



Light My Bricks

Installation Instructions for Light My Bricks LED Lighting Kits

Jul 14, 2017 · 17 min read

## Light My Bricks: Volvo Wheel Loader Lighting Kit



Here is the instructions document for the LEGO Volvo Wheel Loader LED lighting kit. Please read and follow the steps carefully to ensure this lighting kit is installed properly.

If you run into any issues, please refer to the [troubleshooting guide](#).

. . .

### Package contents:

- 17x White 30cm Bit Lights
- 1x 6-Port Expansion Board
- 2x 8-Port Expansion Boards
- 1x Multi-Effects Board
- 3x 5cm Connecting Cables
- 1x AA Battery Pack

## LEGO Pieces:

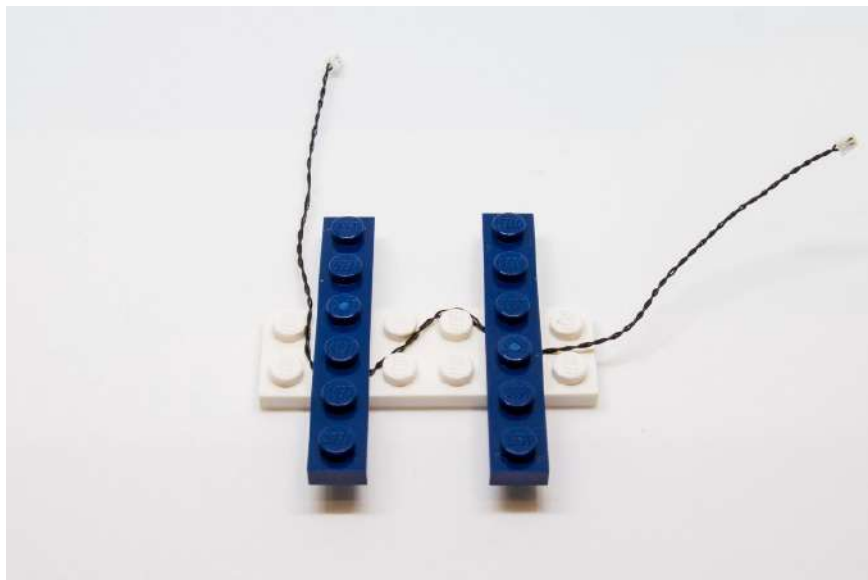
- 2x Trans Orange Round Plate 1x1

. . .

## Important things to note:

### Laying cables in between and underneath bricks

Cables can fit in between and underneath LEGO® bricks, plates, and tiles providing they are laid correctly between the LEGO® studs. Do NOT forcefully join LEGO® together around cables; instead ensure they are laying comfortably in between each stud.



*CAUTION: Forcing LEGO® to connect over a cable can result in damaging the cable and light.*

### **Connecting cable connectors to Expansion Boards**

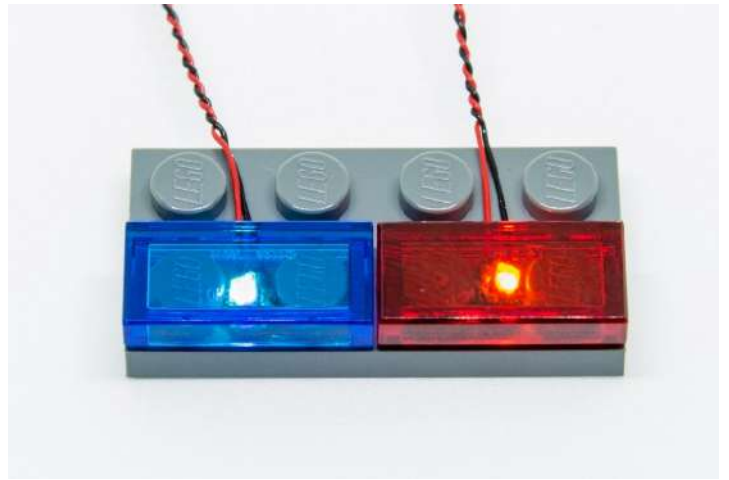
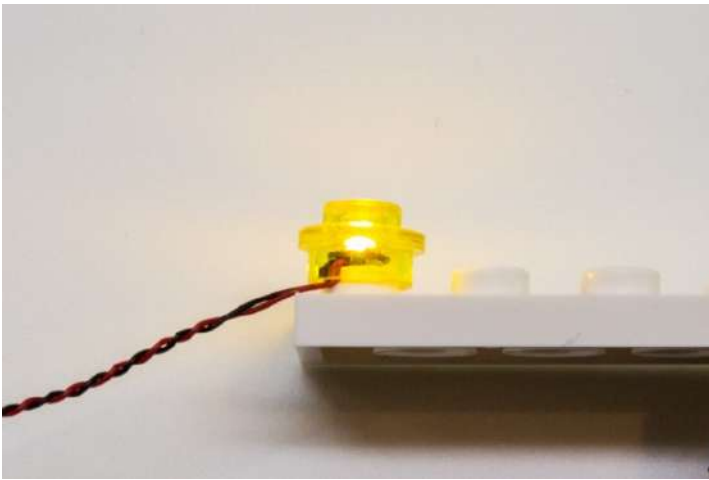
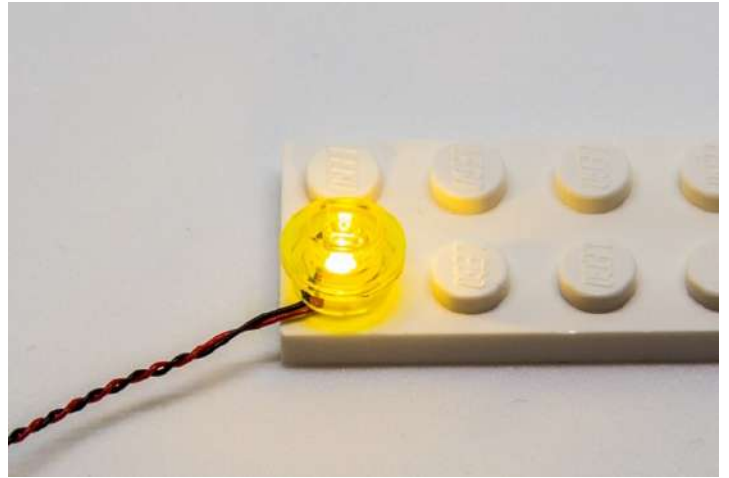
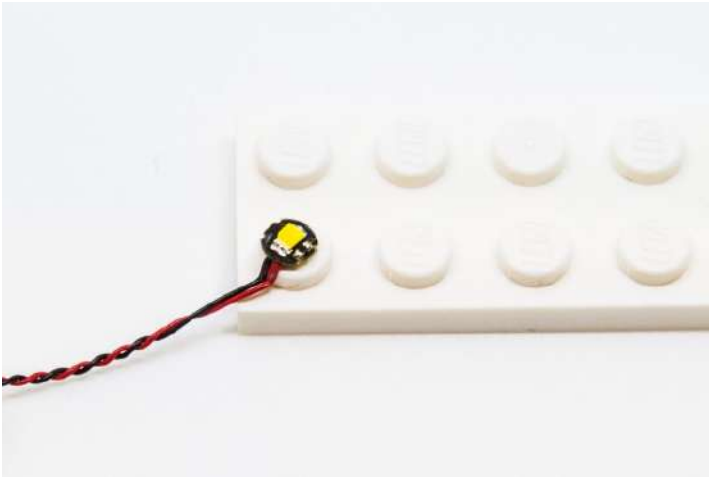
Take extra care when inserting connectors to ports of Expansion Boards. Connectors can be inserted only one way. With the expansion board facing up, look for the soldered “=” symbol on the left side of the port. The connector side with the wires exposed should be facing toward the soldered “=” symbol as you insert into the port. If a plug won't fit easily into a port connector, do not force it.



*Incorrectly inserting the connector can result in bent pins inside the port or possible overheating of the expansion board when connected.*

### **Installing Bit Lights under LEGO® bricks and plates.**

When installing Bit Lights under LEGO® pieces, ensure they are placed the correct way up (Yellow LED component exposed). You can either place them directly on top of LEGO® studs or in between.



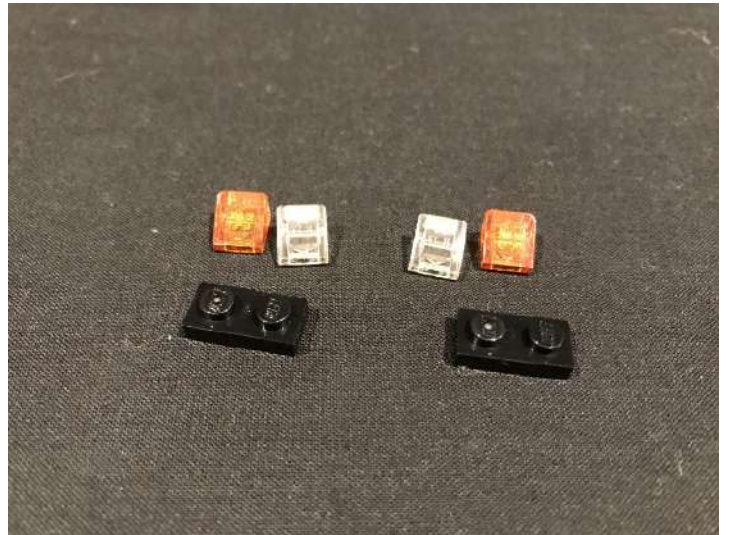
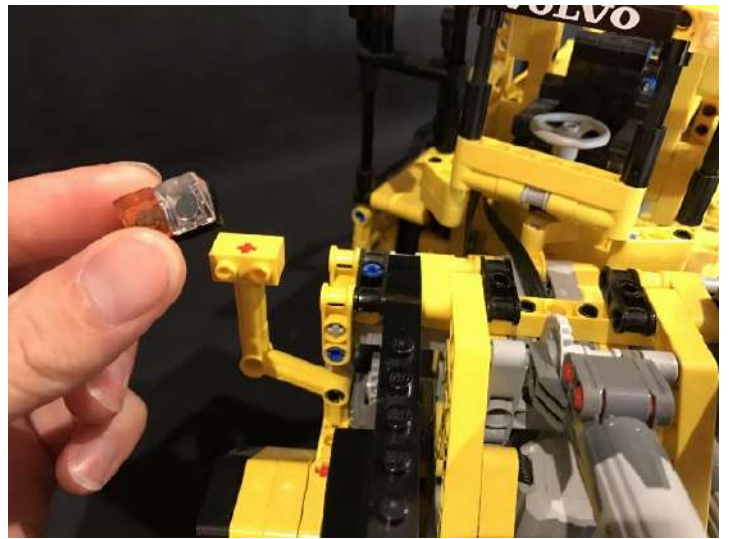
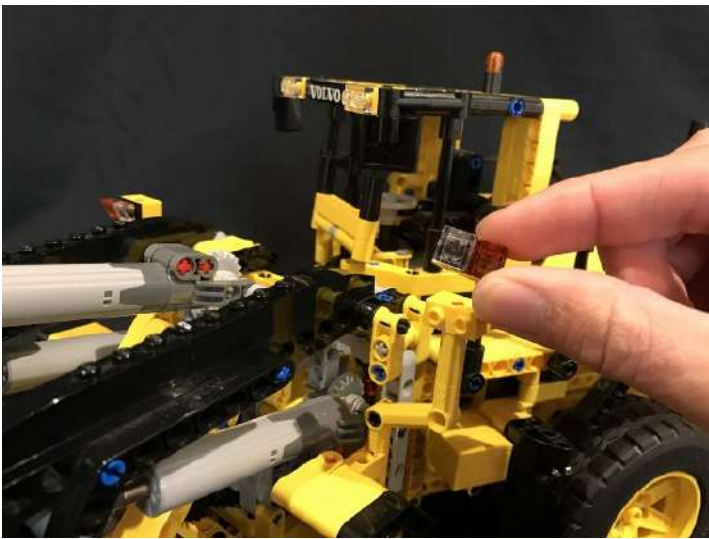
. . . .

OK, Let's Begin!

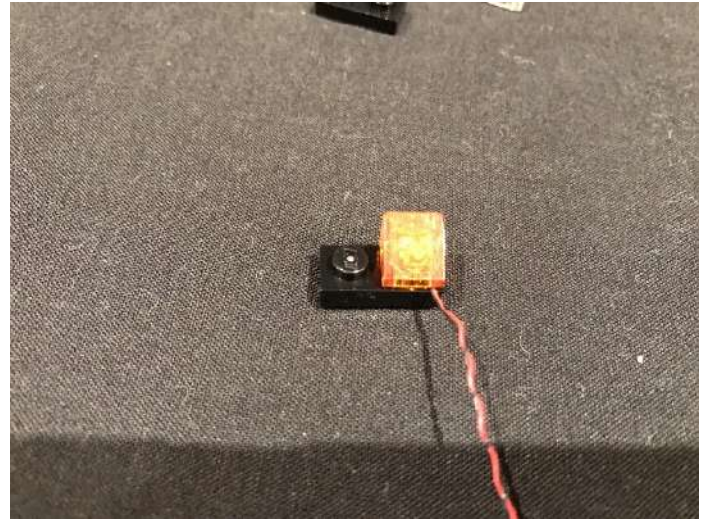
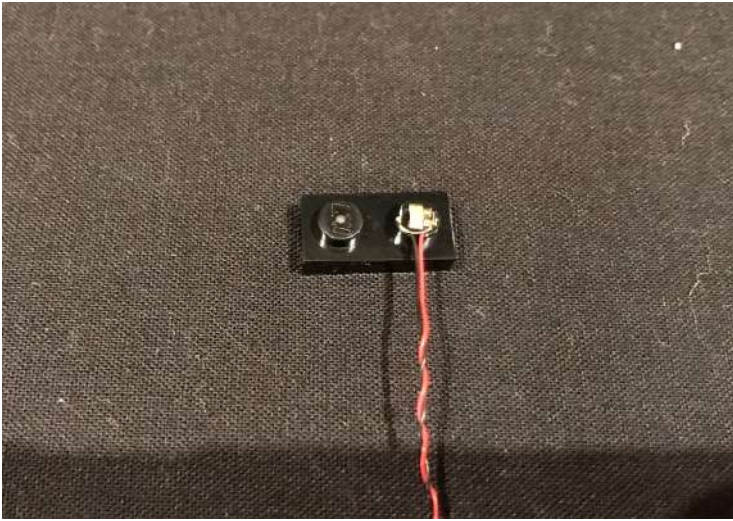
. . . .

## Instructions for installing this kit

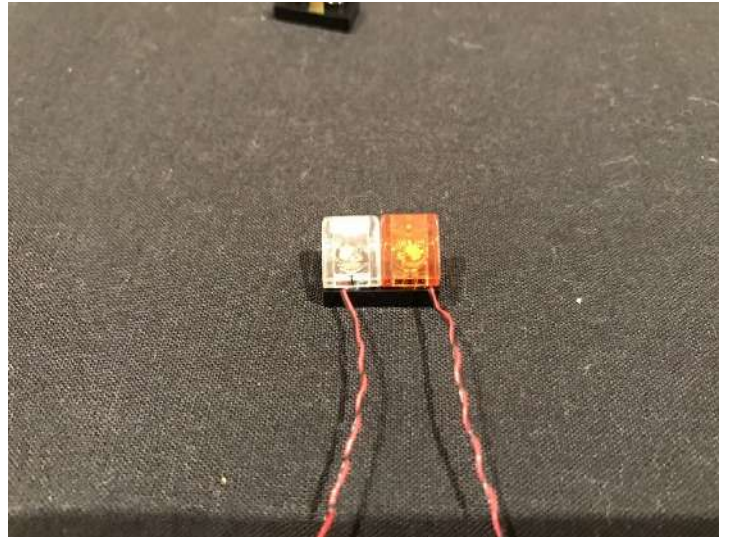
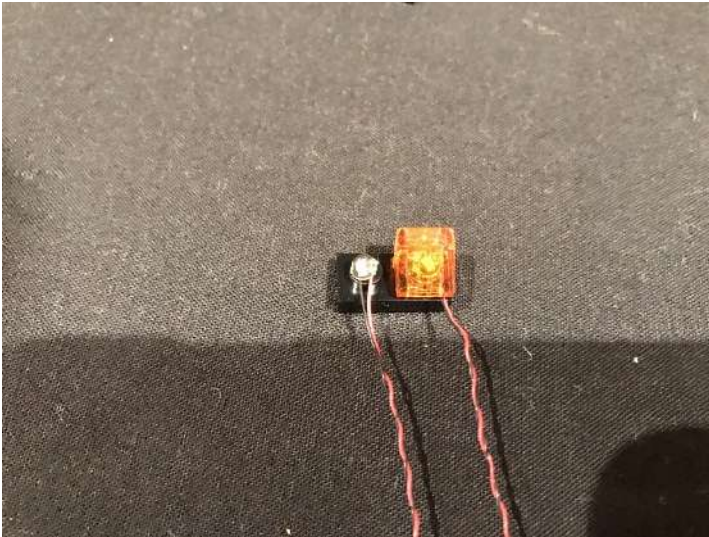
1.) We will start installing lights to the front indicators. First remove these 2 sections and disassemble pieces as per below:

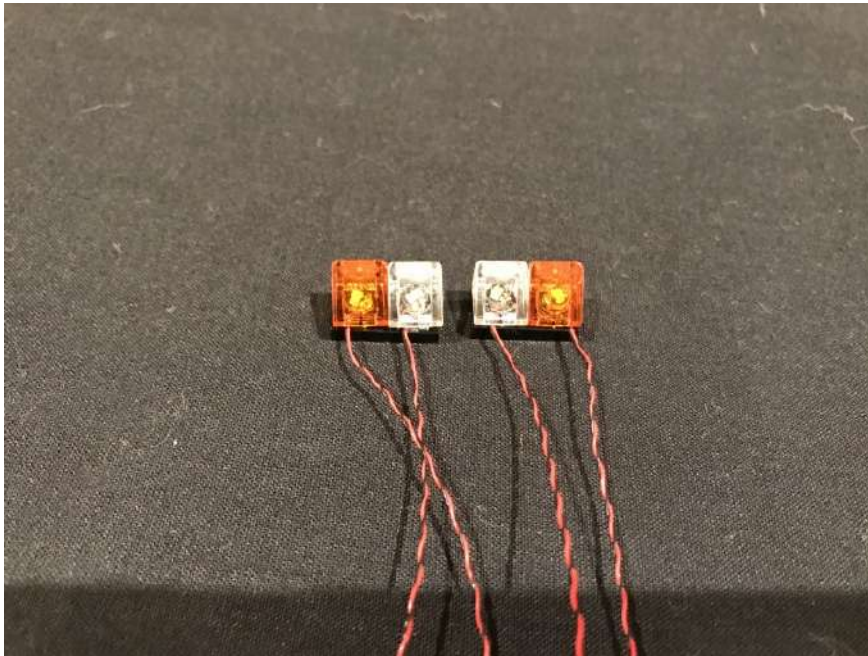


2.) Take a **White 30cm Bit Light** and then place it over the right stud of one of the black 1x2 plates. Ensure the cable for the light is facing down and then secure the light in place by reconnecting one of the triangular trans orange plates over the top.



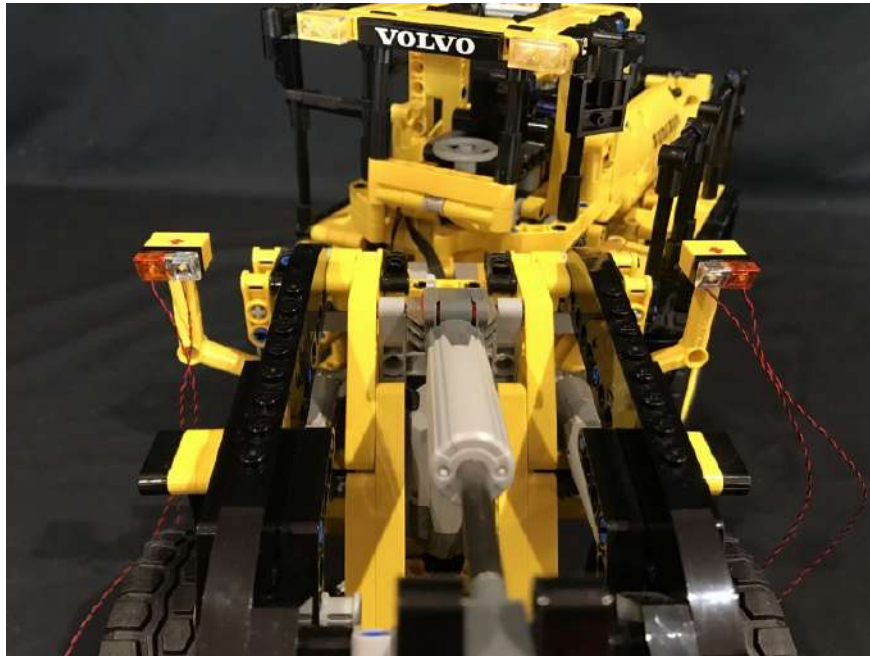
Repeat this step to install another **White 30cm Bit Light** to this section, securing the light in place by reconnecting the triangular trans clear plate. Then repeat this for the next section to install another **2x White 30cm Bit Lights**





3.) Reconnect both sections back to the vehicle ensuring the bit light cables are facing down.

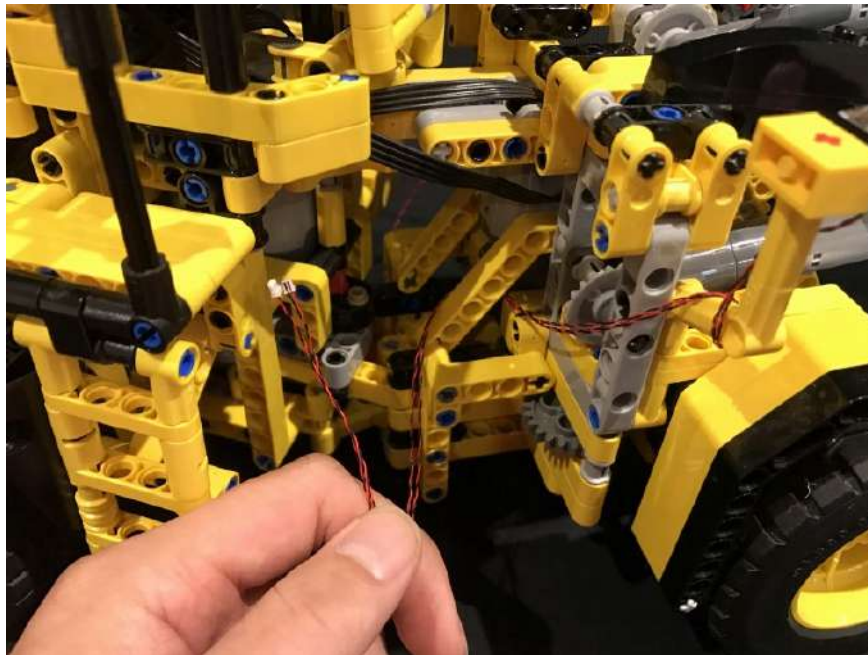
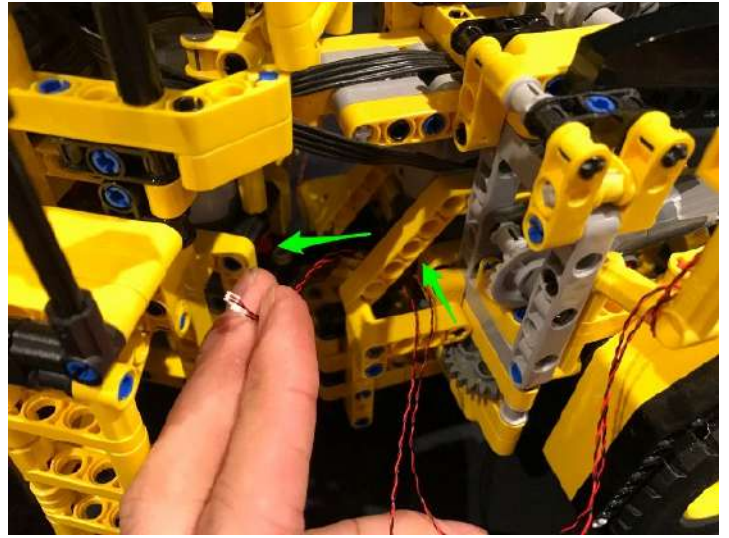
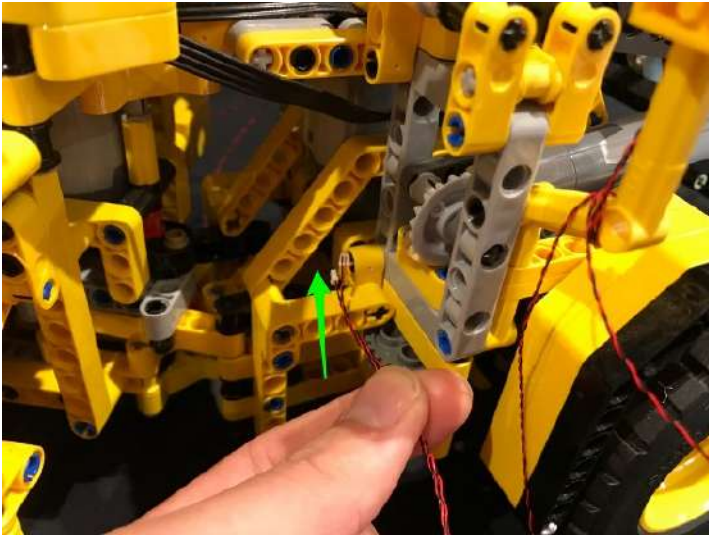




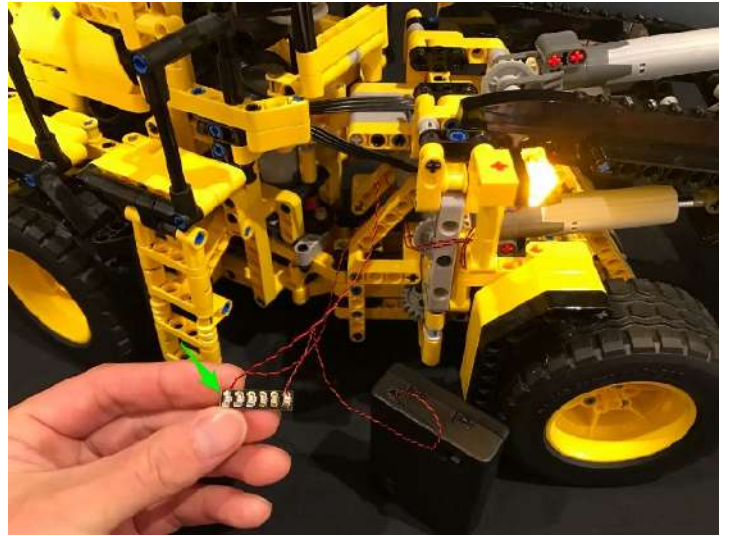
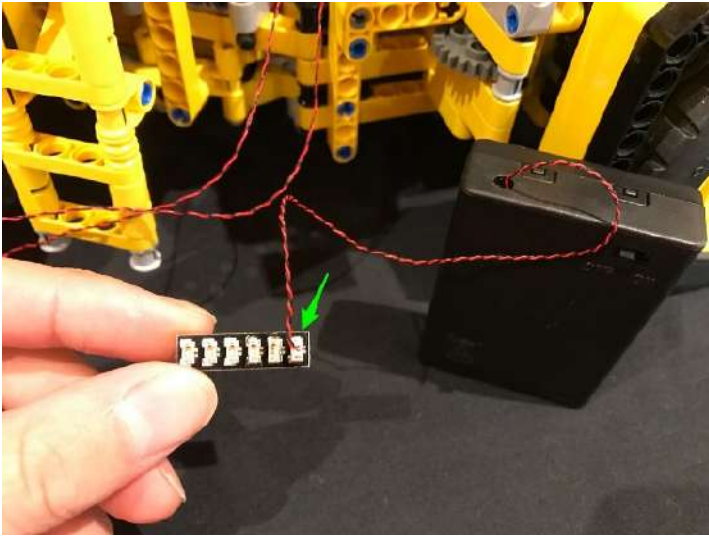
Starting with the left side of the vehicle, bring the cables together and then loop them around the light pole and then thread them around the inside section as per below







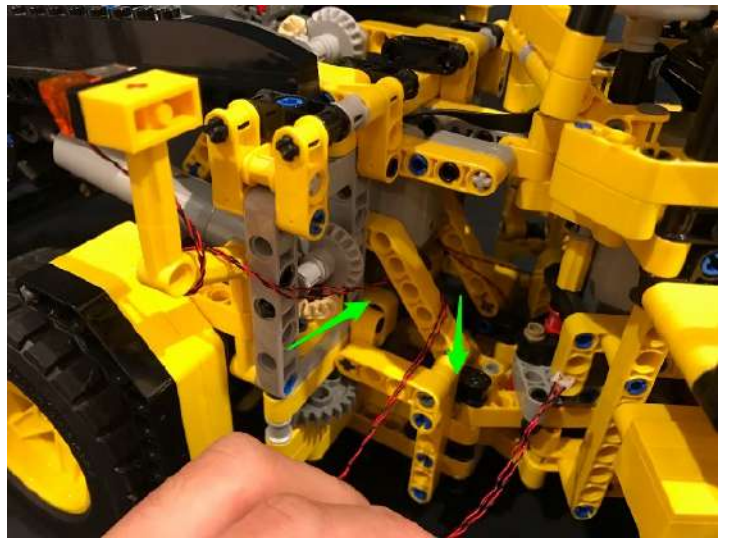
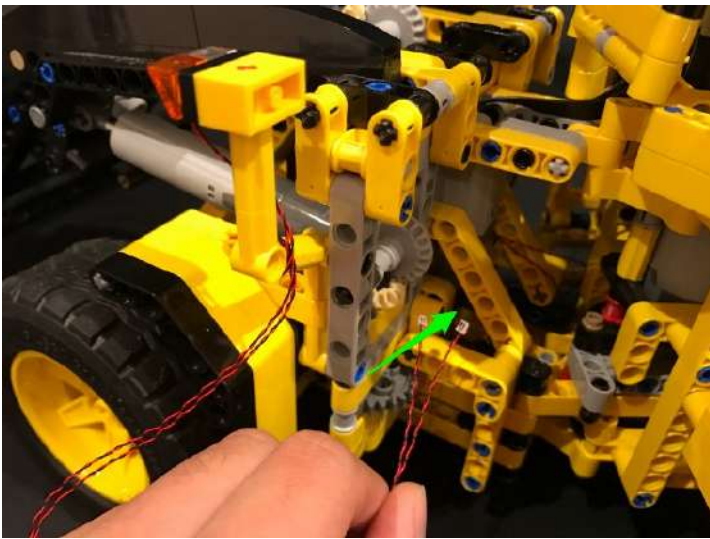
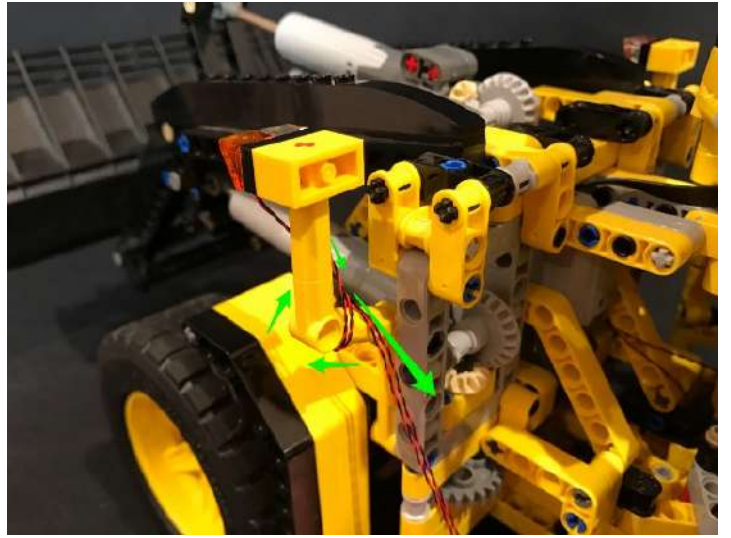
4.) Connect the Bit Light that is installed under the trans orange plate to the **6-Port Expansion Board**. To determine which cable is for the correct light, take the **AA Battery pack** and insert 3x AA batteries to it and then connect it to a spare port on the expansion board. Turn the battery pack on and verify you are connecting the correct light. e.g. if the trans clear plate lights up instead of the trans orange plate, then disconnect and connect the other cable.



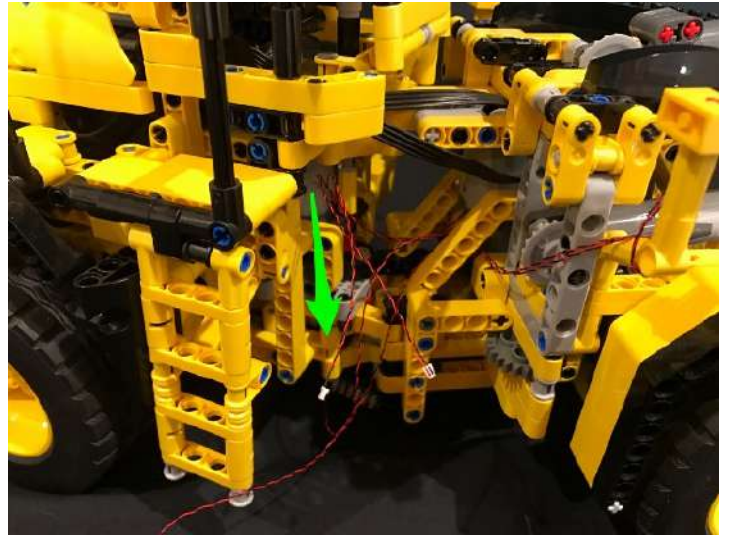
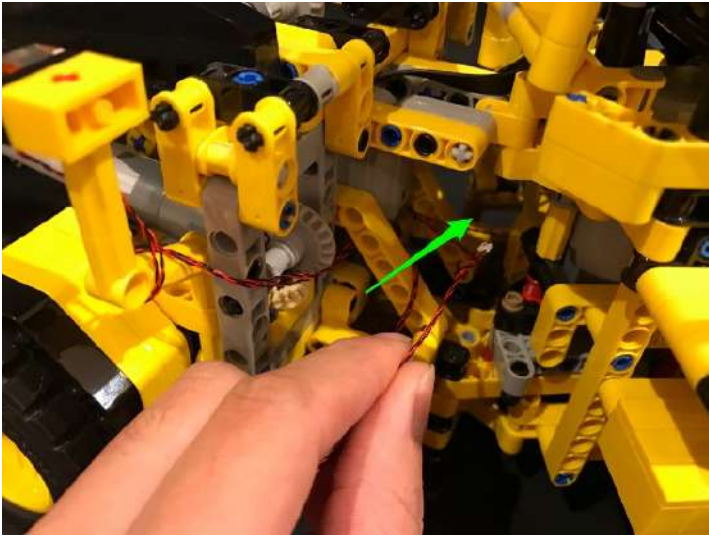
Once you have verified that you have connected the correct light to the expansion board, disconnect the battery pack and leave the other bit light cable aside.



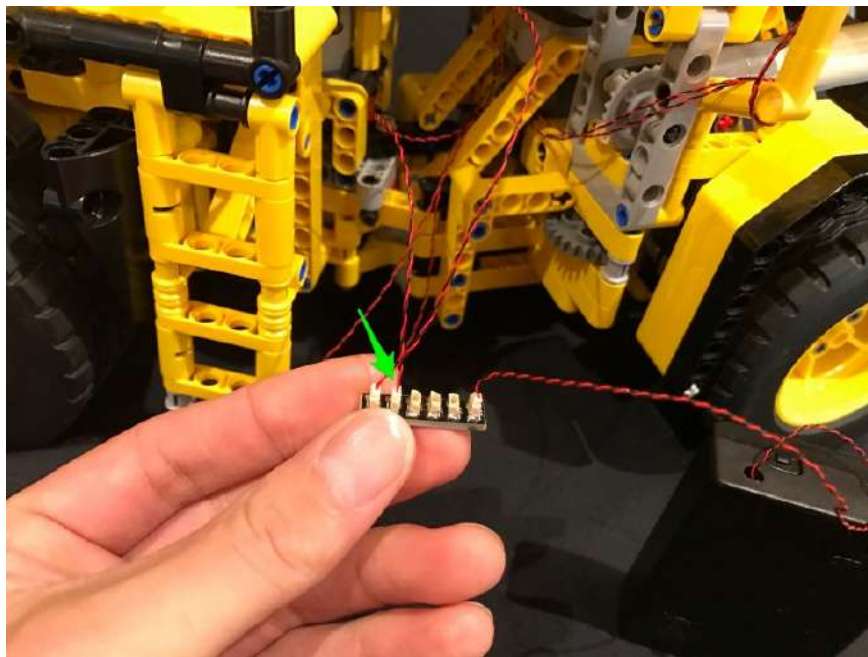
5.) Turn the vehicle around to the right side and then loop the cables from this side around the light pole and around the inner section as we did for the left side.

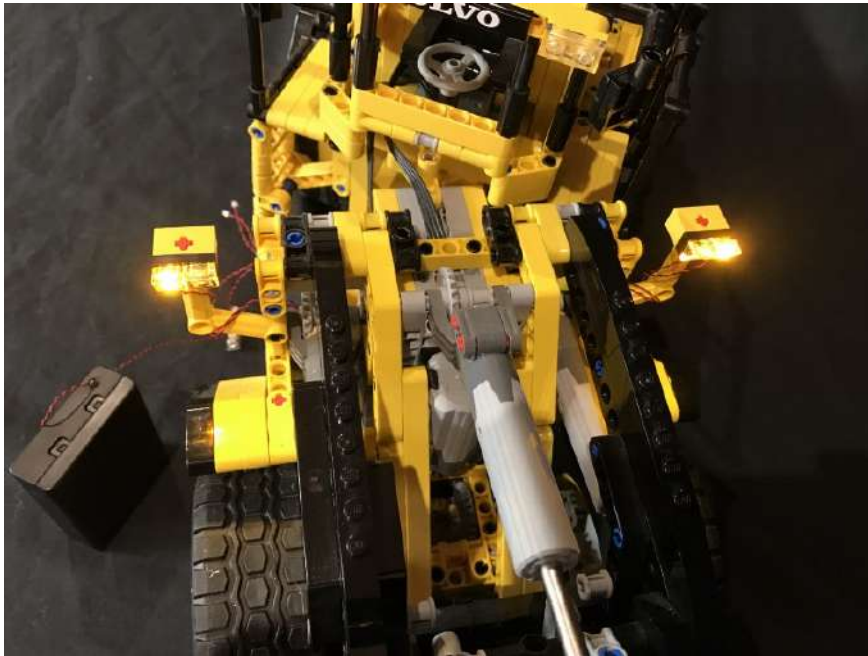


We now need to feed the cables through the middle over to the expansion board on the left side. Thread the cables back through the inner section and then pull them out from the other side as per below.



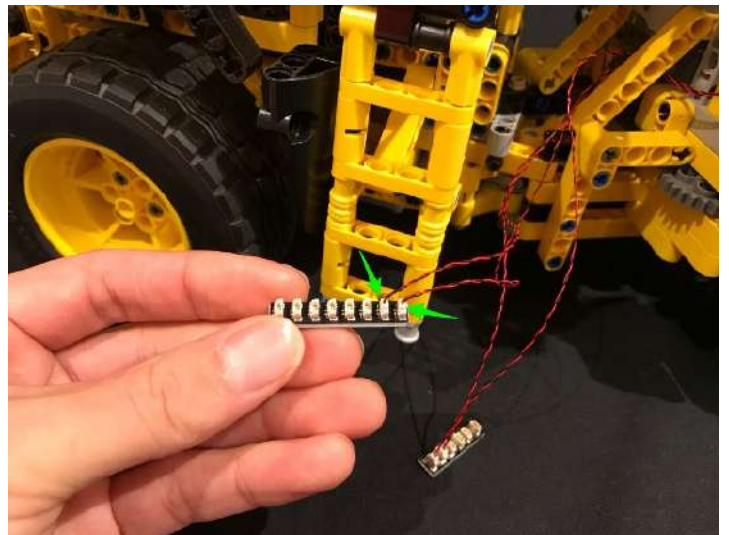
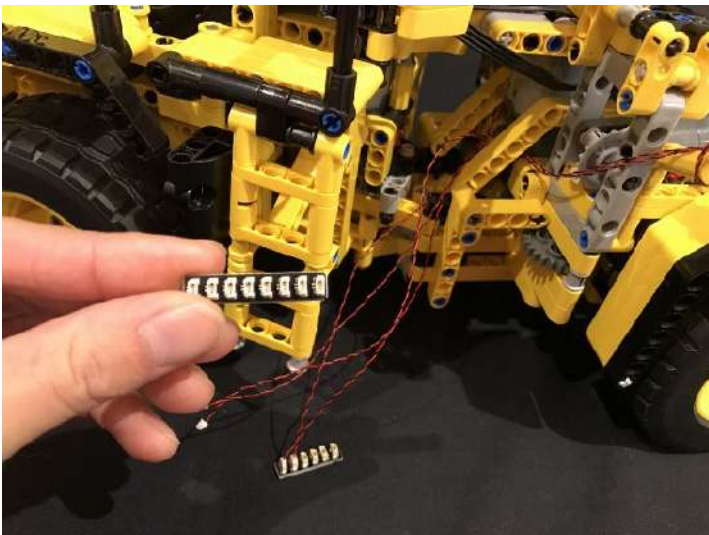
Once again, connect the correct Bit Light cable (the light underneath the trans orange plate) to the next port on the expansion board. Connect up the battery pack again to verify you have connected the correct light.

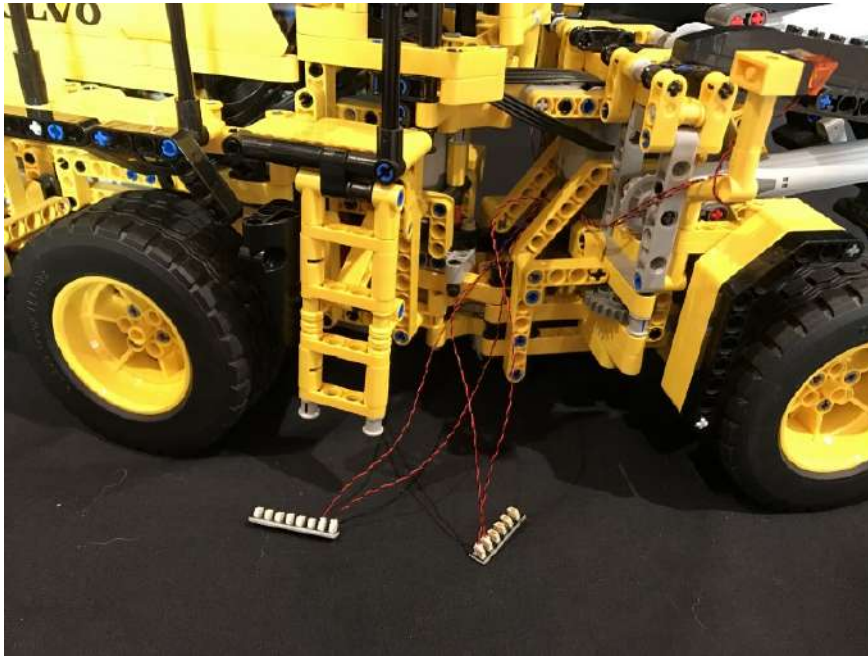




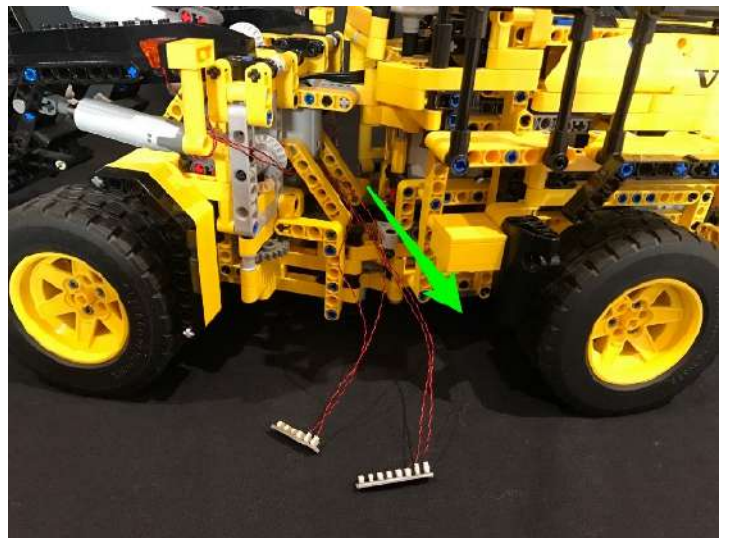
Disconnect the battery pack from the expansion board

6.) Take a **8-port Expansion Board** and connect the other 2 Bit Light cables to the first available ports.

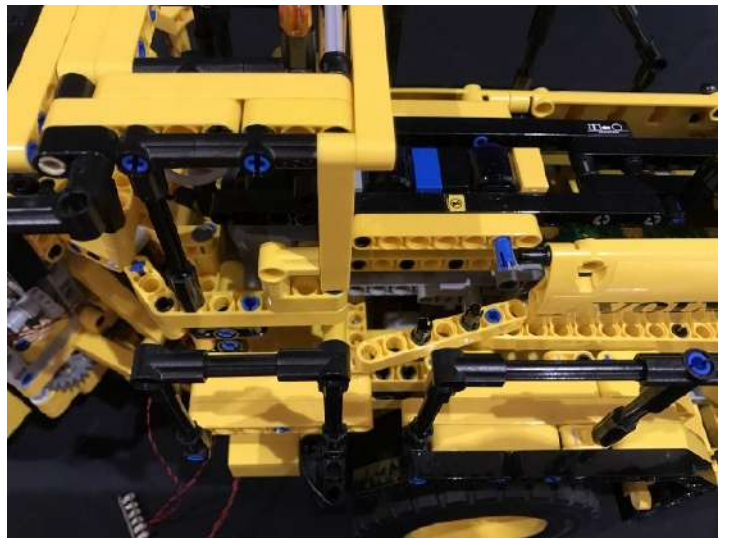




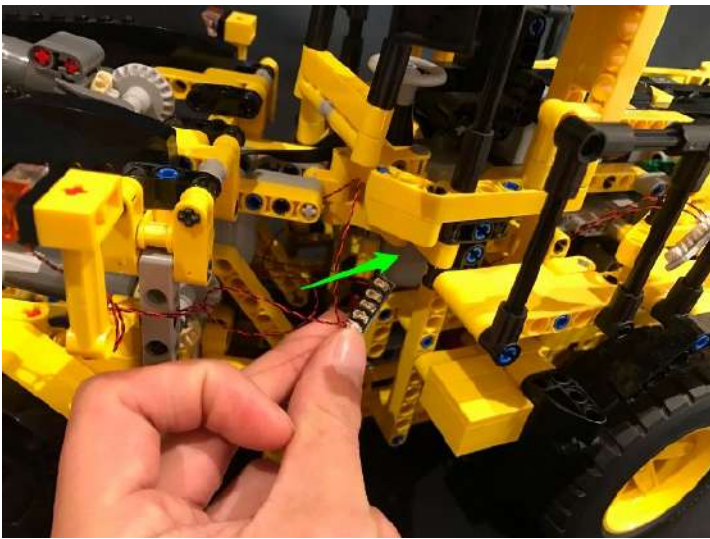
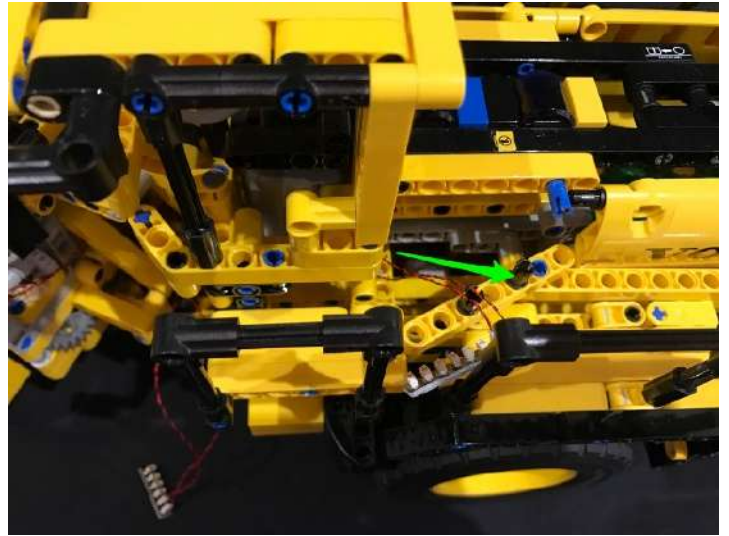
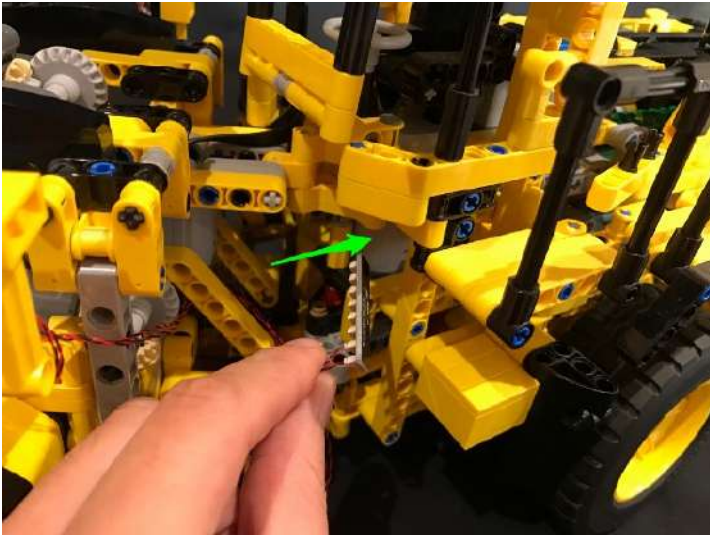
Thread both expansion boards and cables back through the inner section and then pull them out from the other side of the vehicle and then set aside.



7.) Disconnect the following section towards the back of the vehicle to give us access to the inside.

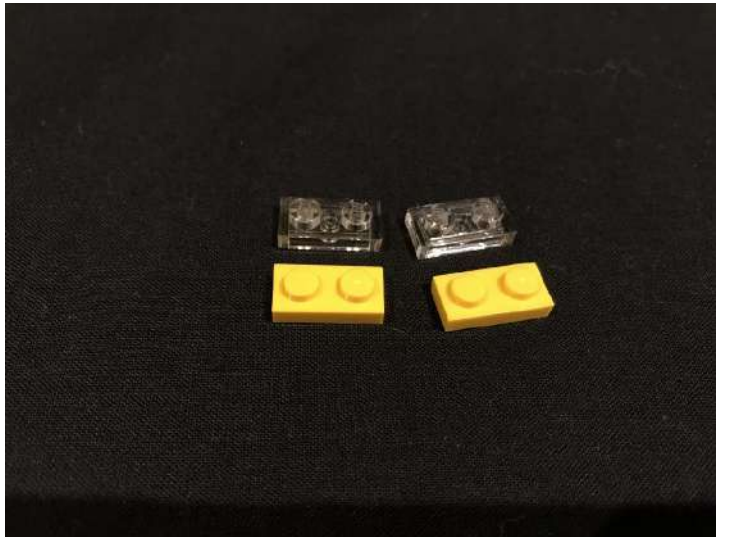
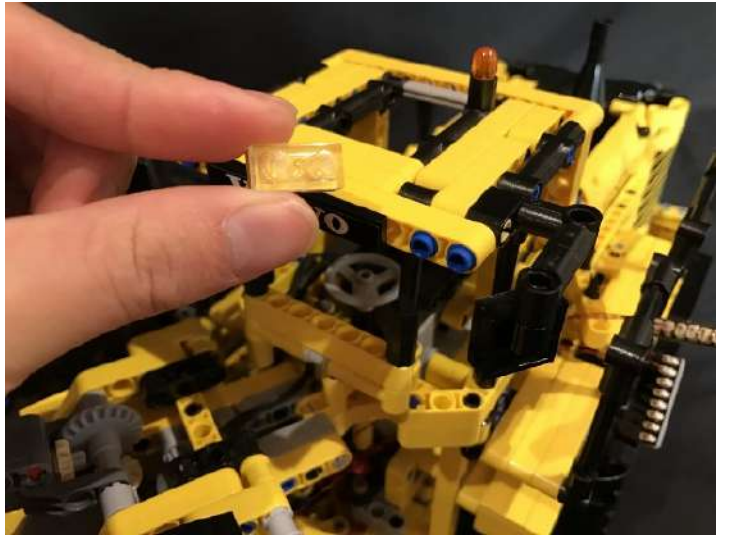
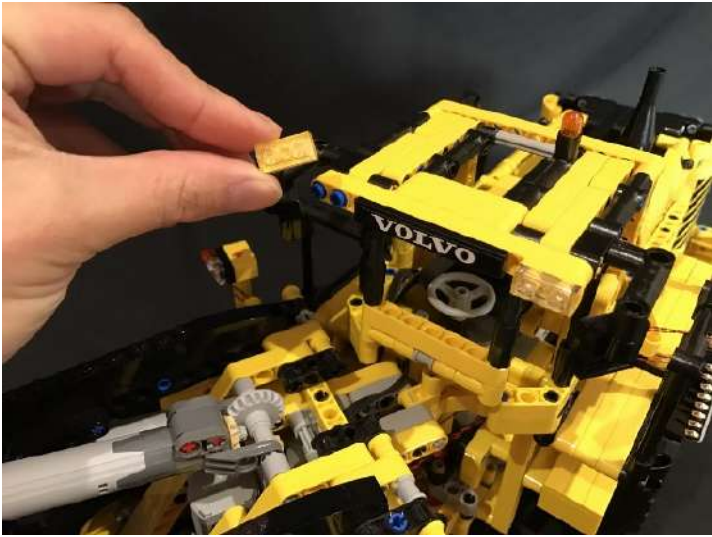
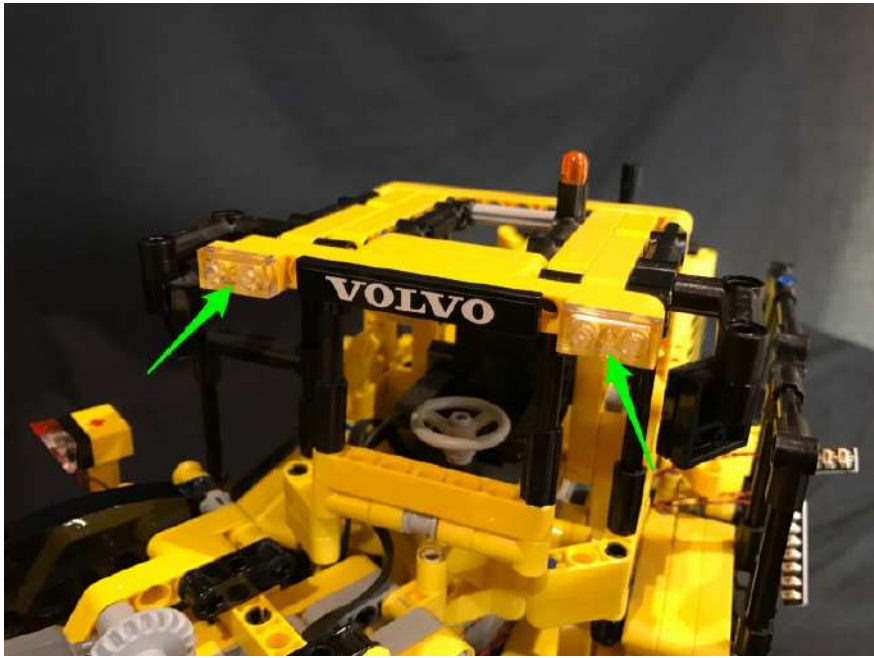


Thread both expansion boards one at a time through the inside of the vehicle and then out through the section where we removed pieces in the previous step.

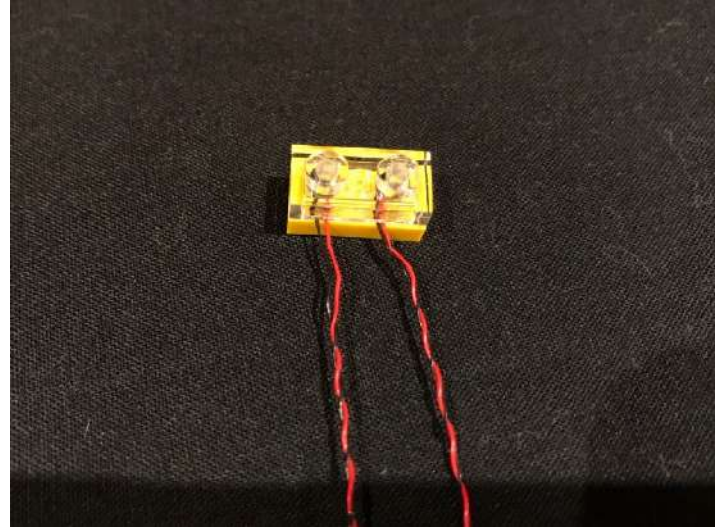
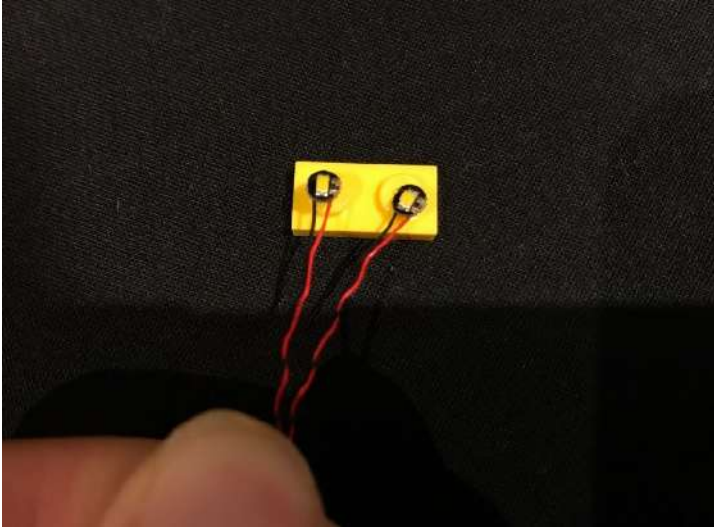


8.) We will now install lights to the top headlights. First disconnect the 2 sections and then disassemble pieces as per below

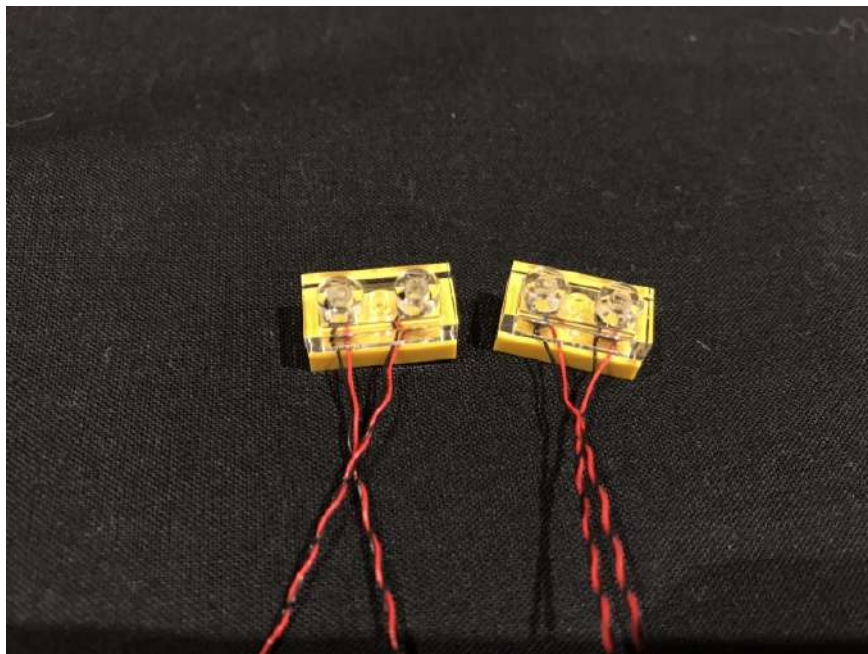




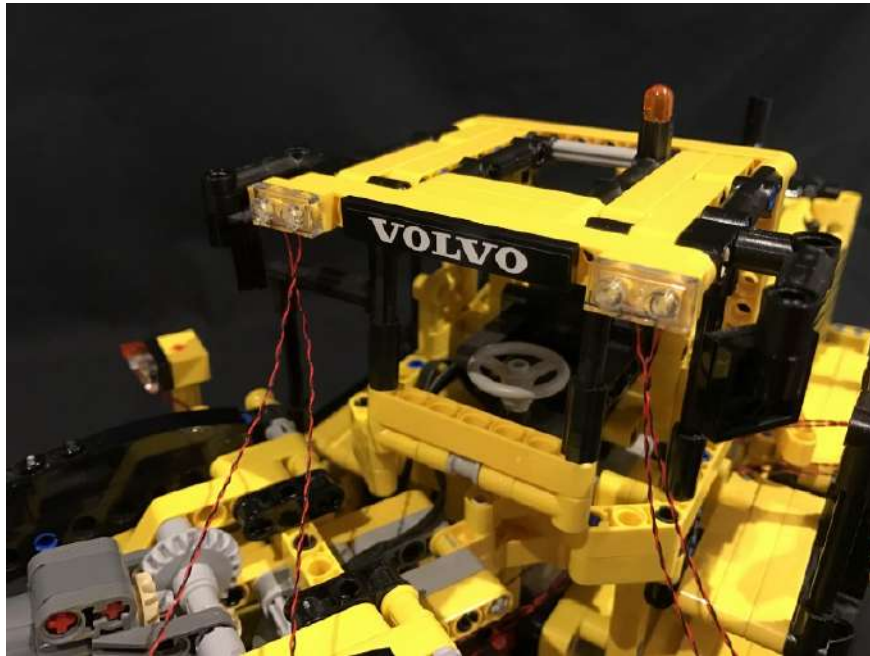
Take **2x White 30cm Bit Lights** and then place them together directly over the studs on the yellow 1x2 plate ensuring cables are facing down. While holding both lights over studs below, secure them in place by reconnecting the trans clear 1x2 plate over the top.



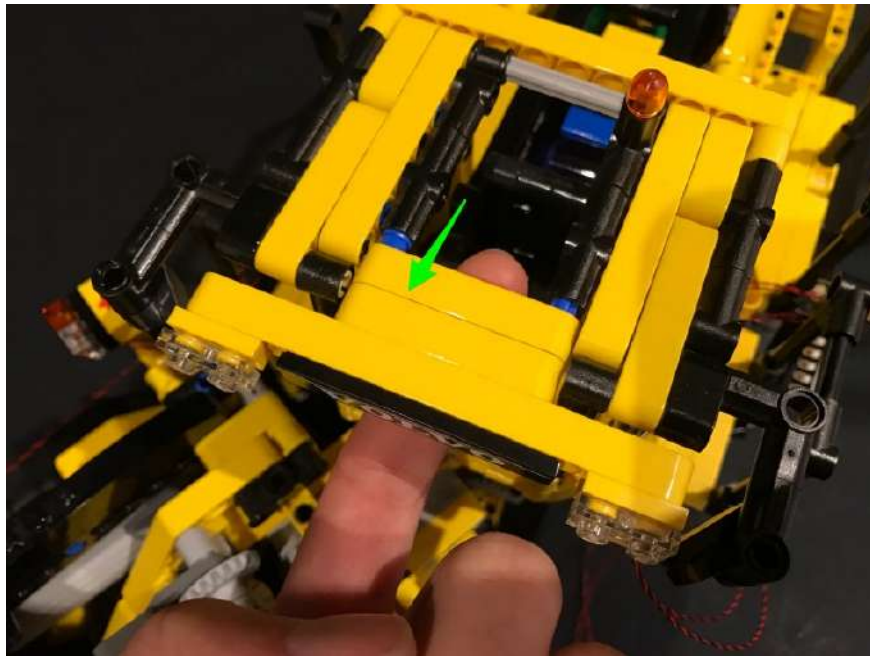
Repeat this process to install another **2x White 30cm Bit Lights** to the other headlight section.

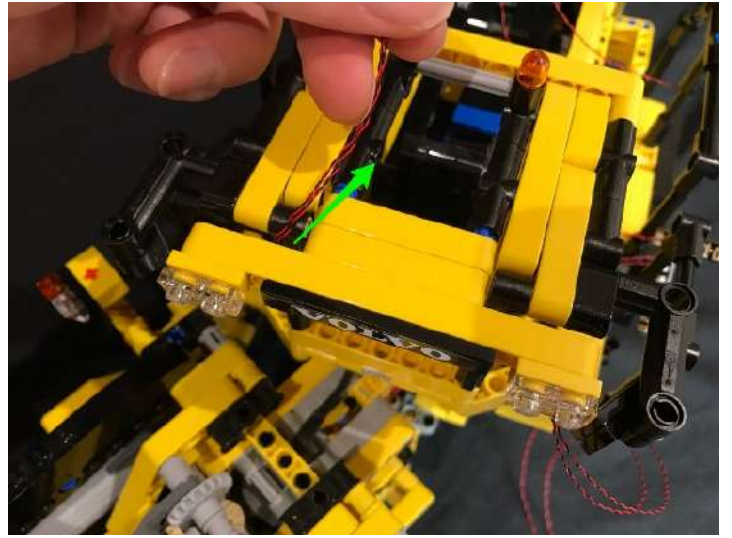
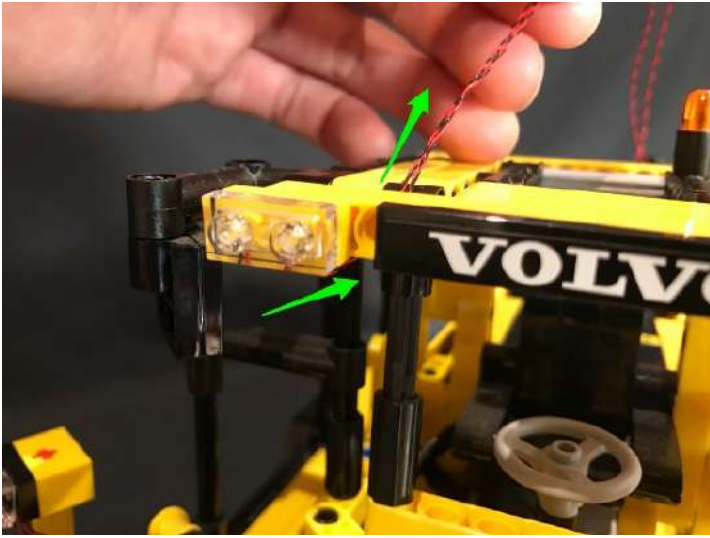


Reconnect both sections back to the front of the vehicle ensuring the cables are facing down.

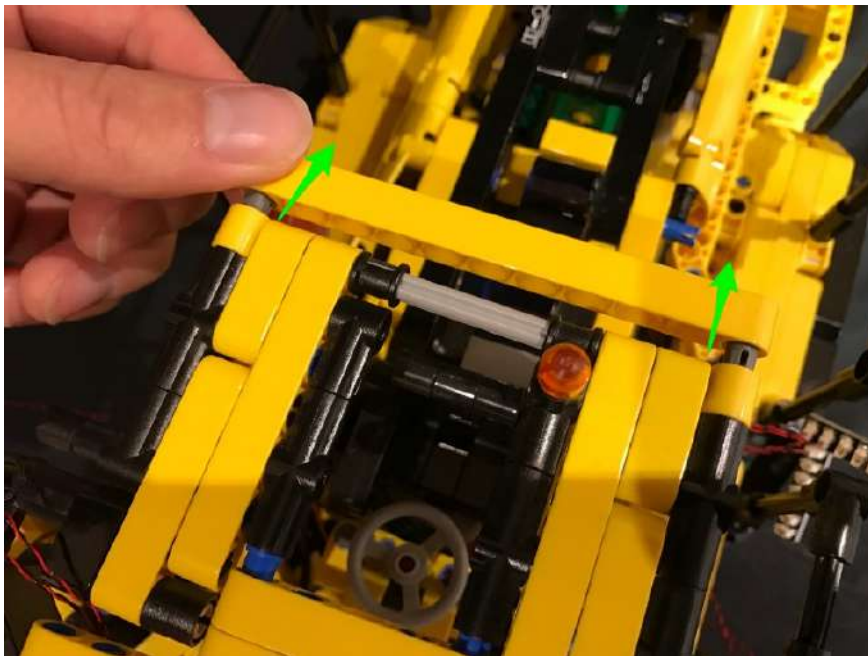


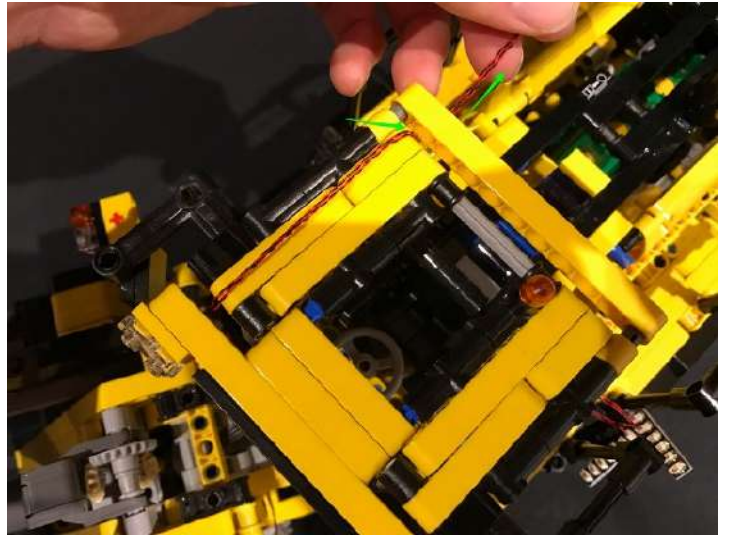
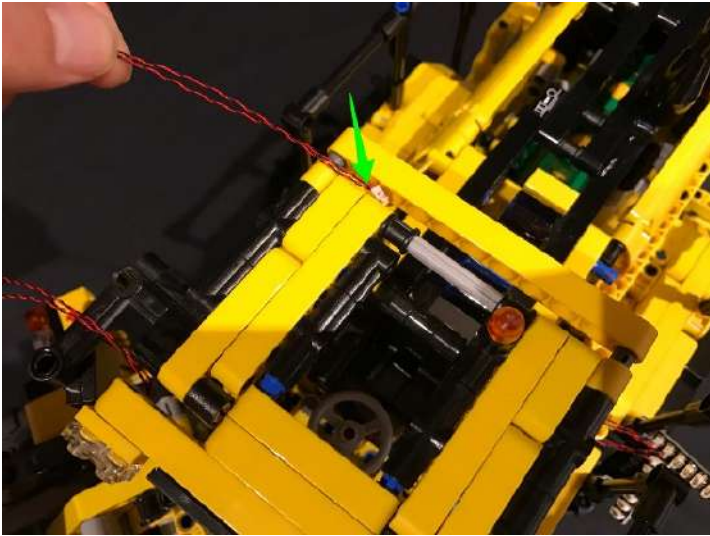
9.) Pull the following section out slightly and then thread the cables on the left up through the spacing we just created. Pull the cables across the top and toward the back of the vehicle.



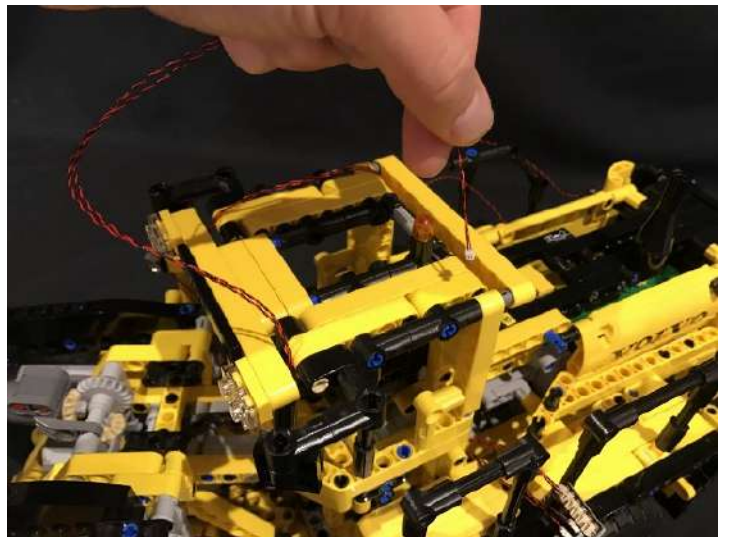
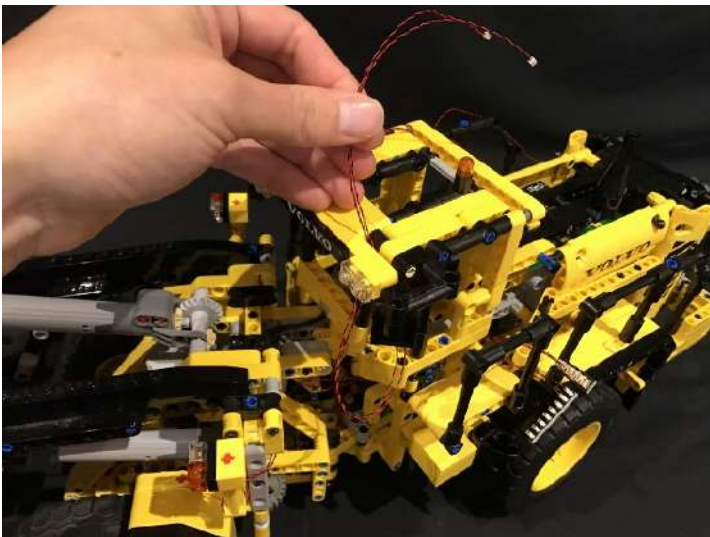


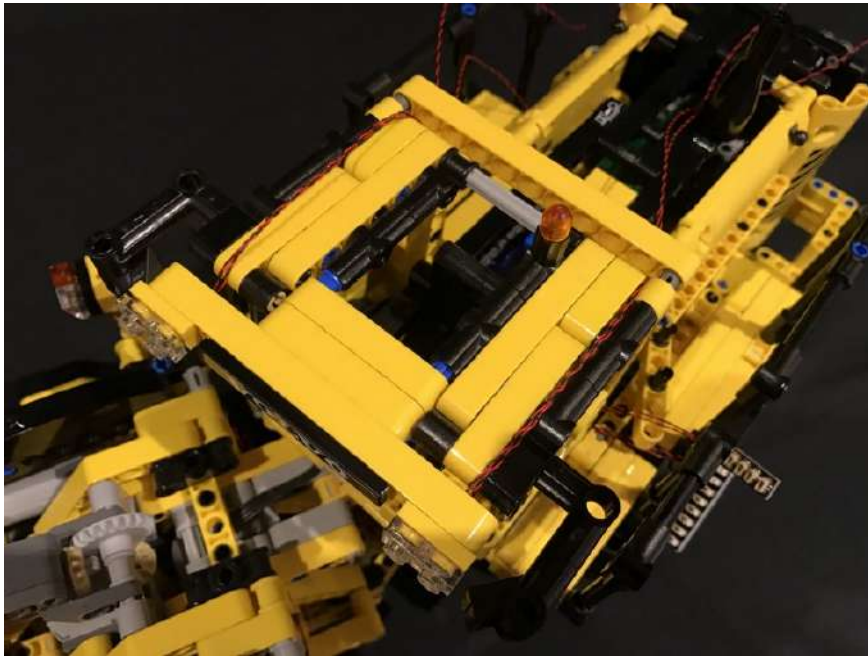
Pull out the back section slightly out as per below and then thread the cables down through the spacing we just created



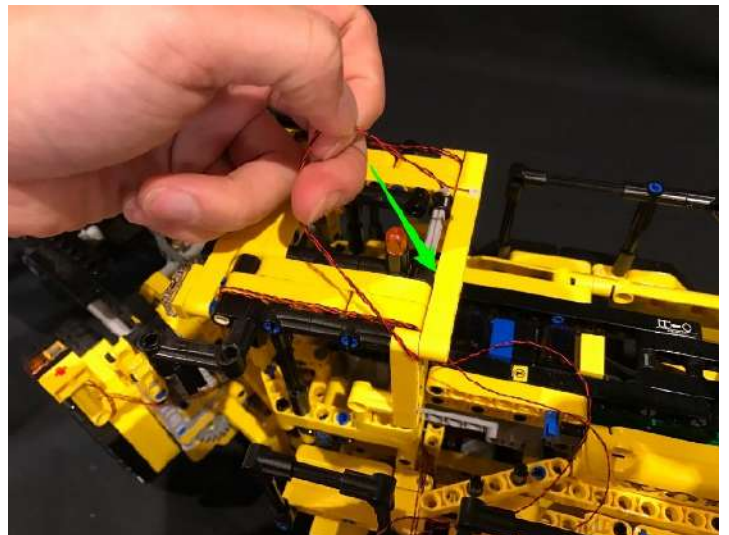
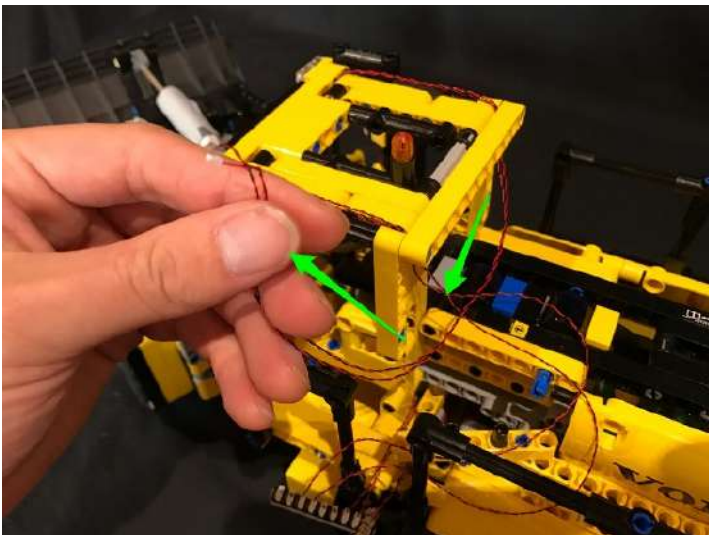


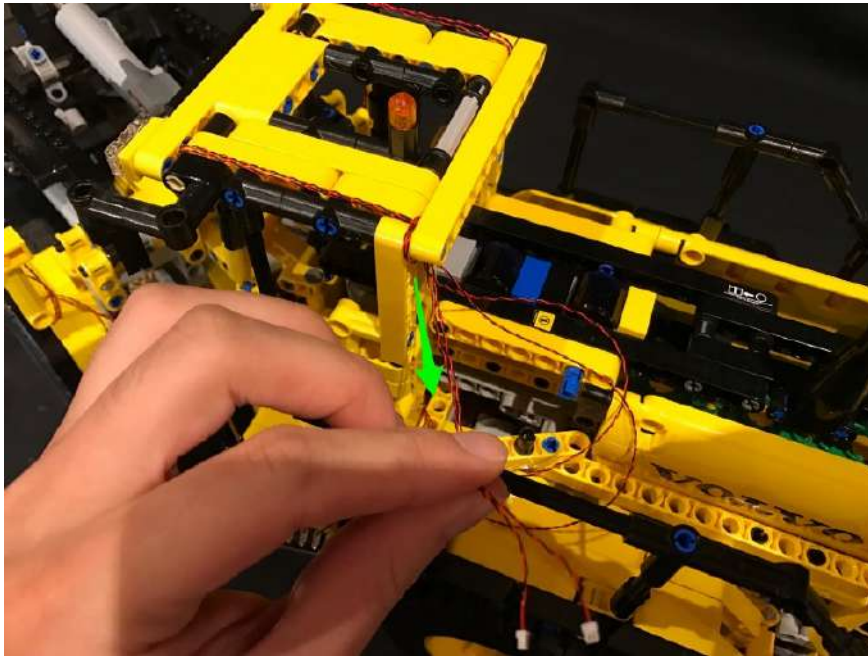
Repeat this process for the cables on the right side



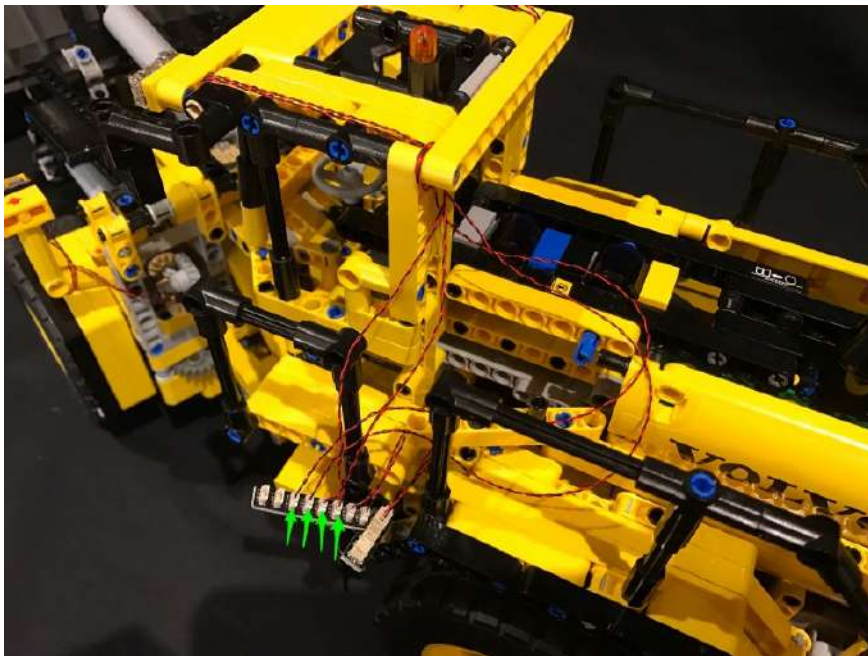


10.) Take the right 2 cables and then pull them underneath towards the left then loop them around the top left frame and then thread the cables down through in between pieces. Pull the cables down from the inside toward the left.

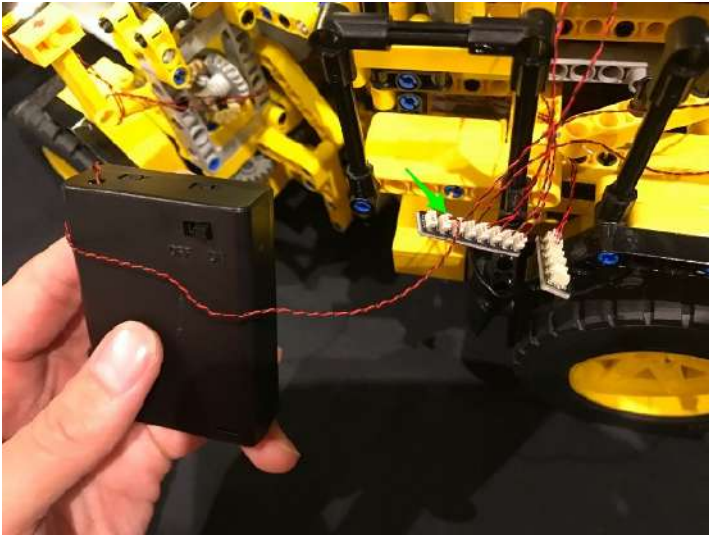




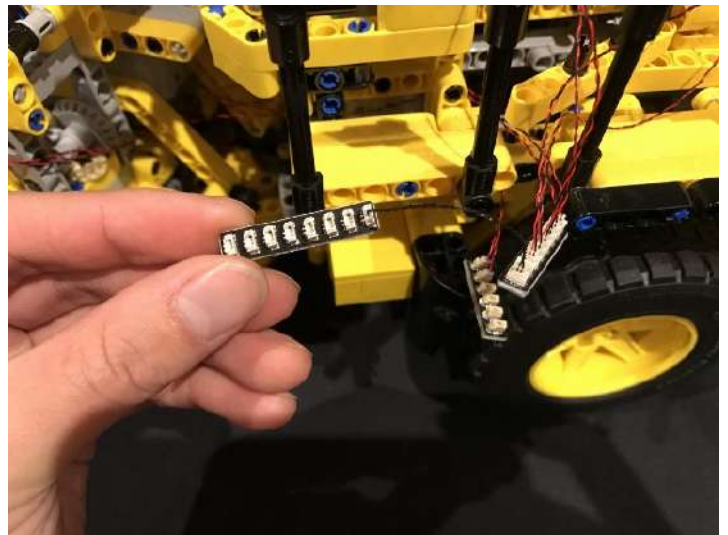
Thread all 4 cables from the top headlights into the next available ports on the 8-port expansion board below.



Test the headlights and trans clear indicators on the front by connecting the Battery Pack to a spare port on the 8-port expansion and verify they are working OK.

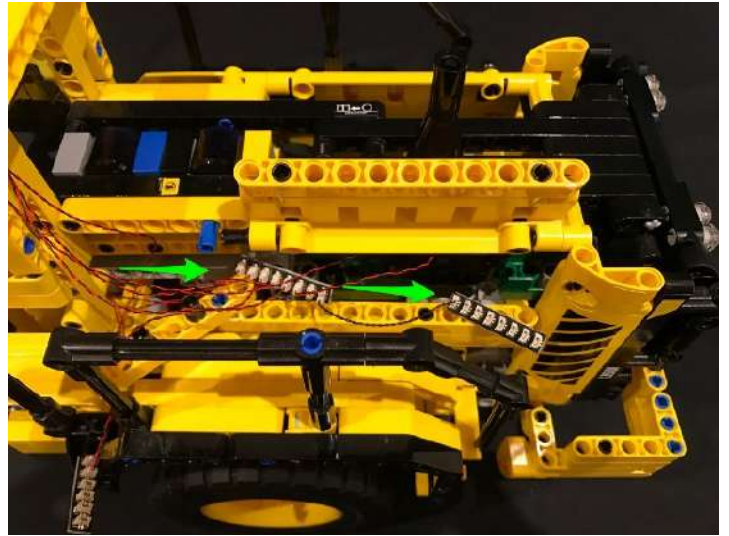
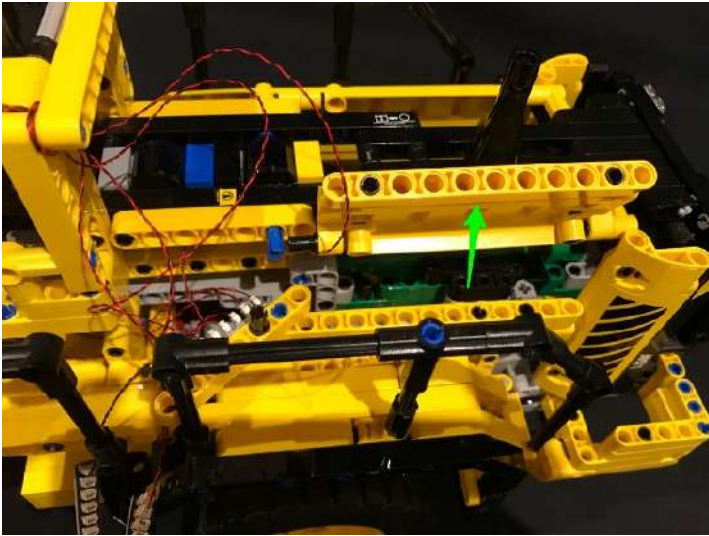


11.) Remove the AA battery pack and connect a **5cm Connecting Cable** to the 8-port expansion board. Connect the other end of the 5cm cable to another **8-Port Expansion board**.

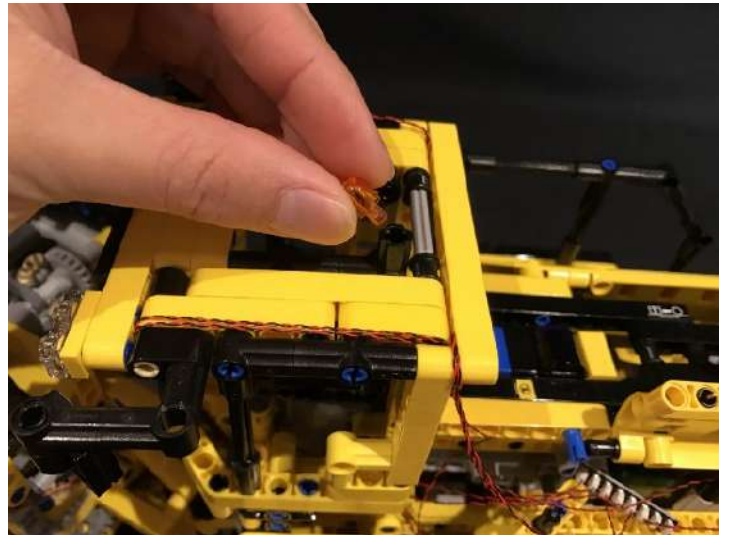


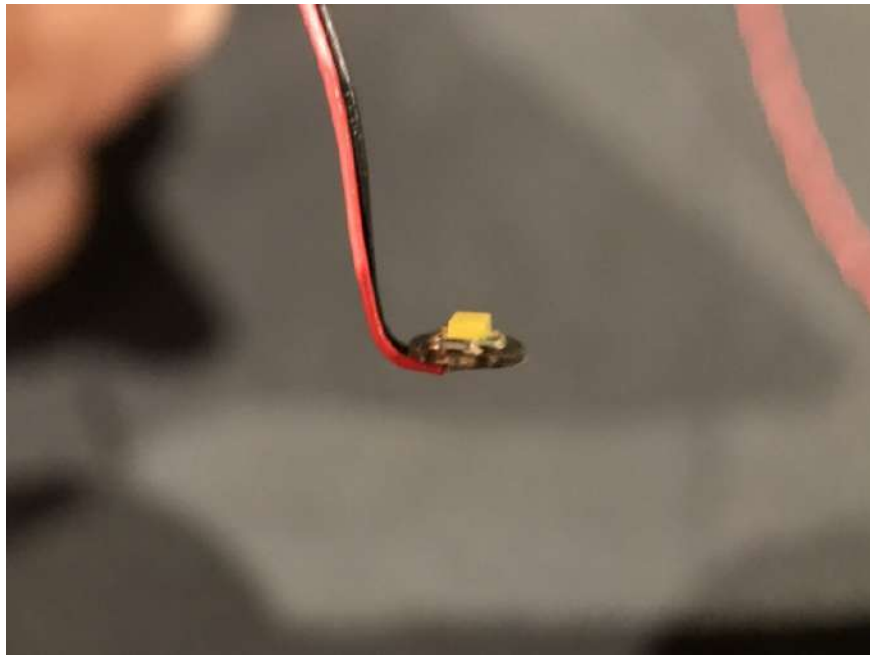
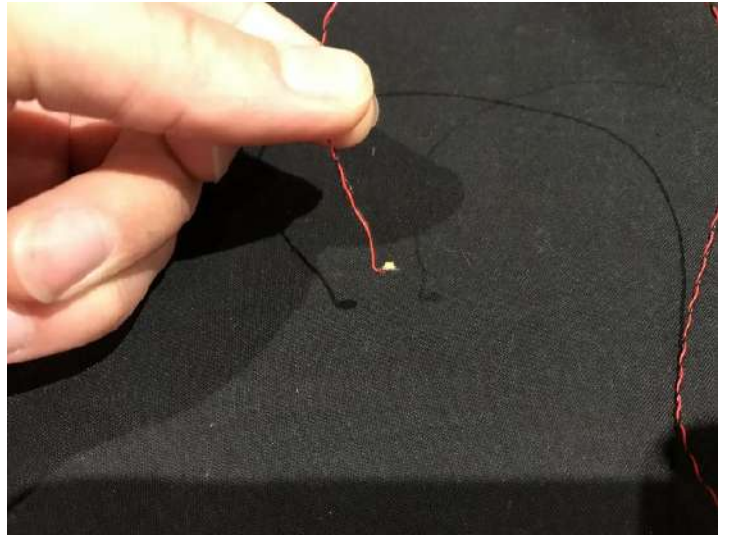
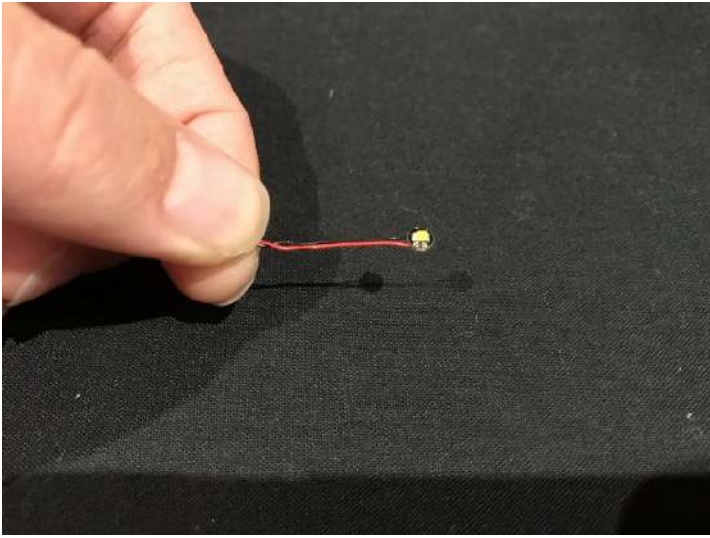
Lift up the panel on the right (volvo sign) and then bring the 2x 8-port expansion boards over to this section, leaving the 6-port expansion board on the left.



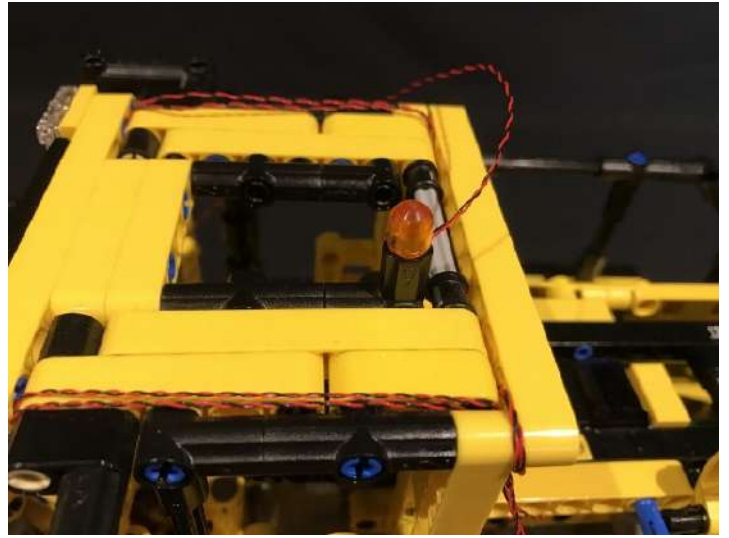
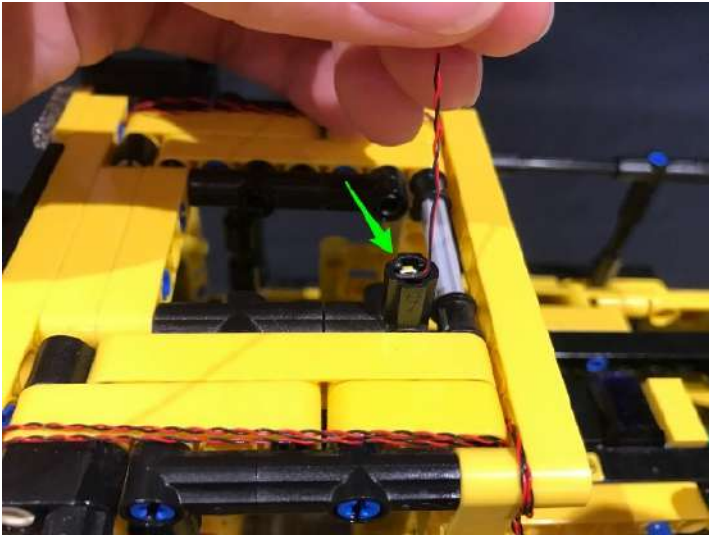


12.) We will now light up the emergency light on the top of the vehicle.  
First remove this LEGO piece and then take a **White 30cm Bit Light**  
and then bend the cable up in a 90 degree angle.

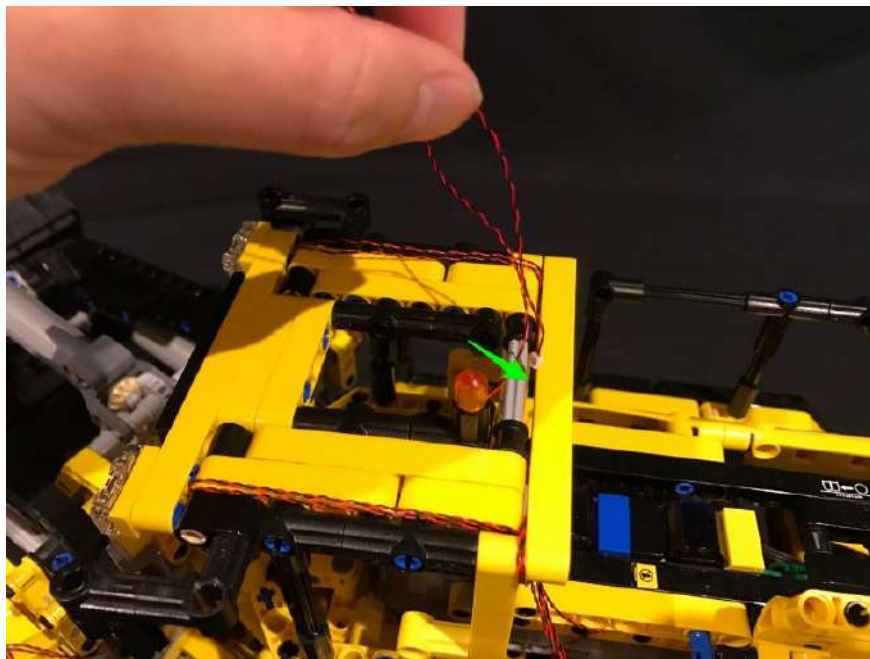




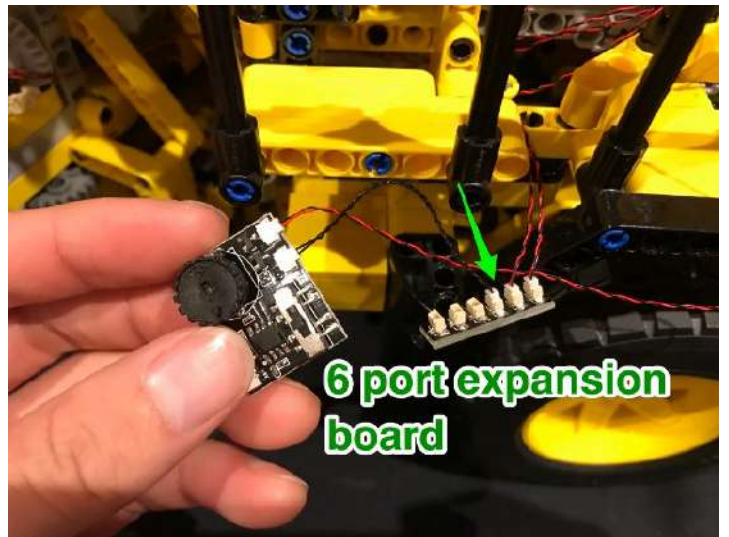
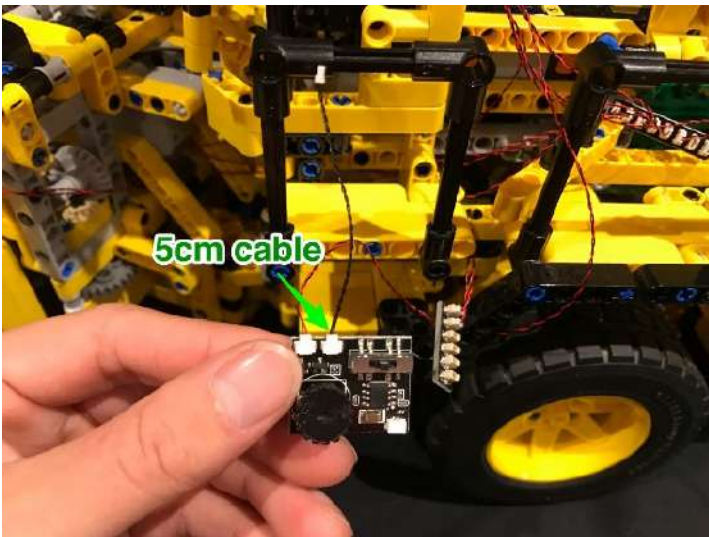
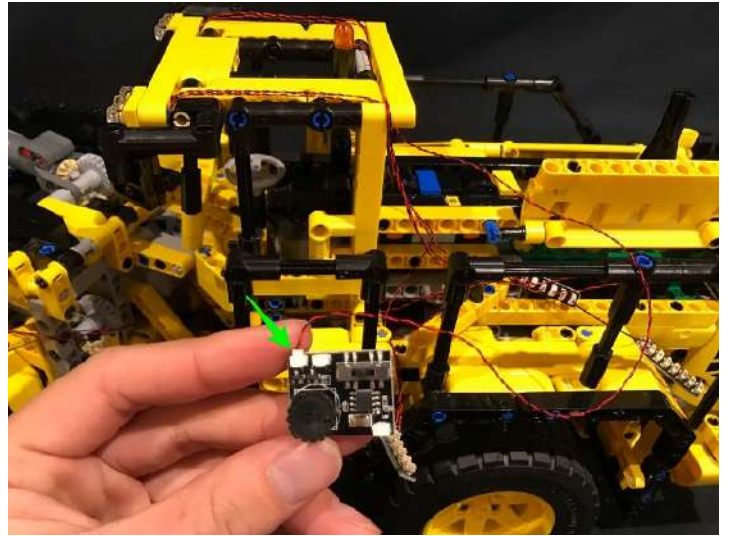
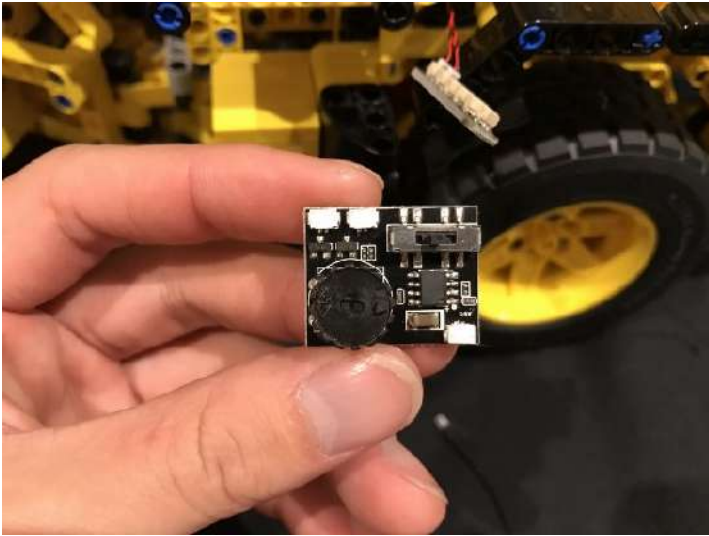
Place the Bit Light inside where we removed the trans orange LEGO piece and then reconnect this piece over the top to secure in place. Ensure the cable is facing the back of the vehicle.



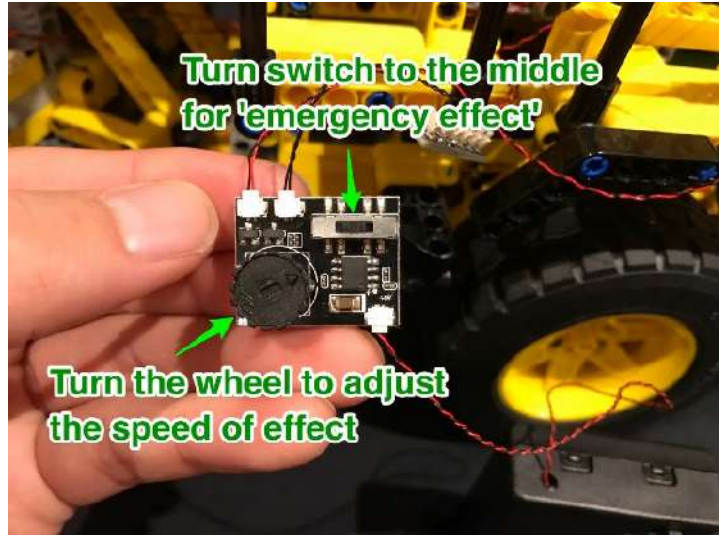
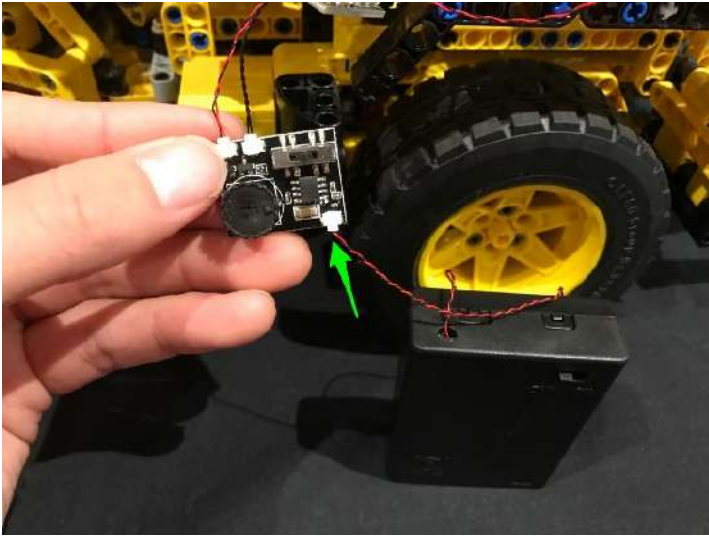
Thread the other end of the cable down in between pieces as per below.



13.) Take the **Multi-Effects Board** and then connect the Bit Light for the emergency light on the roof to one of the output ports (side with 2 ports). Then take another **5cm Connecting Cable** and connect to the other output port. Connect the other side of the 5cm cable to a spare port on the 6-port expansion board below.

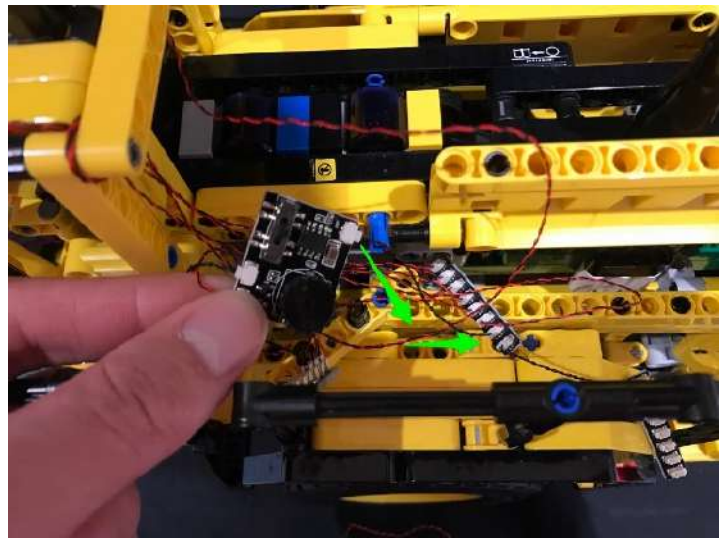
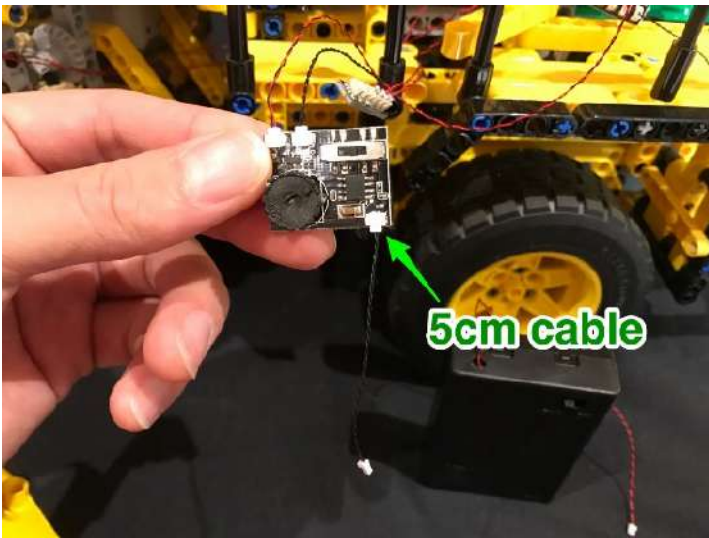


Setup the effects board to 'emergency effect' by connecting the AA battery pack to the output port of the effects board (side with only one port) and then adjusting the settings by flicking the switch to the middle and then adjusting the speed by turning the wheel.

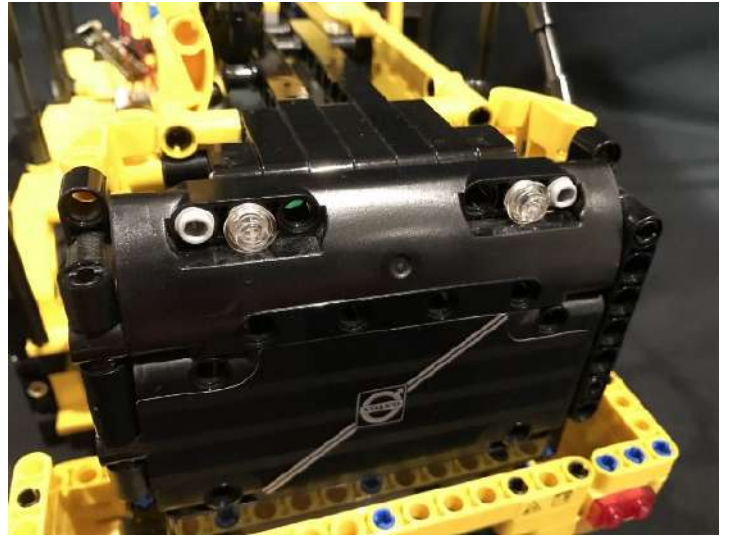
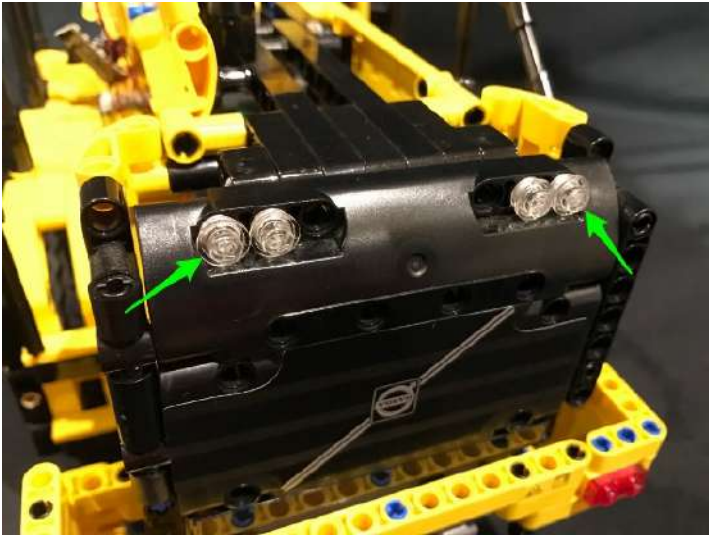


Both the trans orange lights of the front indicators as well as the emergency light on the top of the vehicle should be flashing in sequence.

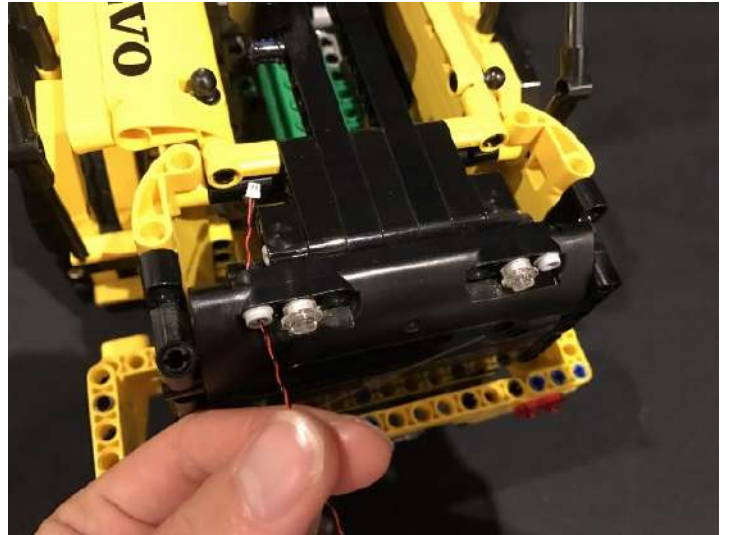
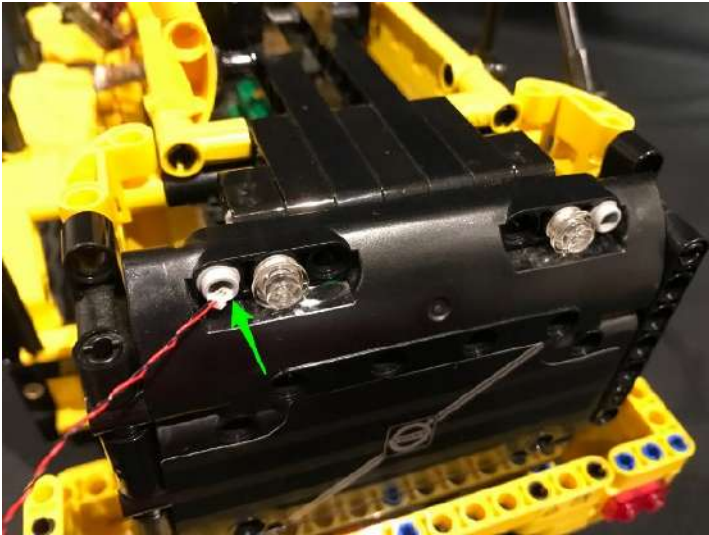
14.) Remove the AA battery pack and then replace with another **5cm Connecting Cable**. Connect the other side of the cable to the remaining port on the first 8-port expansion board we used.

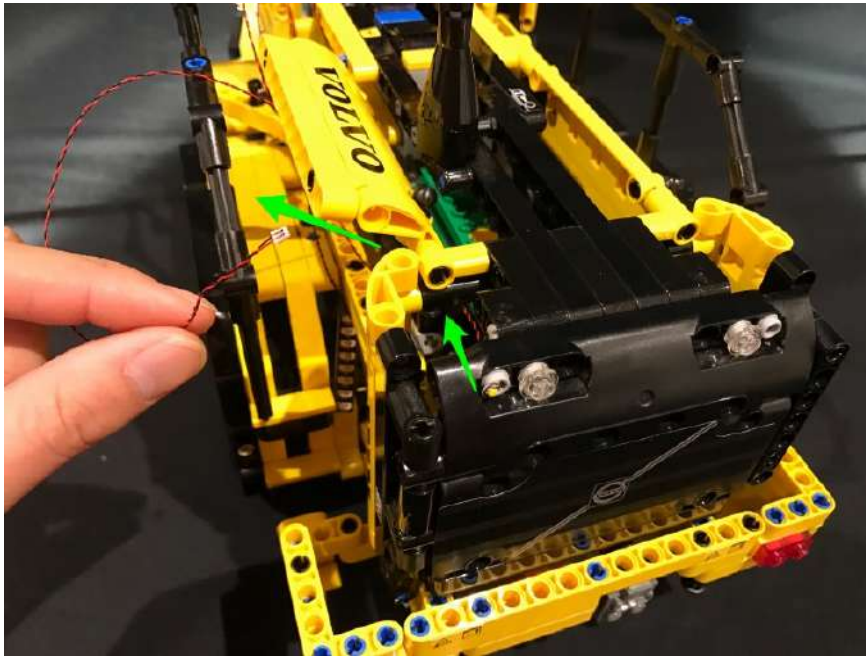


15.) We will now install lights to the back of the vehicle (on the top). First remove the 2 outer trans clear LEGO pieces as shown below.

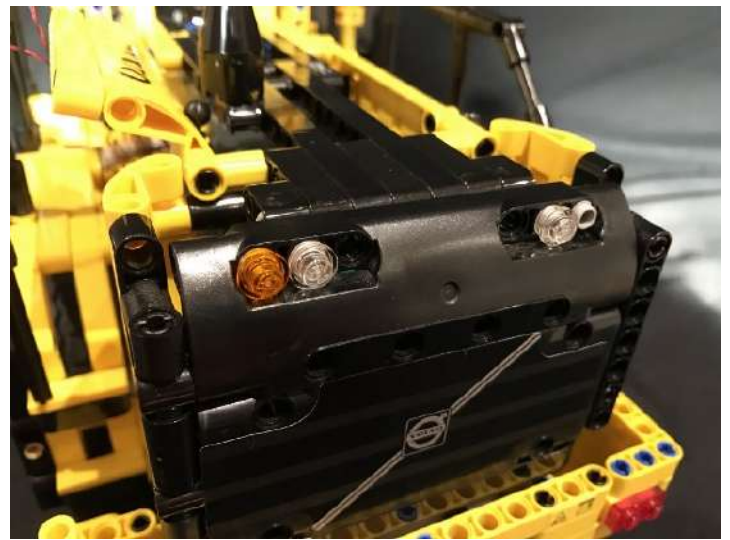
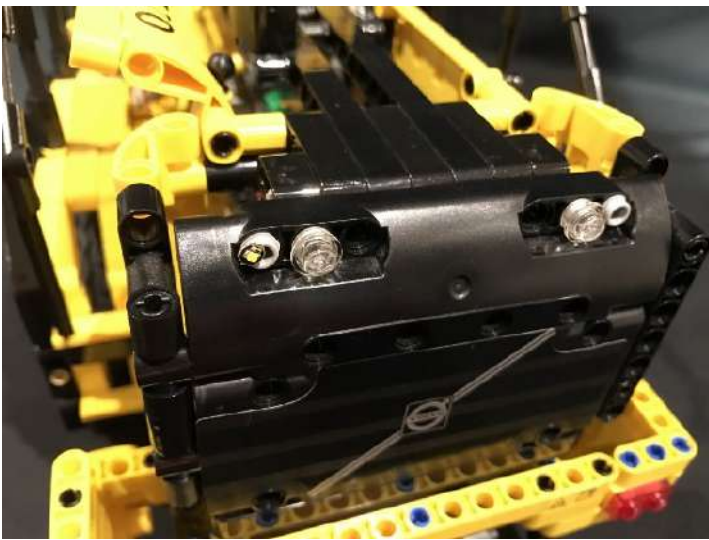


Take a **White 30cm Bit Light** and then thread the connector side through the left hole. Thread the cable all the way through until the Bit Light is on the very edge and then pull the other end of the cable out through where we lifted up the panel (with the volvo sign).

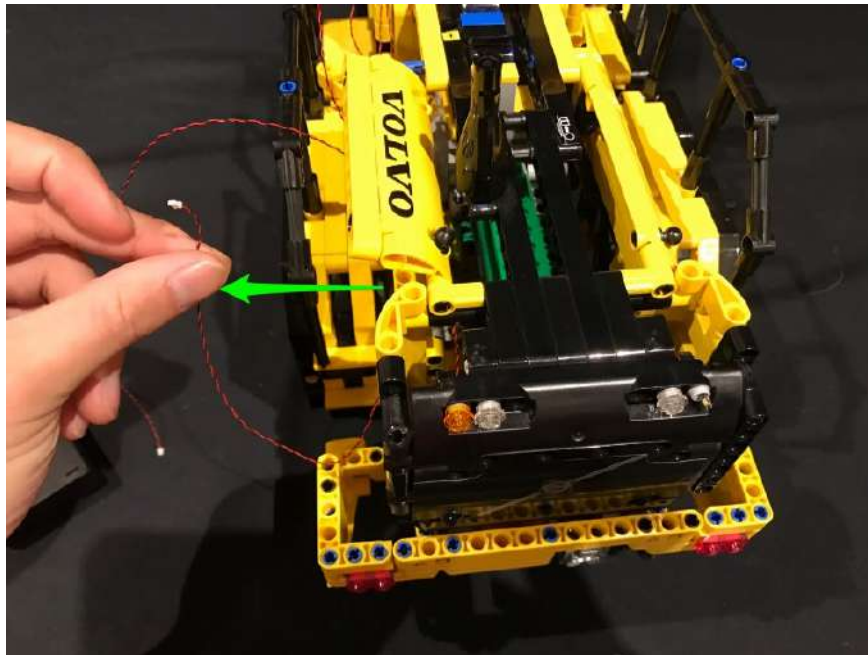
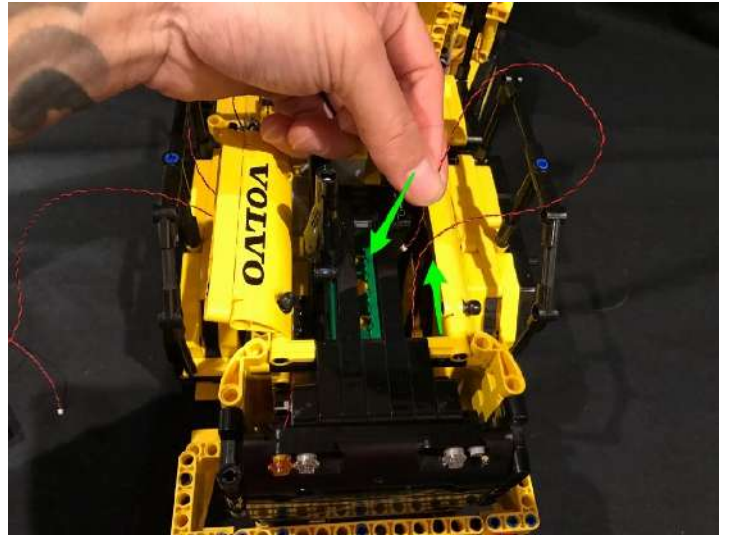
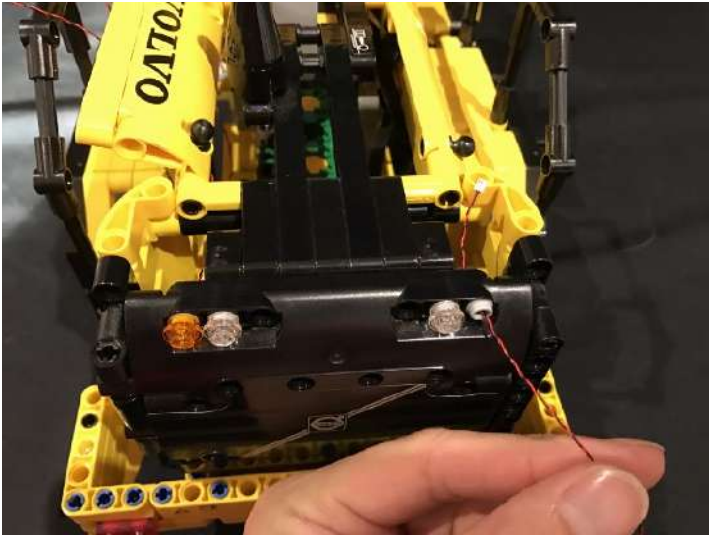




Secure the Bit Light in place by connecting one of the provided **LEGO trans-orange round plates** over the top. You may need to bend the Bit Light slightly so that it sits flat against the edge of the hole.

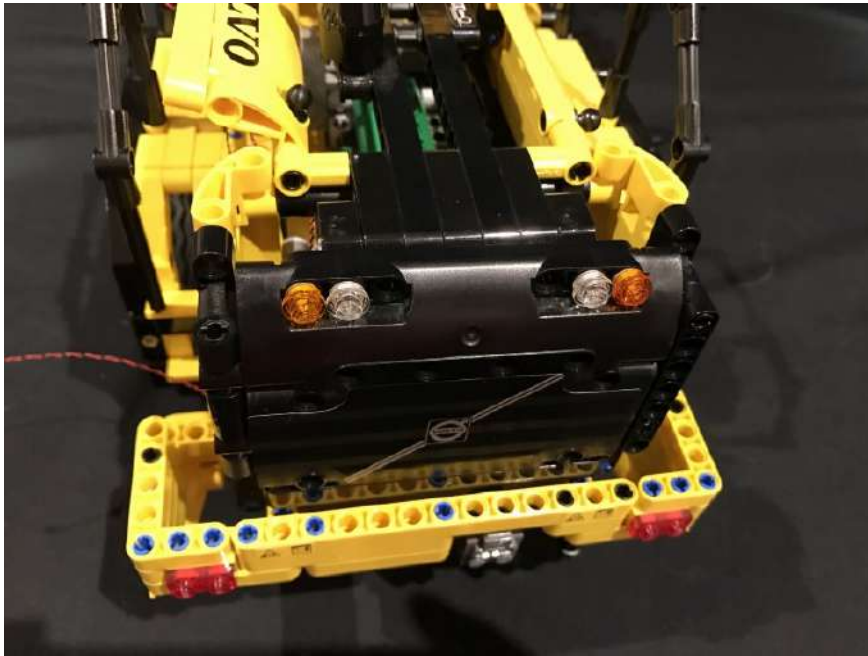


Repeat this process to install another **White 30cm Bit Light** to the right side except this time you will need to thread the cable down across to the left side.

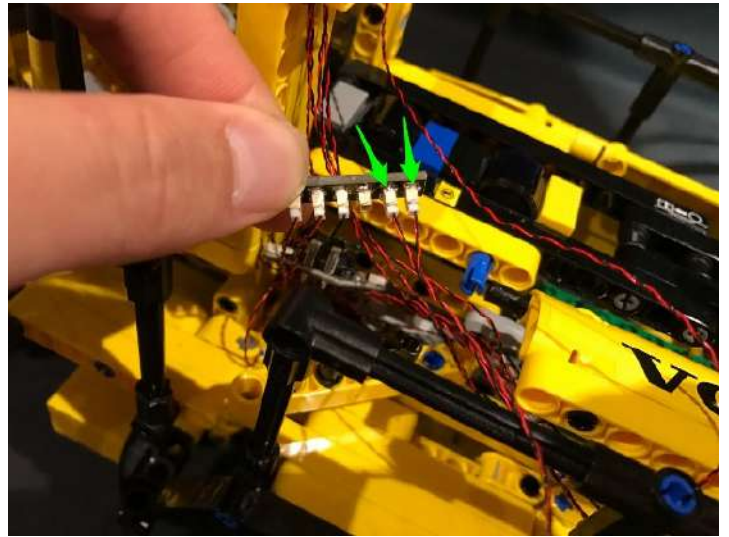
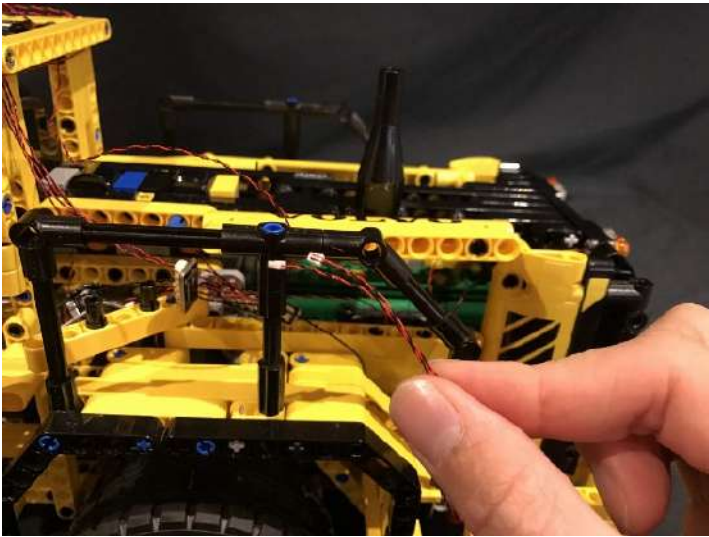


Secure the light in place by using another provided **LEGO trans orange round plate**.



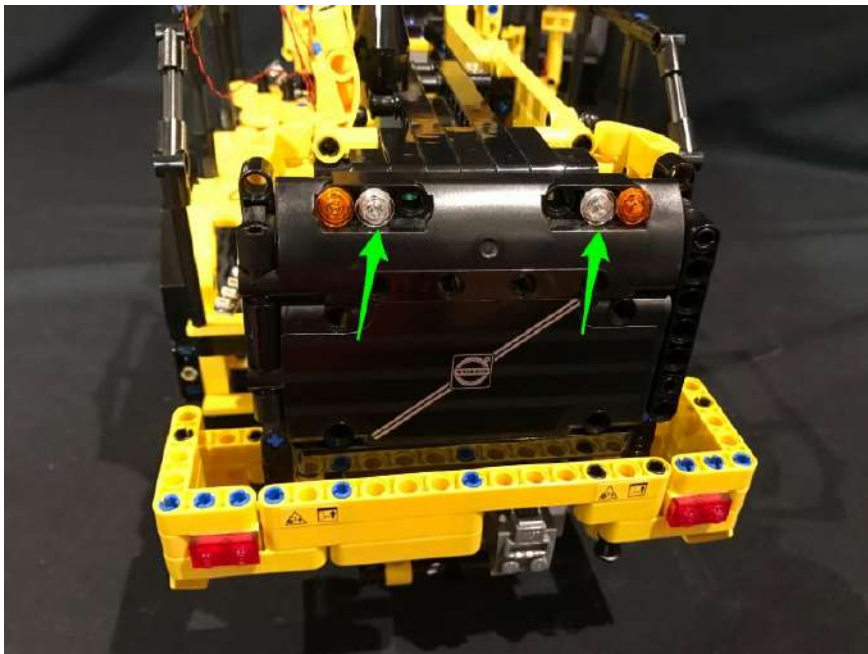


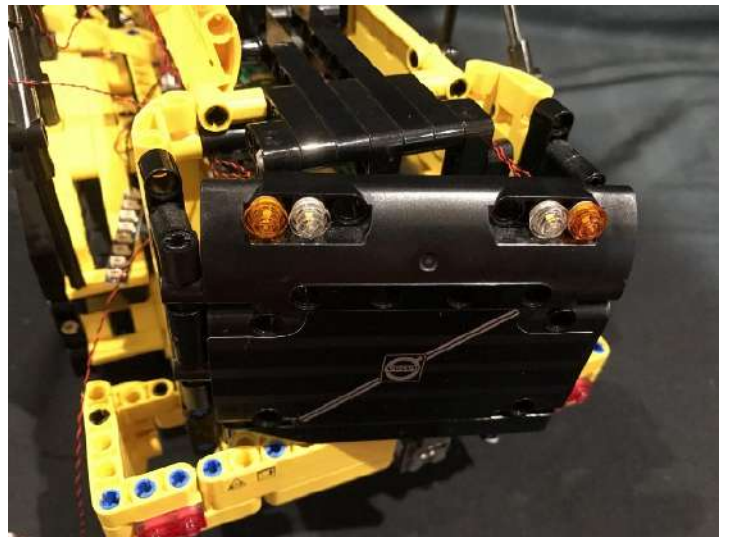
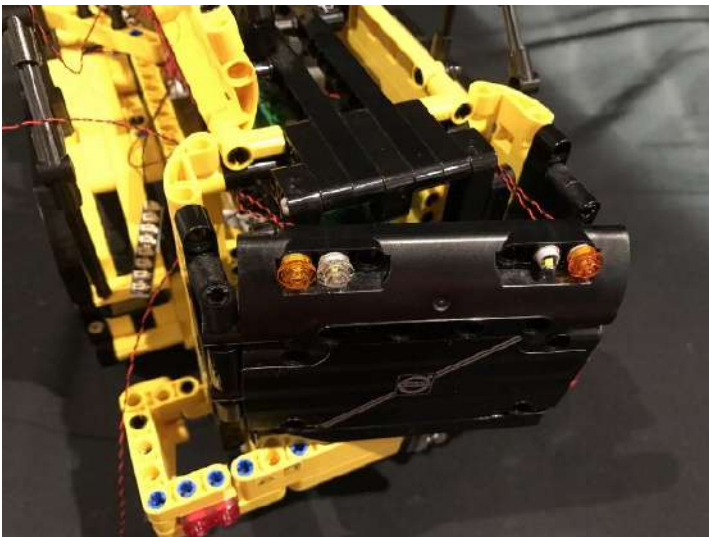
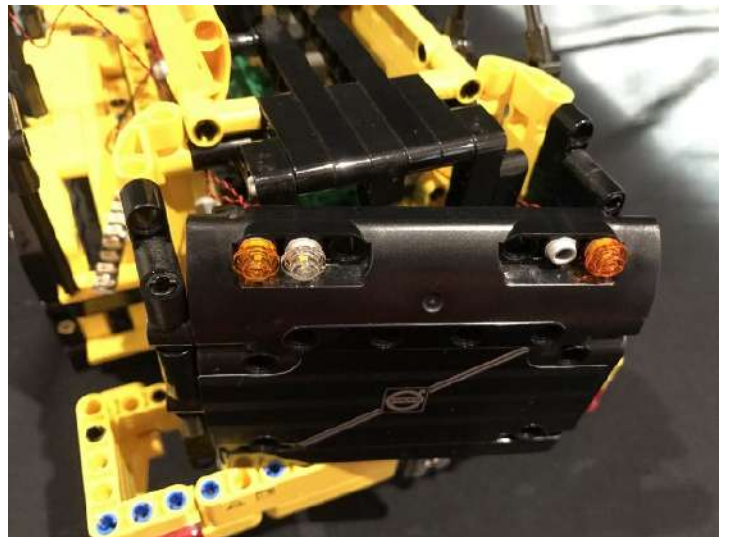
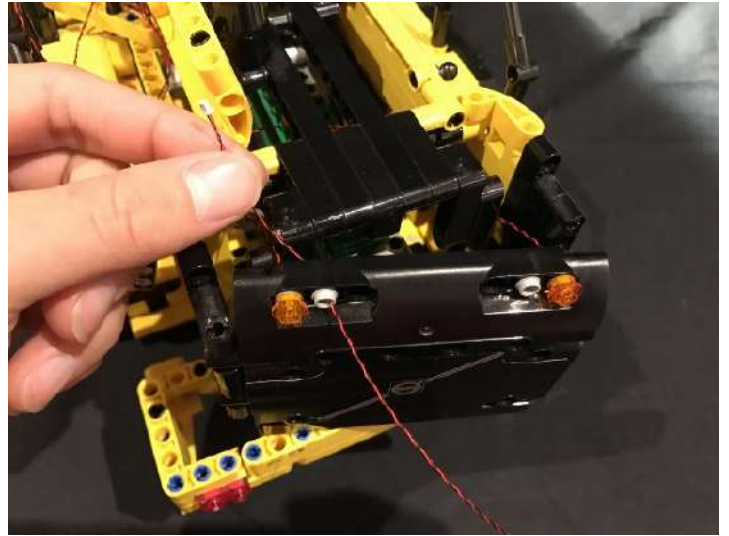
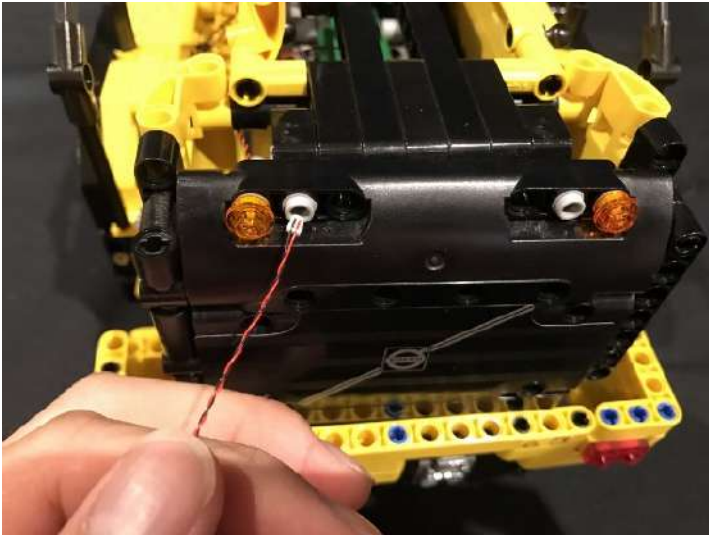
Take the 2 cables from the Bit Lights we just installed and then pull them across the side to connect them to spare ports on the 6-port expansion board.



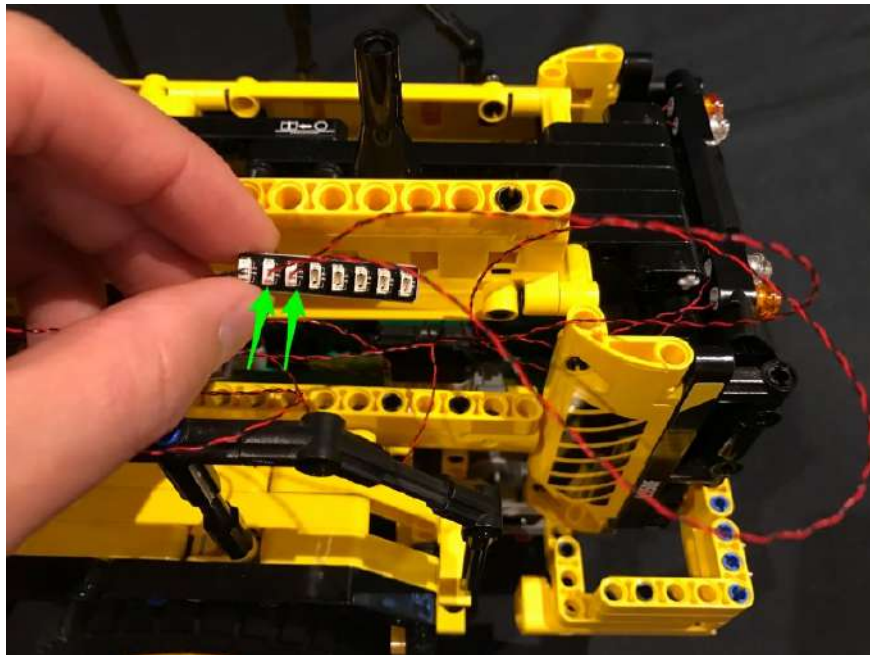
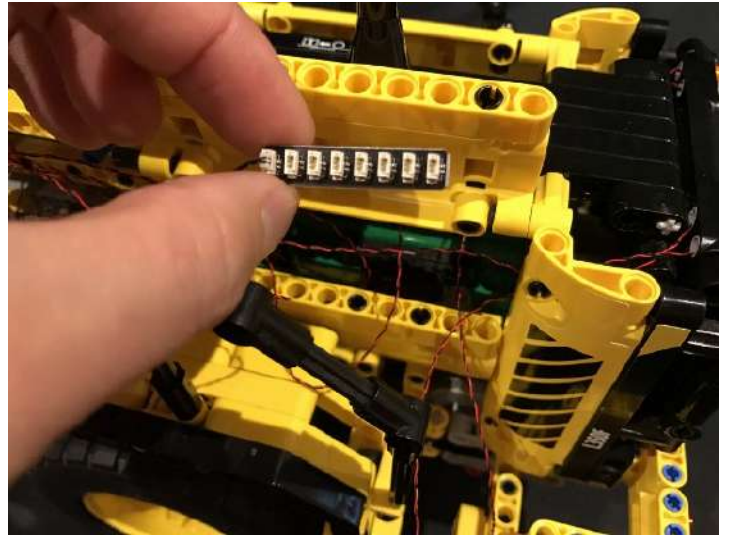
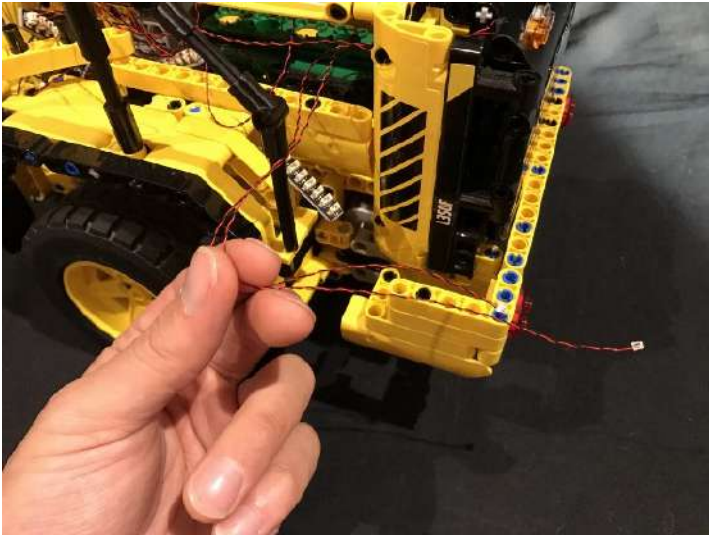


16.) We will now install lights to the remaining lights on the top. Disconnect the trans clear round plates and then thread another **2x White 30cm Bit Lights** through these holes. Thread them all the way through (the same way we did for the other 2 lights) and then secure them in place by reconnecting the trans clear round plates.

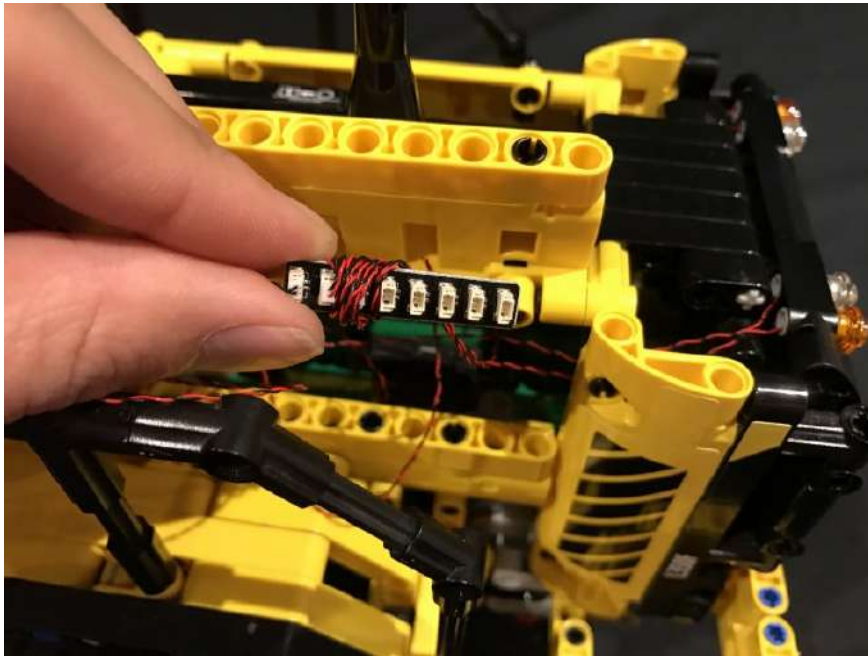




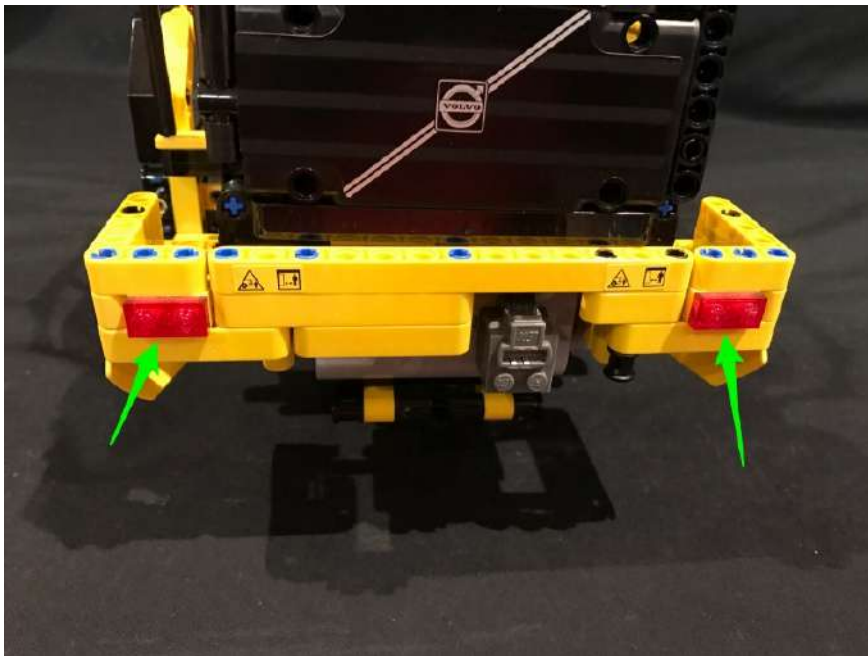
Take the 2 cables from the Bit Lights we just installed and then connect them to the first few ports on the second 8-port Expansion Board.

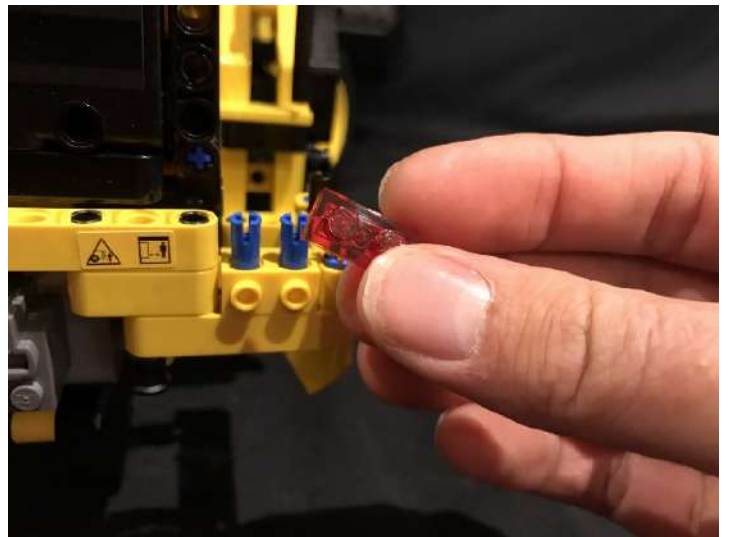
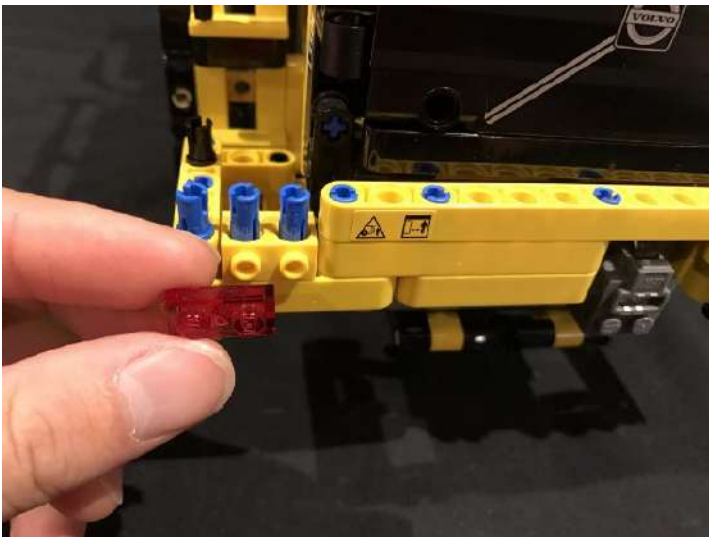
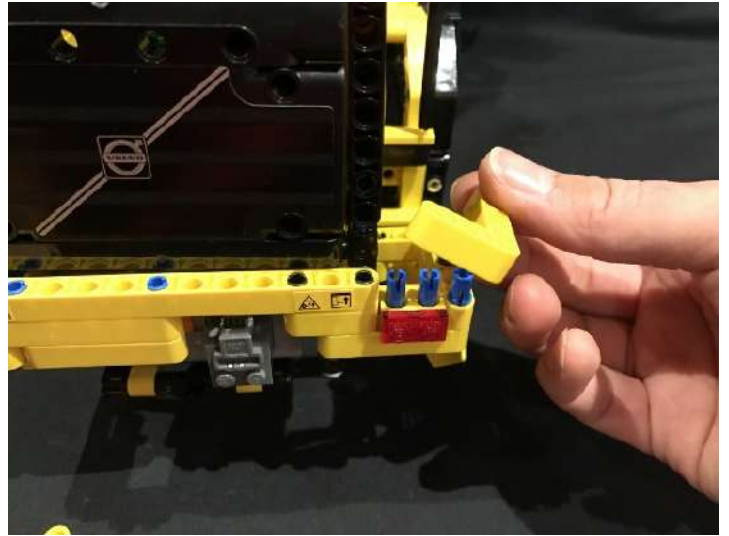
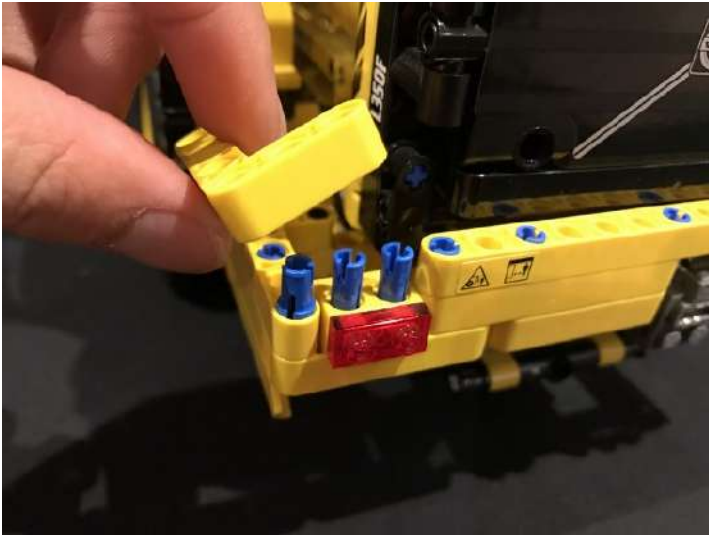


Eliminate excess cable by winding the cables around the expansion board 3-4 times. Just ensure you do not cover the spare ports while doing so.

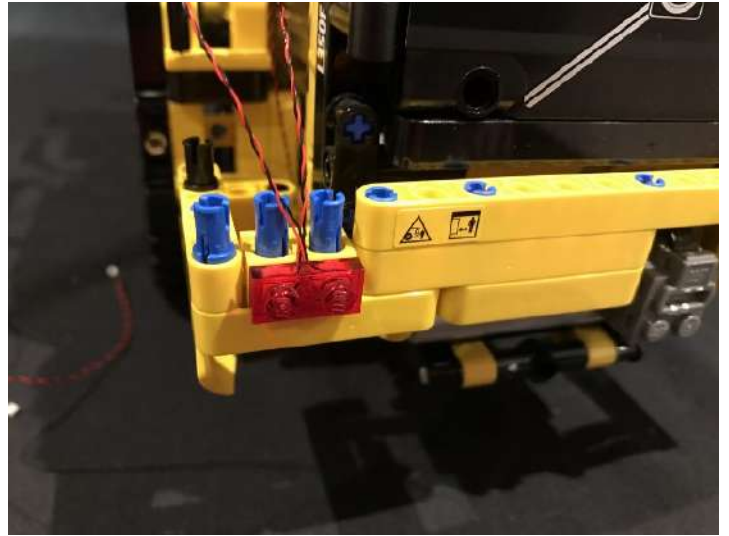
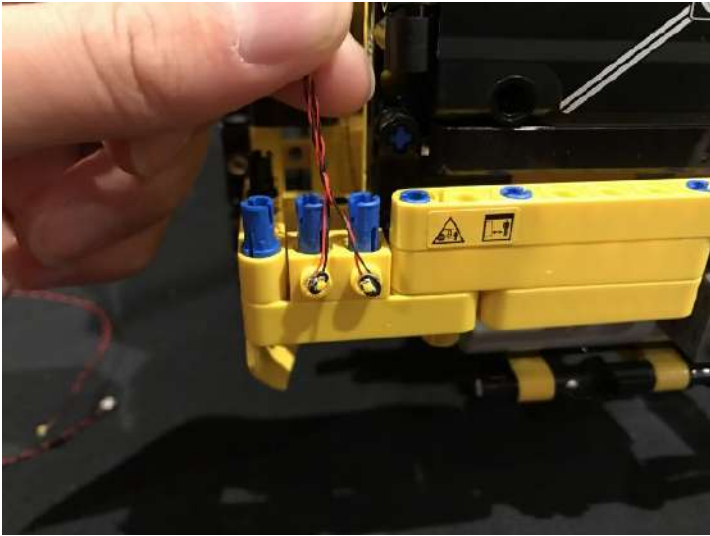


17.) We will now light up the break lights. First remove the L shaped piece above each break light, followed by the trans red 1x2 plate.

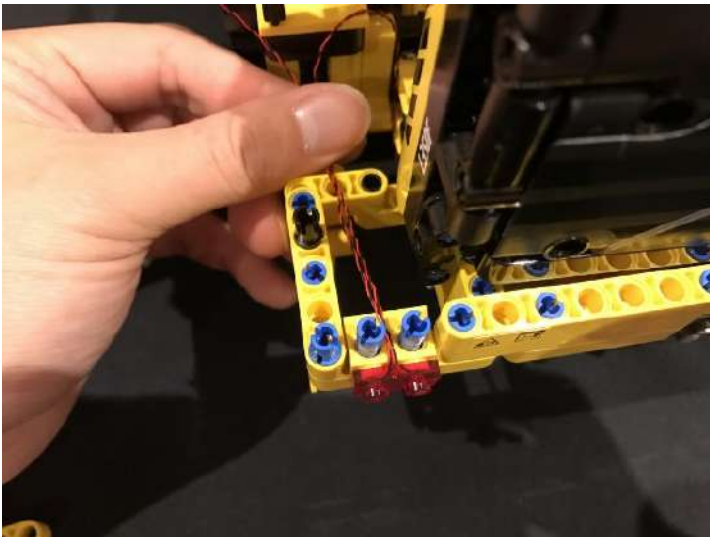




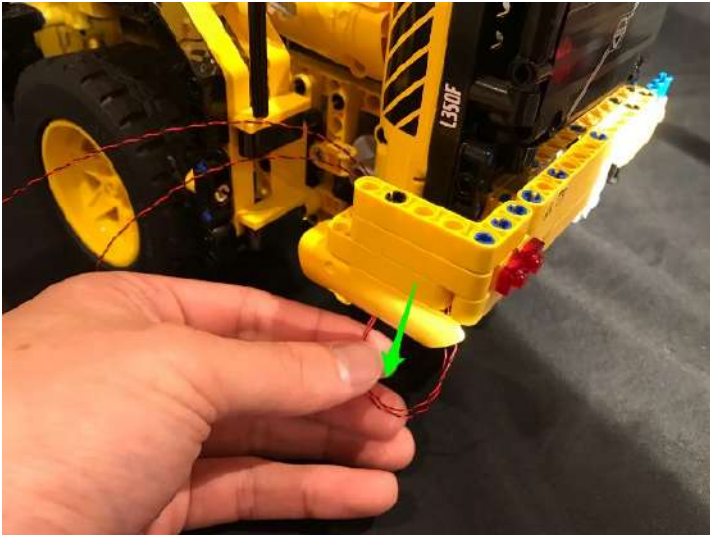
Take **2x White 30cm Bit Lights** and then hold them together with cables facing up and place them over the 2 yellow studs. Secure the lights in place by reconnecting the trans red 1x2 plate over the top of them.



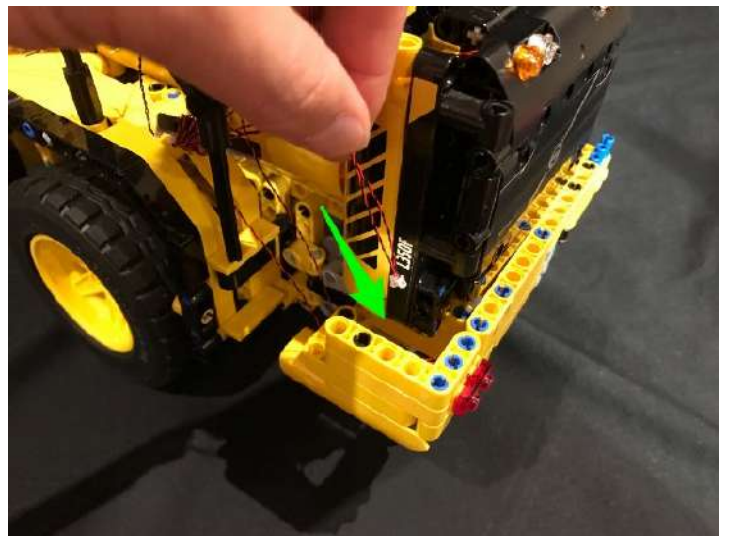
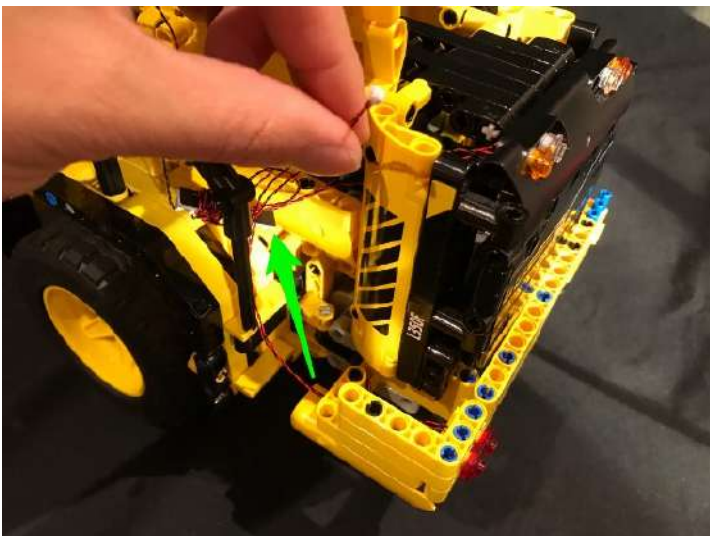
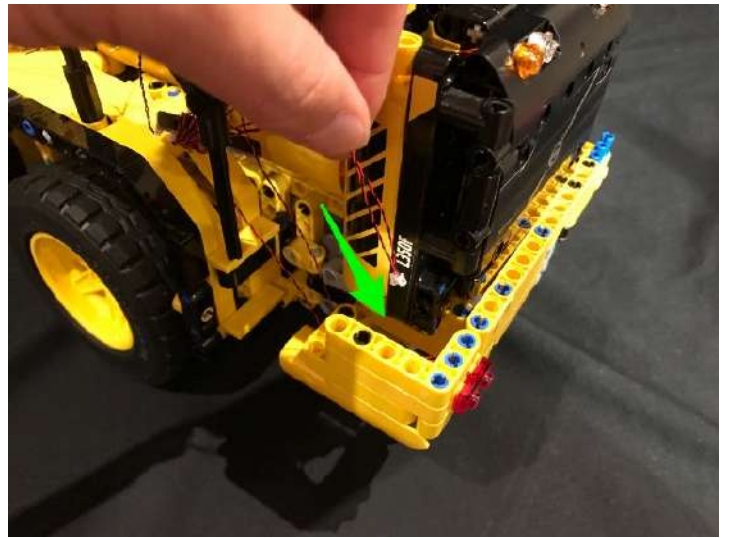
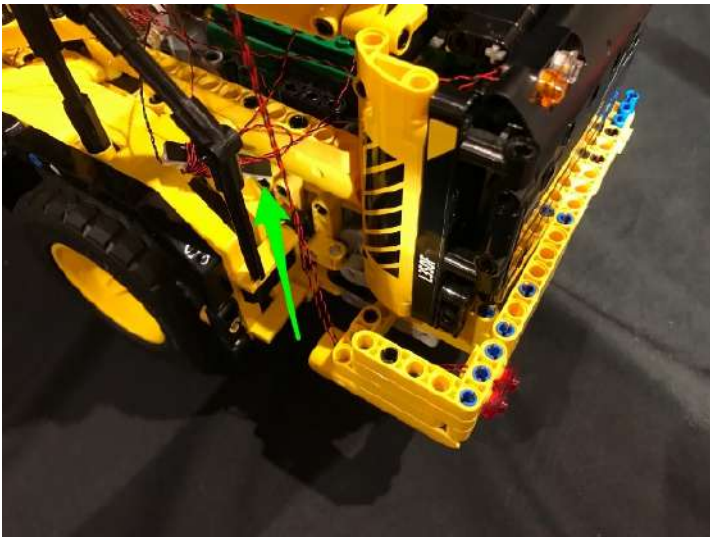
Bring the 2 cables over in between the blue pieces and then reconnect the L shaped piece over the top.



Pull the cable down from in between this section

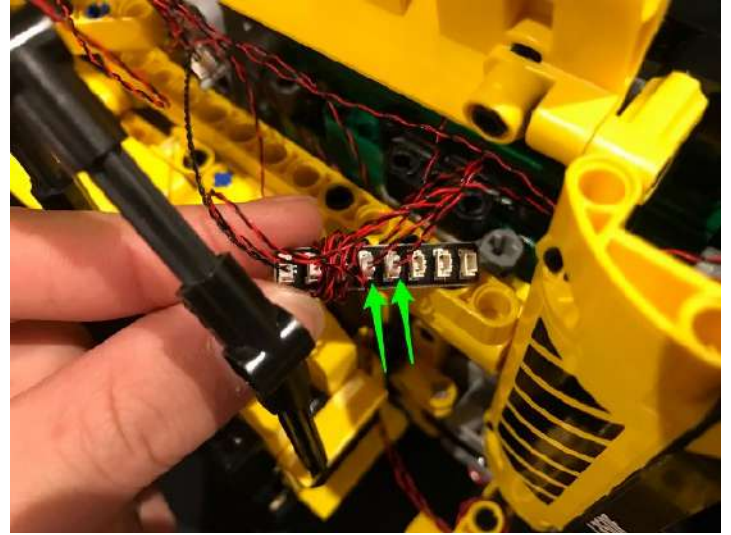
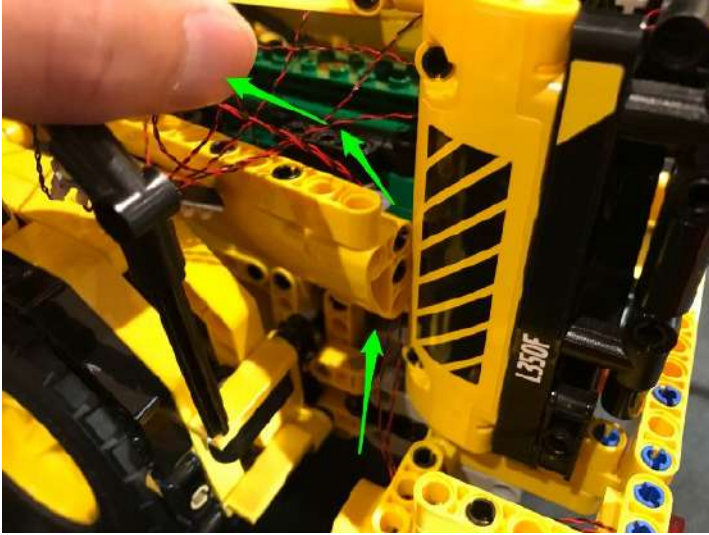


To eliminate excess cable, thread the cable up and then back around 3–4 times

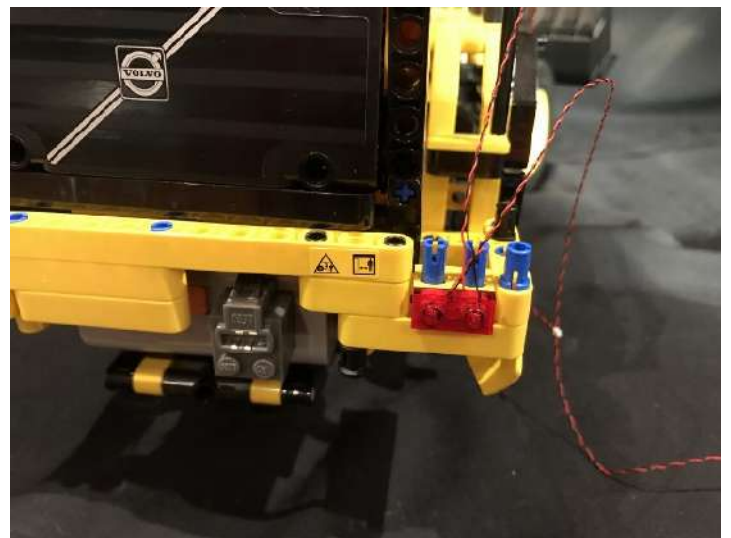
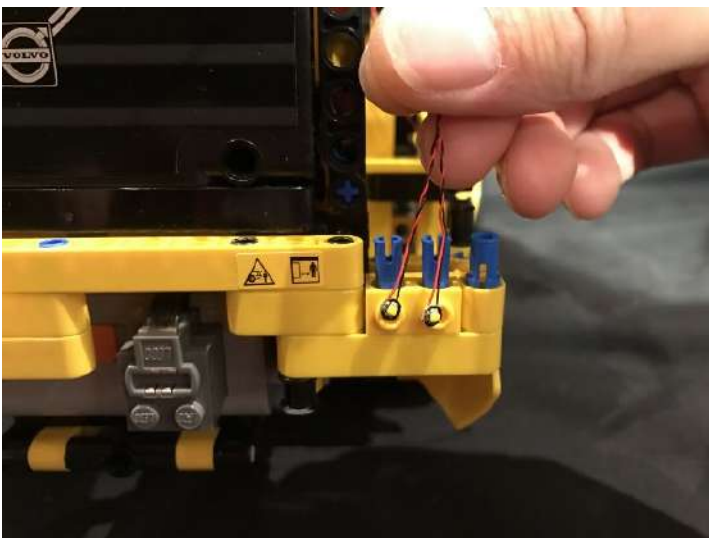


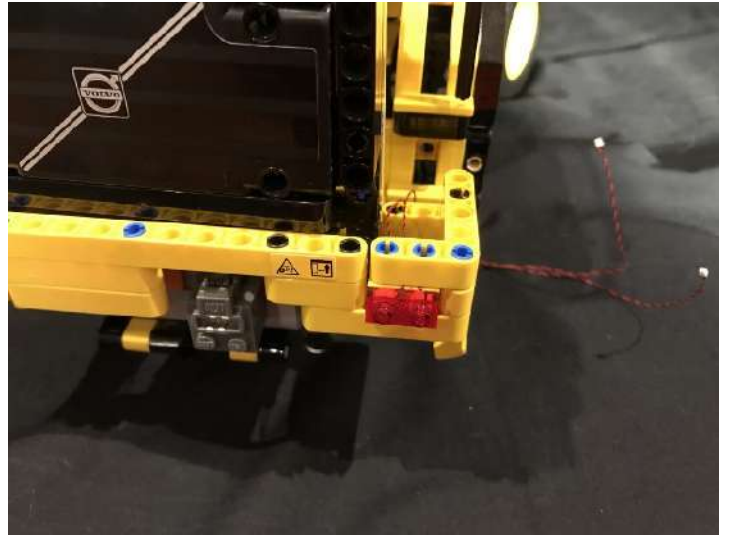
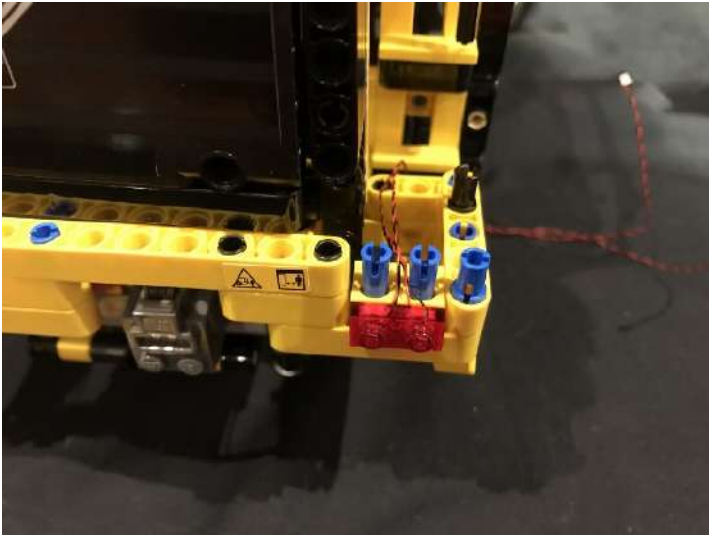


Once you have eliminated as much slack as possible, thread the cables up and behind the back left panel before connecting them to the next available ports on the second 8-port Expansion Board.

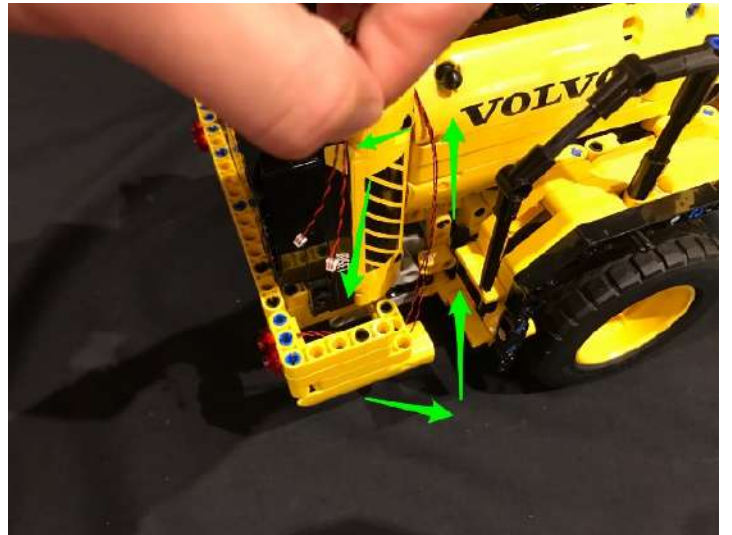
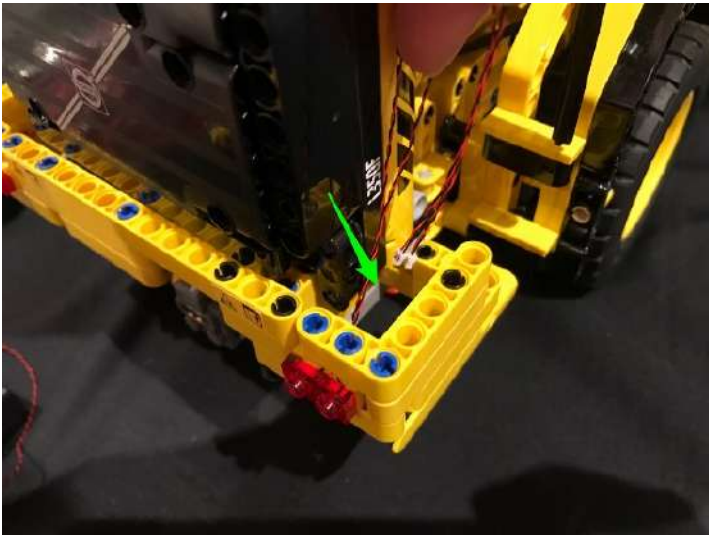


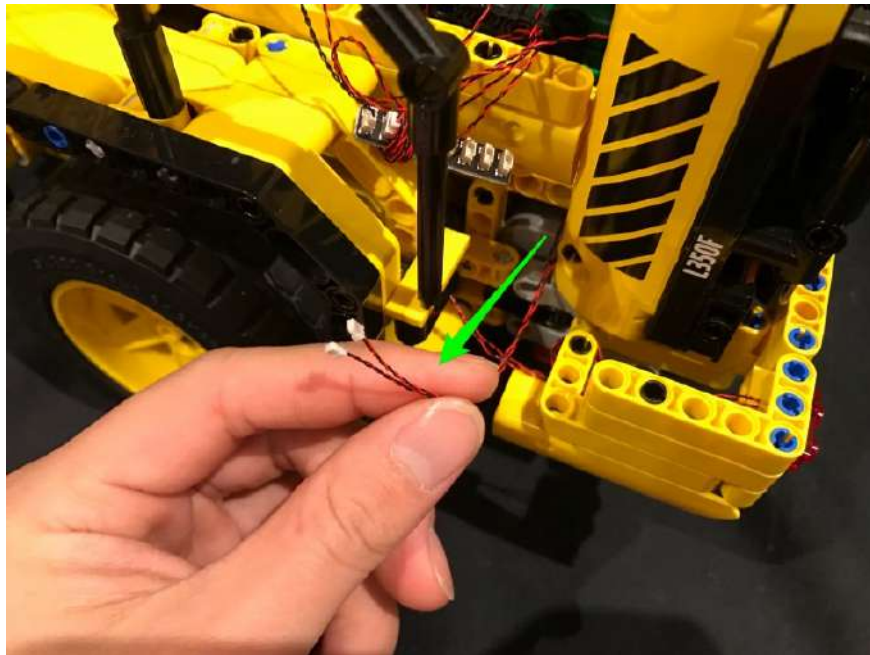
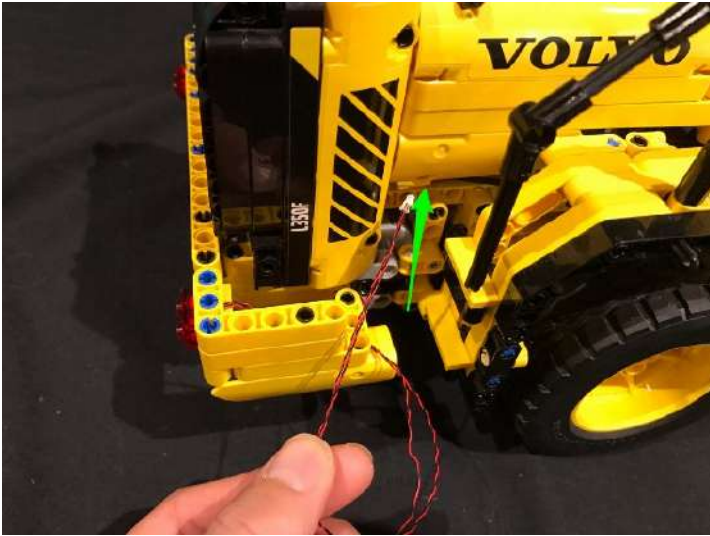
18.) Take another 2x White 30cm Bit Lights and install them to the right break lights using the same method as we did previously.



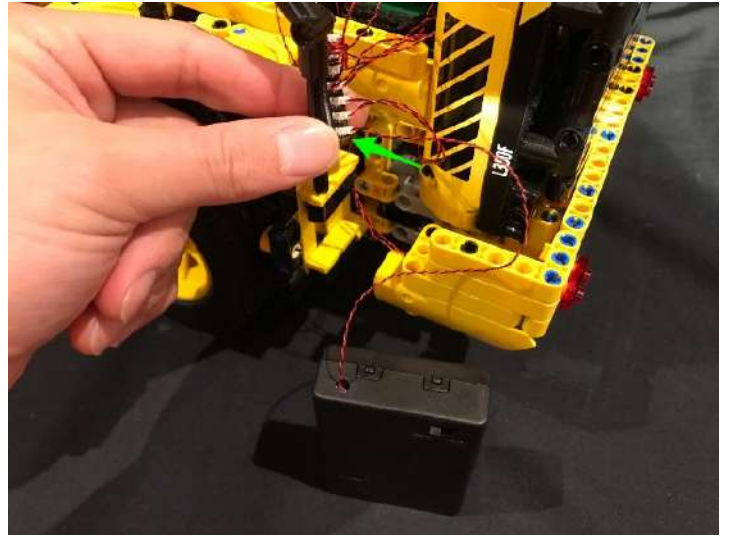
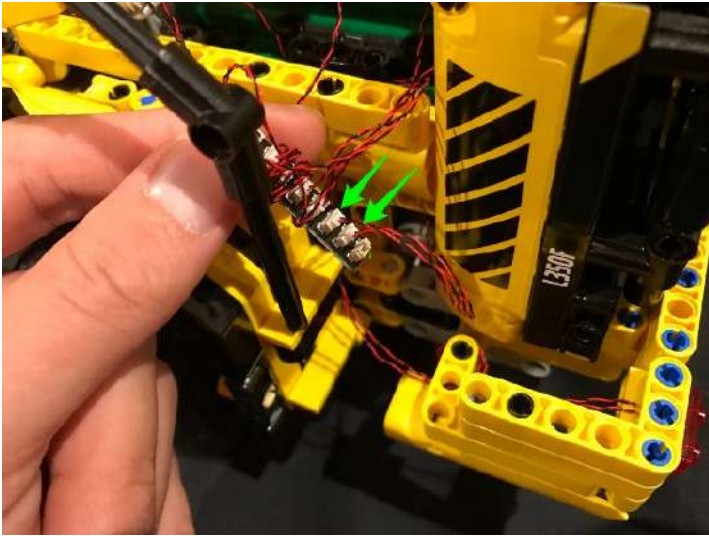


Eliminate excess cable by looping the cables around this section 2 times before threading them through the middle and out through the other side.





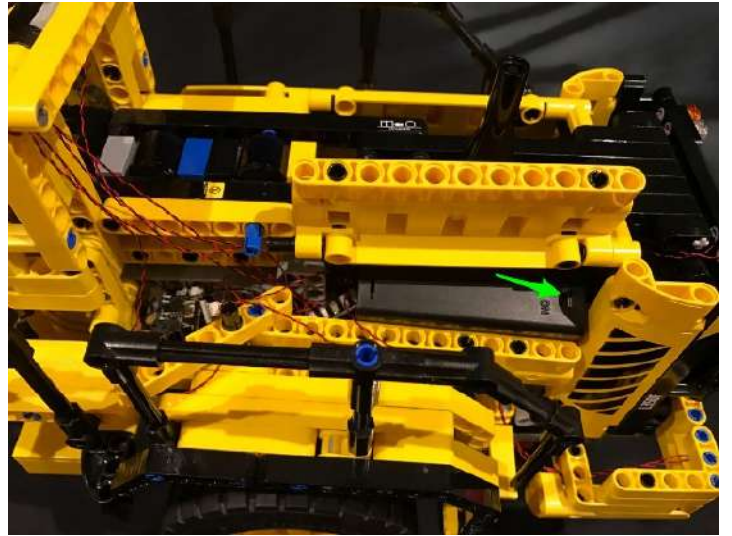
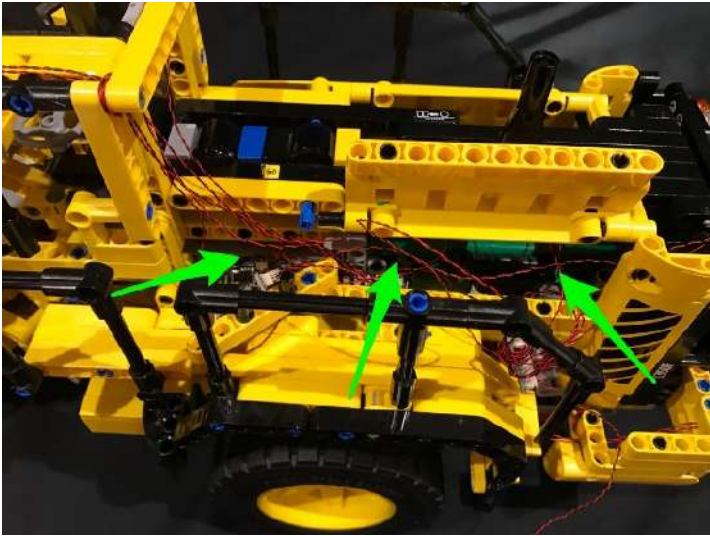
19.) Connect the 2 cables to the next available ports on the 8-port expansion board then connect the AA battery pack to the remaining port.



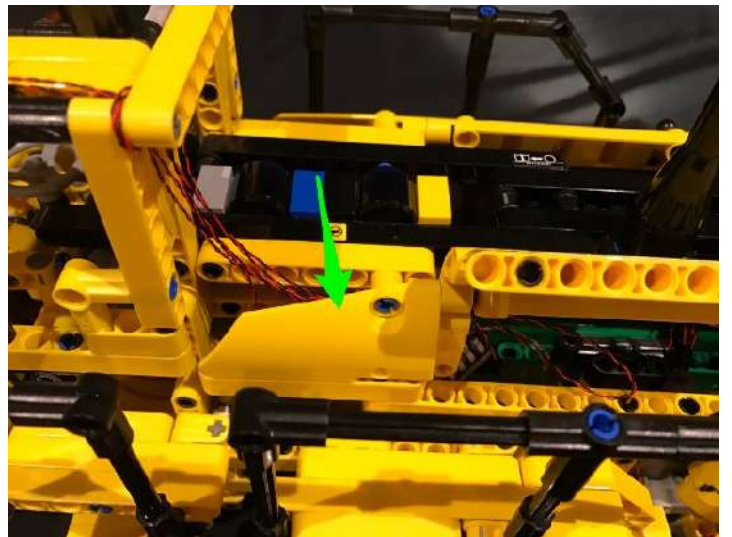
Turn on and verify all lights (front and back) are working OK.



20.) Neatly place all the cables and expansion boards inside the vehicle, followed by the AA battery pack toward the back. Ensure the battery pack switch is accessible.



Reconnect the panel we removed in step 7.



Ensure all components are neatly hidden before closing the back left panel.



...

This finally completes installation of the Volvo L350F Wheel Loader Light Kit. To turn on, simply lift up the back left panel to access the battery switch.

ENJOY!

