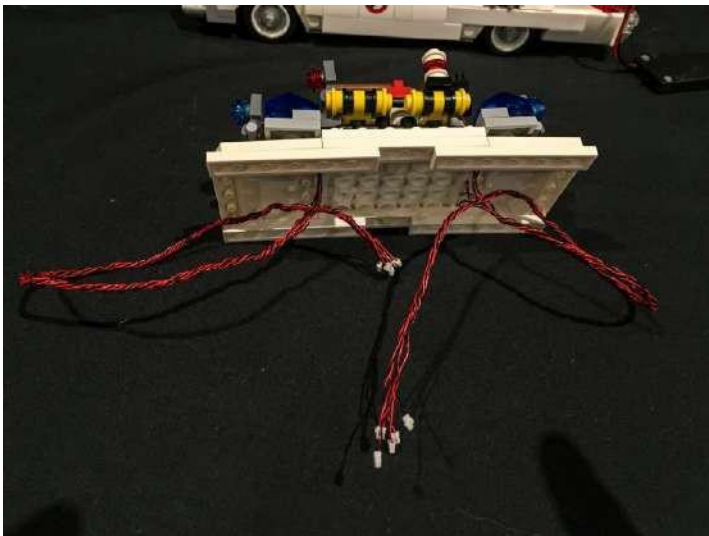


27.) Turn the roof on its side to allow you to then group all the cables from the front roof LEDs.

Twist/wind them around each other, same way we did for the rest of the light cables.



28.) Take the 2 groups of cables from the roof lights and loop them around so that we do not have too much excess cabling. Use some tape to tape the cables together to prevent them from unwinding.

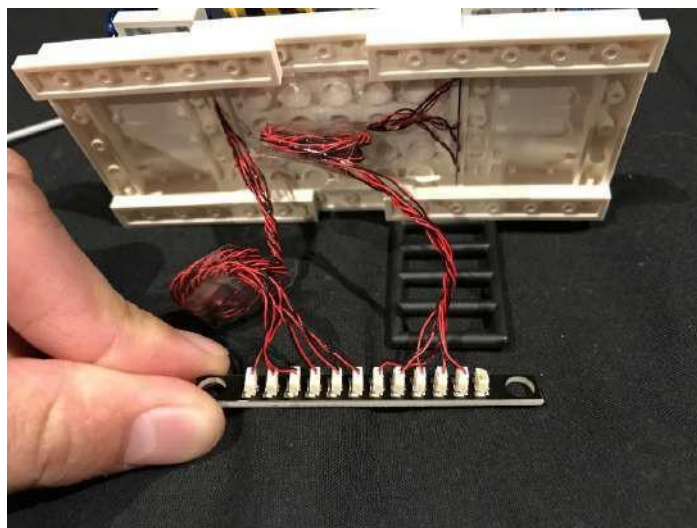


29.) Take another expansion board (expansion board#2) and connect the first group of 6 lights from the front section of the roof to the first available ports on the expansion board.

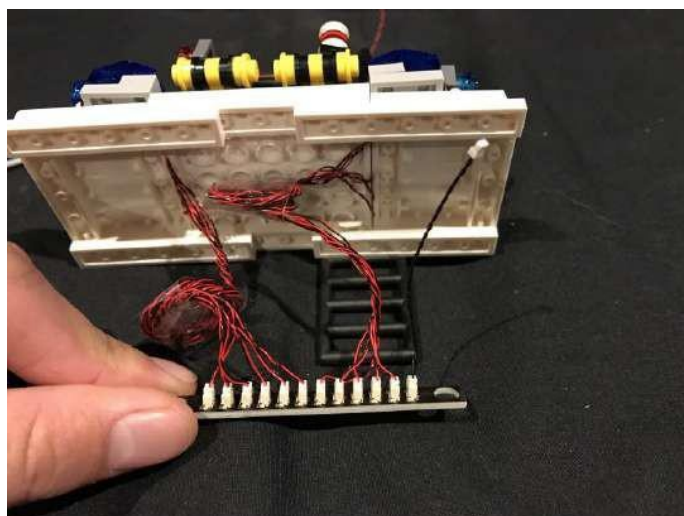




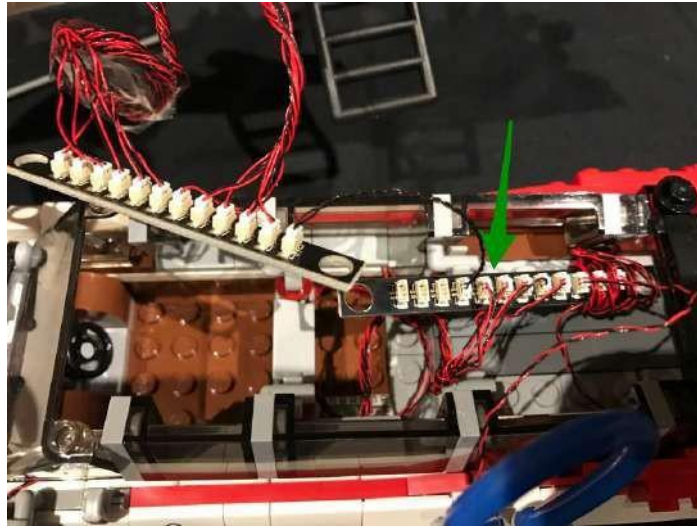
Connect the other group of lights from the back section of the roof to the next available ports on the expansion board#2.



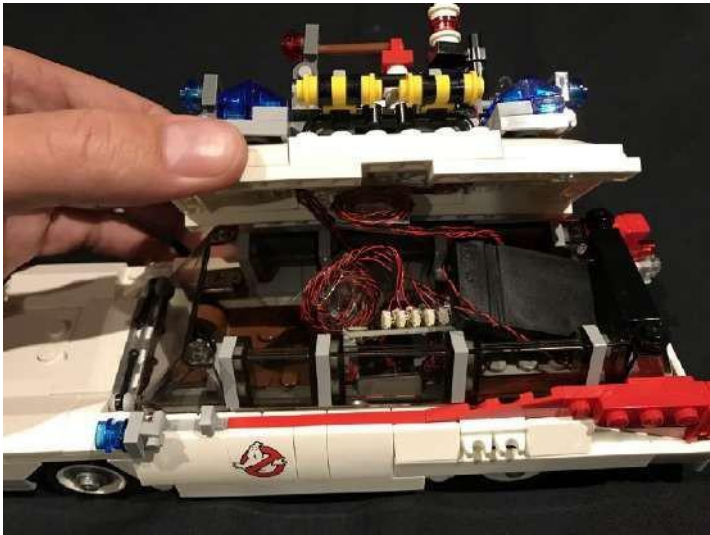
30.) Take the 5cm connecting cable from the kit and connect it to the last available port on expansion board#2.



Connect the other end of the 5cm cable to a spare port on expansion board#1.



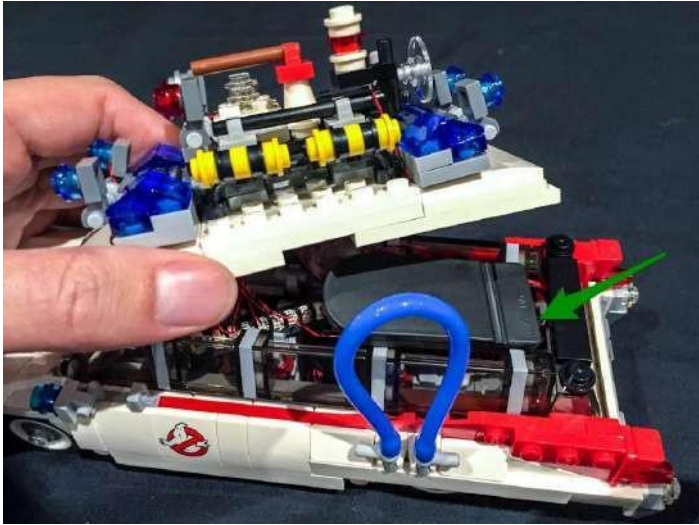
31.) Tuck all the cables down below and then re-position the battery pack so that the switch is facing toward the back. Place the battery pack over the top of all the components and then reconnect the roof section.



This now completes installation of the LED lighting kit.

To turn the lights on, simply lift up the roof section (from the back) and turn the battery pack switch to "ON".





Your Lego Ghostbusters Ecto 1 has now come “alive”!

