

Light My Bricks : Fire Brigade LED Lighting Kit



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

Package contents:

- 1x Lamp Post with 30cm Bit Light installed
- 4x White Bit Lights 30cm
- 4x White Bit Lights 15cm
- 2x White Flashing Bit Lights 15cm
- 2x Red Flashing Bit Lights 30cm
- 5x LED Strip Lights
- 4x 15cm Connecting Cables
- 1x 30cm Connecting Cable
- 5x Adhesive Squares
- 1x 12-port Expansion Board
- 1x 8-port Expansion Board
- 1x AA Battery Pack (Requires 3x AA Batteries)
- 1x Flat Battery Pack (Requires 2x CR2032 Batteries)

Extra LEGO Pieces

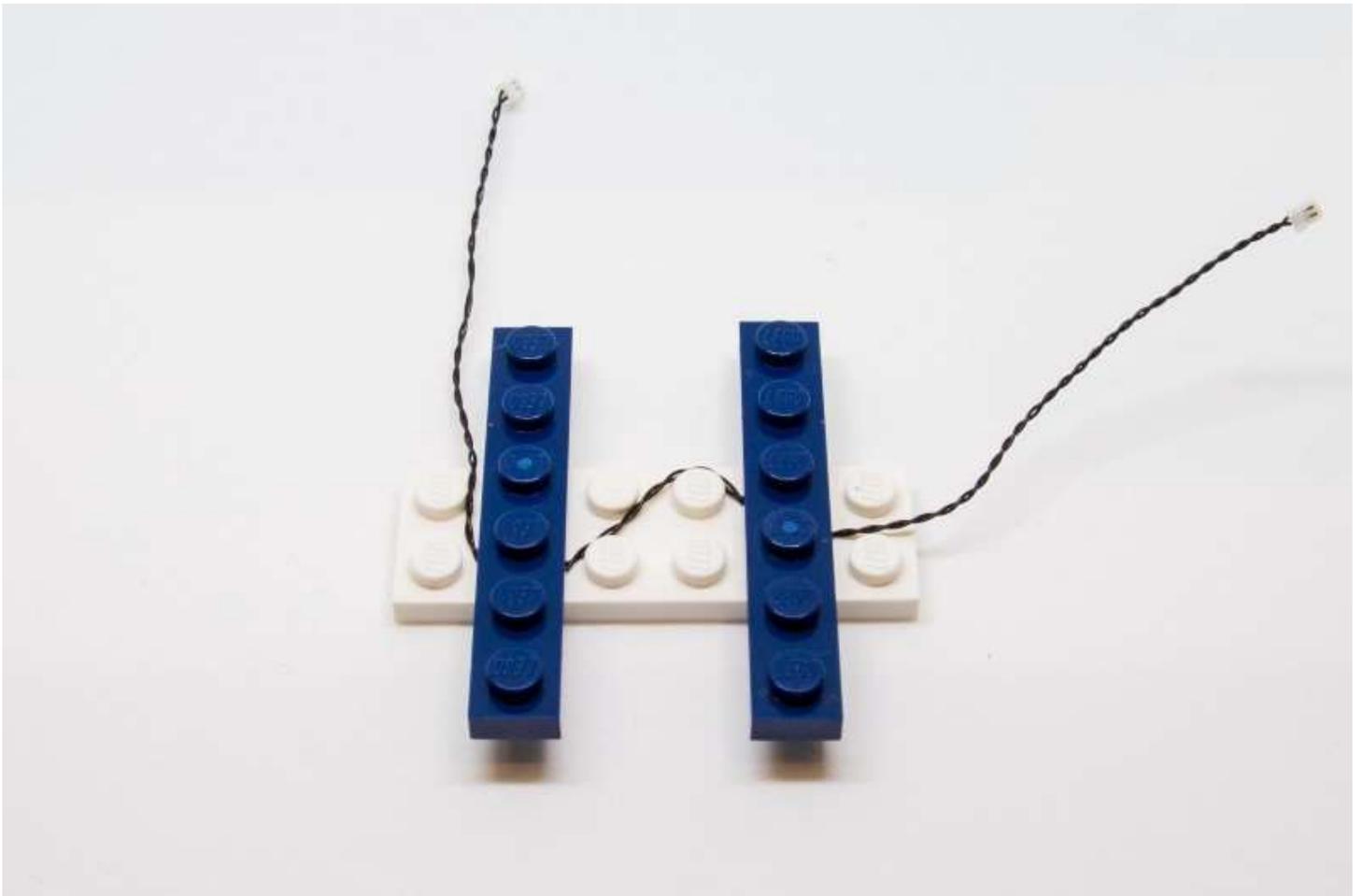
- 2x LEGO Trans Red 1x1 round bricks
 - 2x LEGO Light Grey 1L bar with mechanical claw clip
 - 4x LEGO Plates 1x6 for mounting Strip Lights
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Important things to note:

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.

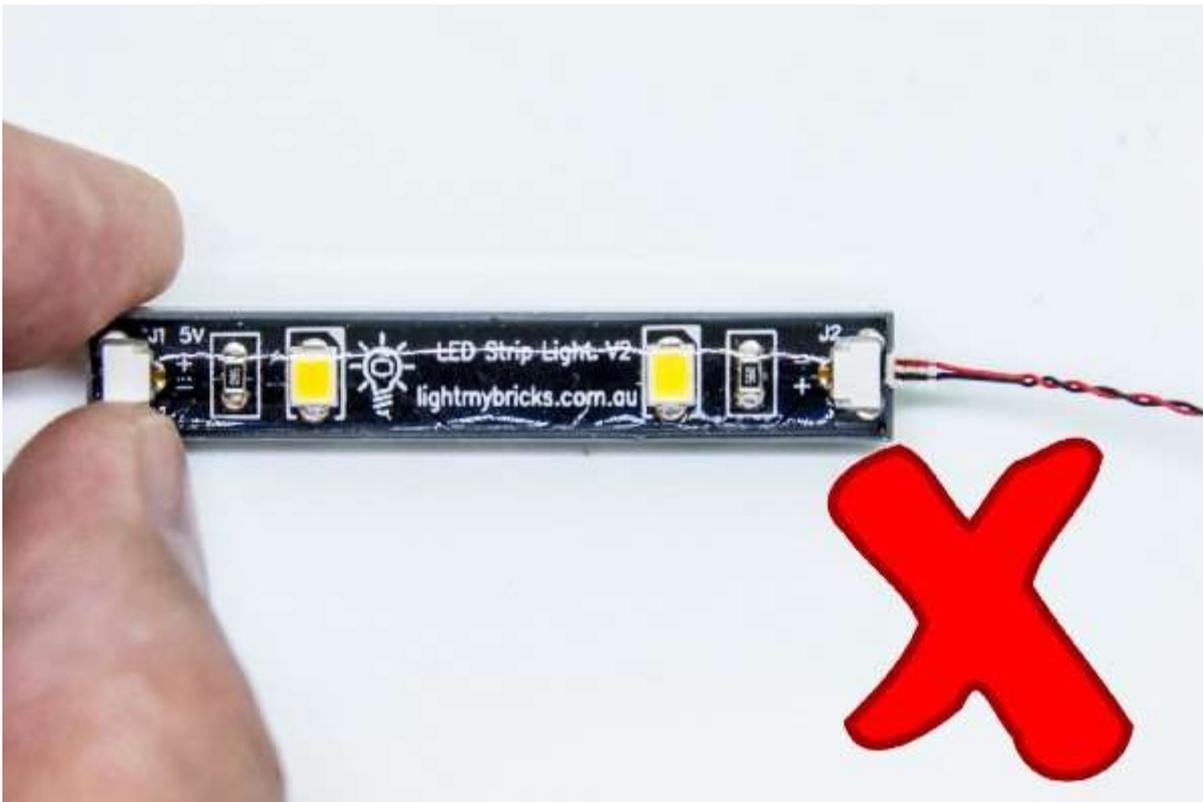
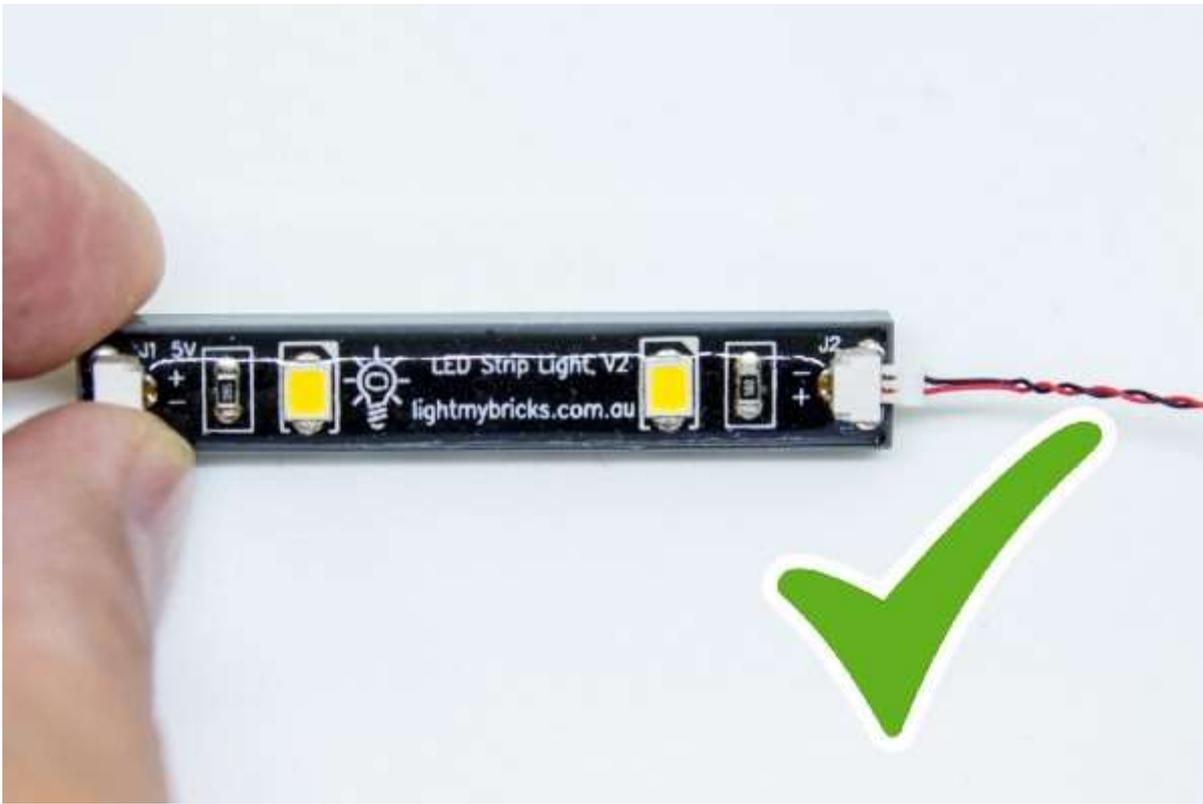




CAUTION: Forcing LEGO® to connect over a cable can result in damaging the cable and light.

Connecting cable connectors to Strip Lights

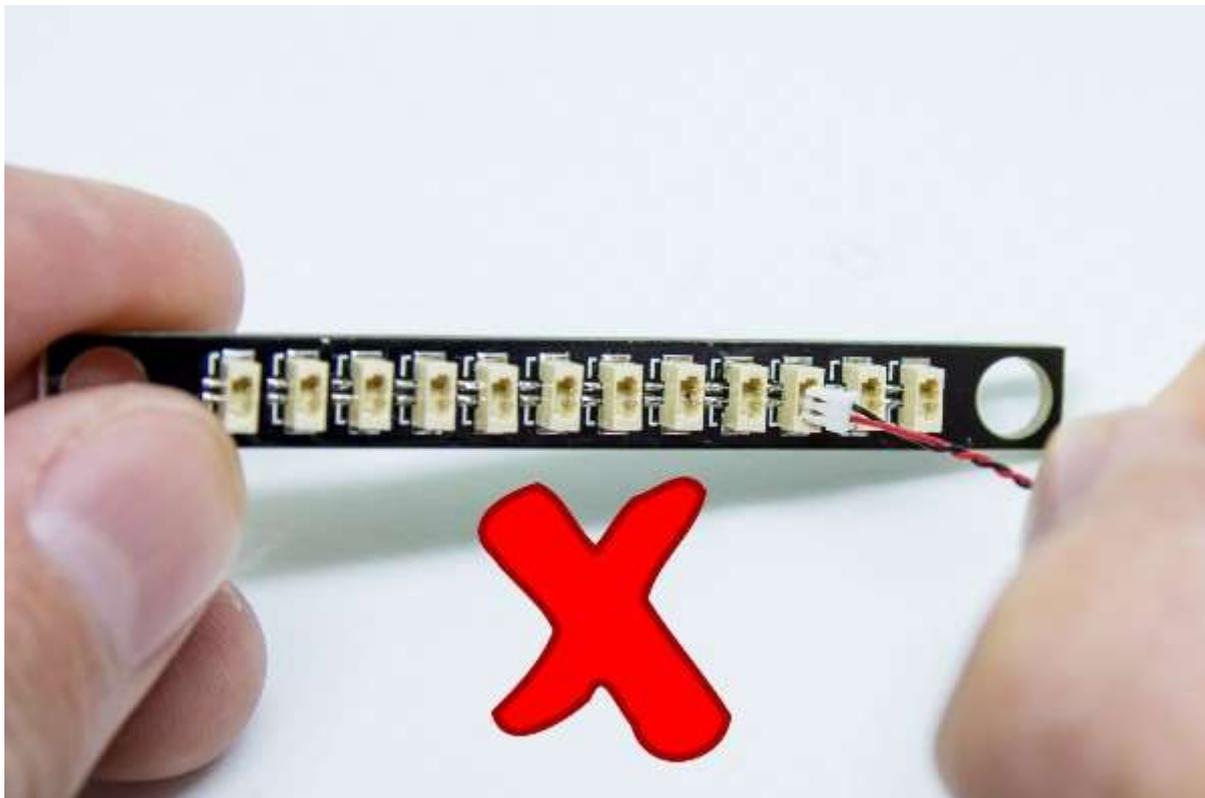
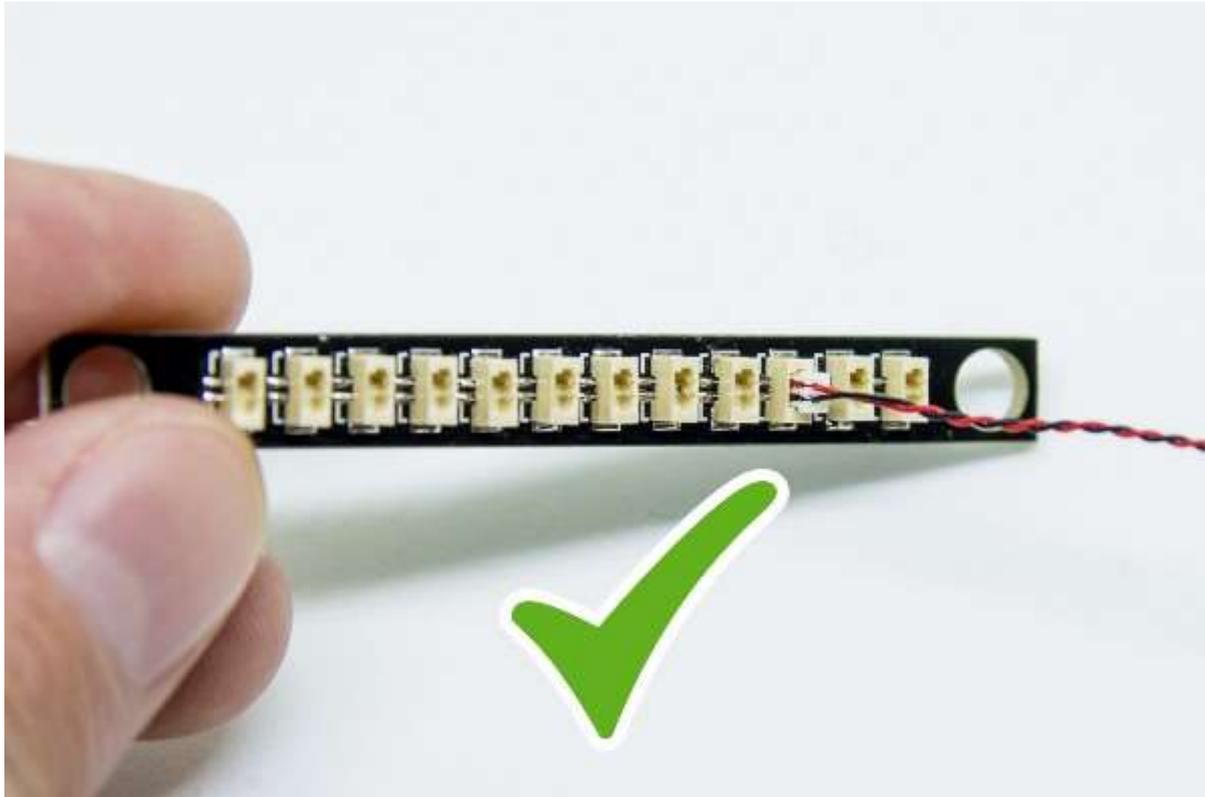
Take extra care when inserting connectors to ports on the Strip Lights. Connectors can be inserted only one way. With the Strip Light facing up, ensure the side of the connector with the wires exposed is facing down. If a plug won't fit easily into a port connector, don't force it. Doing so will damage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



Connecting cable connectors to Expansion Boards

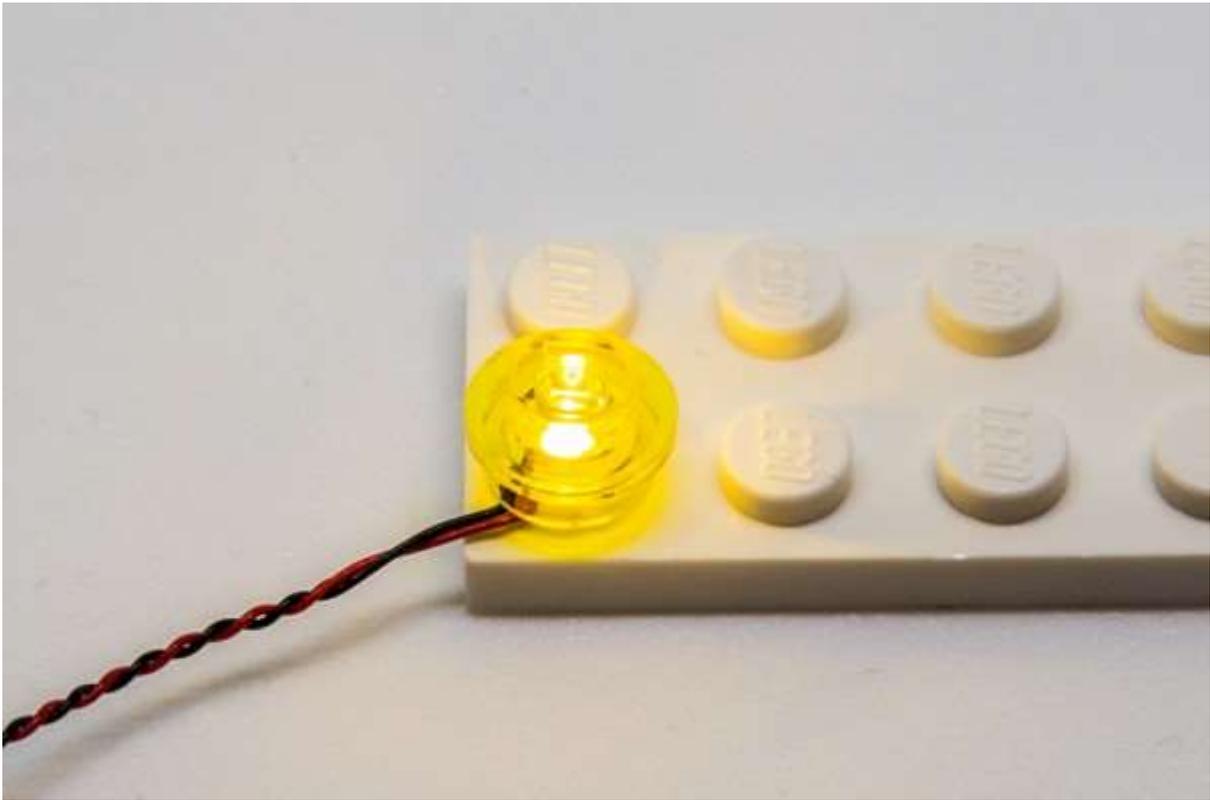
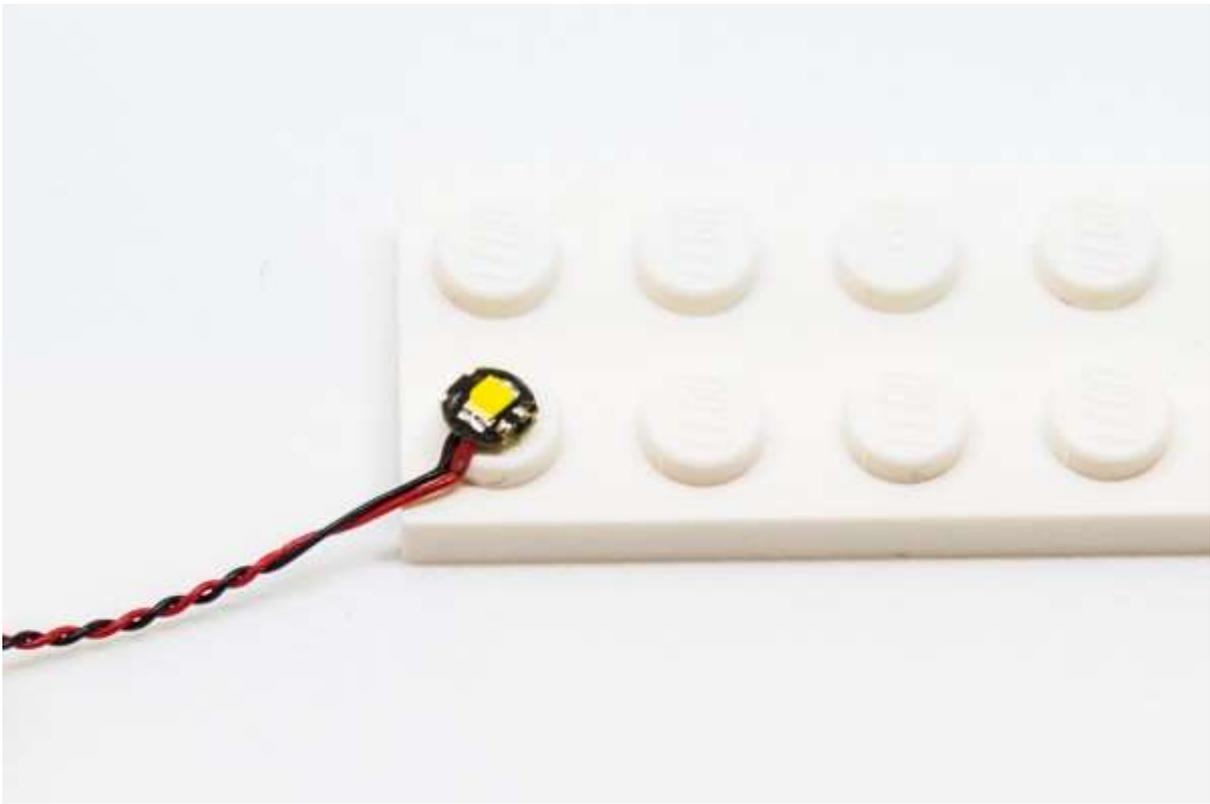
Take extra care when inserting connectors to ports of Expansion Boards. Connectors can be inserted only one way. With the expansion board facing up, look for the soldered “=” symbol on the left side of the port. The connector side with the wires exposed should be facing toward the soldered “=” symbol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

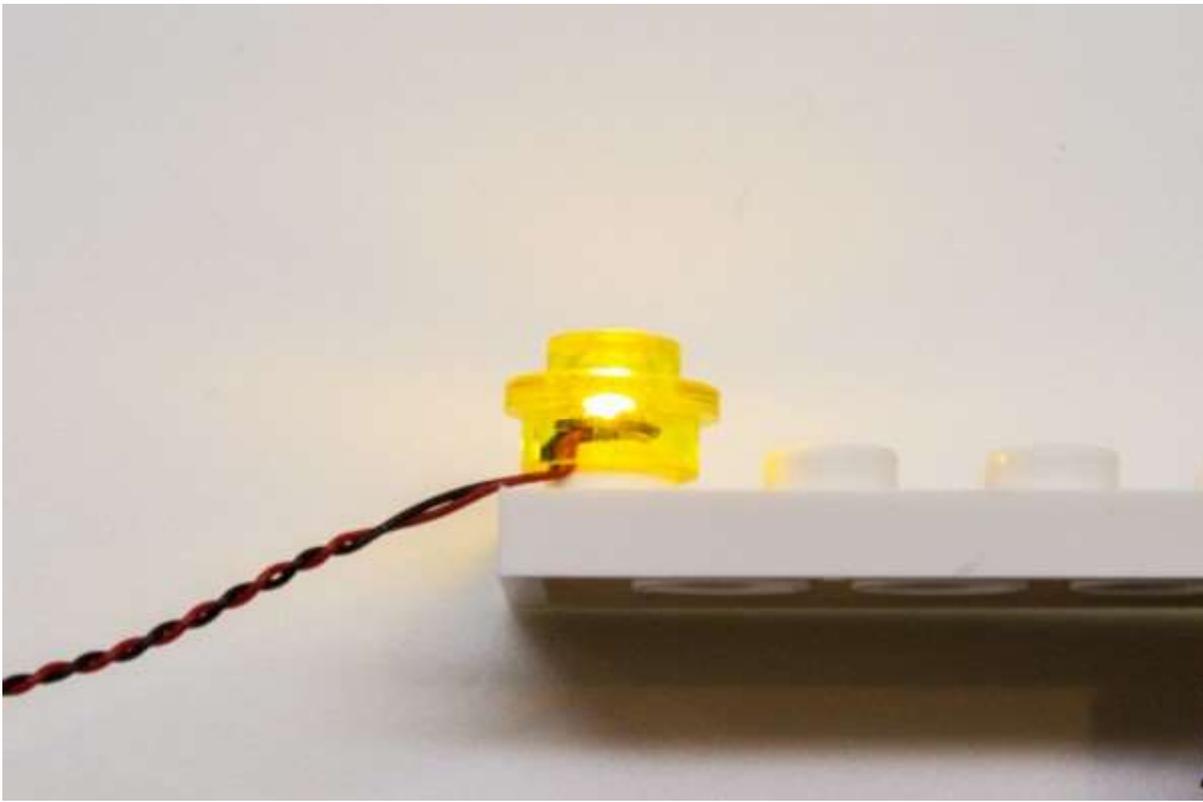
Incorrectly inserting the connector can result in bent pins inside the port or possible overheating of the expansion board when connected.



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

This section will guide you to install light to the fire truck first.

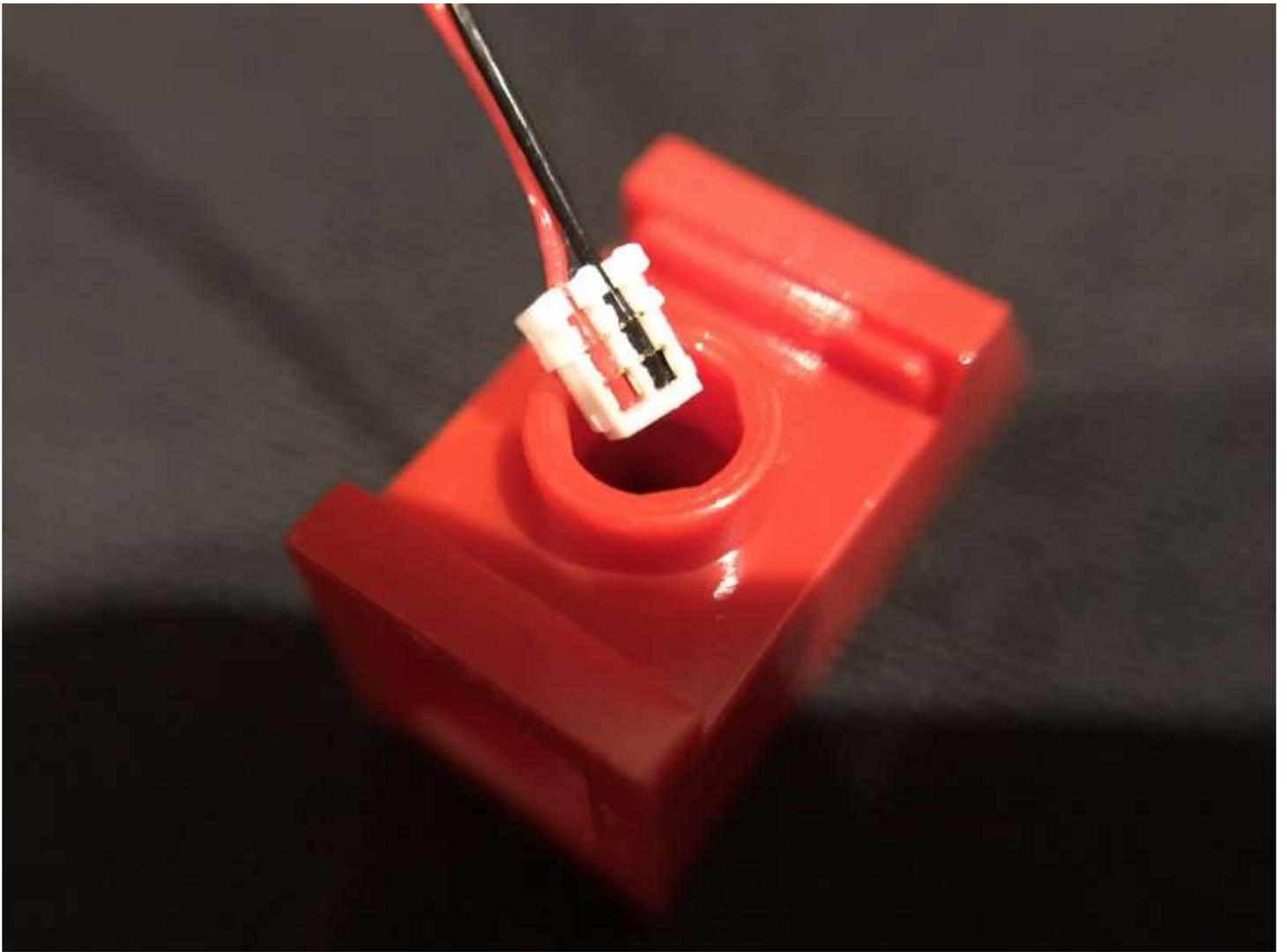
1) Start by removing the following pieces to allow us to remove one of the headlight sections from the front.



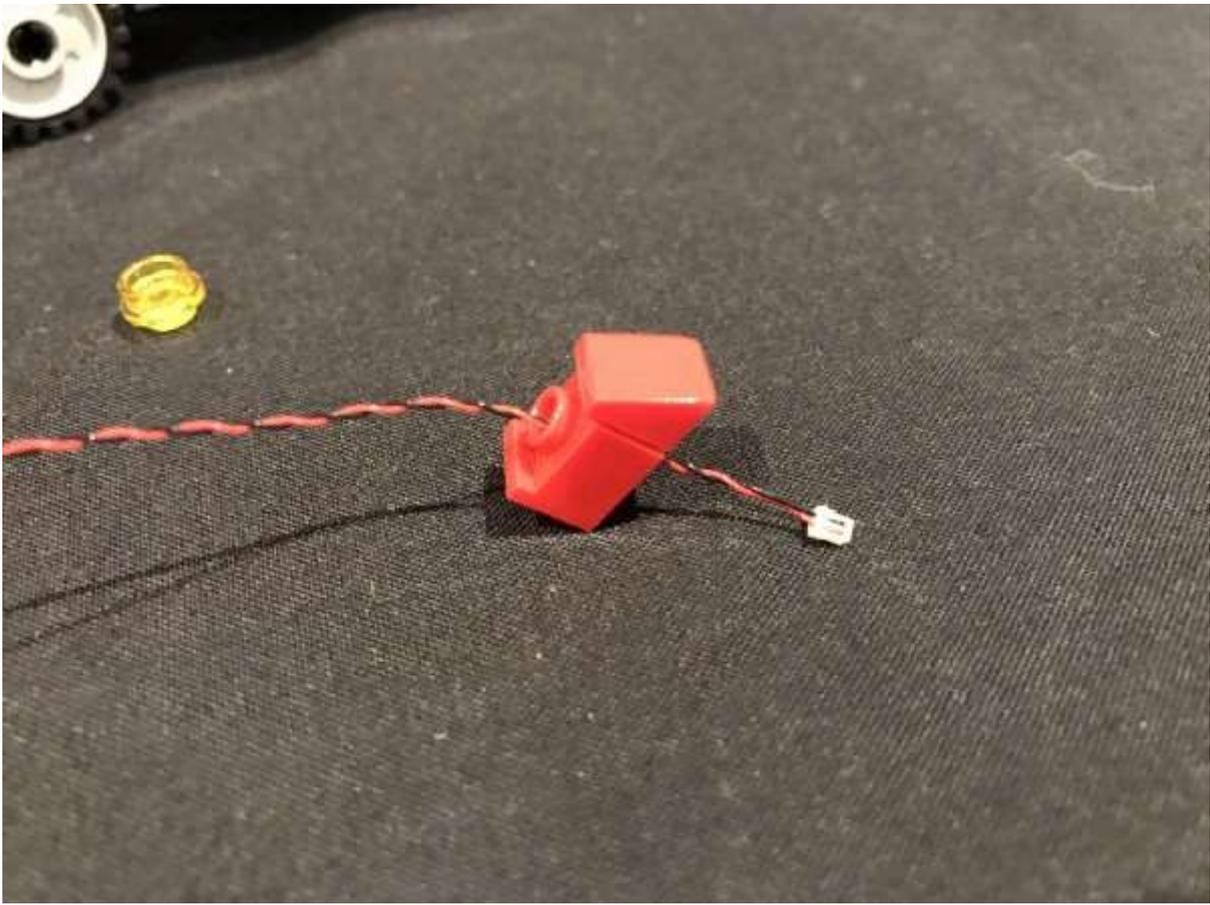




Remove the trans yellow round plate and then take one **White 15cm Bit Light** and thread the connector side through the front hole of the red brick as per below.

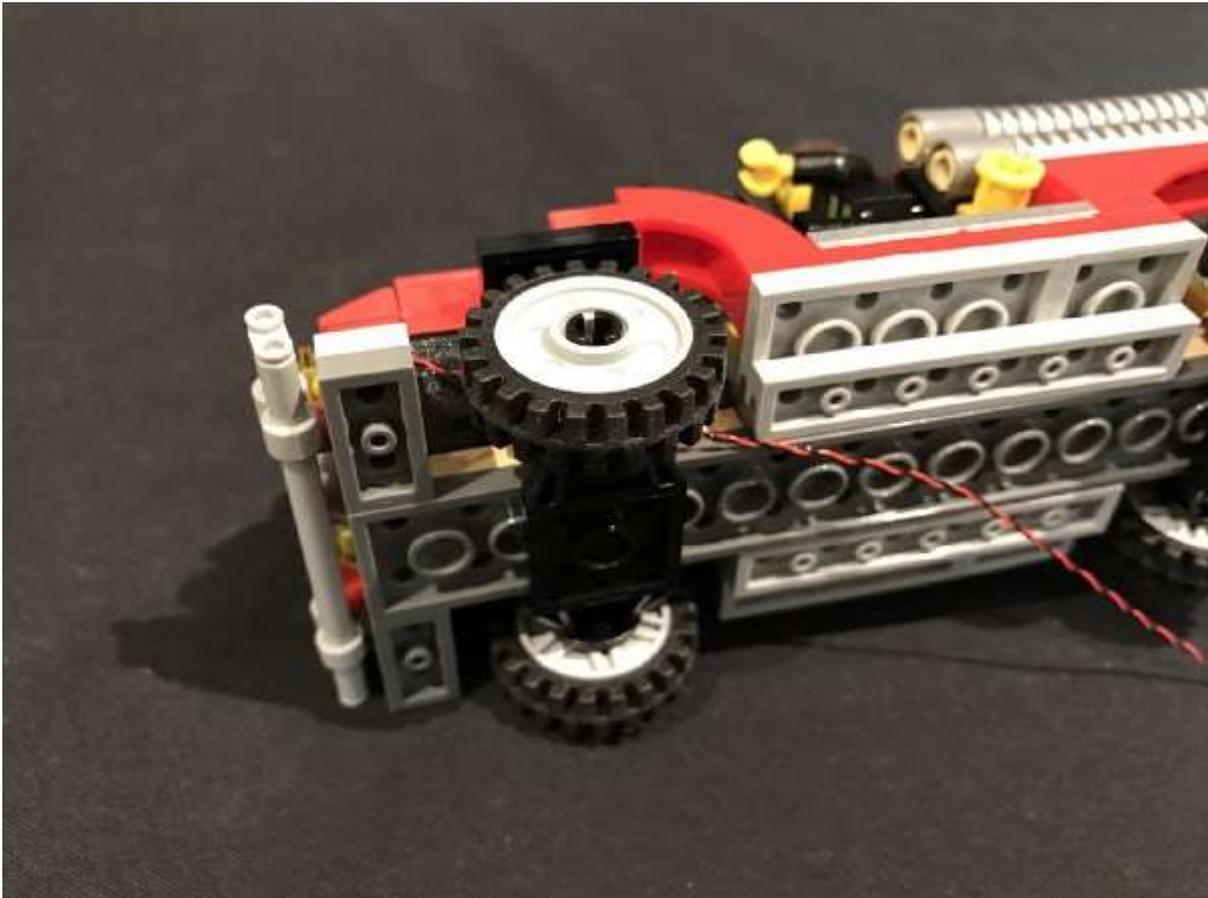
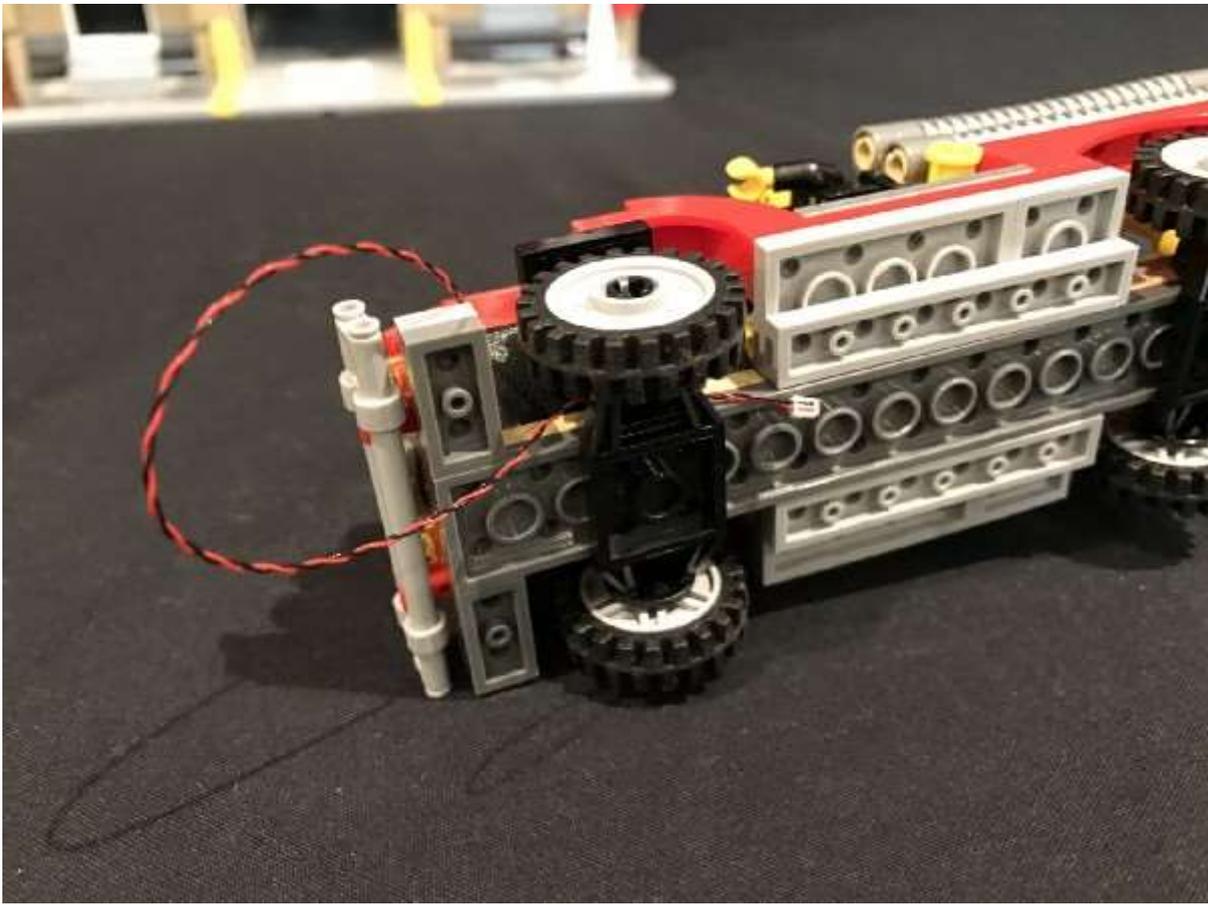


Thread this all the way through until the LED component is flat against the top of the red brick. Secure it in place by reconnecting the trans yellow round plate over the top. Reconnect this headlight back to the car ensuring the cable is hidden behind.





Turn the fire truck onto its side and thread the bit light cable over the wheel. Pull all the way through from the other side of the wheel.



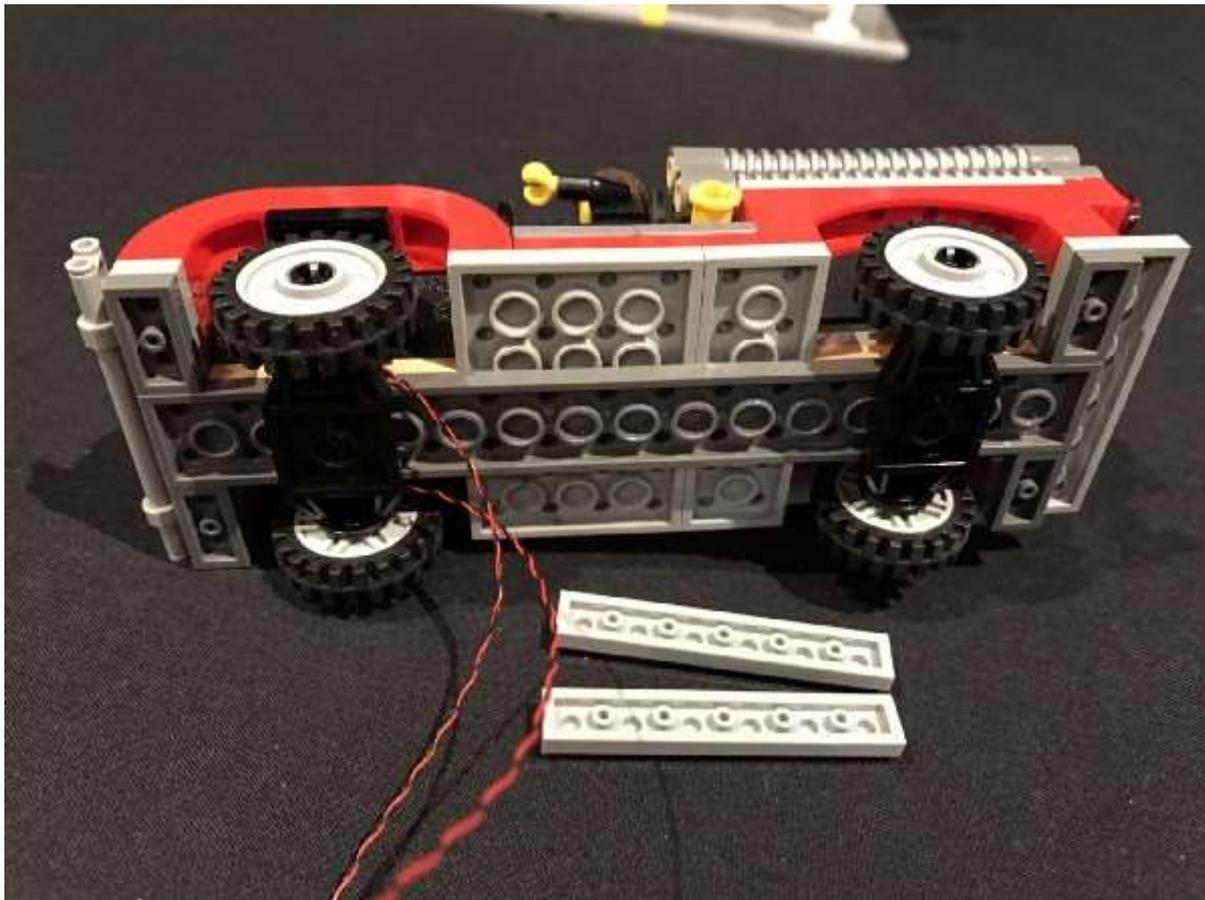
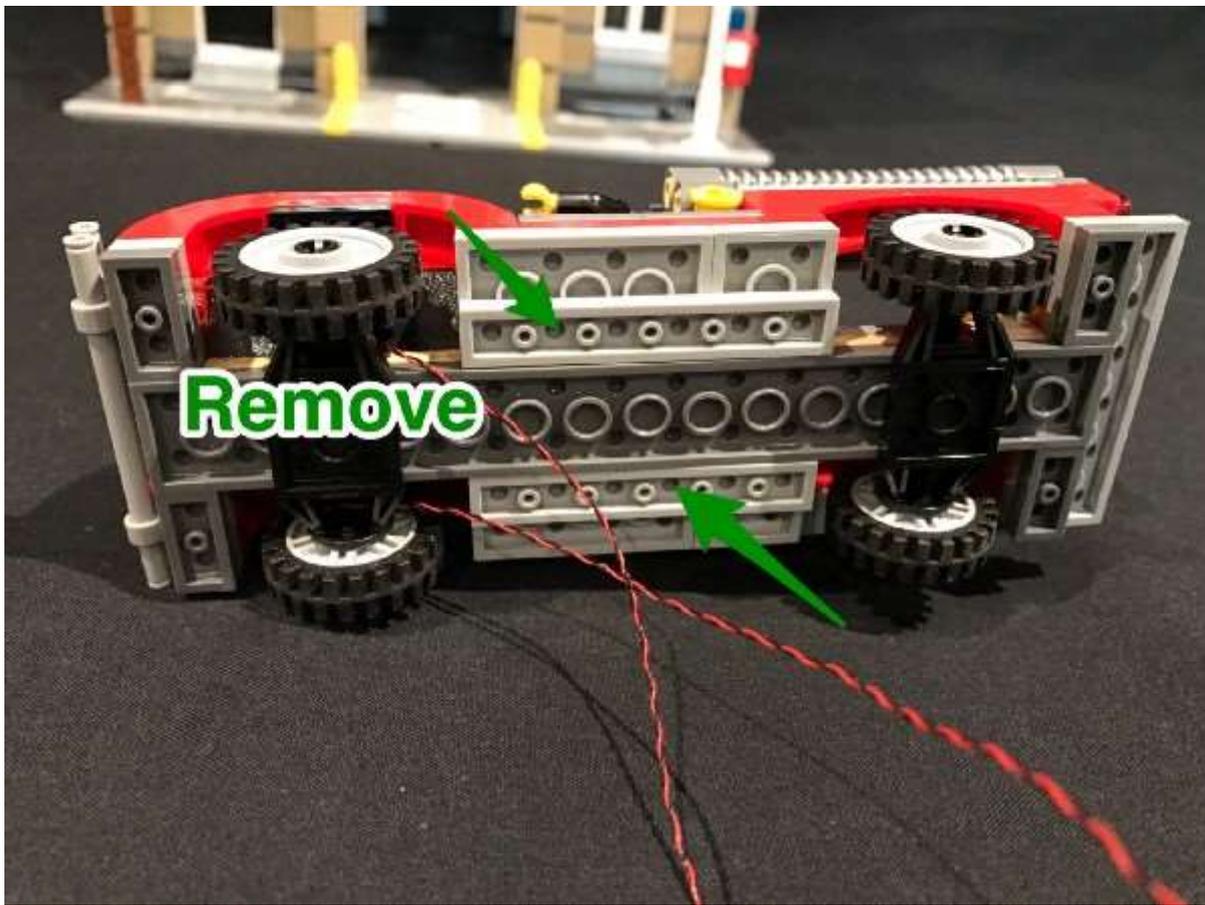
Reconnect the red piece we removed at the start.



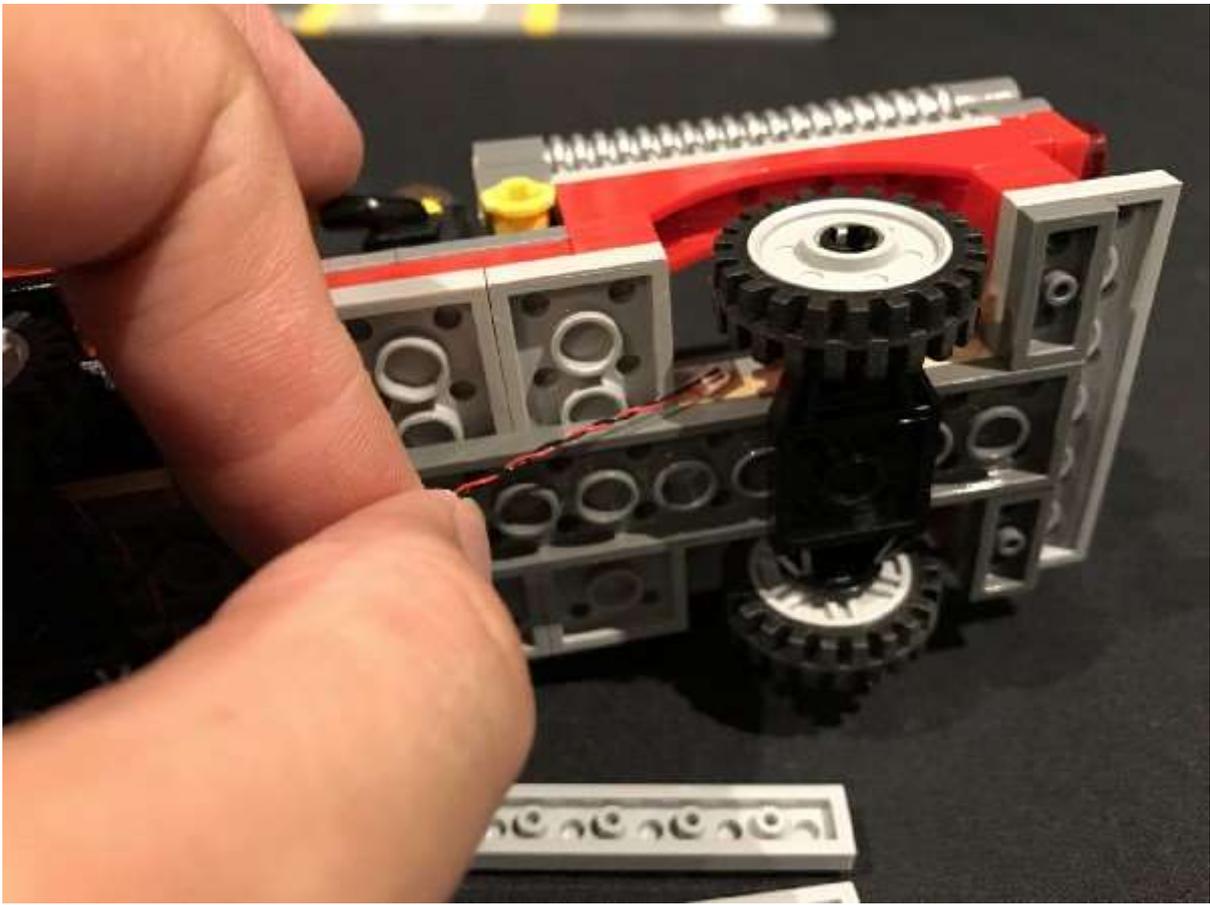
Repeat this process to install another **White 15cm Bit Light** to the other side of the fire engine.

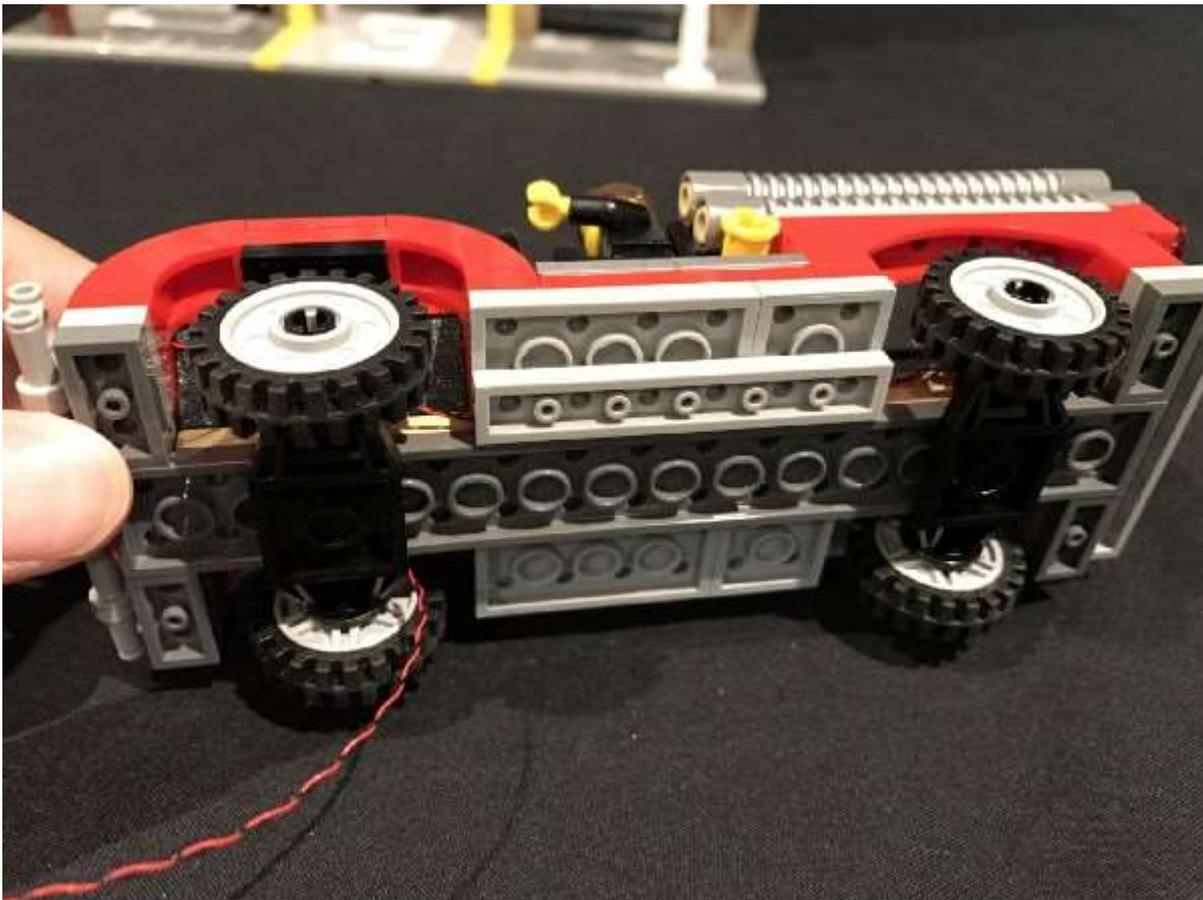
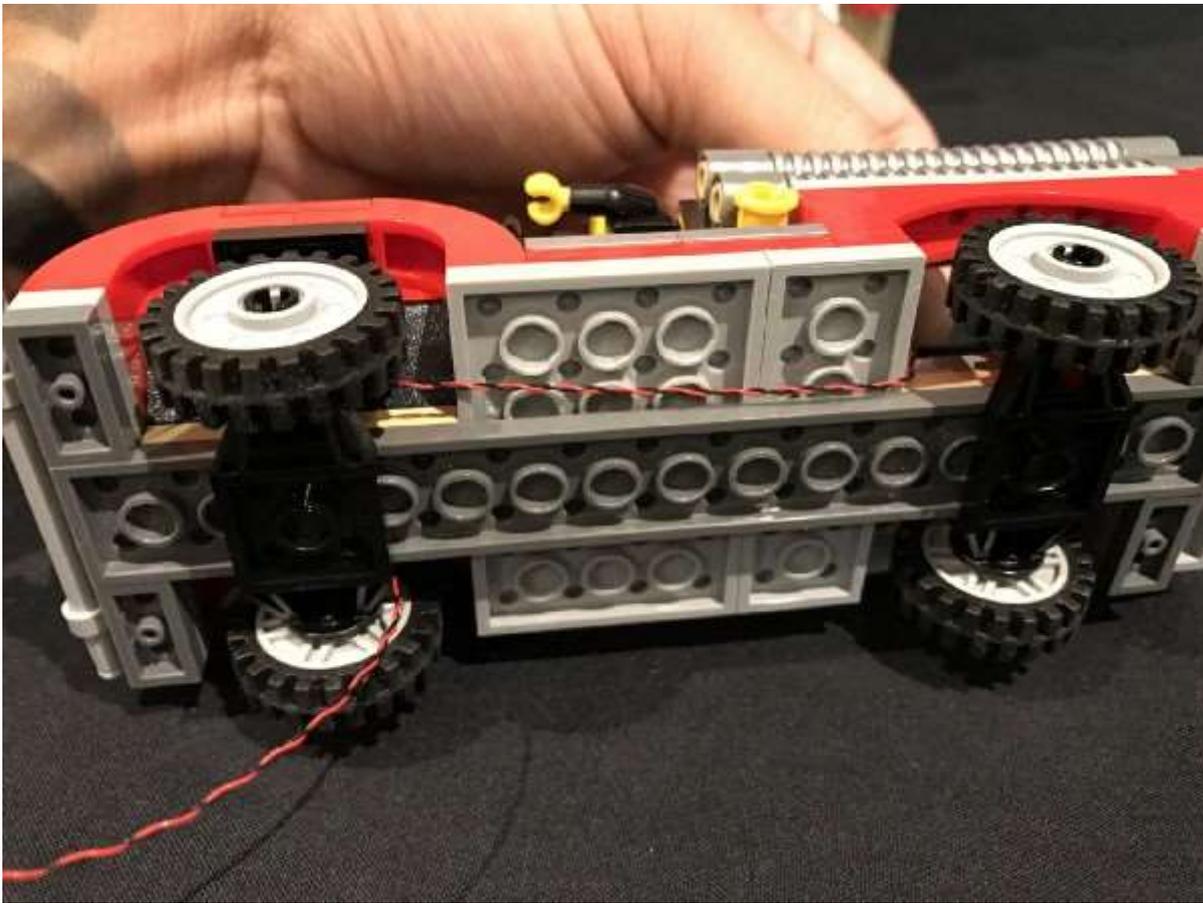


2.) Turn over again and remove the two grey 1×6 plates.

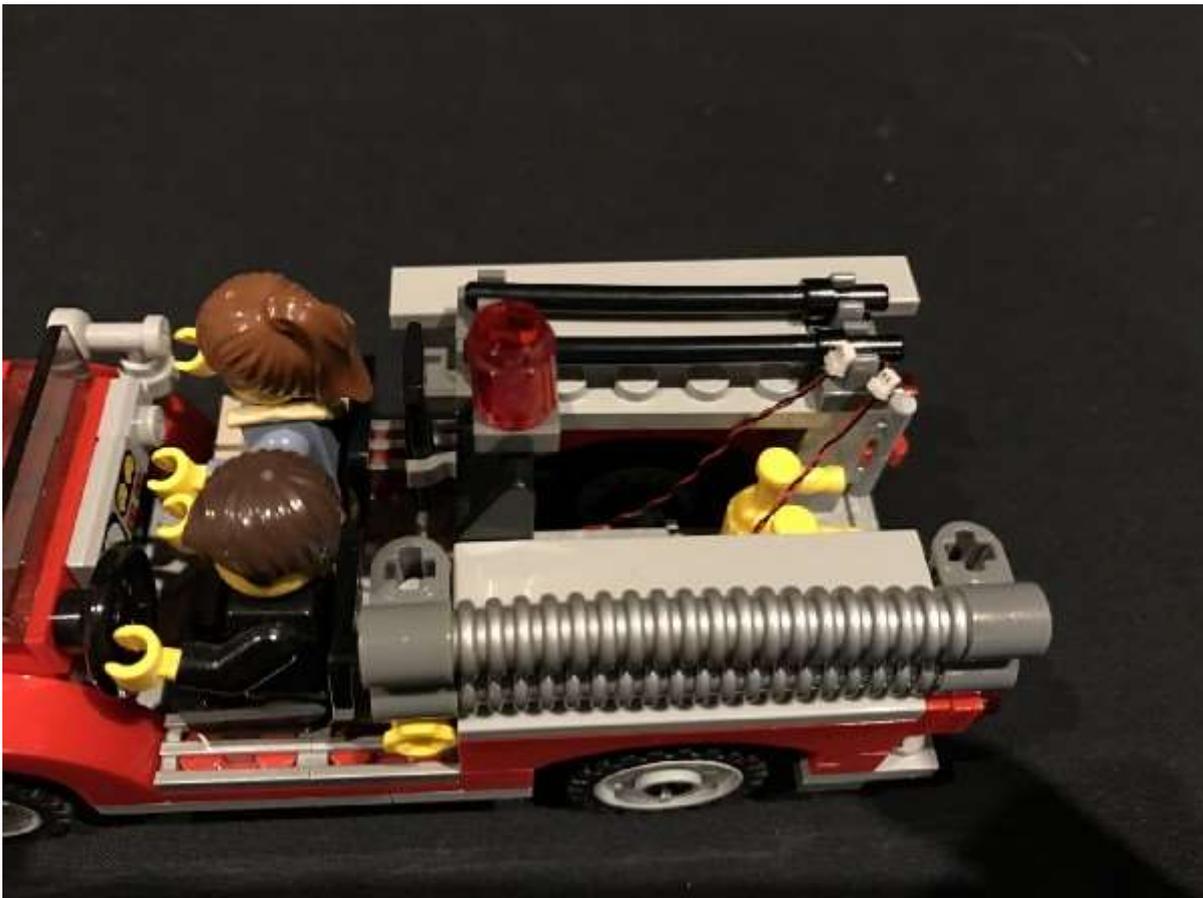
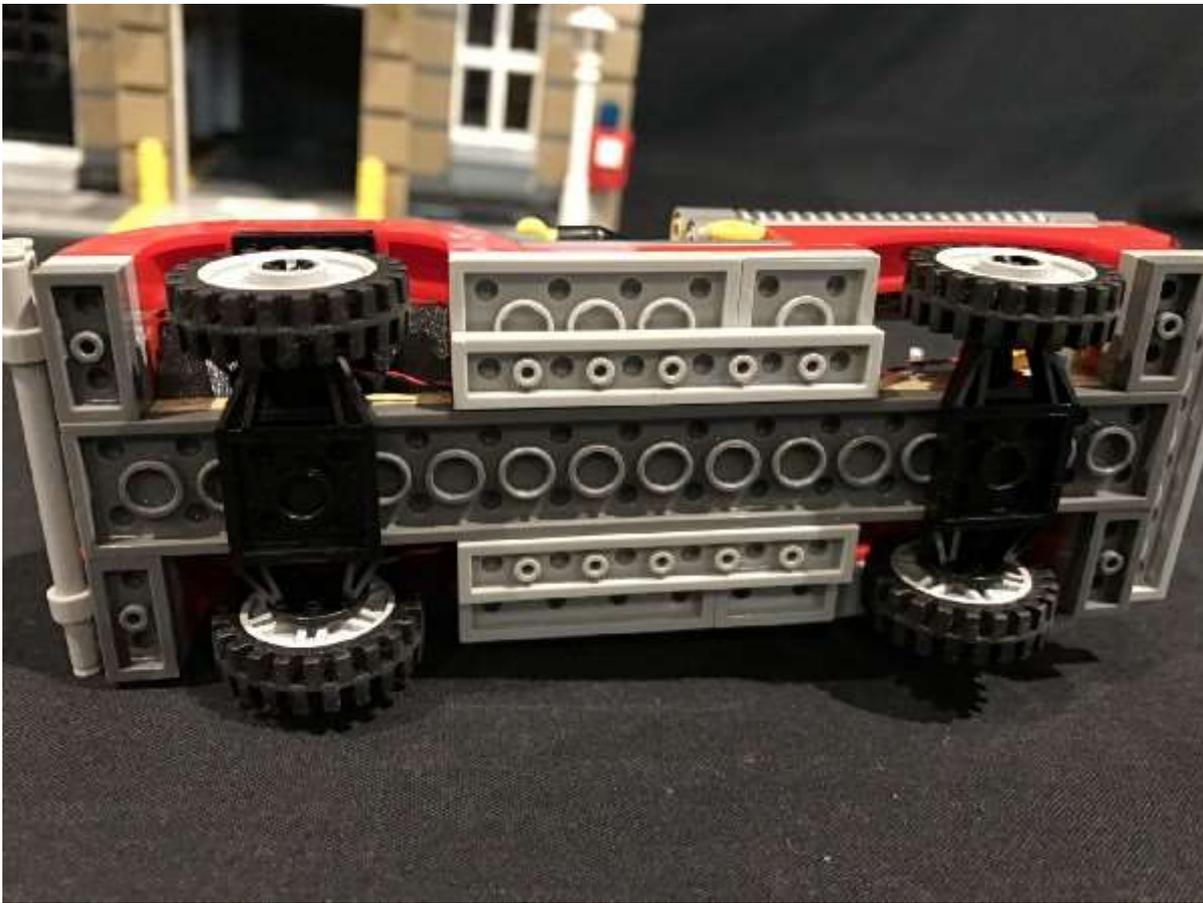


Thread the cable up to the back section of the fire truck and pull all the way up from the top. Secure the cable by reconnecting the 1×6 plate we removed earlier.

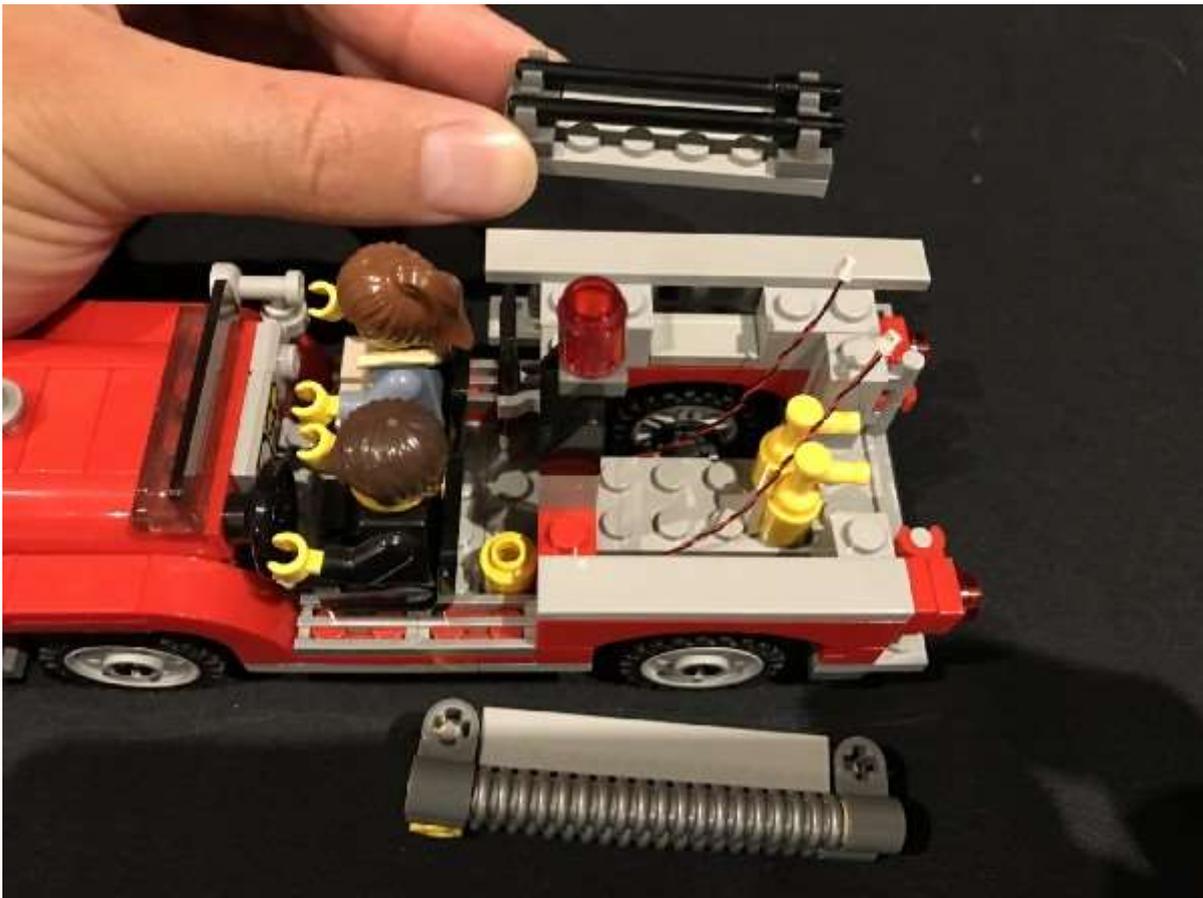




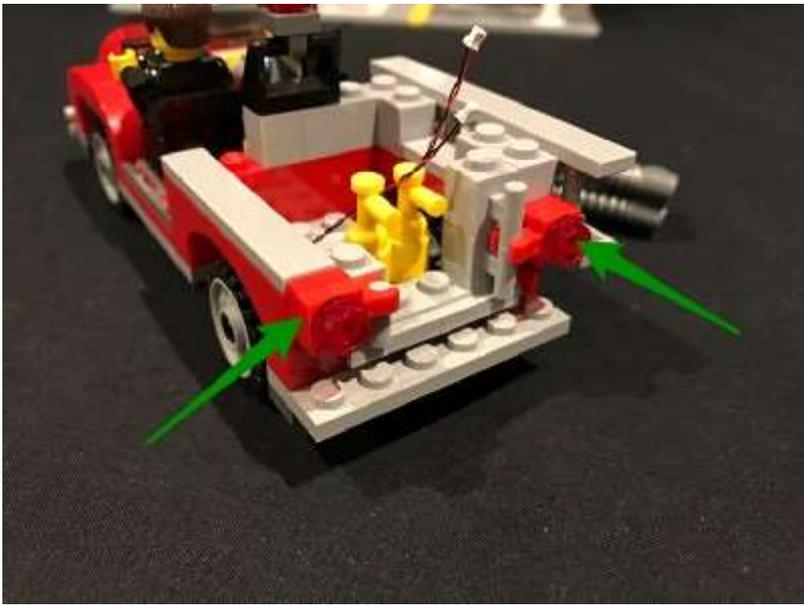
Repeat this process to feed the other cable up to the back section.



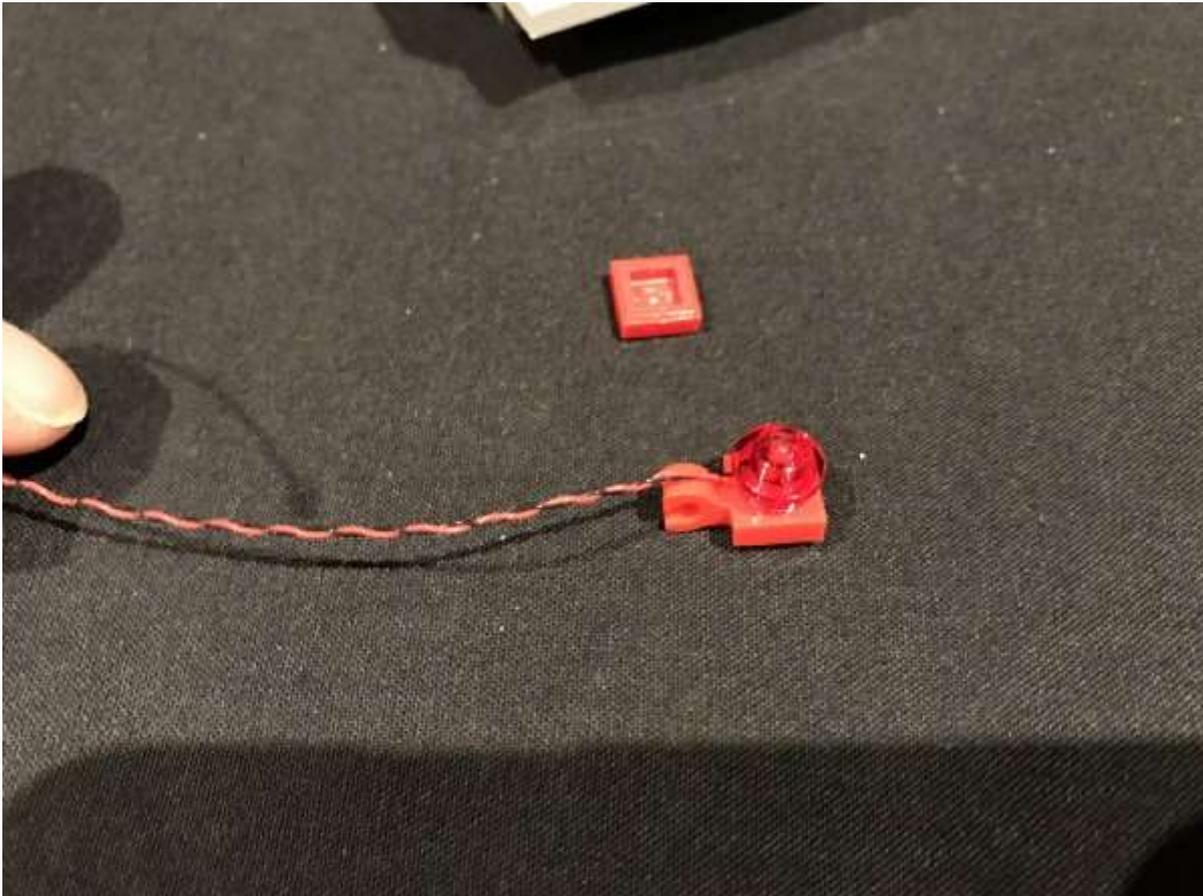
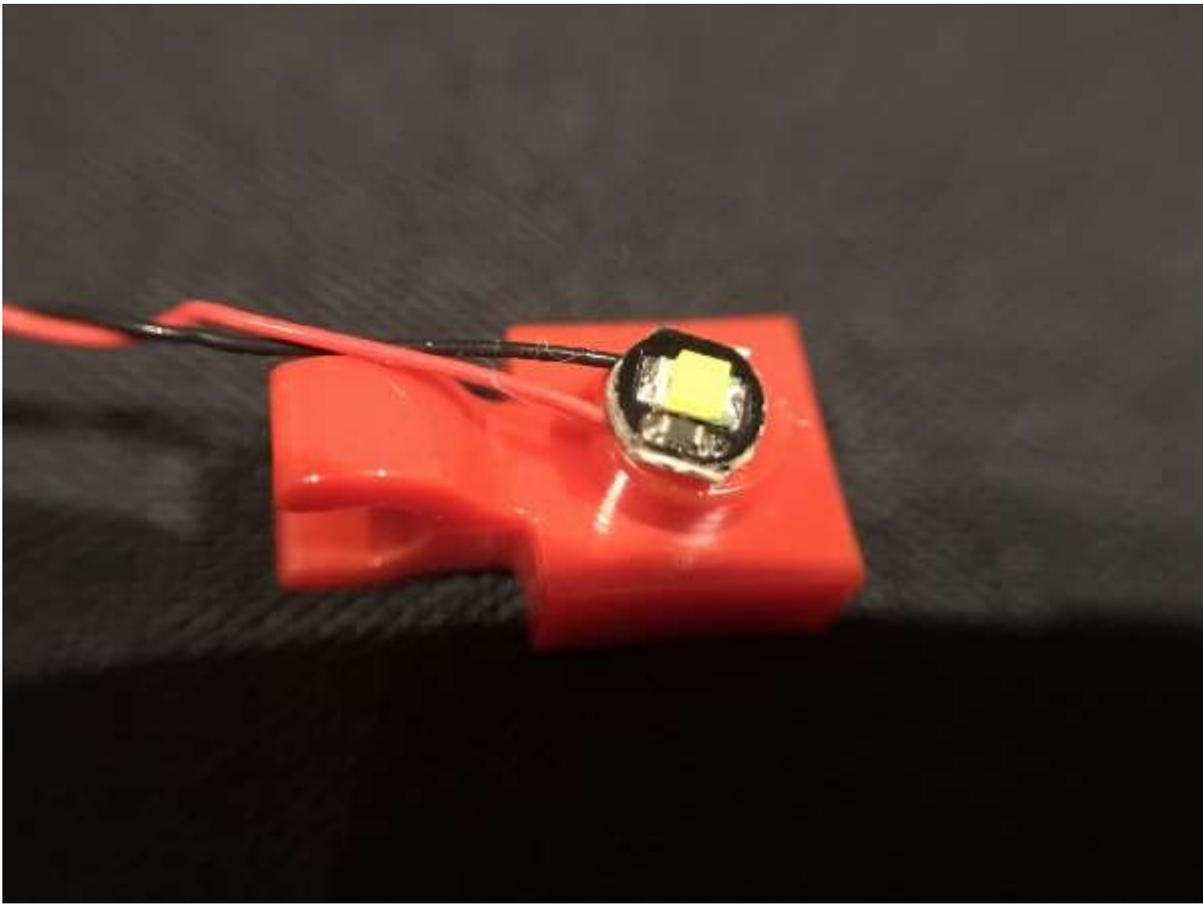
3.) Remove the following sections to give us more room to access the back of the truck.



4.) We will now install the back lights. Start by removing the 2 back light sections and then disassemble pieces as per below



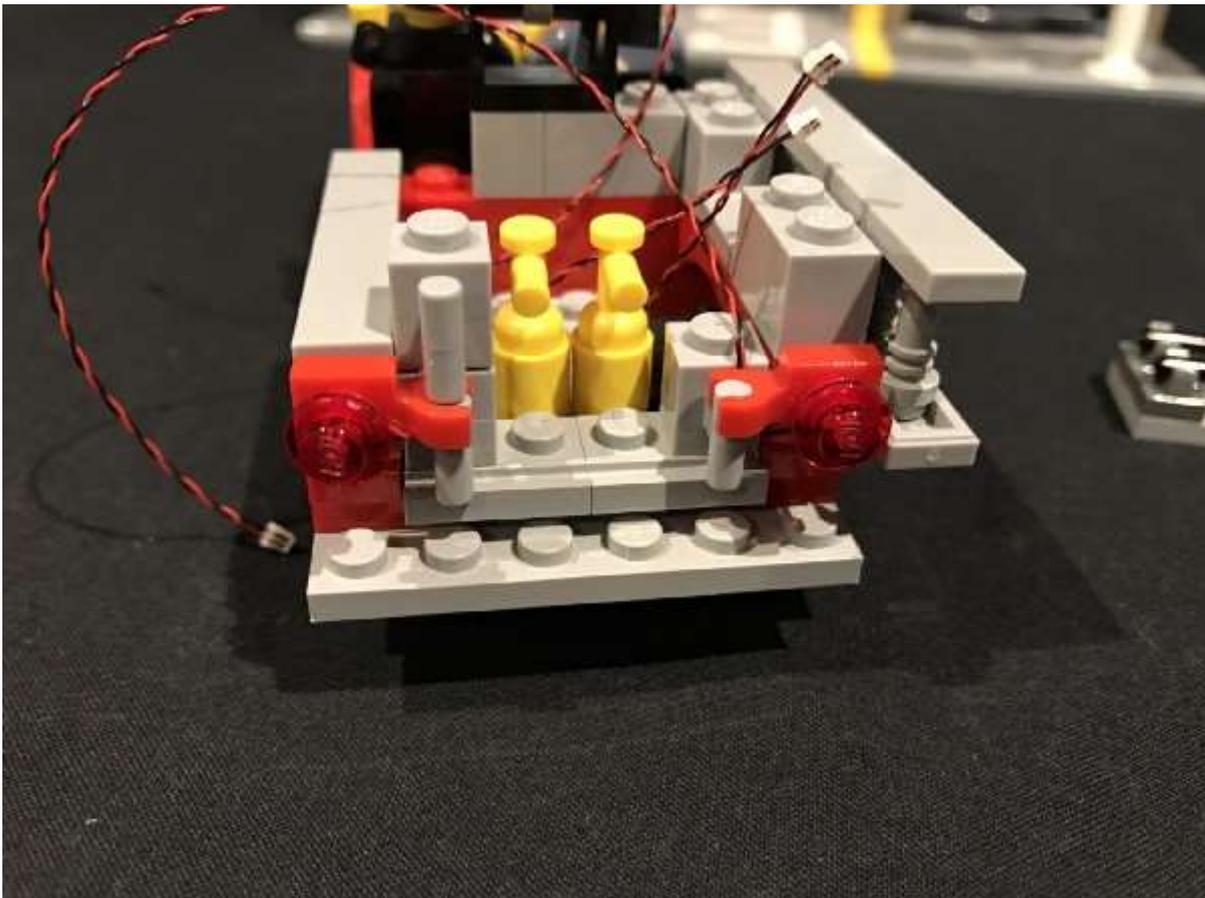
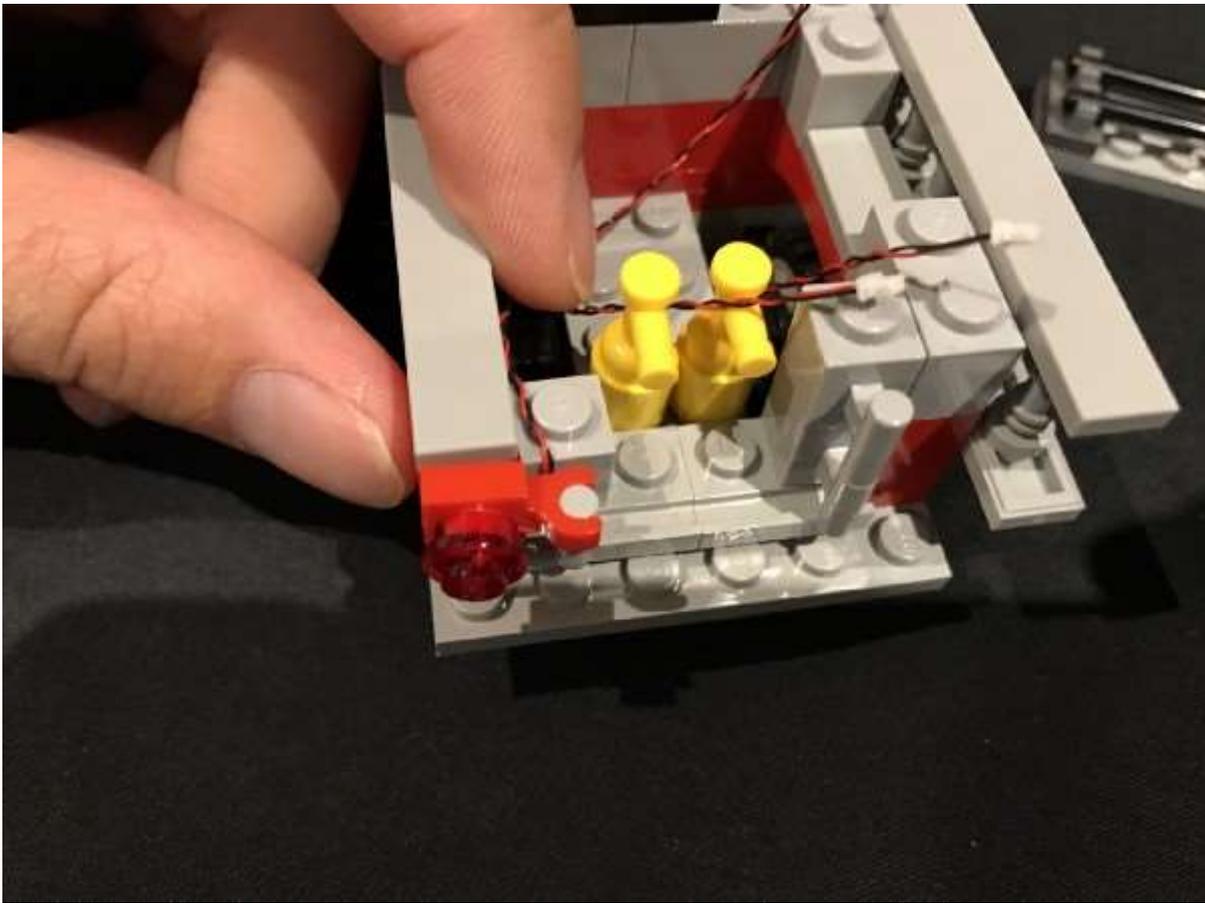
5.) Take another **White 15cm Bit Light** and place the LED component directly over the stud of the red plate with clip. Secure the bit light in place by reconnecting the trans red round plate over the top. Ensure the cable is facing toward the clip.



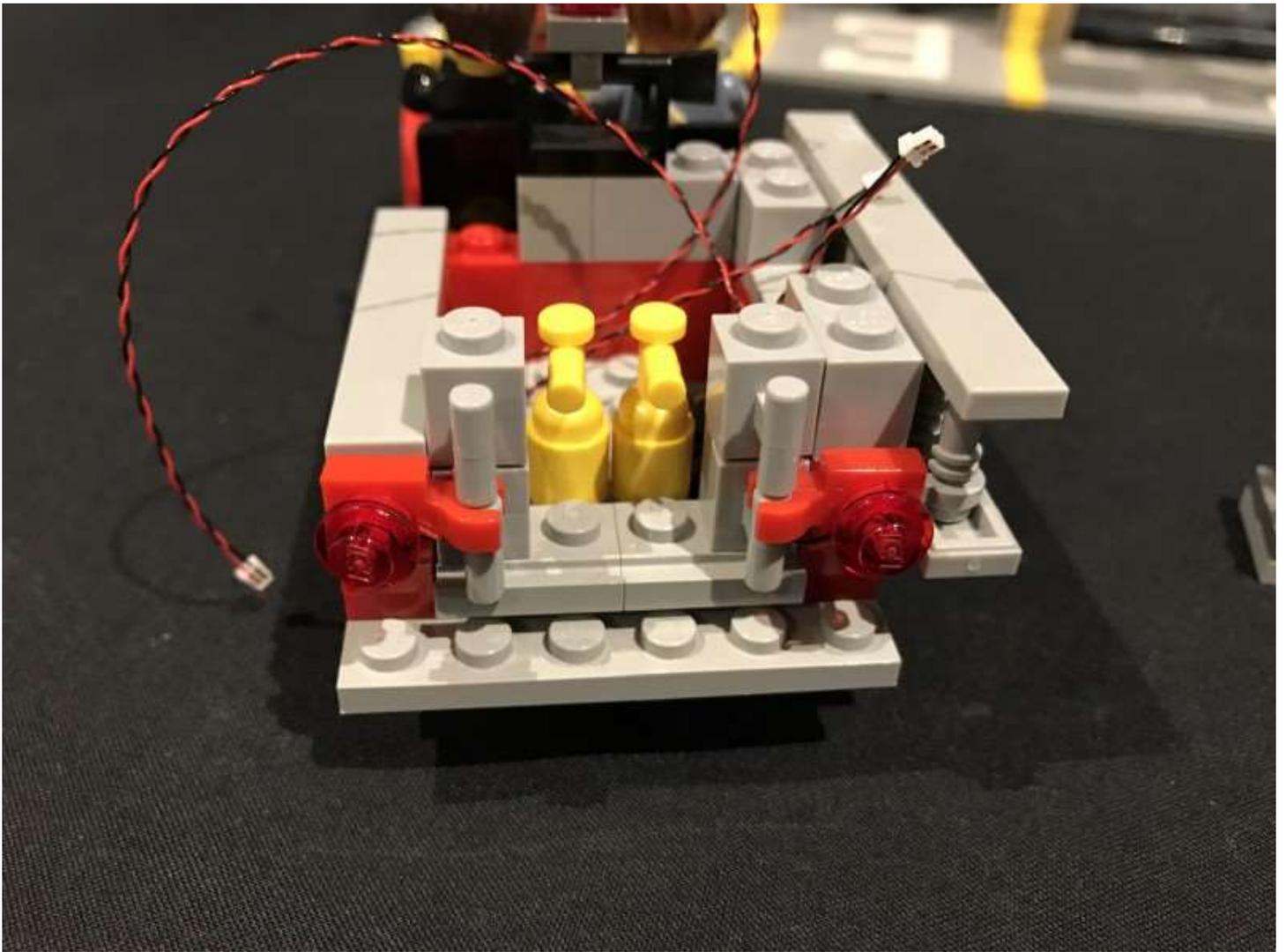
Reconnect this section back to the back of the truck and discard the flat red plate as this is no longer needed.



6.) Feed the wire behind and in between the grey stud before reconnecting the grey brick with bar over the top.



Repeat this process to install another **White 15cm Bit Light** to the other side.

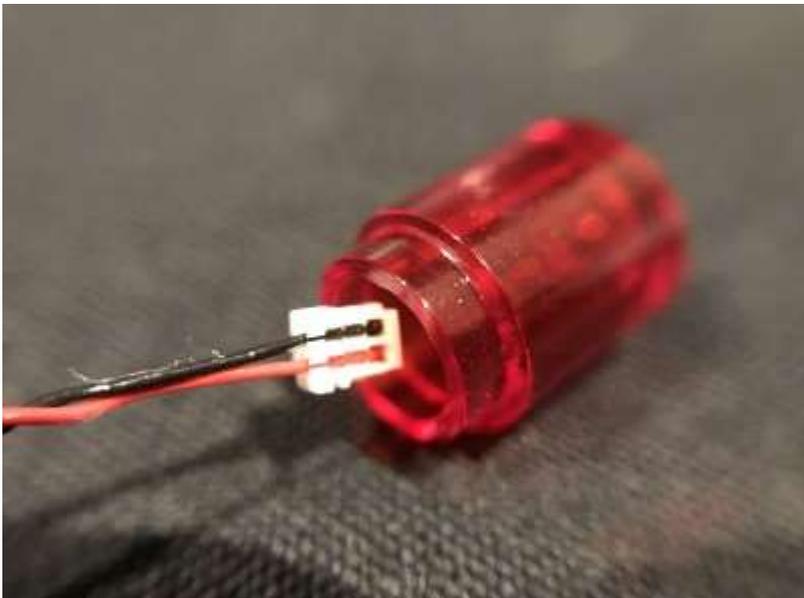


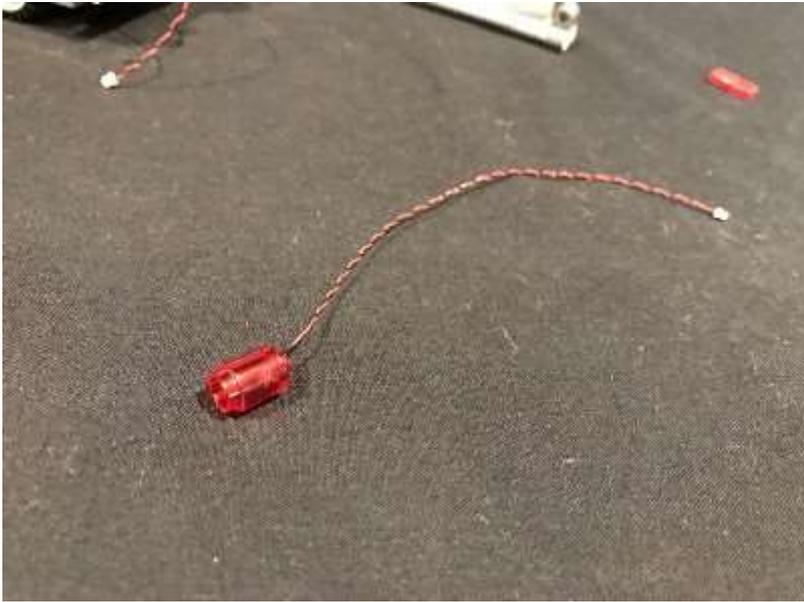
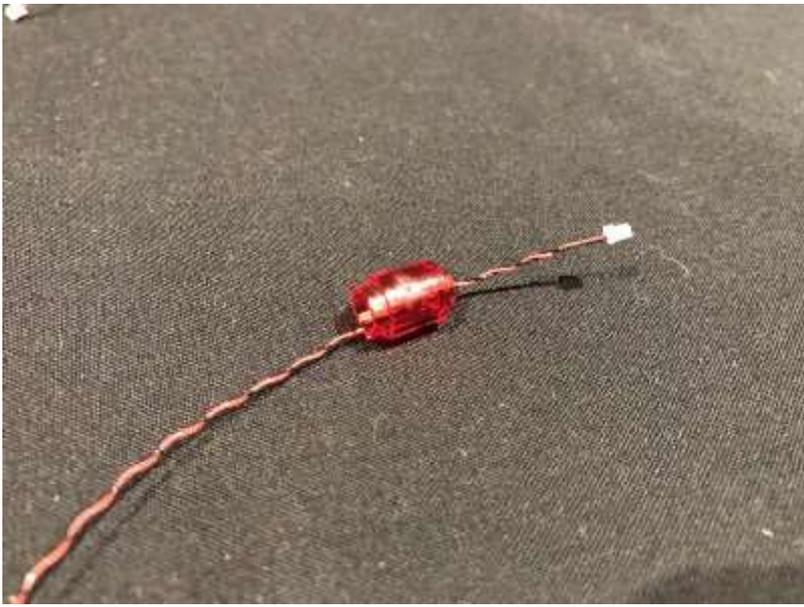
7.) We will now install a flashing light to the top of the truck. Remove this section and then disassemble pieces as per below



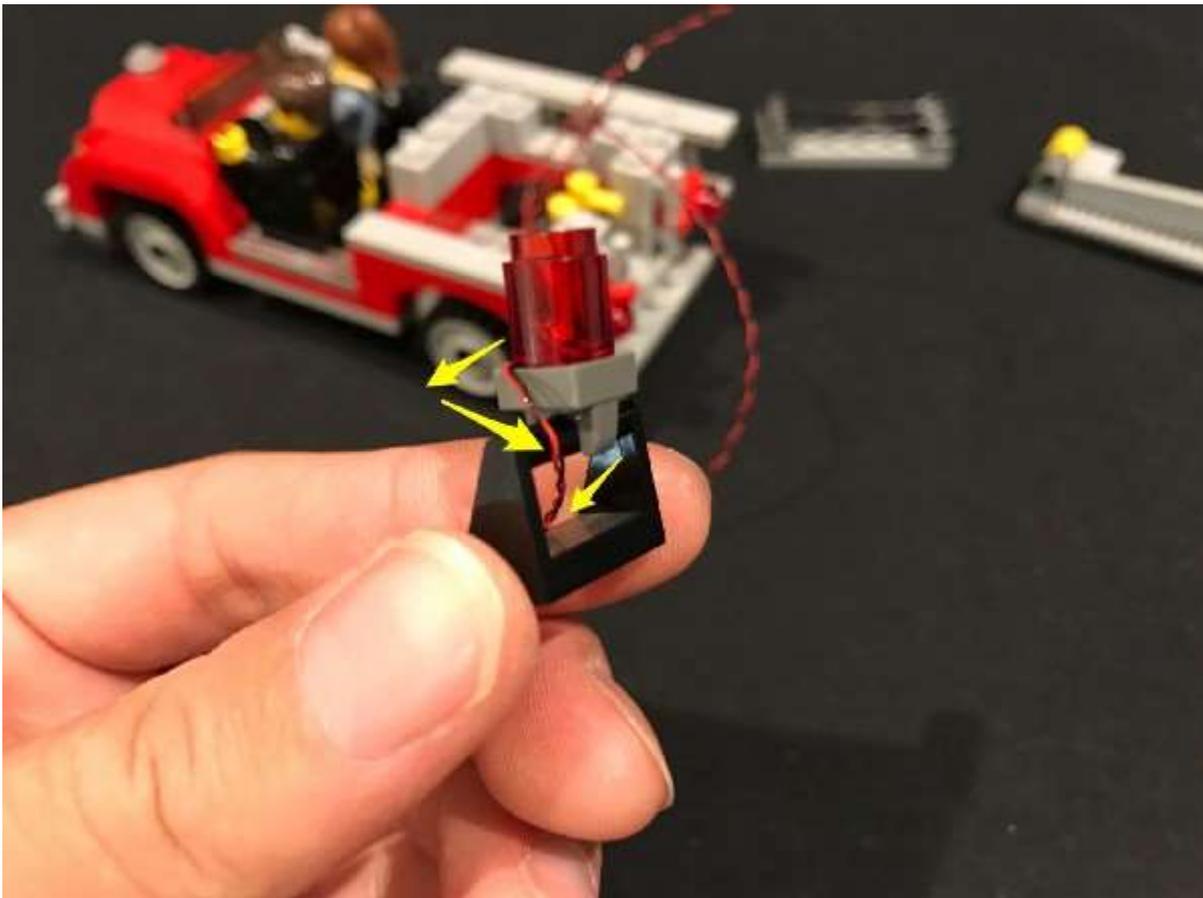
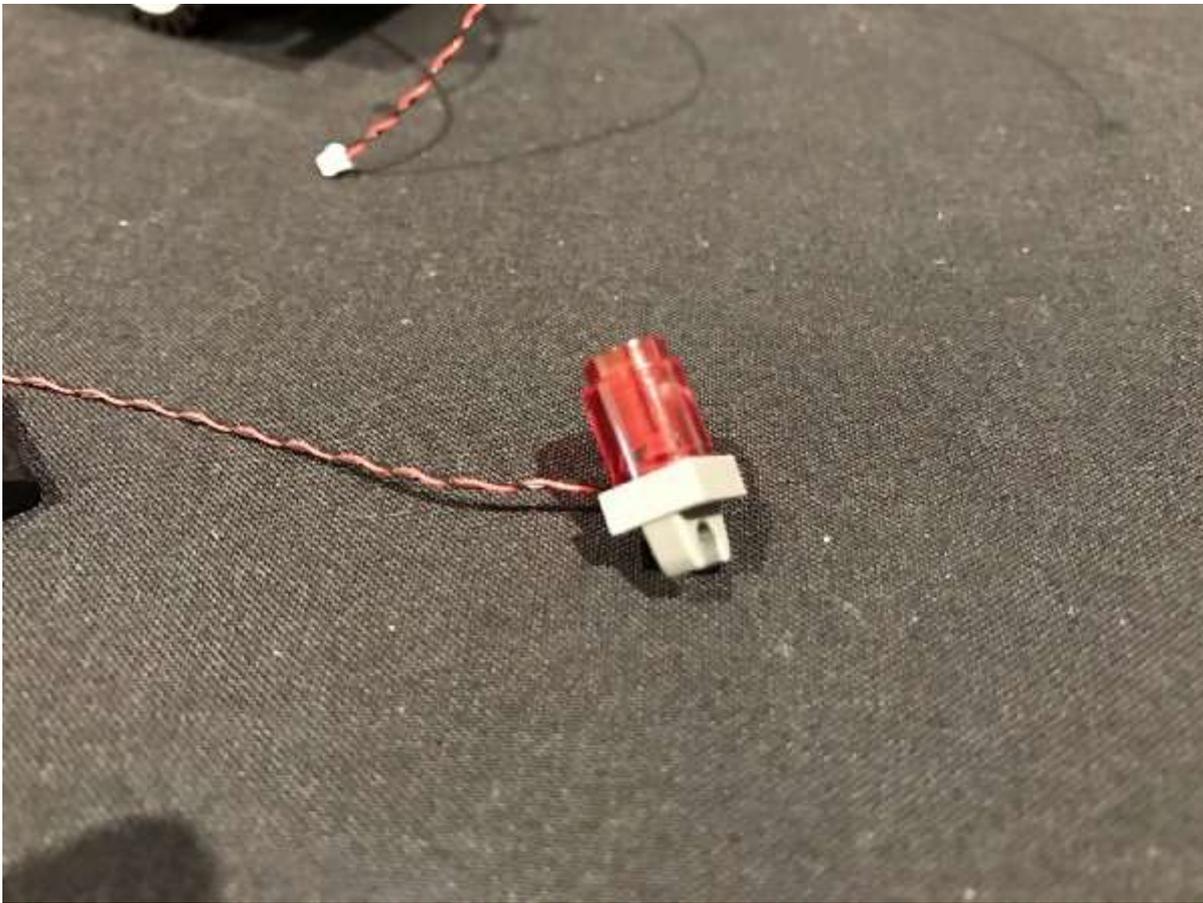


Take a **White 15cm Flashing Bit Light** and thread the connecting side through the large hole of the trans red round brick. Pull the cable all the way through from the other side until the LED component is right up against the inside of the brick.

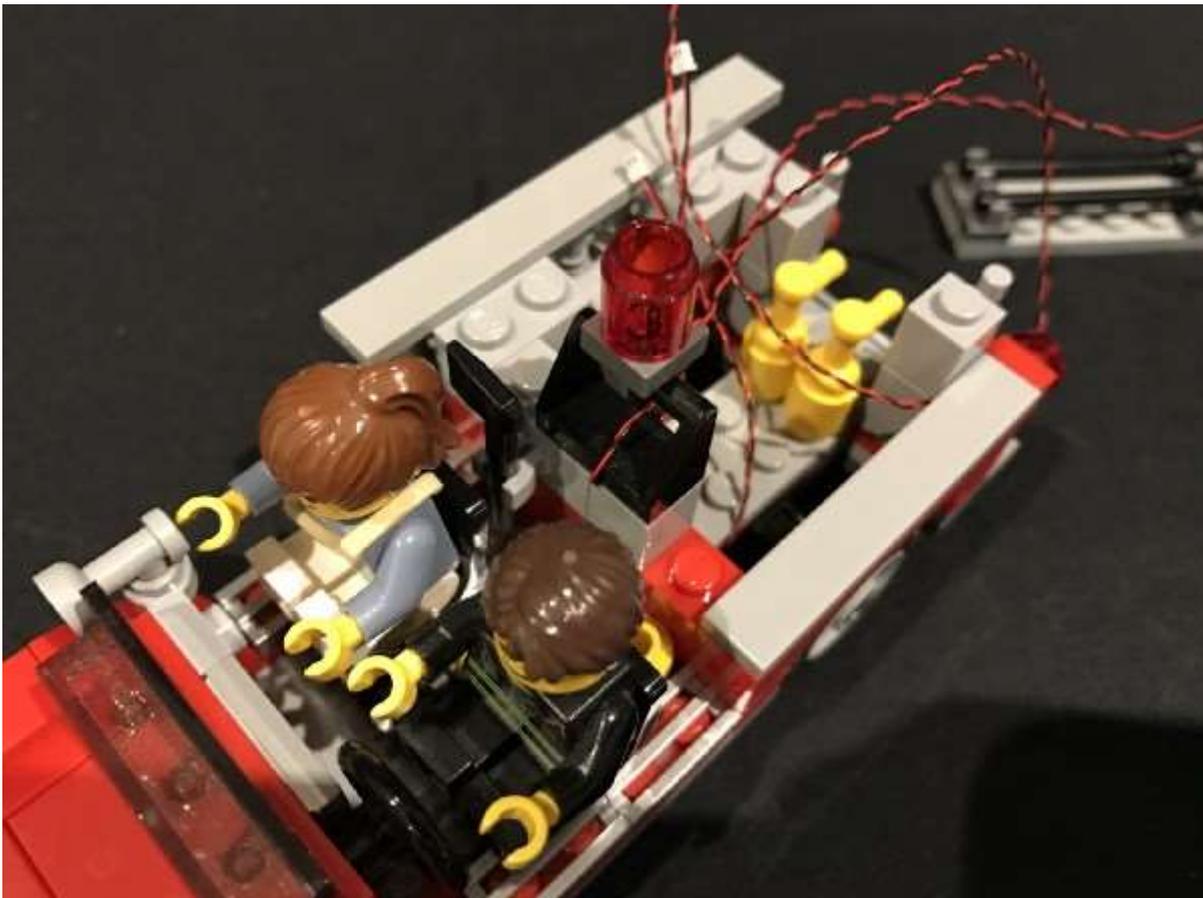
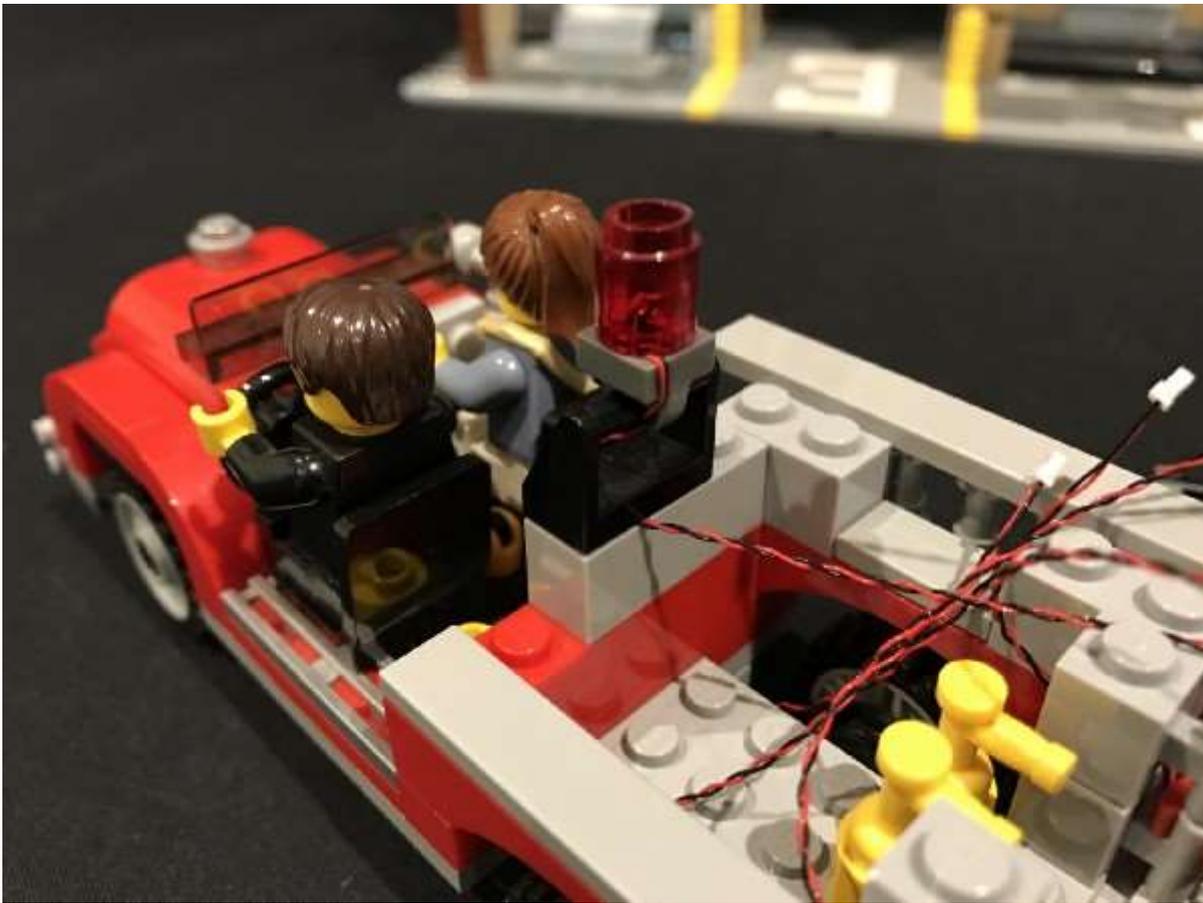




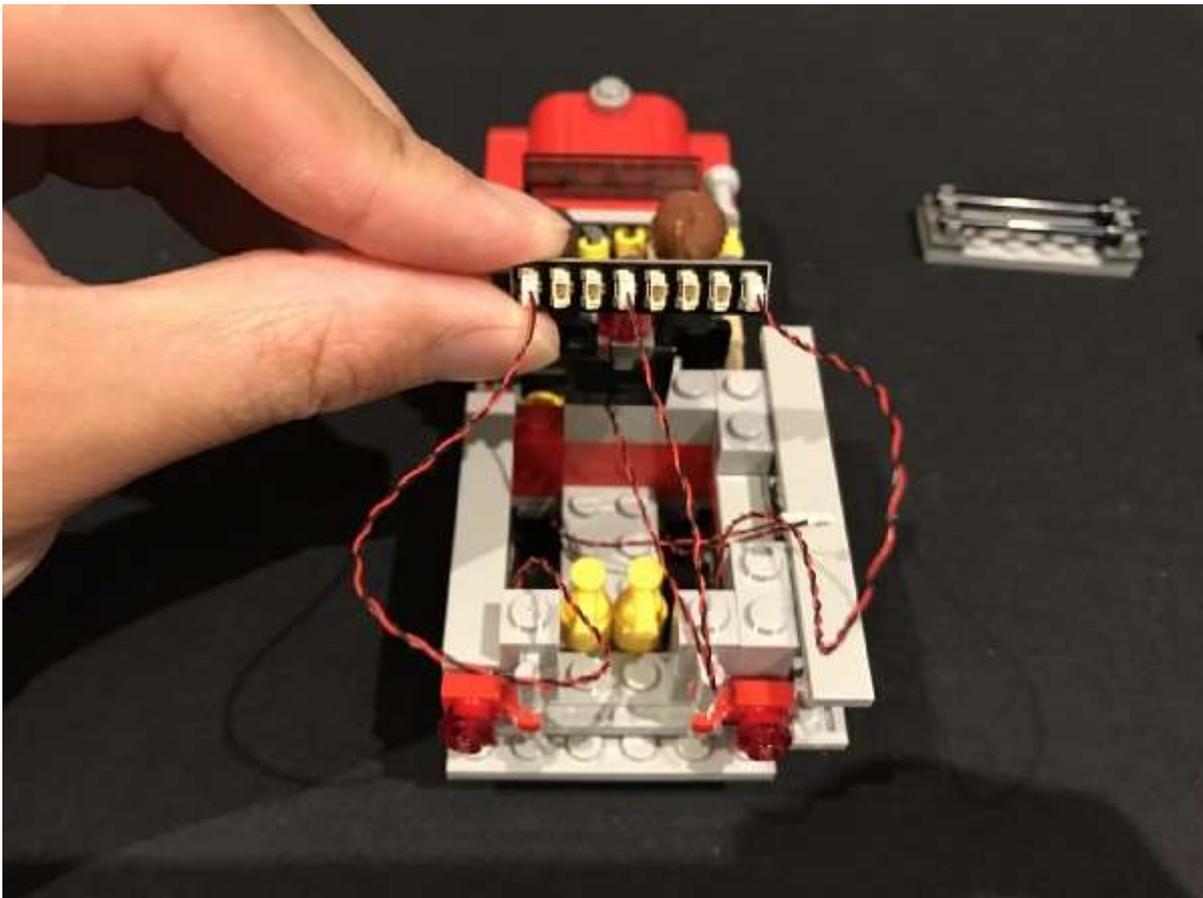
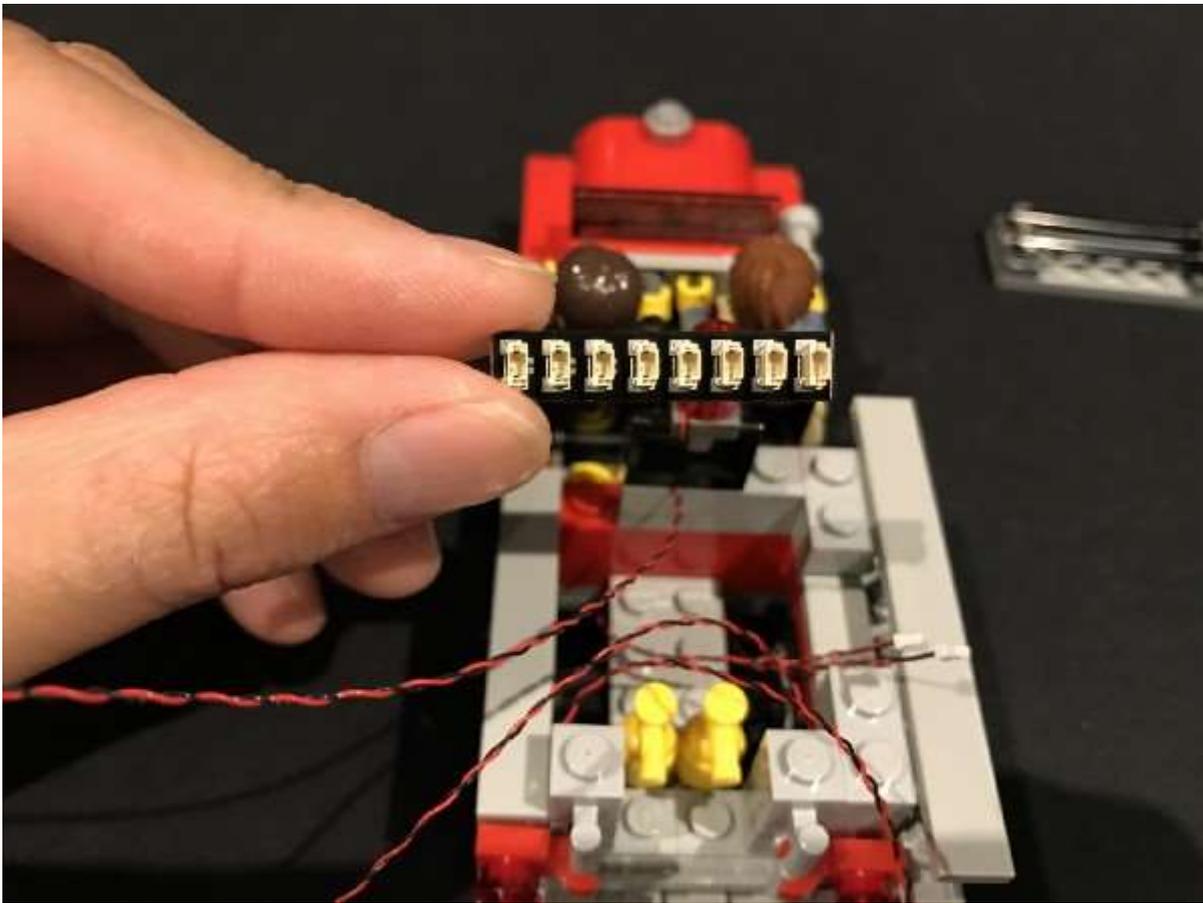
Reconnect the grey plate with clip to the trans red piece and then reconnect this section back to the black frame. Ensure the cable is threaded behind and then back through the black frame toward the front.



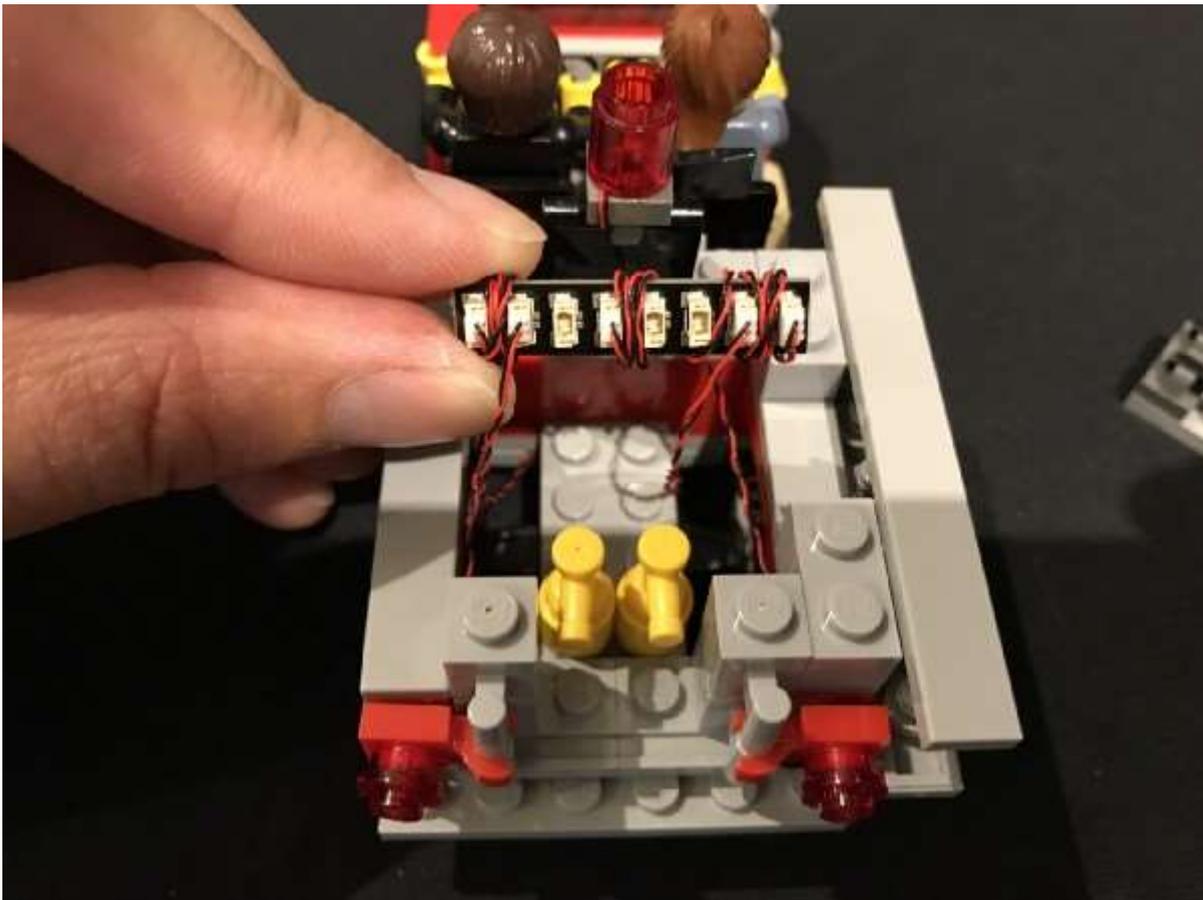
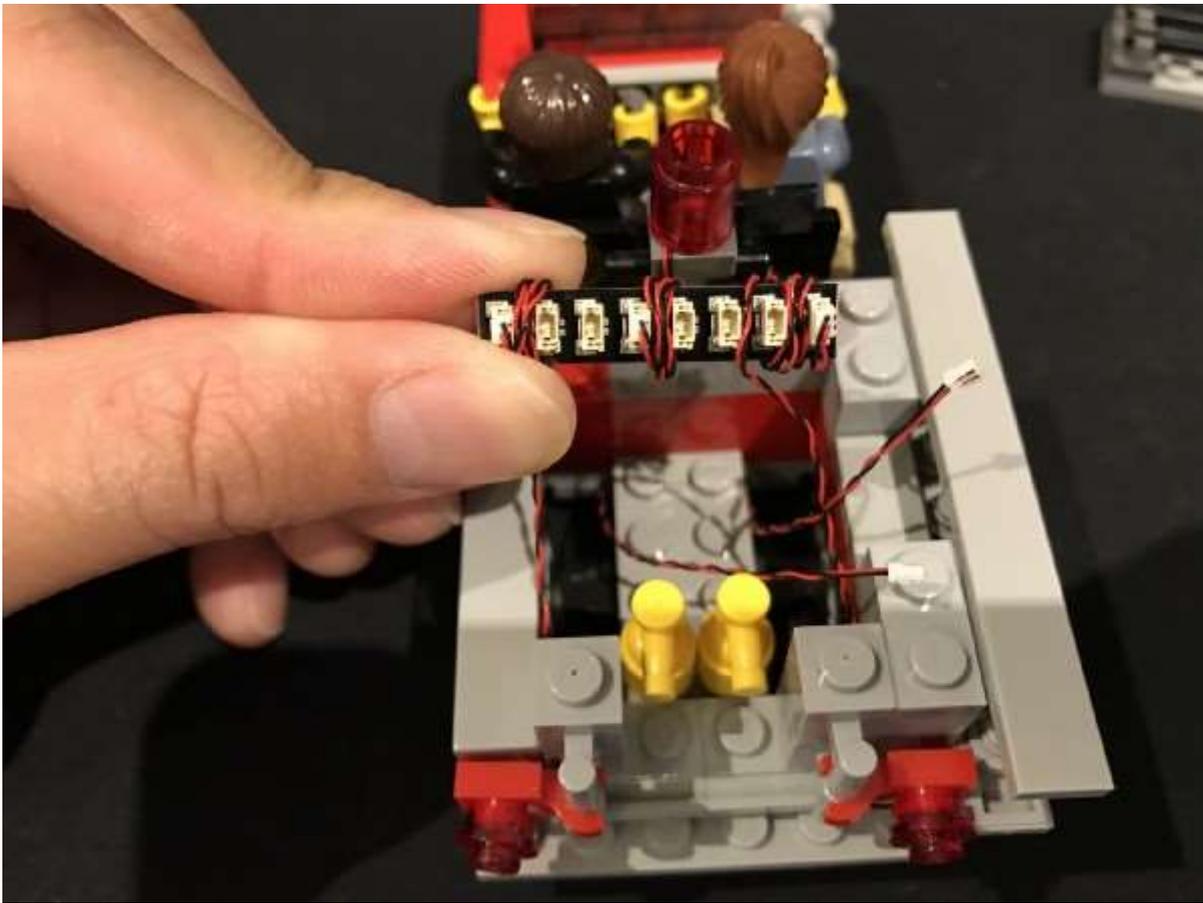
Reconnect this whole section back to the truck ensuring the cable is laid underneath the bottom of the black frame toward the back.



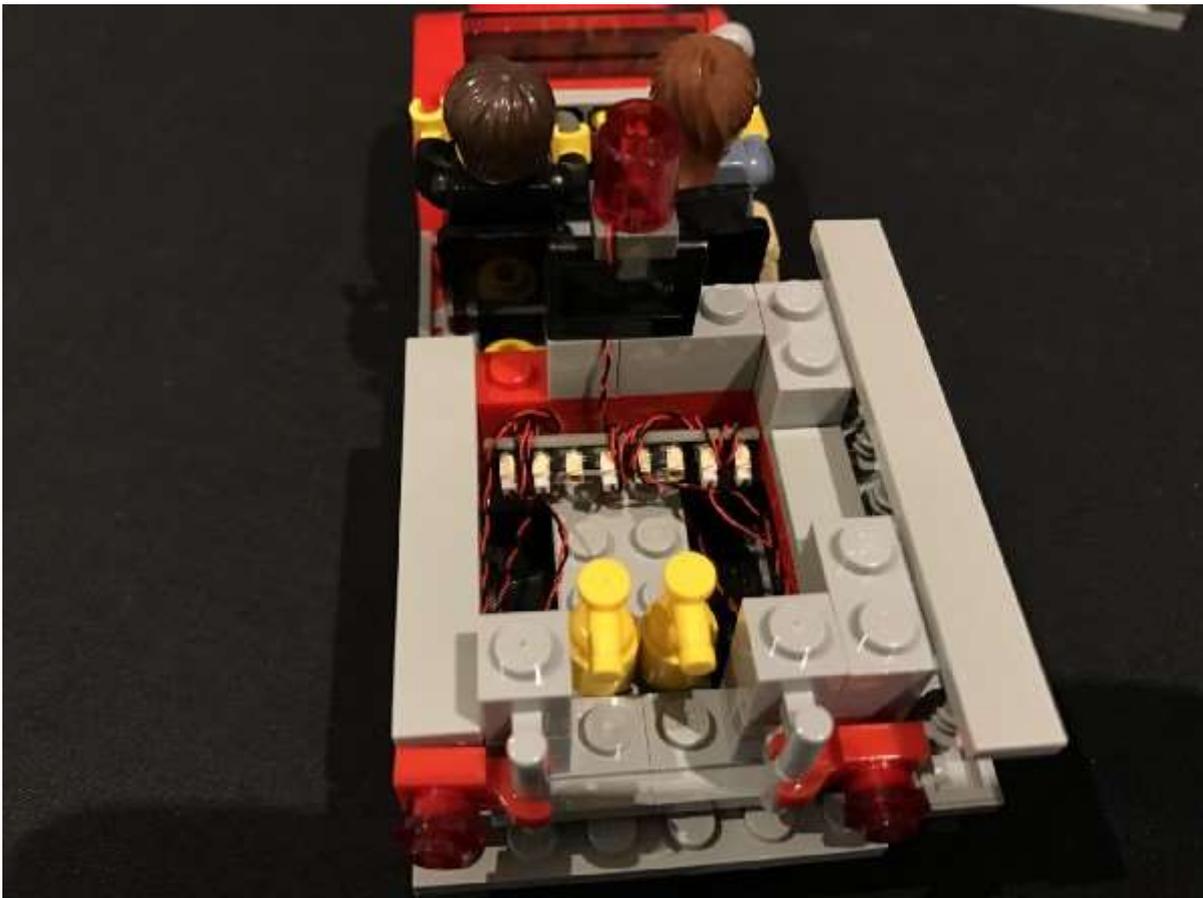
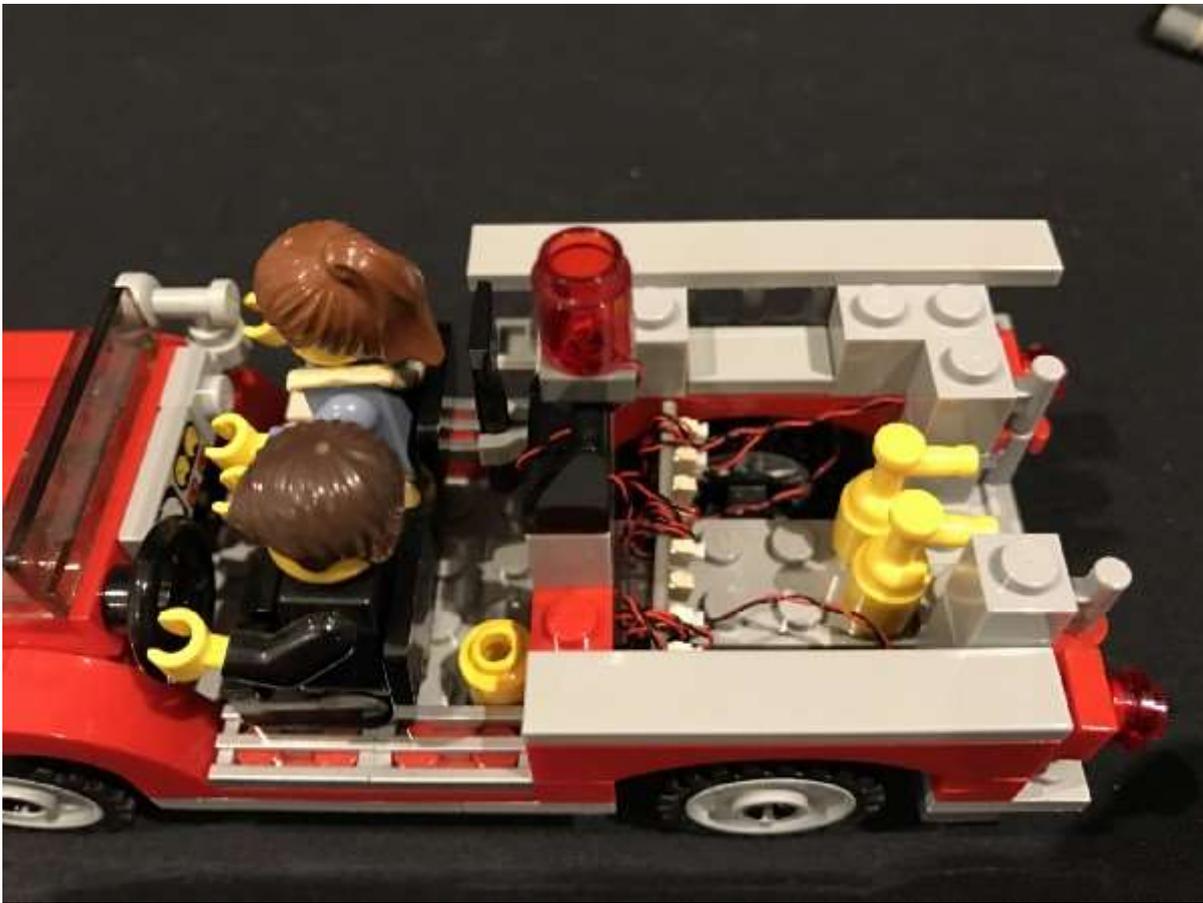
8.) Take the **8-Port Expansion Board** and then connect cables from the 2 back lights as well as the flashing light to the ports as per below.



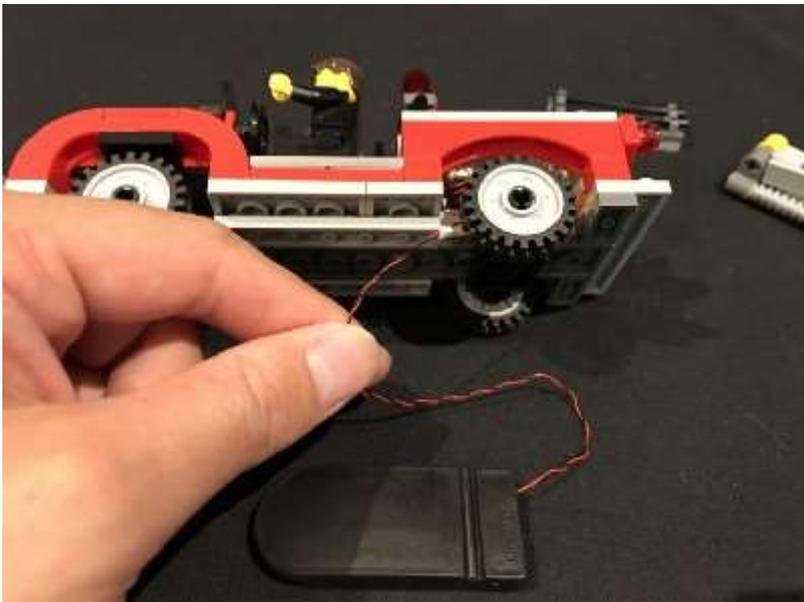
9.) Wind the cables around the board 3 times or until the expansion board is close to the connectors from the headlights and then connect these two cables from the headlights to the next available ports.



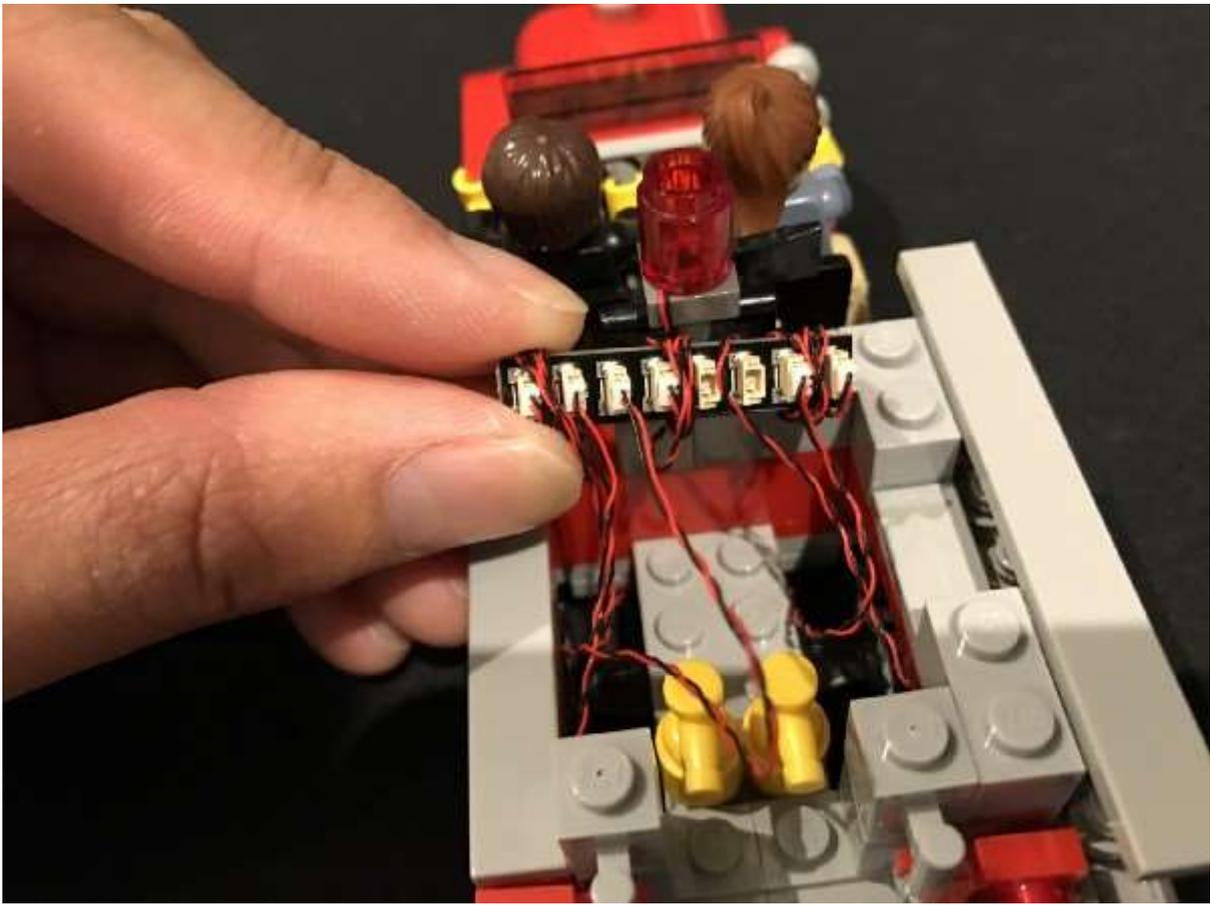
10.) Tuck the expansion board and any excess cables into the back section of the truck.

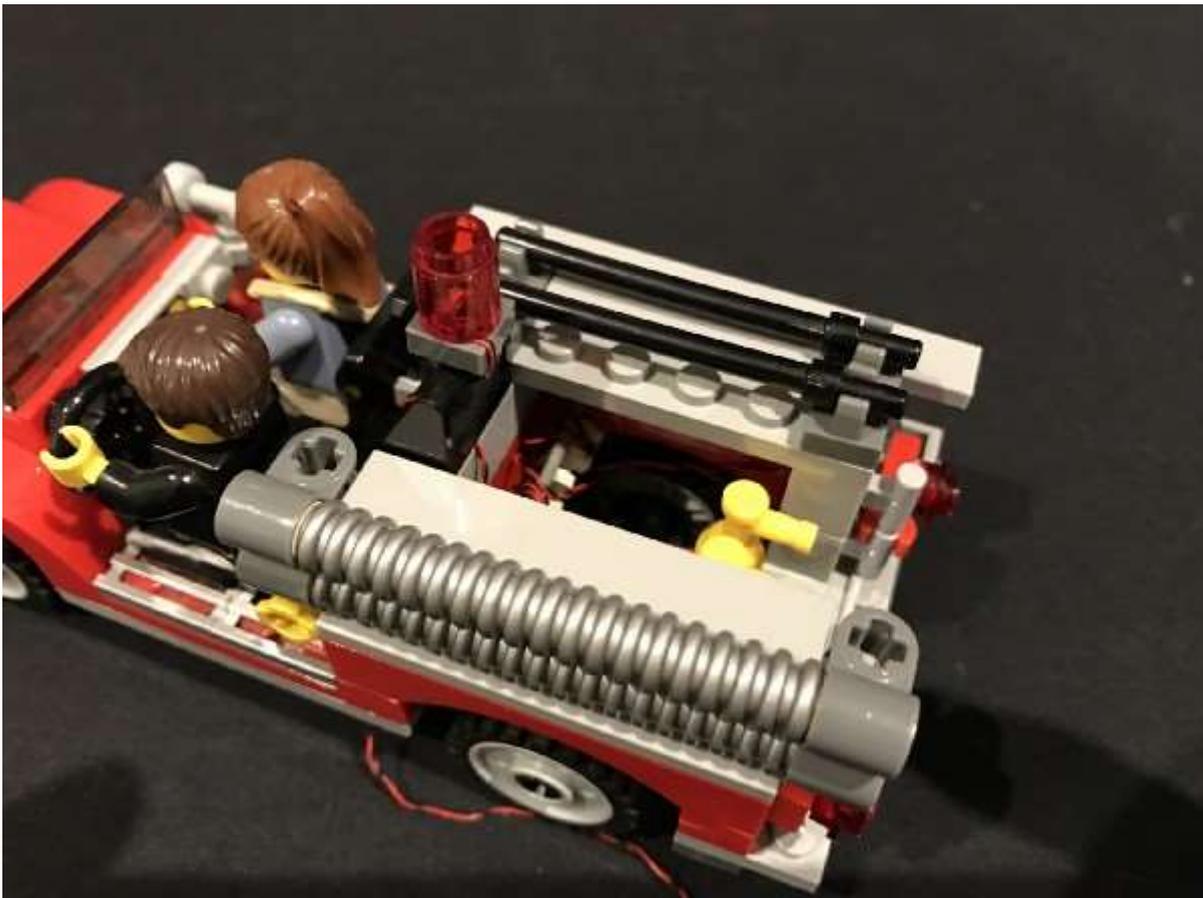
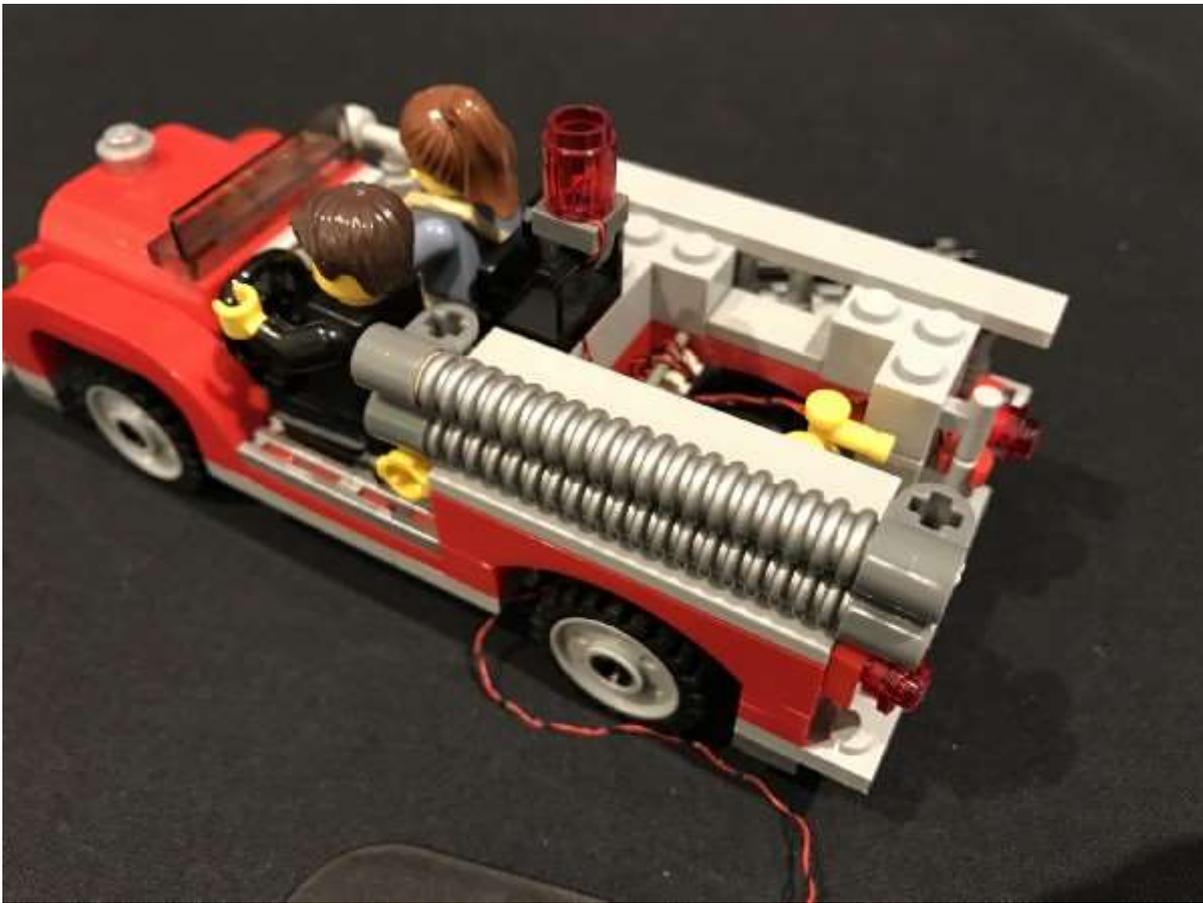


11.) Take the **Flat Battery Pack** and insert 2x CR2032 batteries into it. Thread the battery pack cable up underneath the truck into the back section and then pull up from the top.

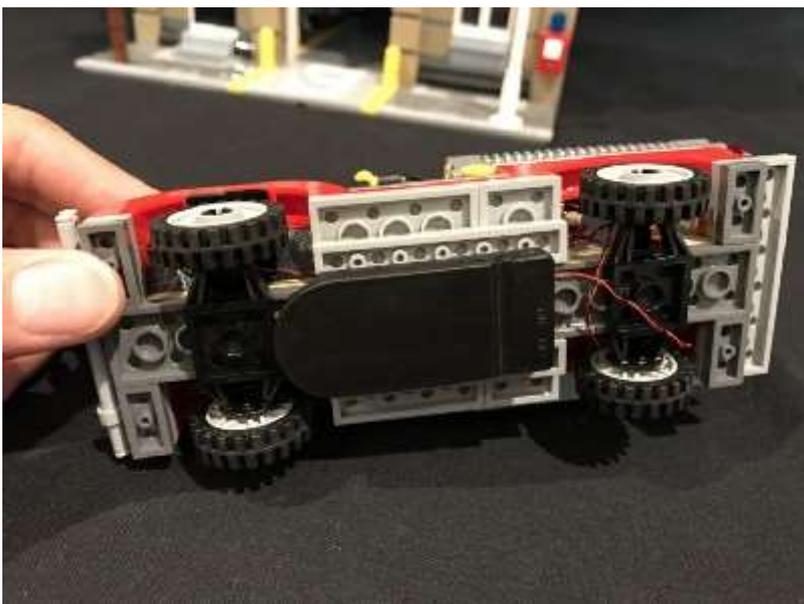
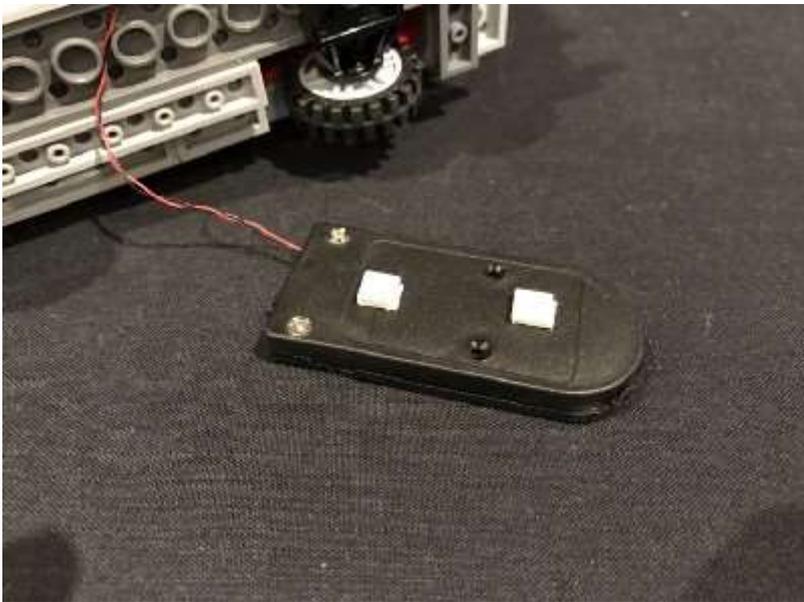
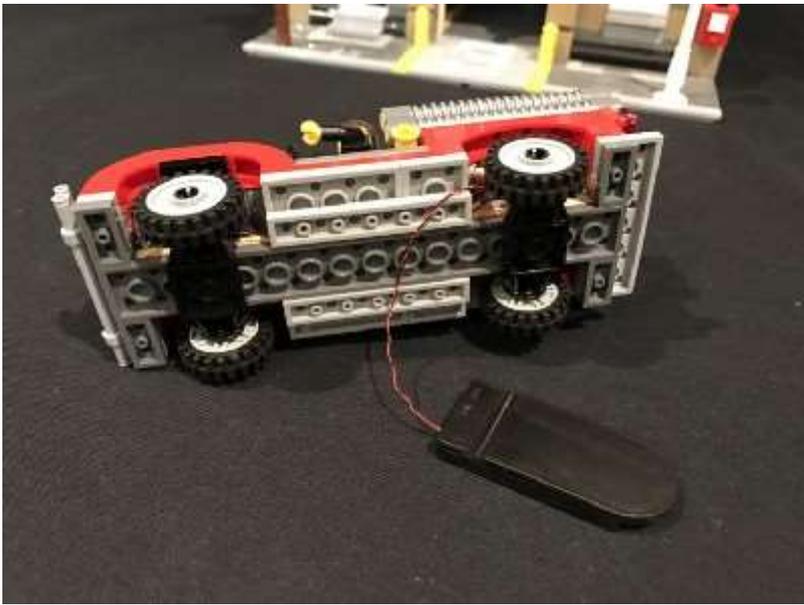


Connect the cable into one of the spare ports of the expansion board then tuck the expansion board back in and reconnect the sections of the back of the truck which we removed earlier.





12.) Using 2x self adhesive squares, mount the battery pack underneath the truck with the battery pack switch facing toward the back.



This completes installation of the light kit for the fire truck. Turn on the battery pack and ensure all lights are working.

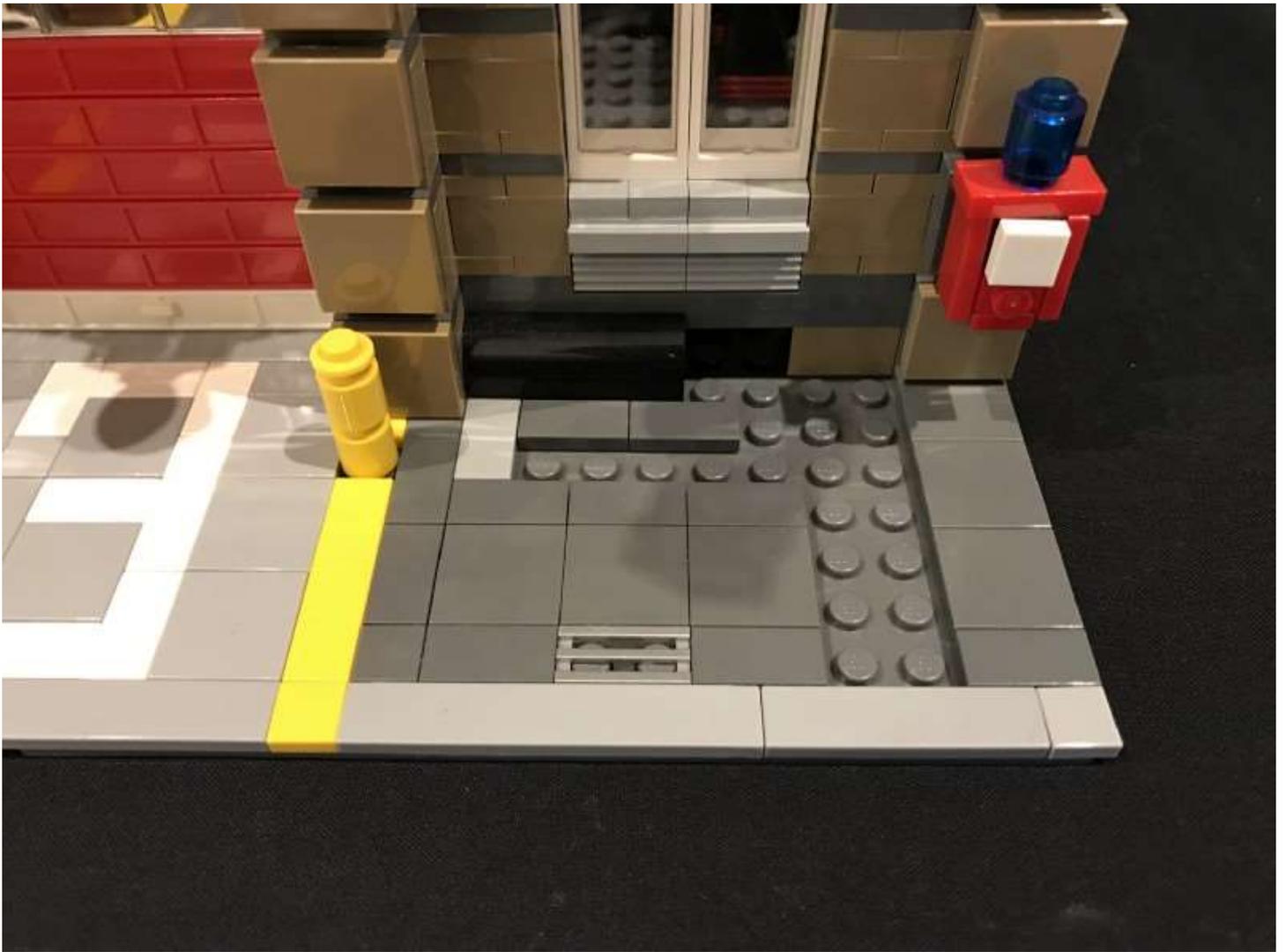


Installing lights to the Fire Brigade building

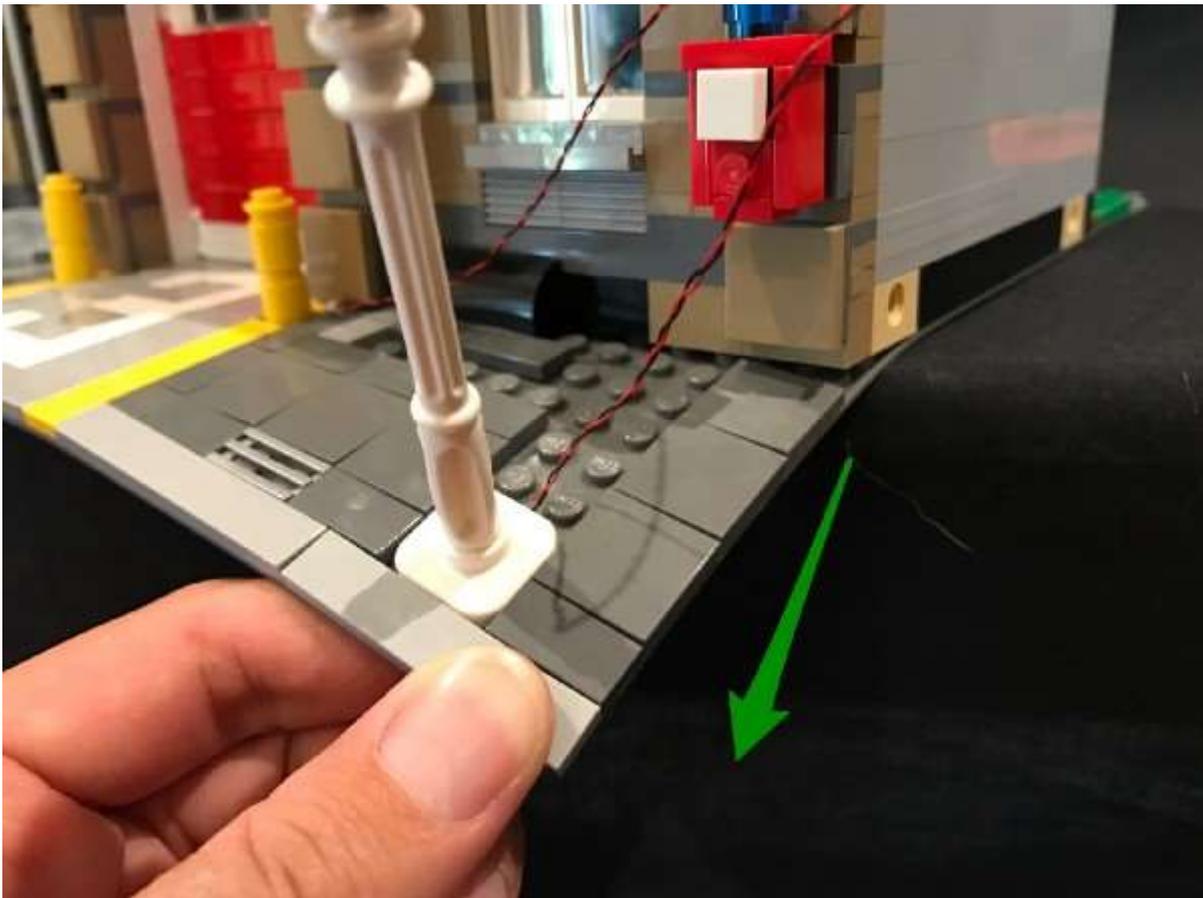
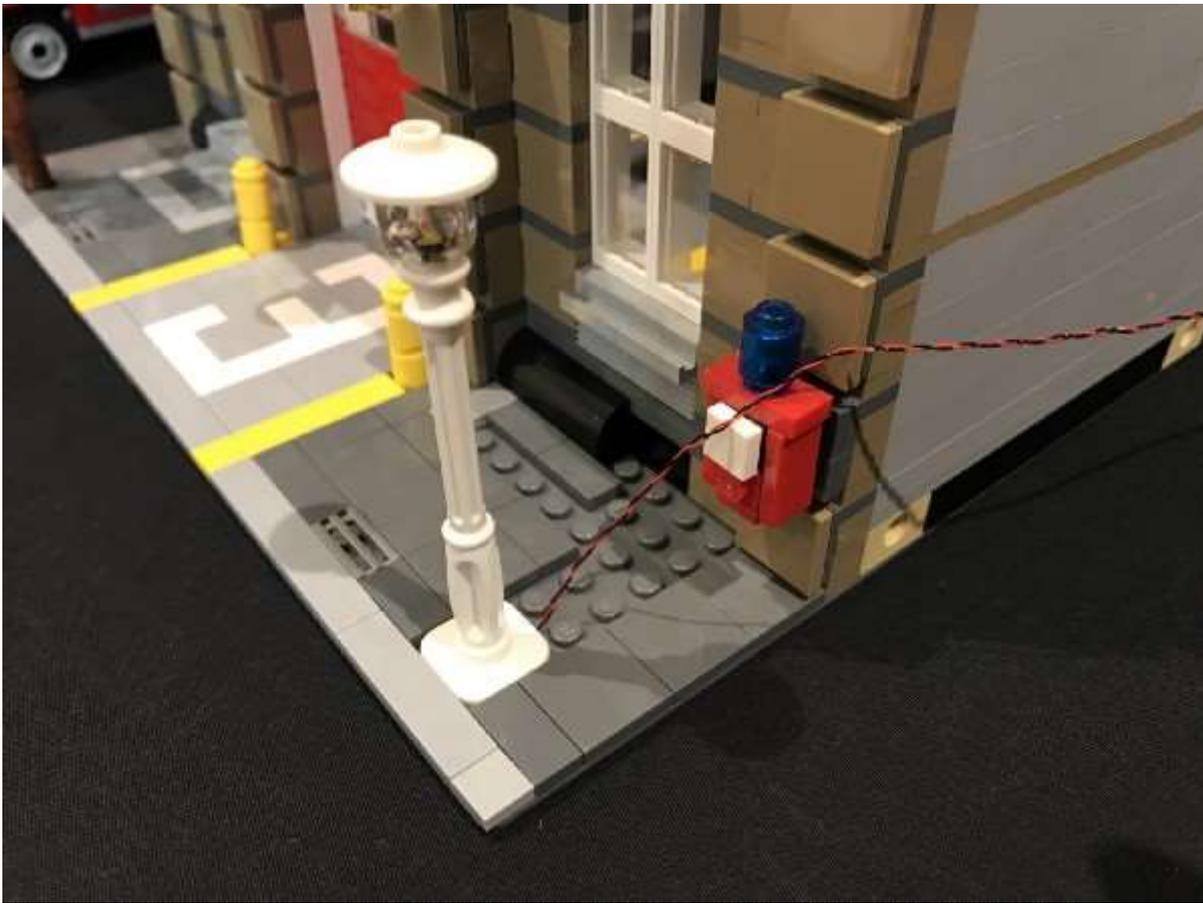
1.) Remove the top half of the building followed by the lamp post and various tiles and pieces as shown below:



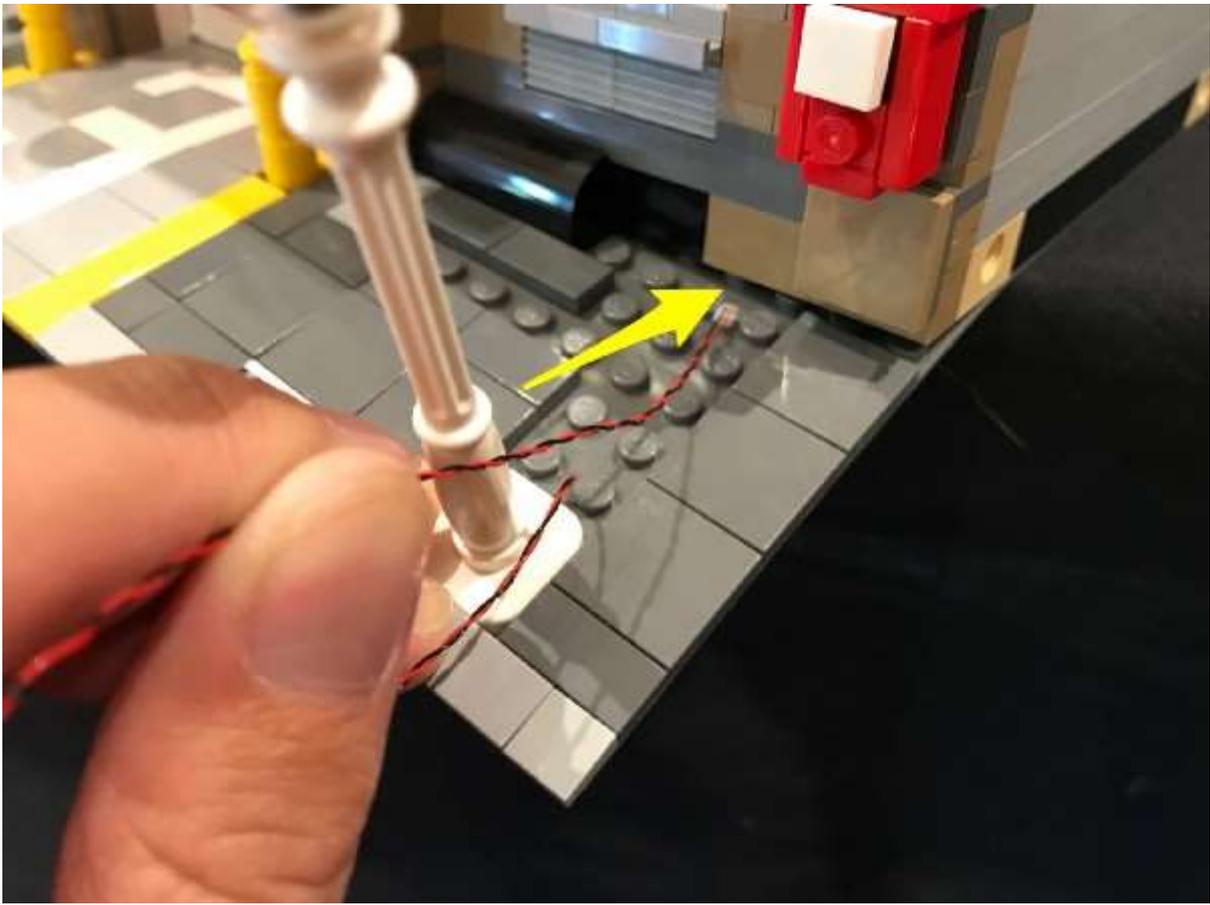


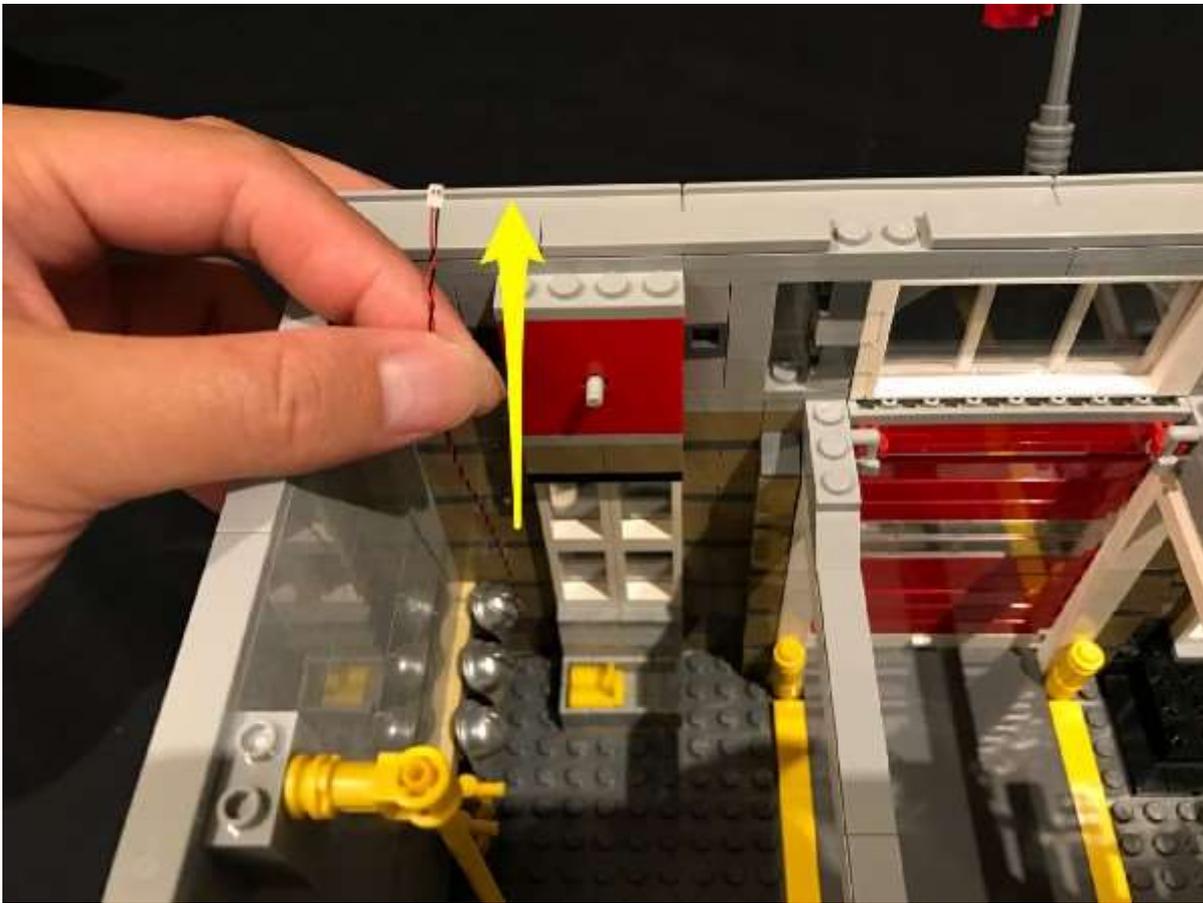


2.) Replace the stock lamp post with the **Light My Bricks lamp post with Bit Light installed** then carefully bend the corner of the base plate down so that it comes apart from the front wall.



Thread the lamp post cable underneath the front wall and then pull it all the way through from the inside of the building. Ensure the cable is laid neatly in a straight line in between the studs of the base plate.



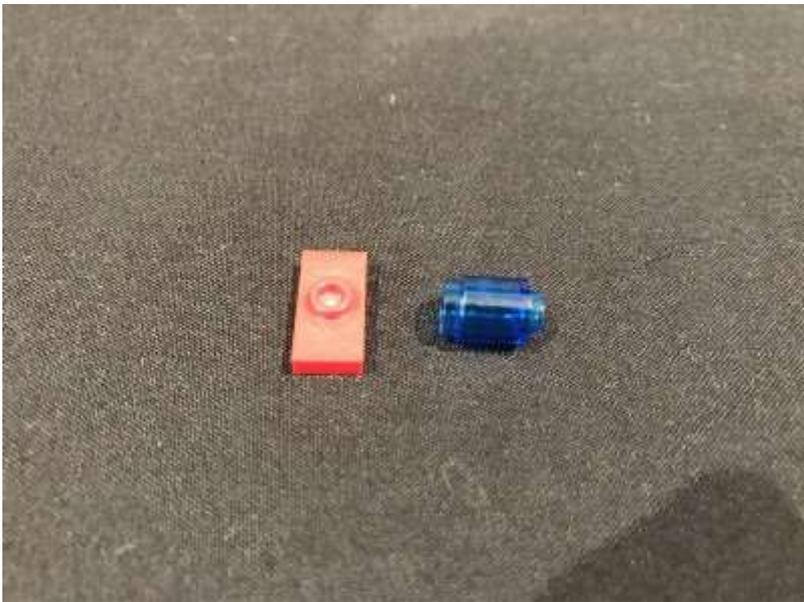
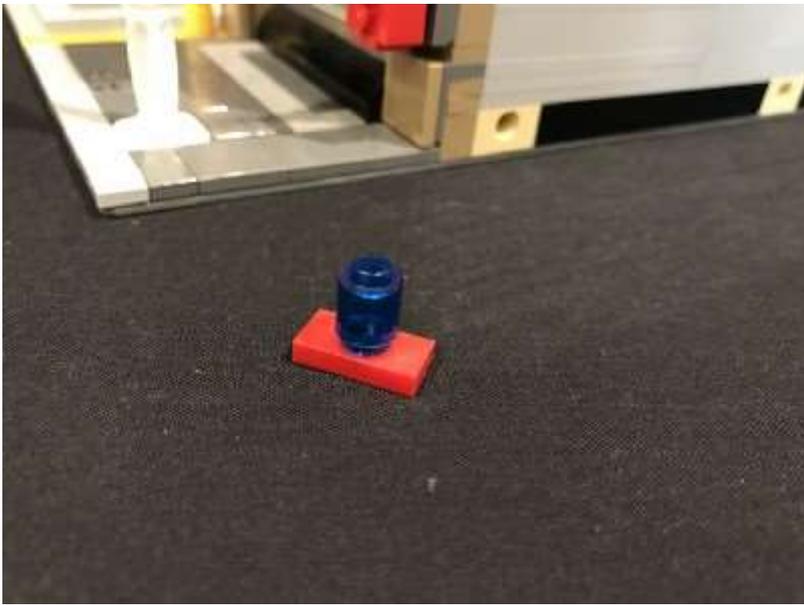


Reconnect the various tiles and pieces we removed earlier.

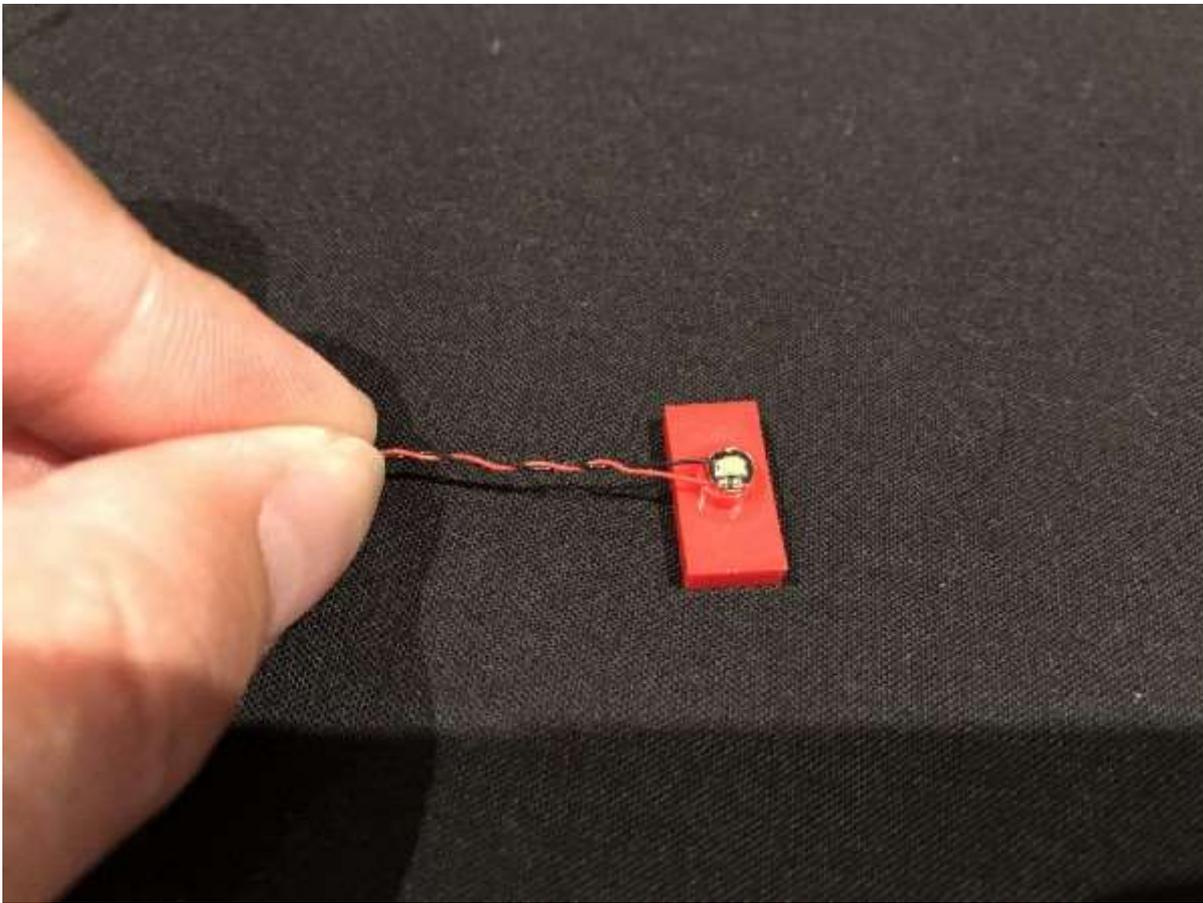


3.) We will now install a flashing light to the blue light at the front. Disconnect the red plate and trans blue round brick as per below:

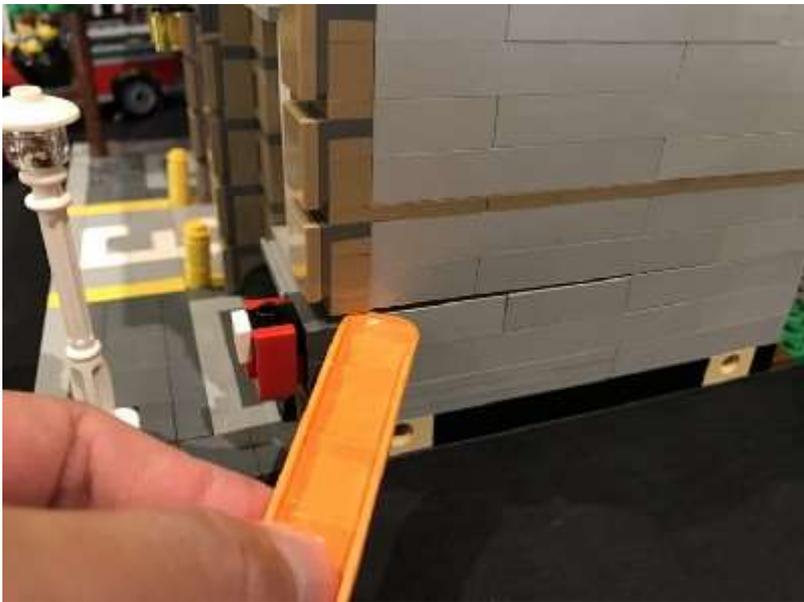
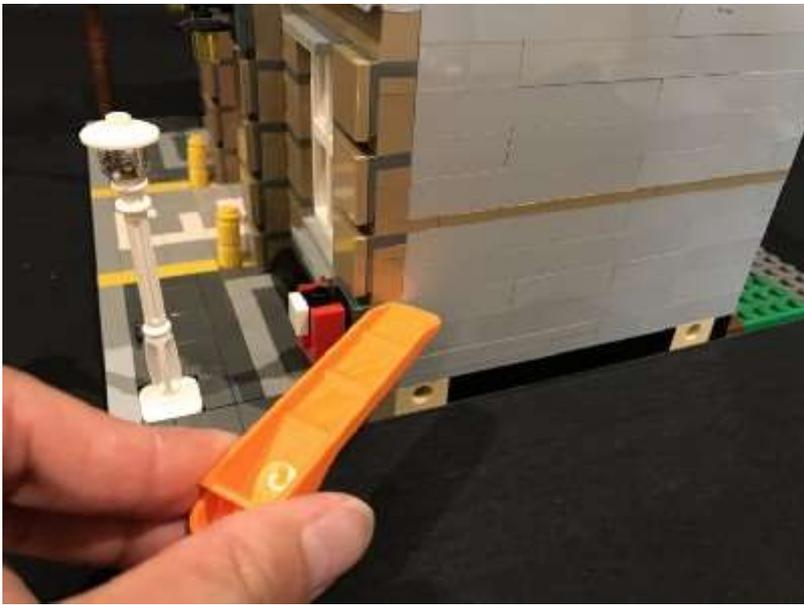




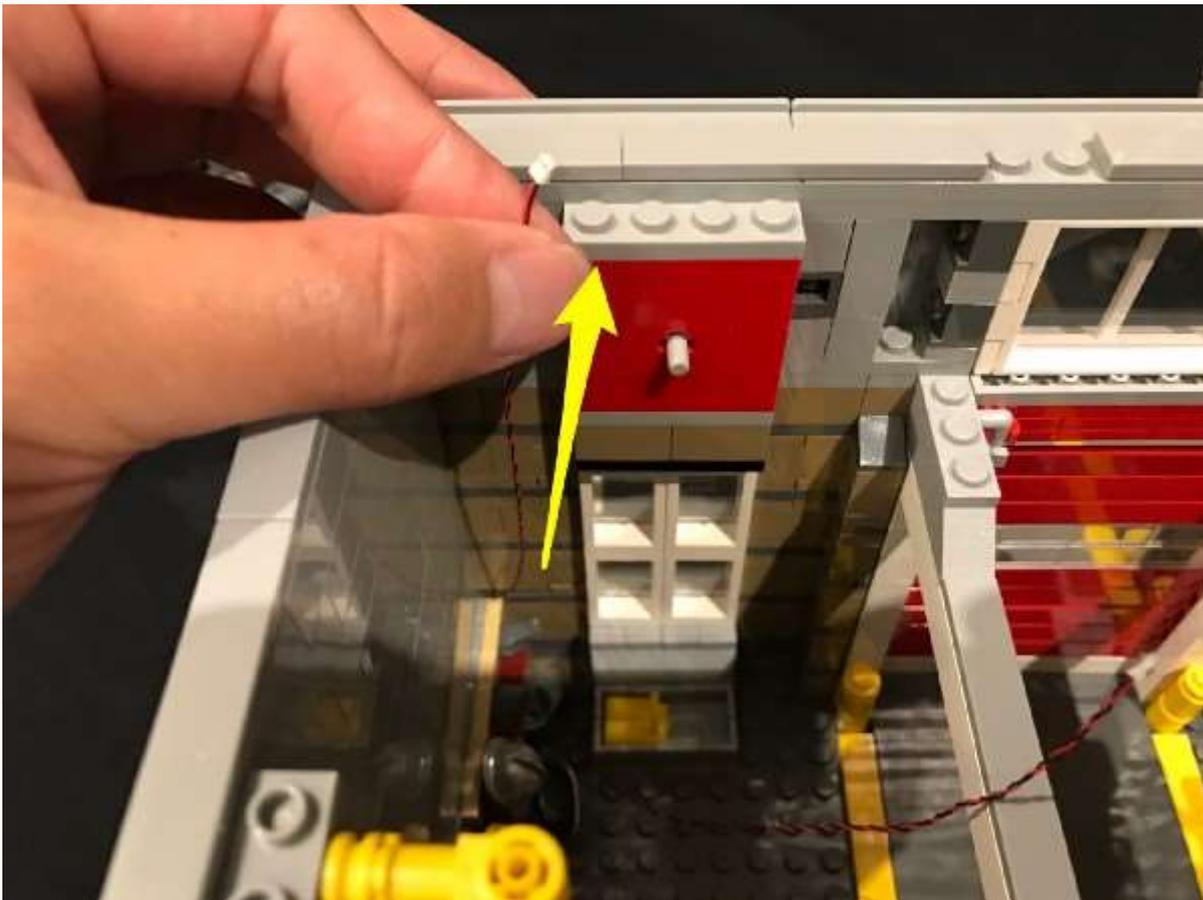
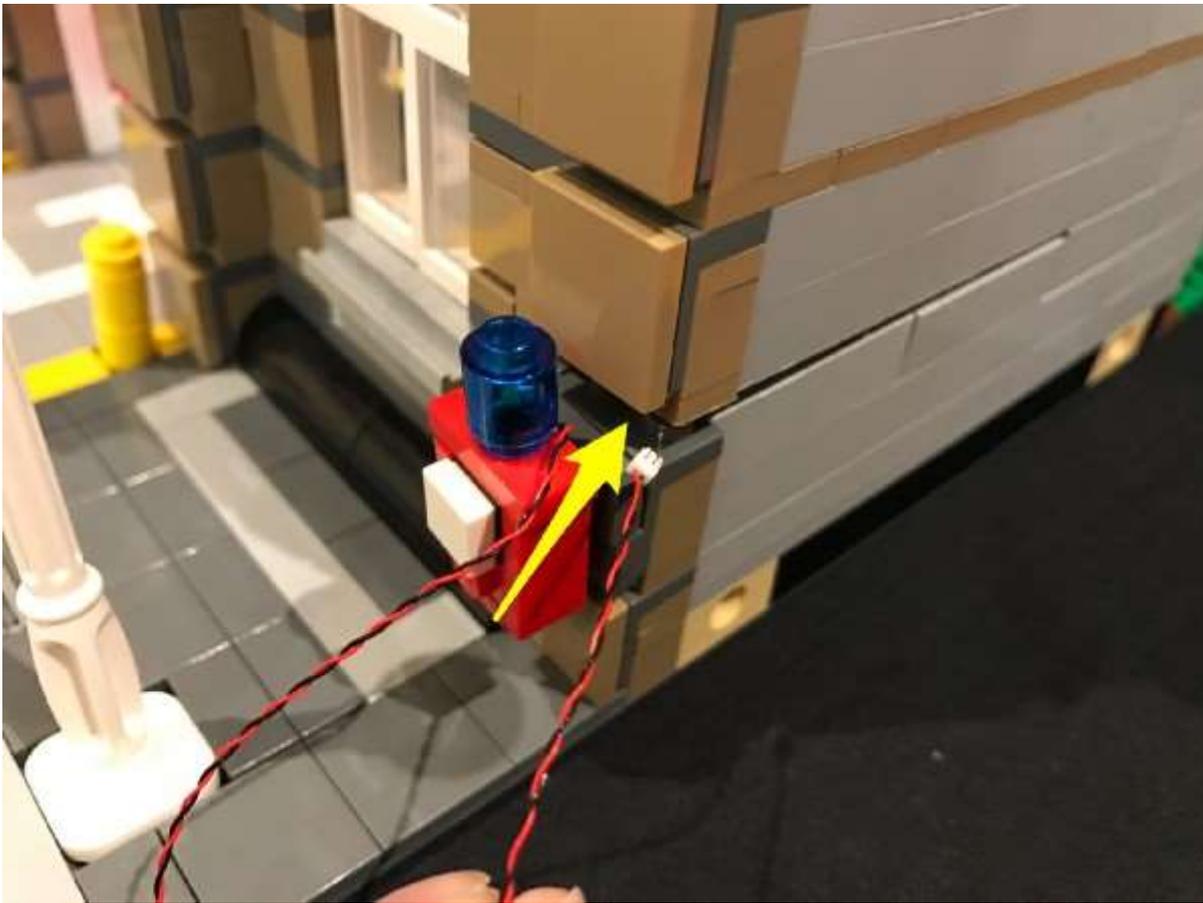
Take a **White Flashing 15cm Bit Light** and then place the LED component directly over the red stud. Secure it in place by reconnecting the trans blue round brick over the top.



4.) In order for us to thread the cable through to the inside of the building we will need to make a gap in between bricks. Using the LEGO removal tool, lift up this section of the wall to create an opening.



Reconnect the blue light section and then thread the cable in through the gap we have just created. Pull the cable through from the inside of the building.

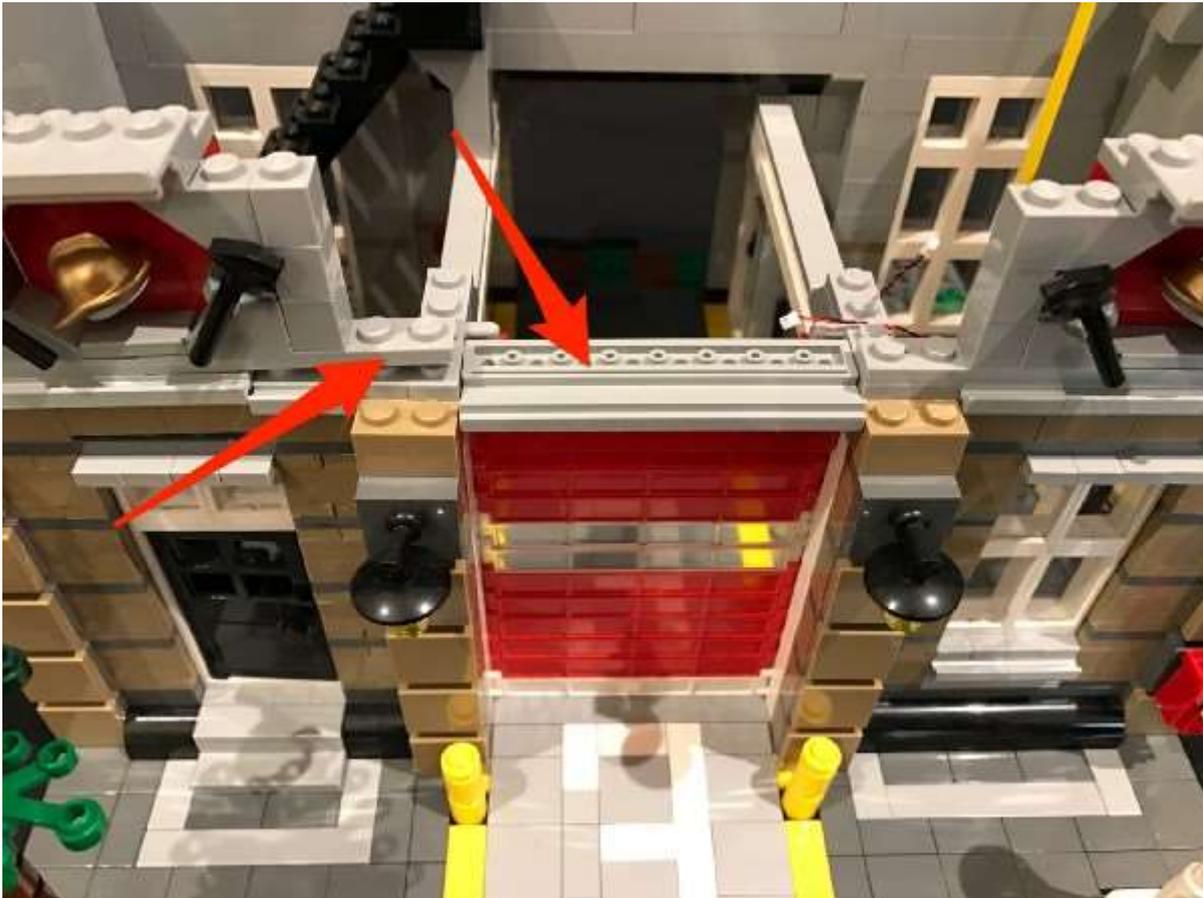
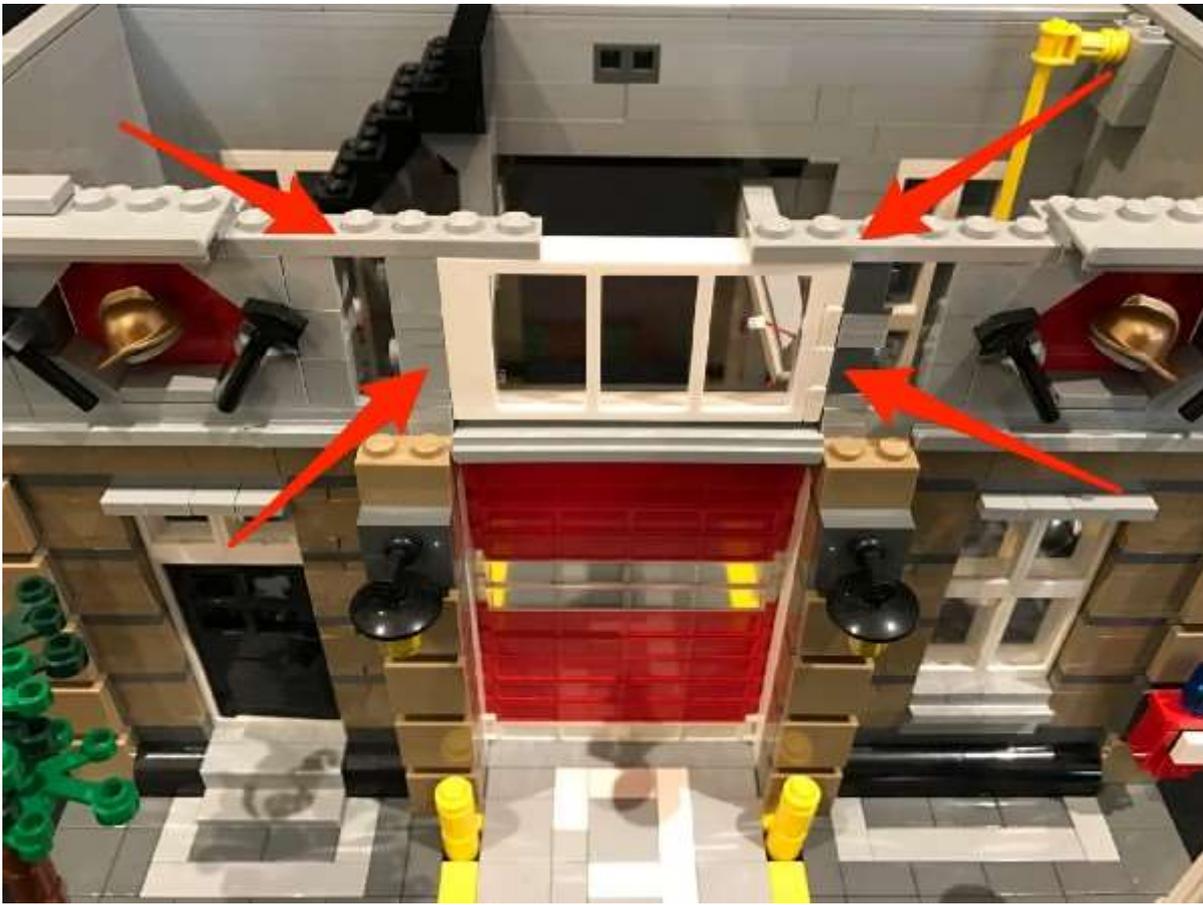


Ensure the cable is laid in between studs before then closing the gap of the wall and connecting everything back together.



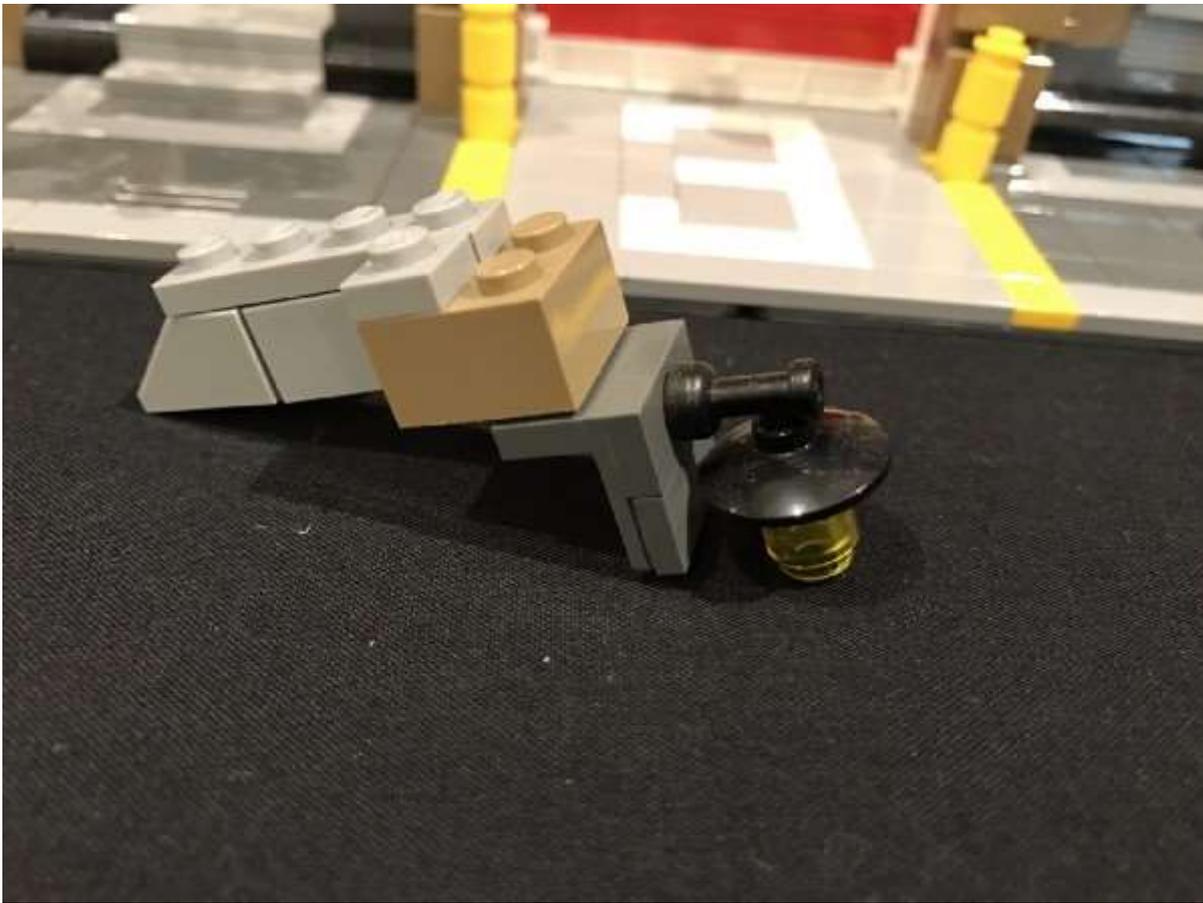
5.) We will now install lights to the 2 front door lamps. First remove the following pieces to allow us to gain access.



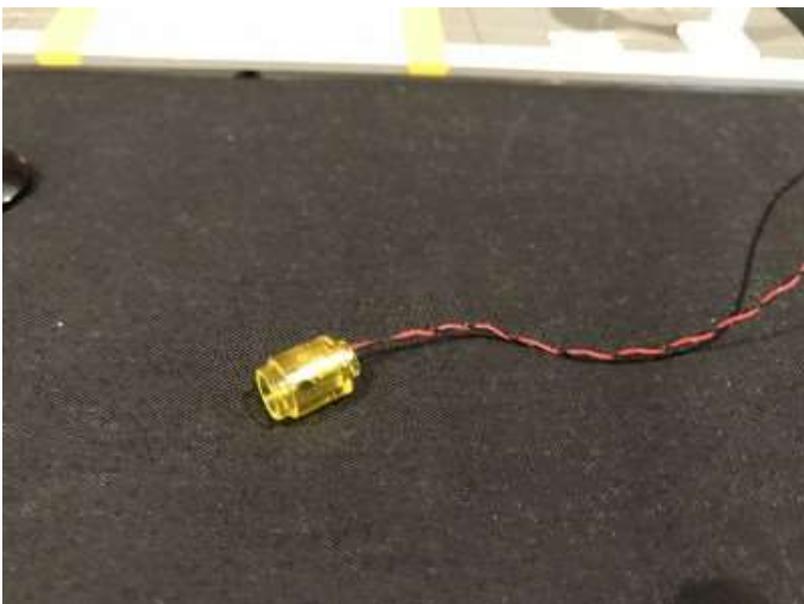
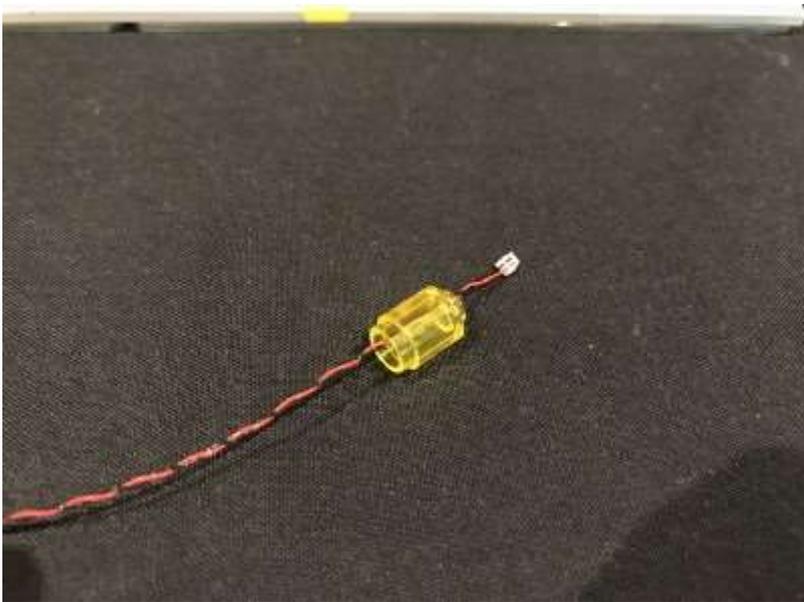
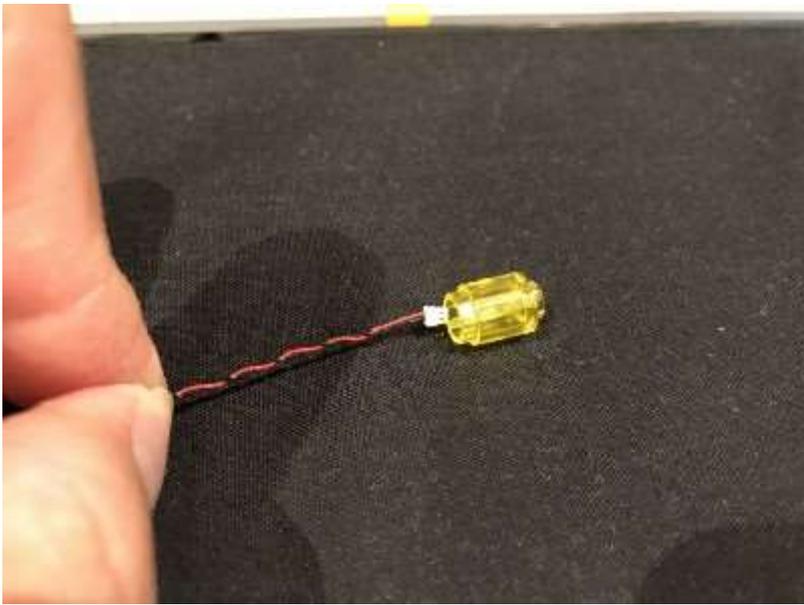


Remove one of the door lamp sections and disconnect the lamp pieces as per below

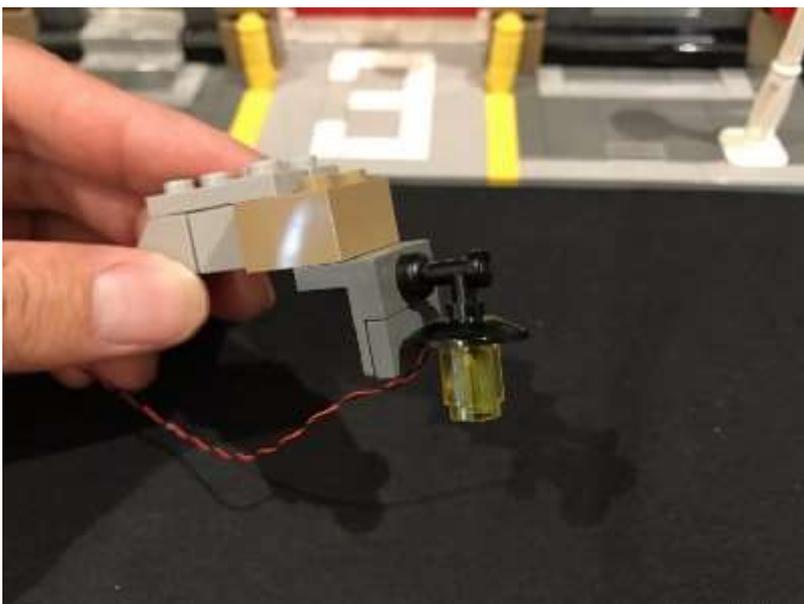
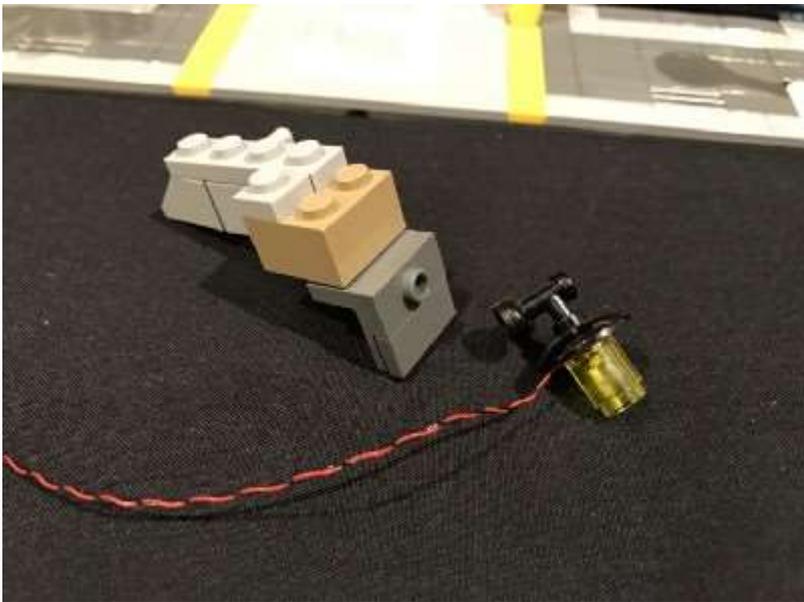
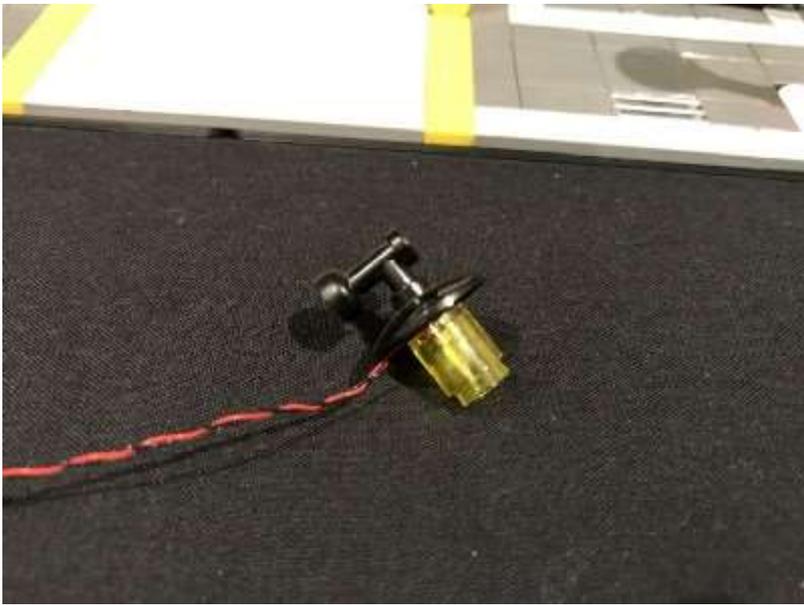




6.) Take **White 30cm Bit Light** and thread the connector side of the cable through the large hole of the trans yellow round brick. Pull the cable all the way through from the other side until the LED component is right up against the inside of the brick.



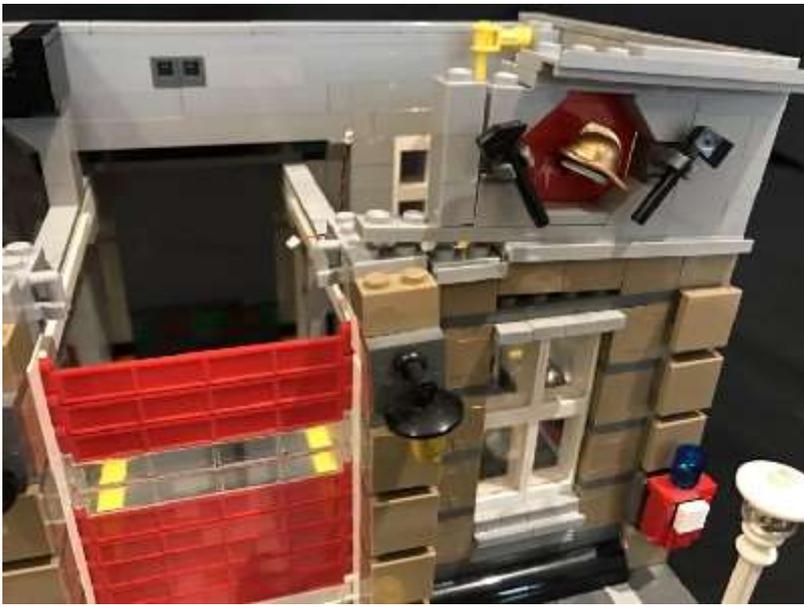
Reconnect the lamp shade piece to the trans yellow brick, securing it in place. Ensure the cable is facing toward the back and then reconnect back to the wall section.



Reconnect this wall section back to the front wall ensuring the cable is laid behind.



Repeat this step to install another **White 30cm Bit Light** to the door lamp on the right side.



7.) Reconnect the surrounding LEGO pieces we removed earlier.

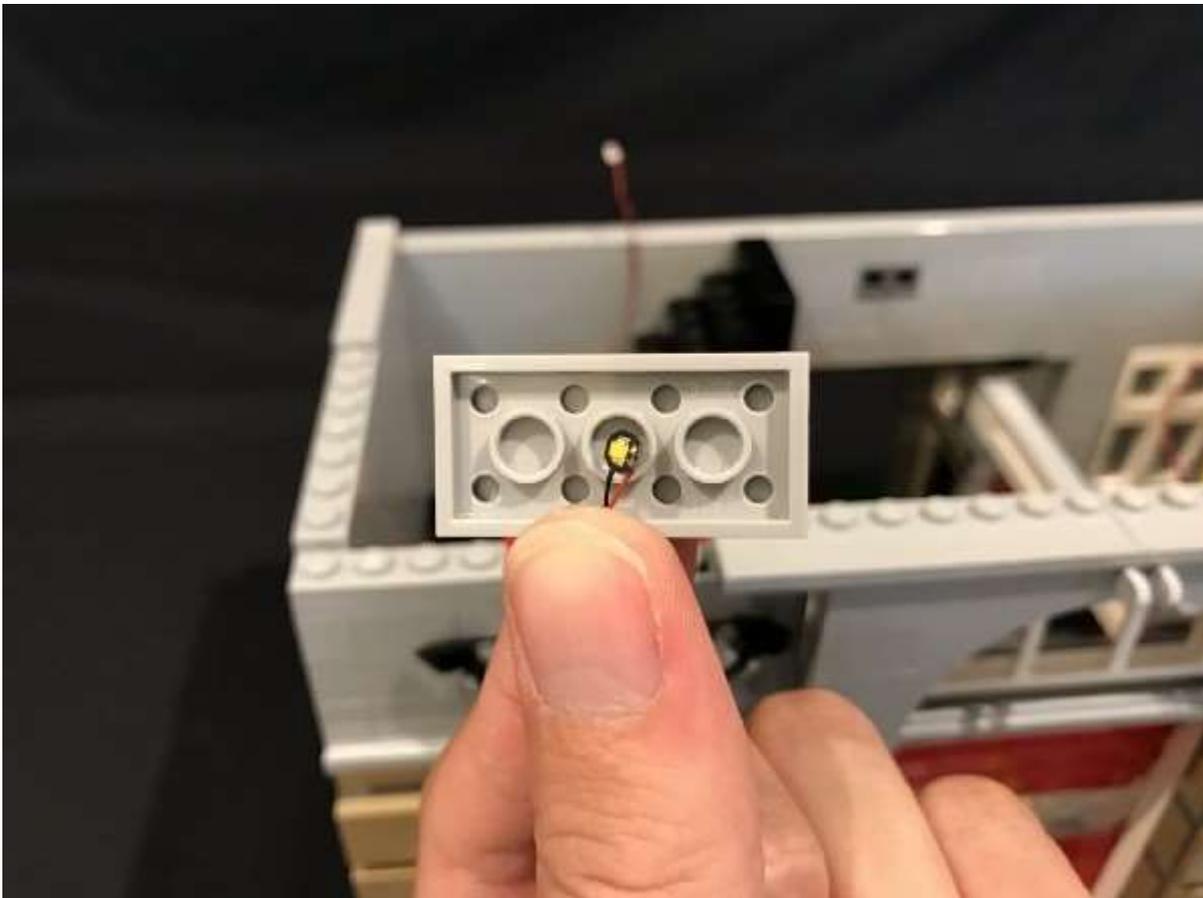
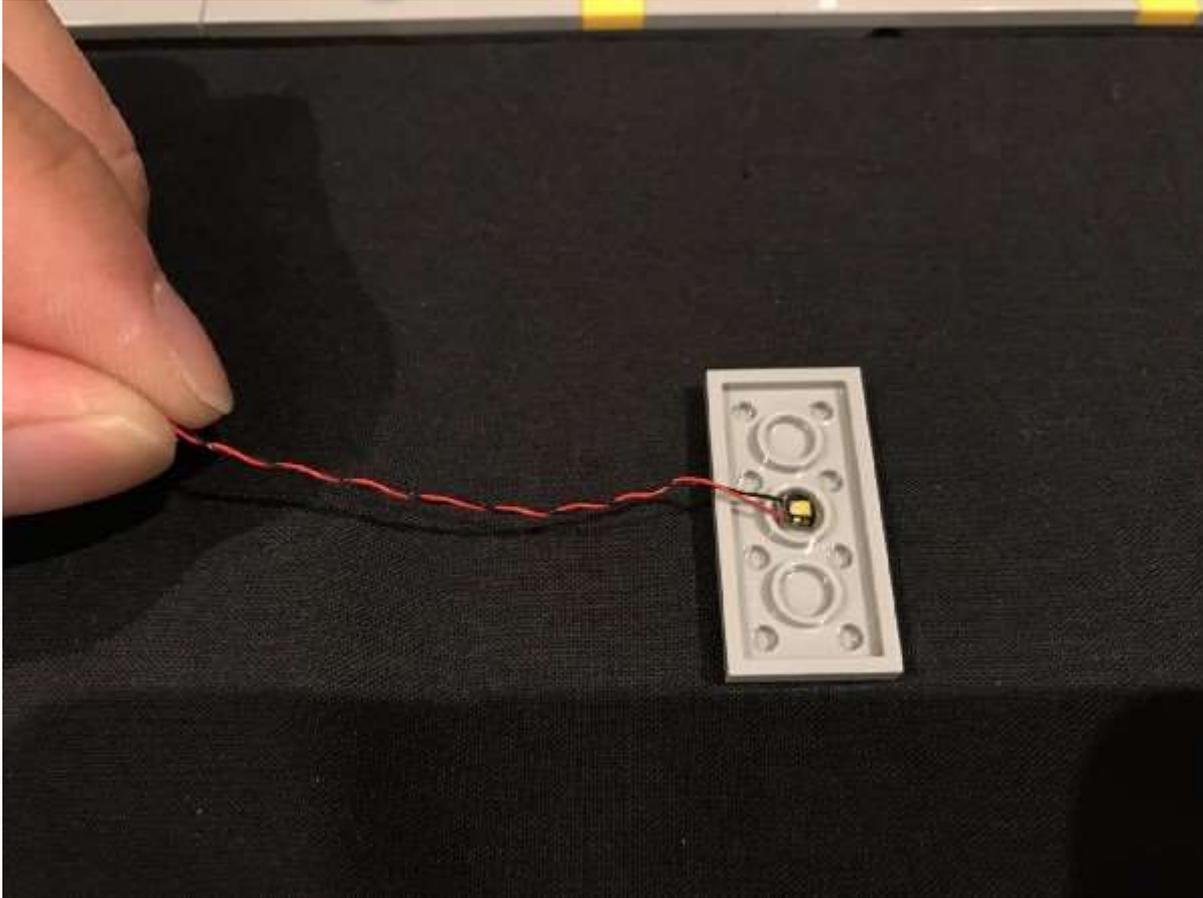


8.) We will now install a light above the gold fireman hats on each side of the front. First, remove a few of the tile pieces and then disconnect the grey 2x4 plate.



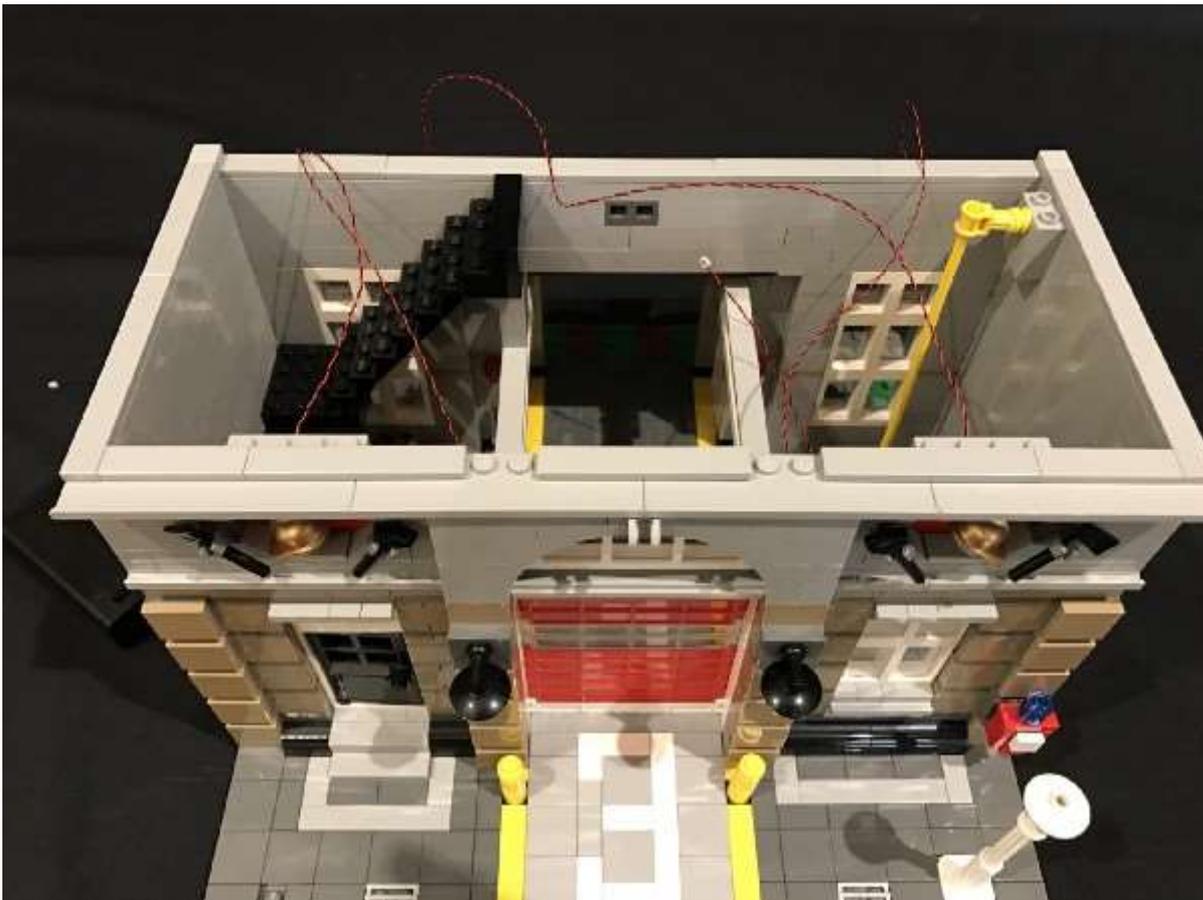
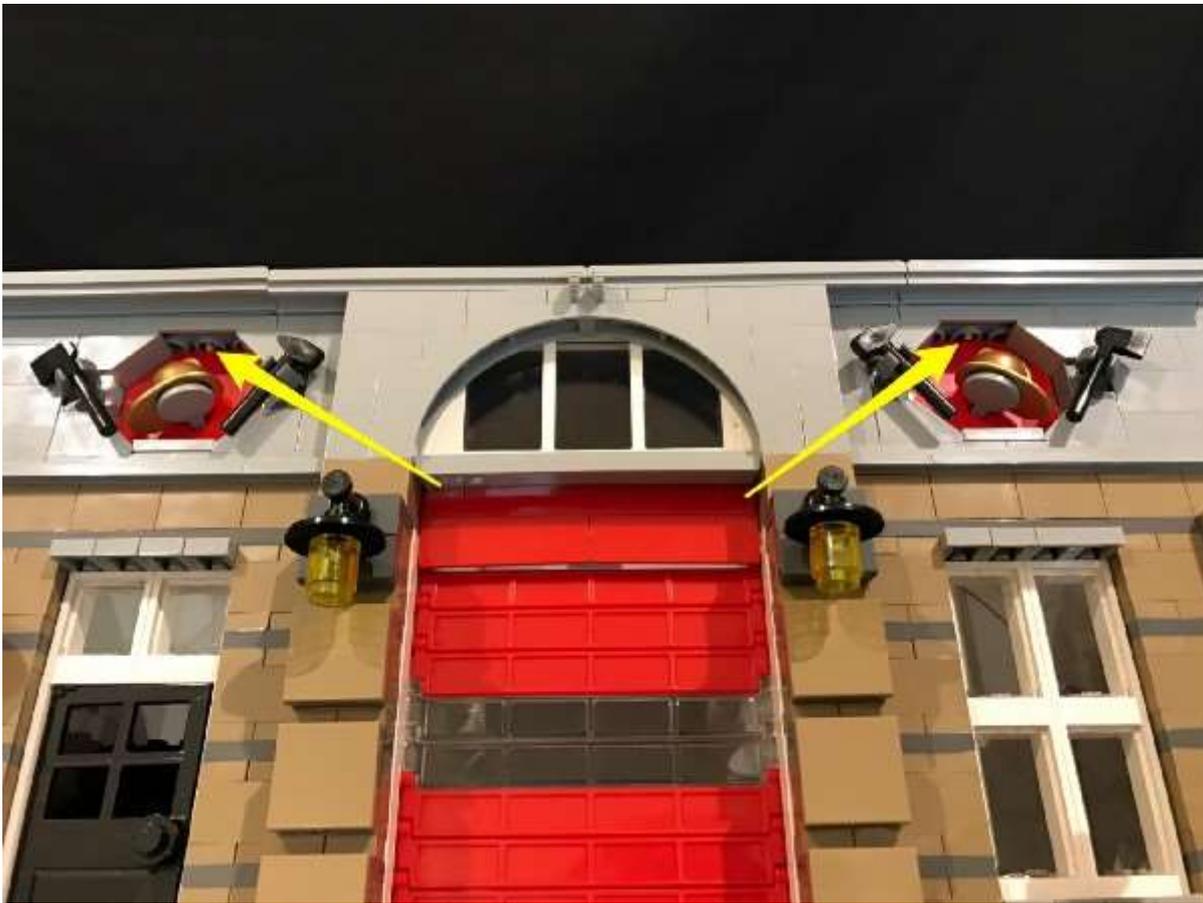
Take another **White 30cm Bit Light** and then place the LED component in the middle hole of the bottom of the 2x4 plate. Hold the cable in place before then reconnecting this

plate back to the wall. Ensure the bit light is in place and cable is laid behind. You should be able to see the LED component peaking out from the front.

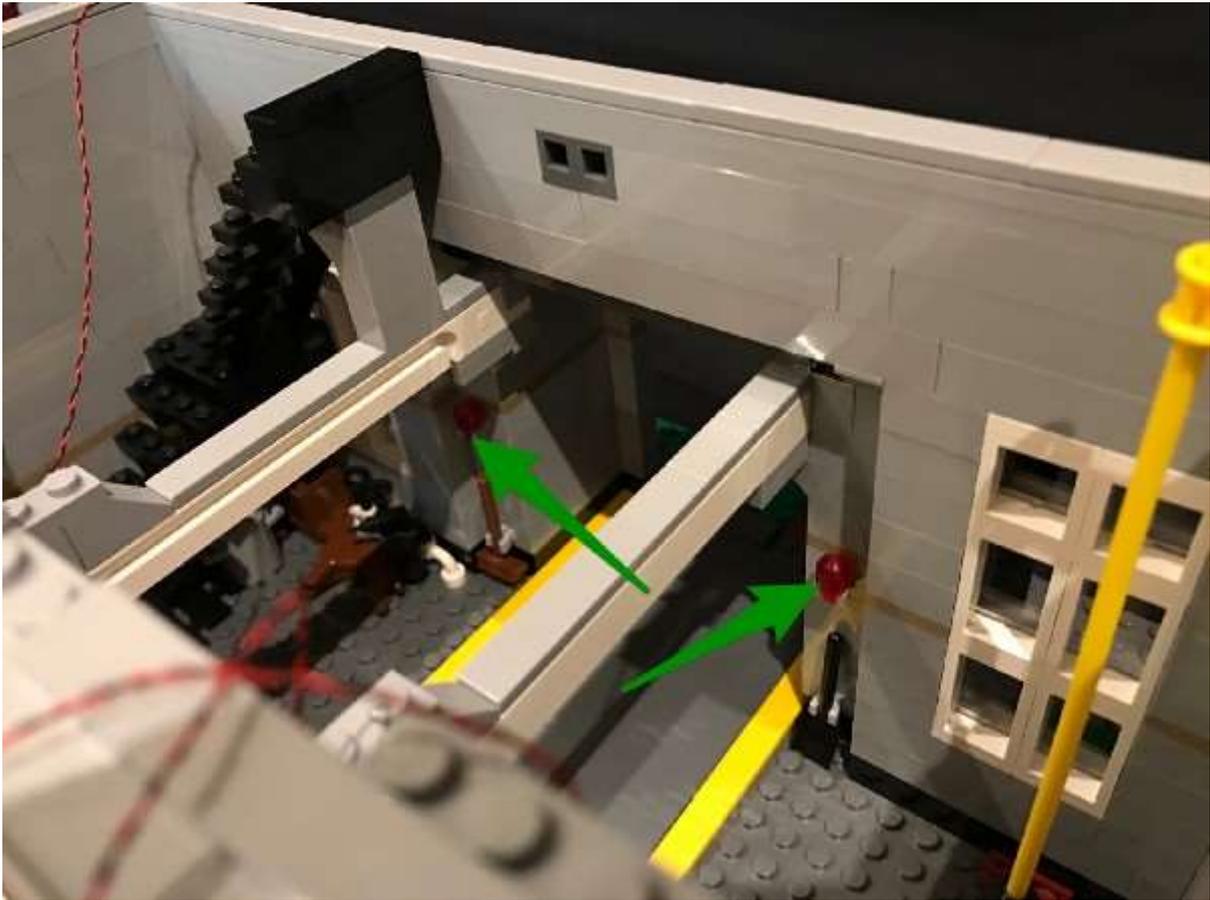
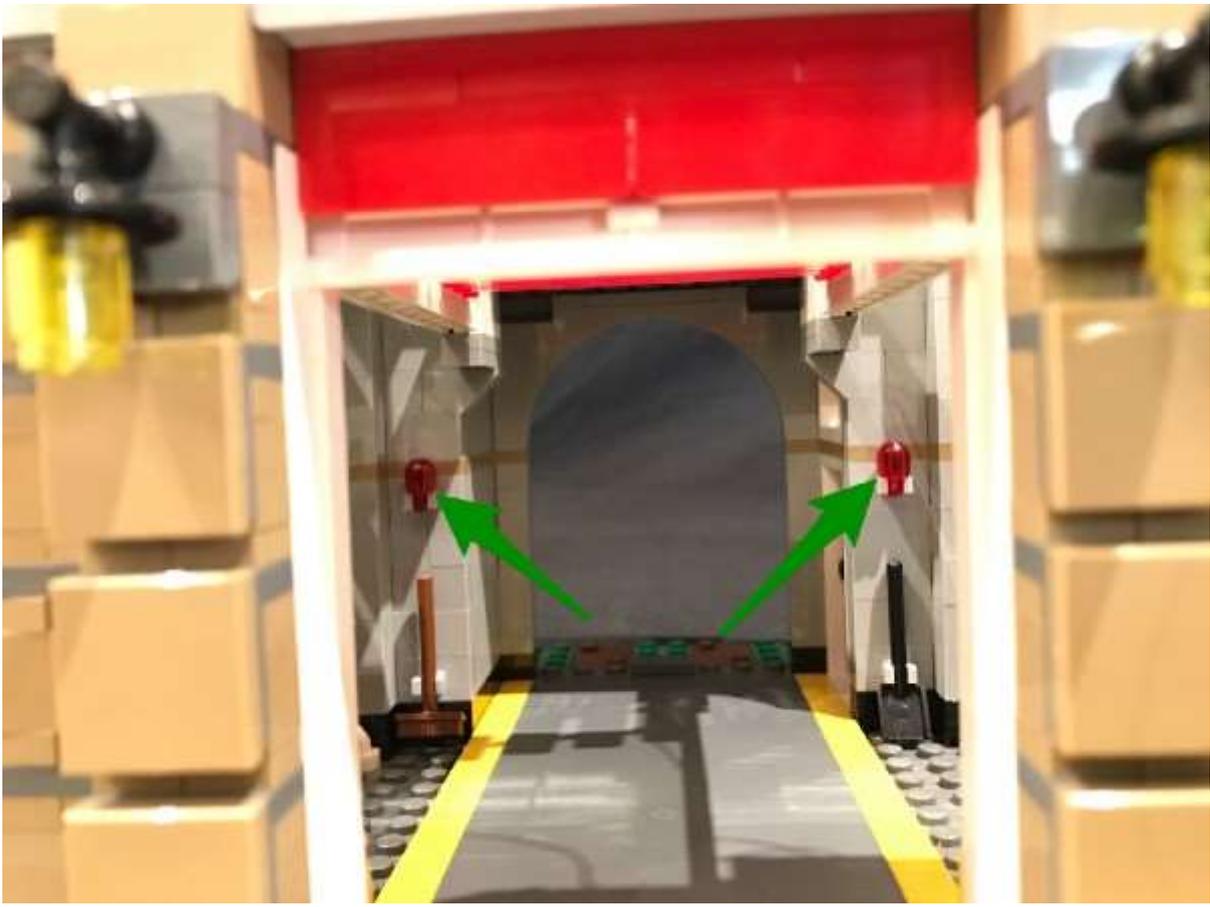




Repeat this step to install another **White 30cm Bit Light** to the right fireman hat then reconnect all the pieces we removed earlier.

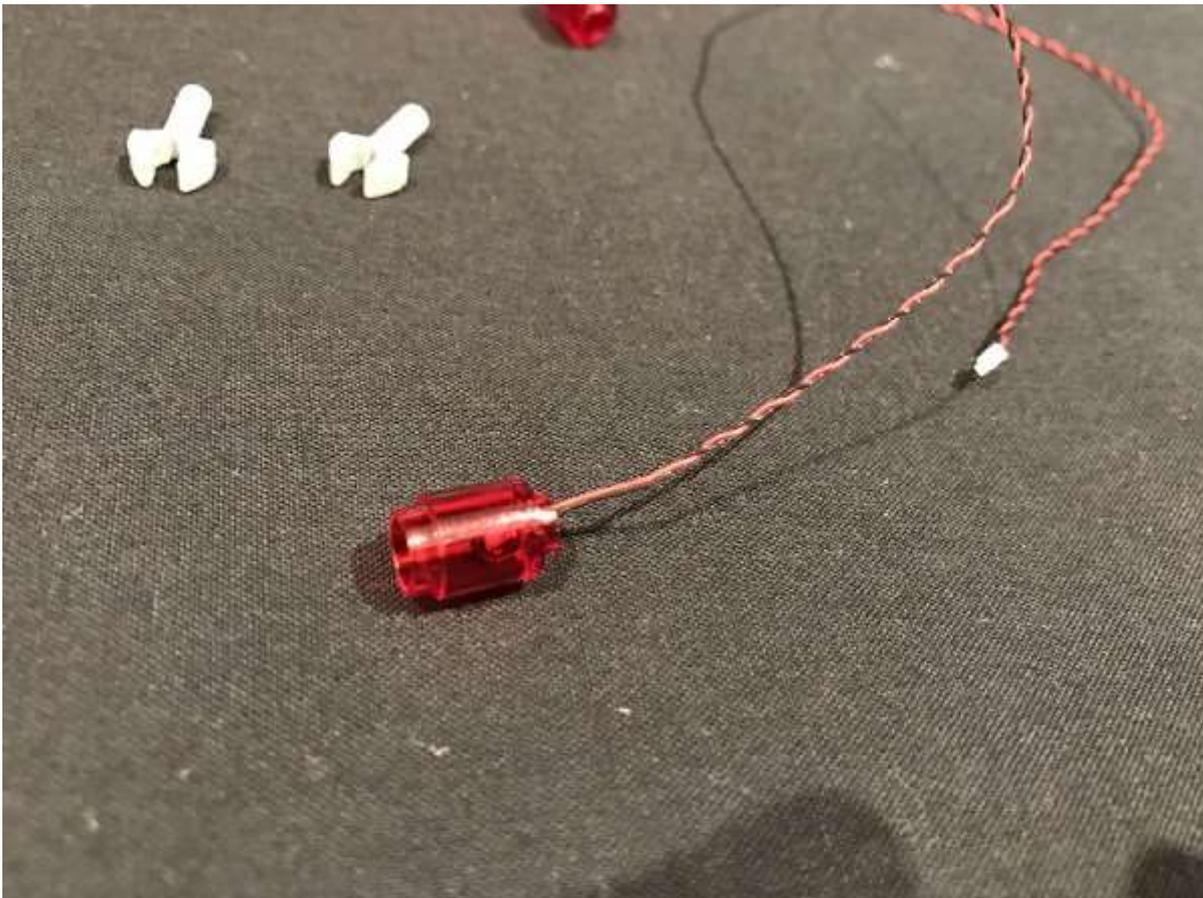
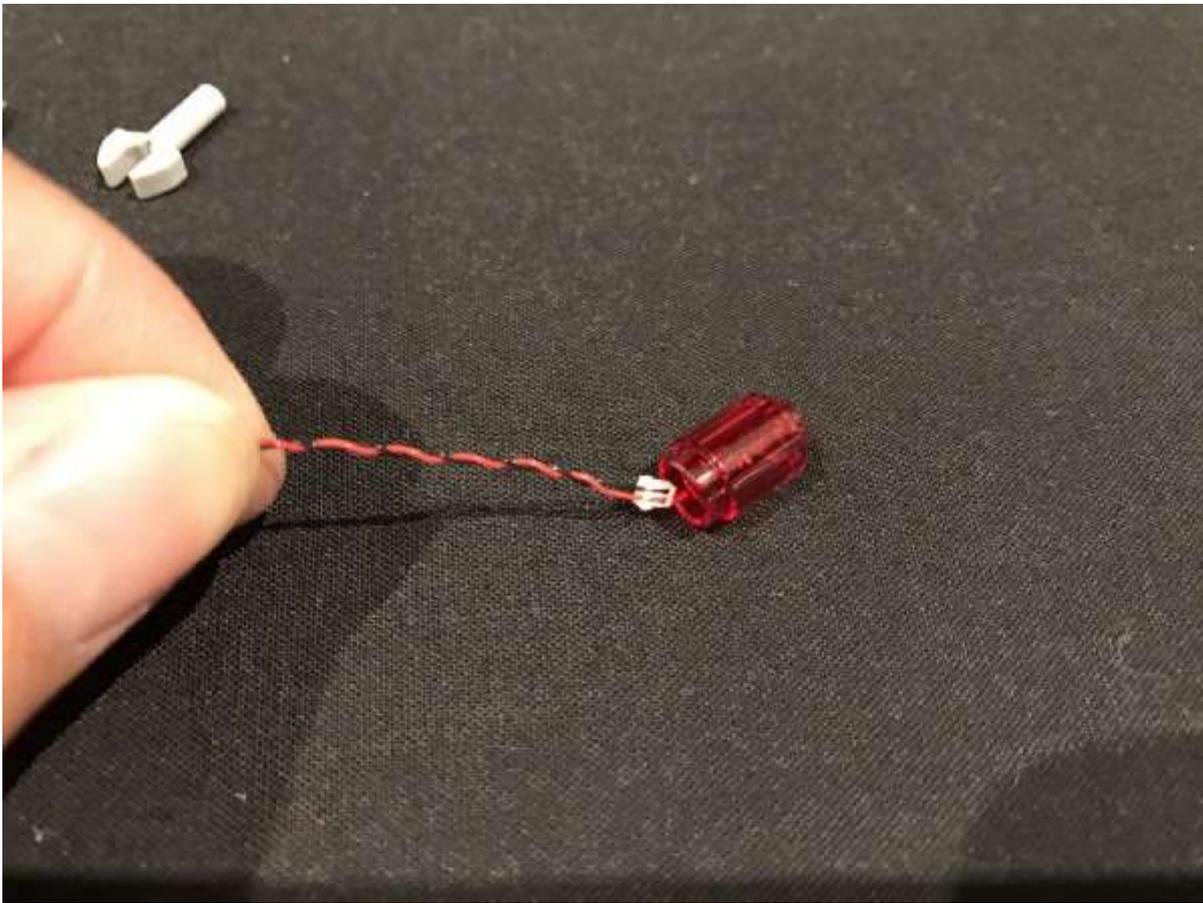


9.) We will now install flashing lights to the 2x red light sections inside the fire brigade. Remove the 2 trans red pieces and discard them. We can't install lights to these pieces so we will be replacing them with different pieces (provided in this kit).

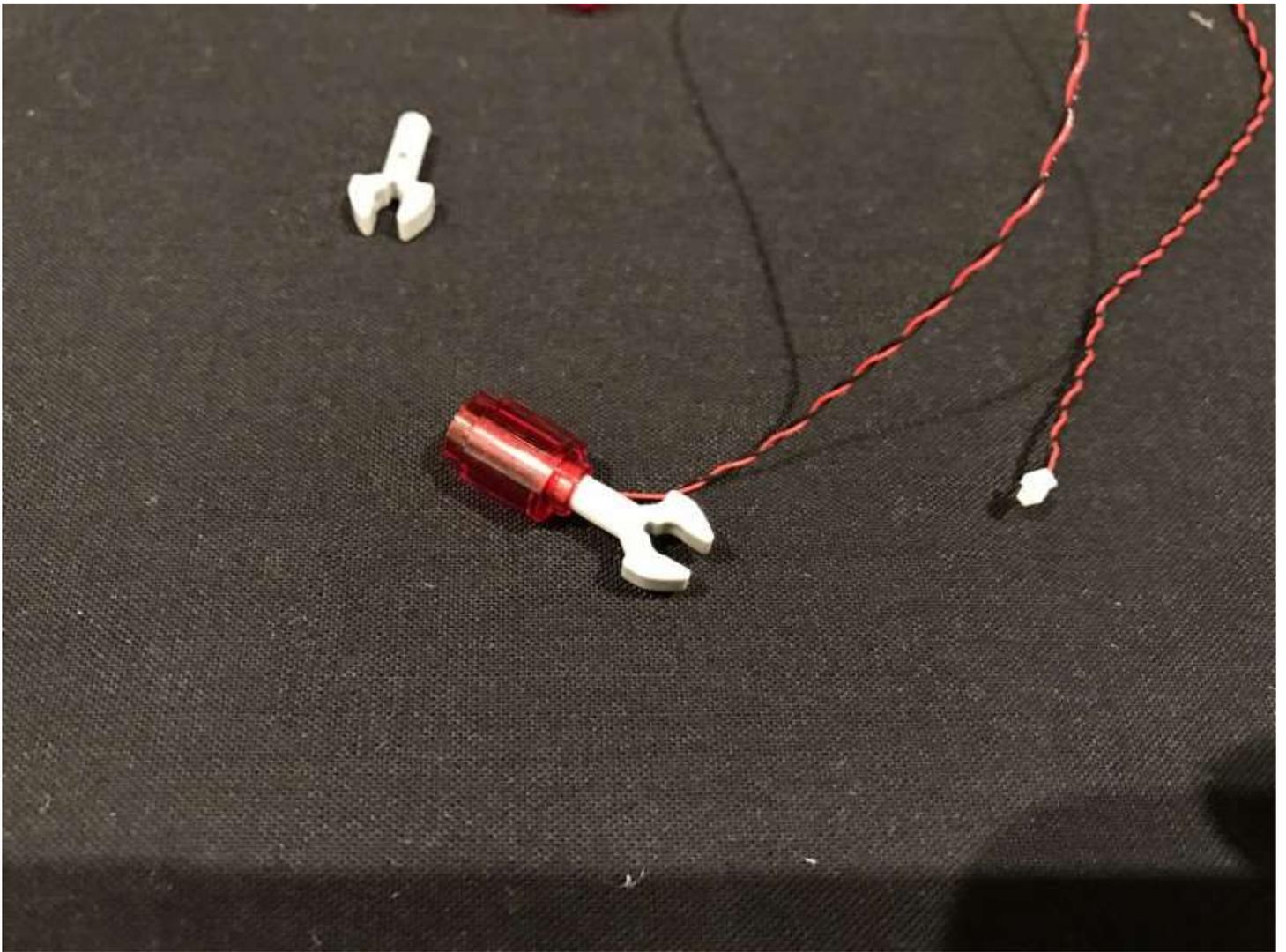




Take a **Red 30cm Flashing Bit Light** and thread the connector side through the large hold of the trans red round brick. Pull it all the way through from the other side until the LED component is right up against the inside of the brick.



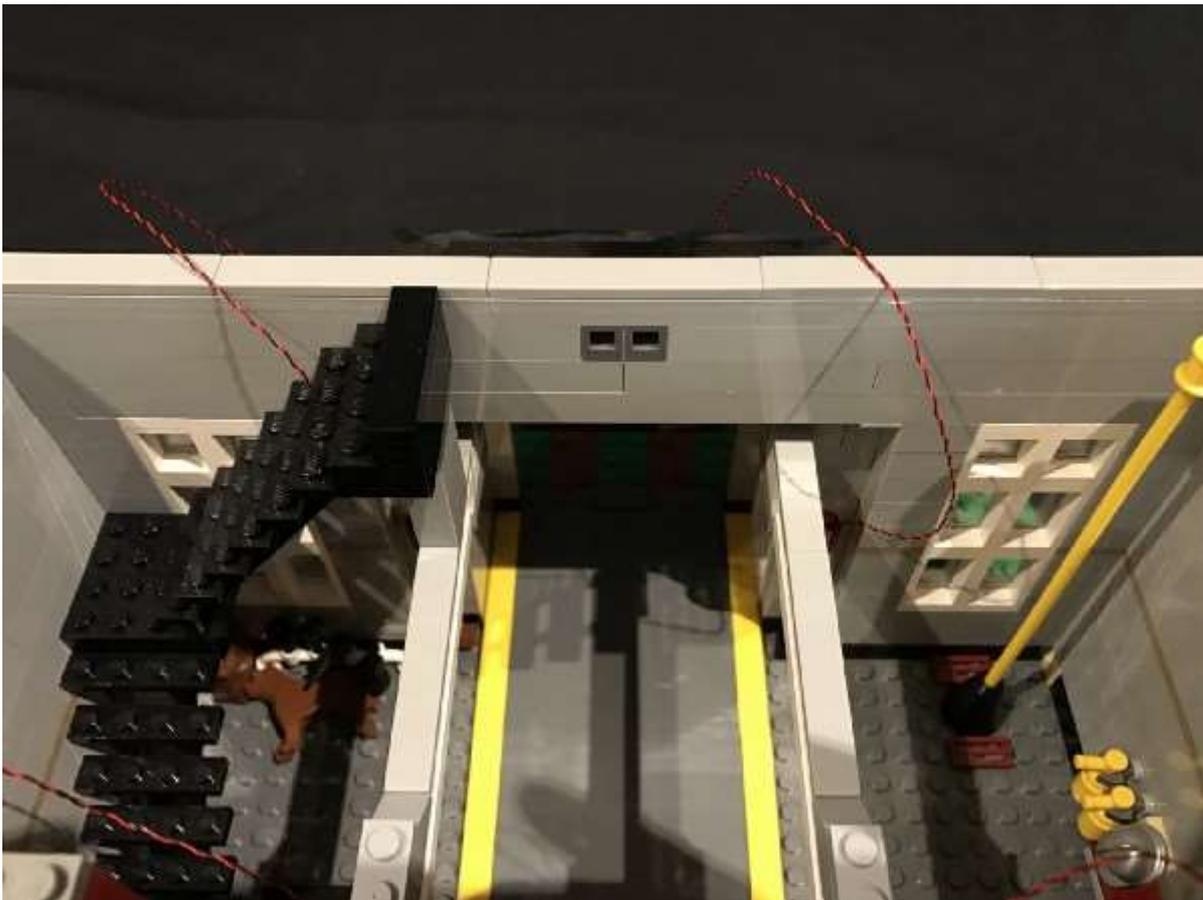
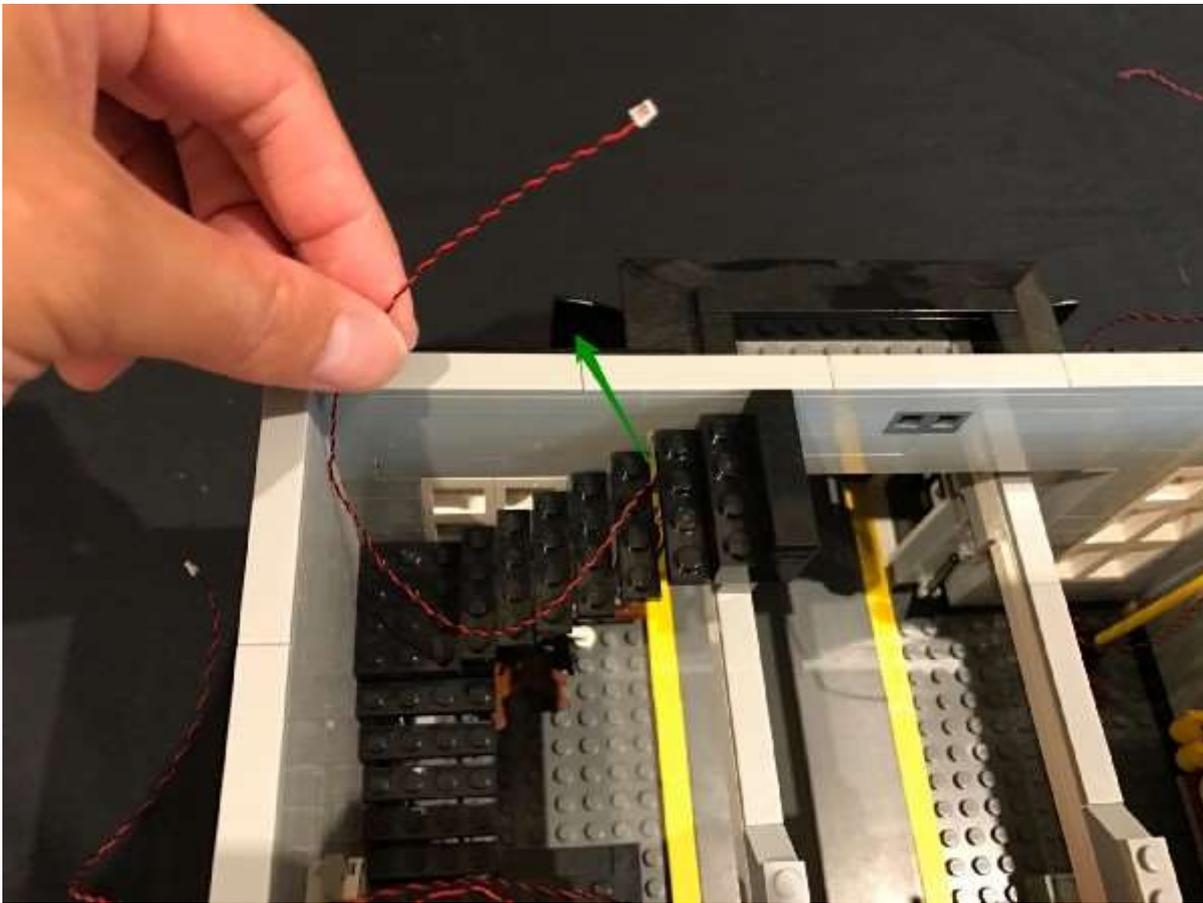
Insert the **grey bar with mechanical clip** into the smaller hole of the trans red round brick. Do not to push it all the way through as we will require a bit of space on the bar to connect back to the wall.



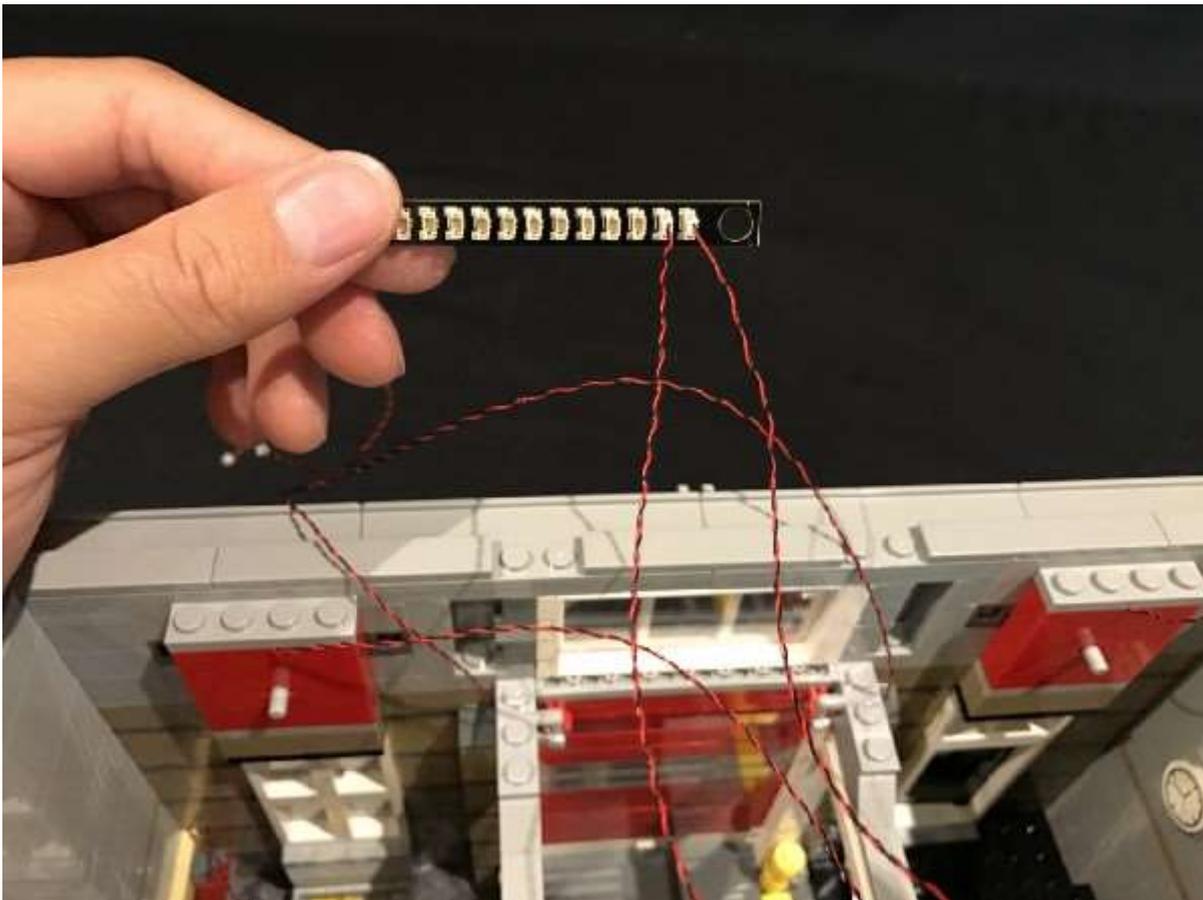
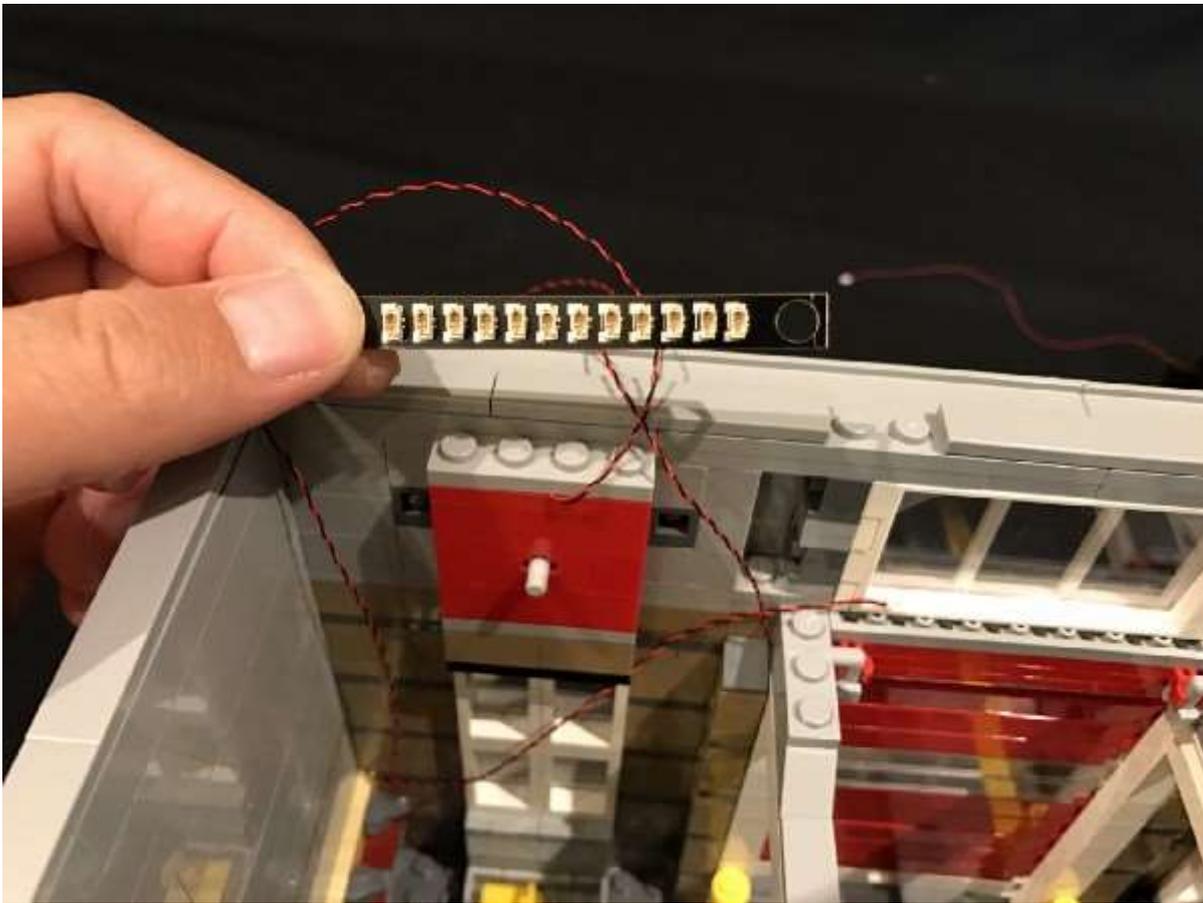
Repeat this process to install another **Red 30cm Flashing Bit Light** to the provided replacement pieces and then reconnect them to the wall as shown below.



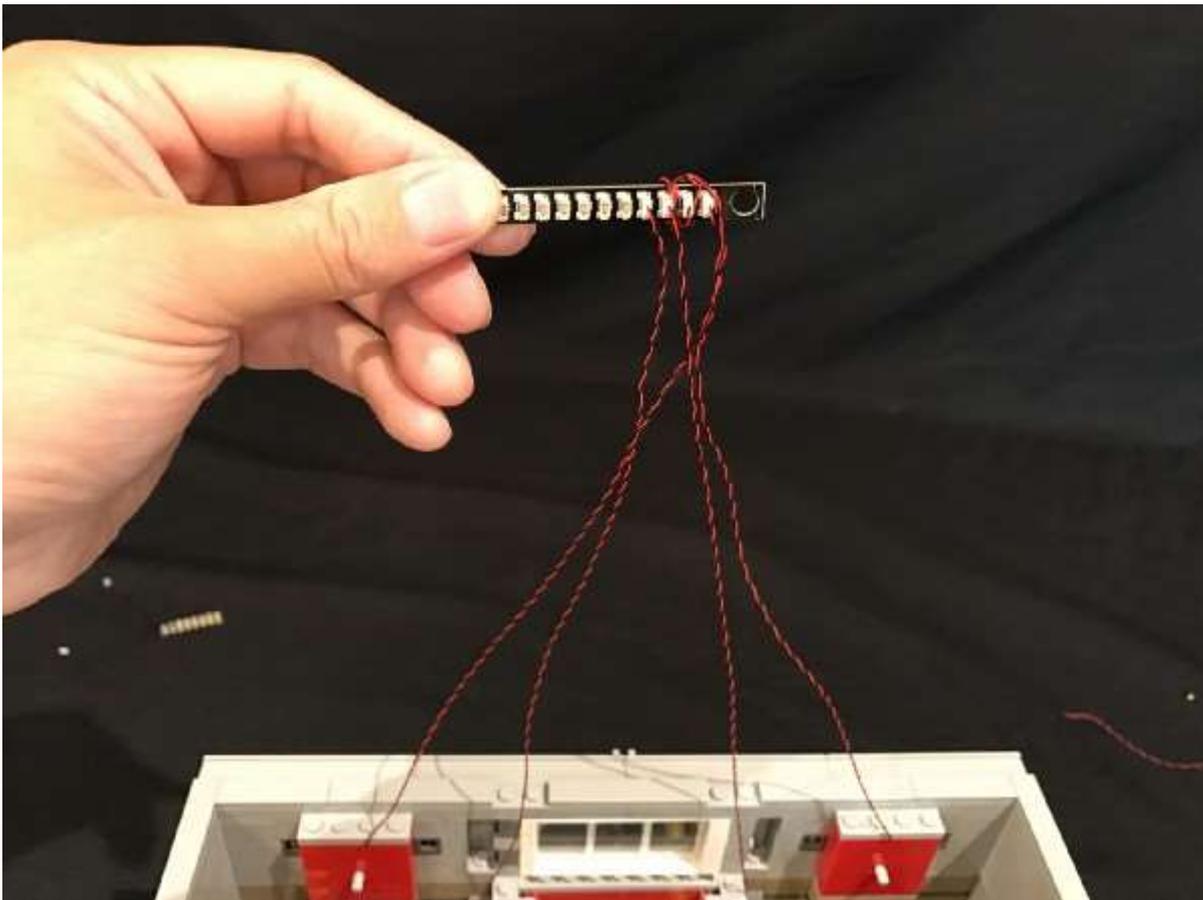
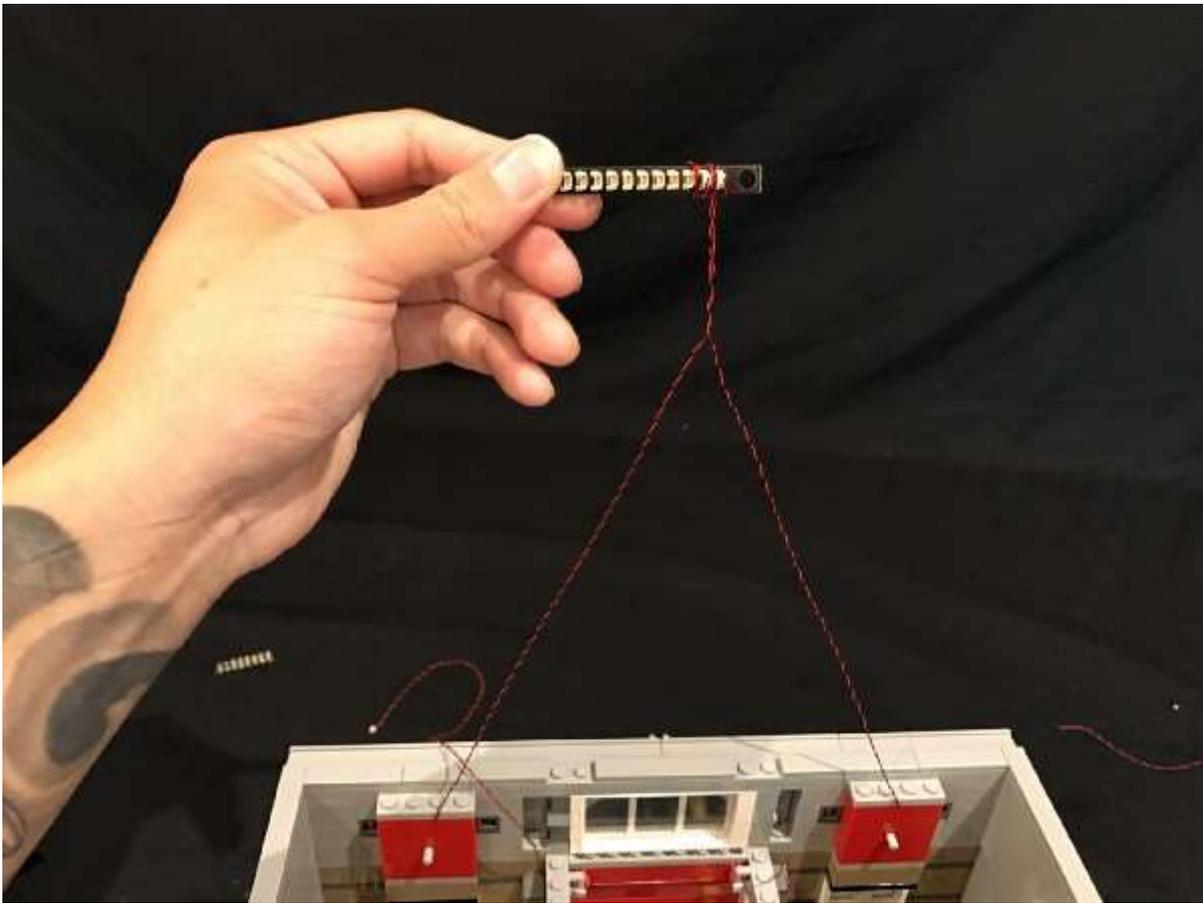
Thread the cable for the light on the left up through spacing of the stair case as per below



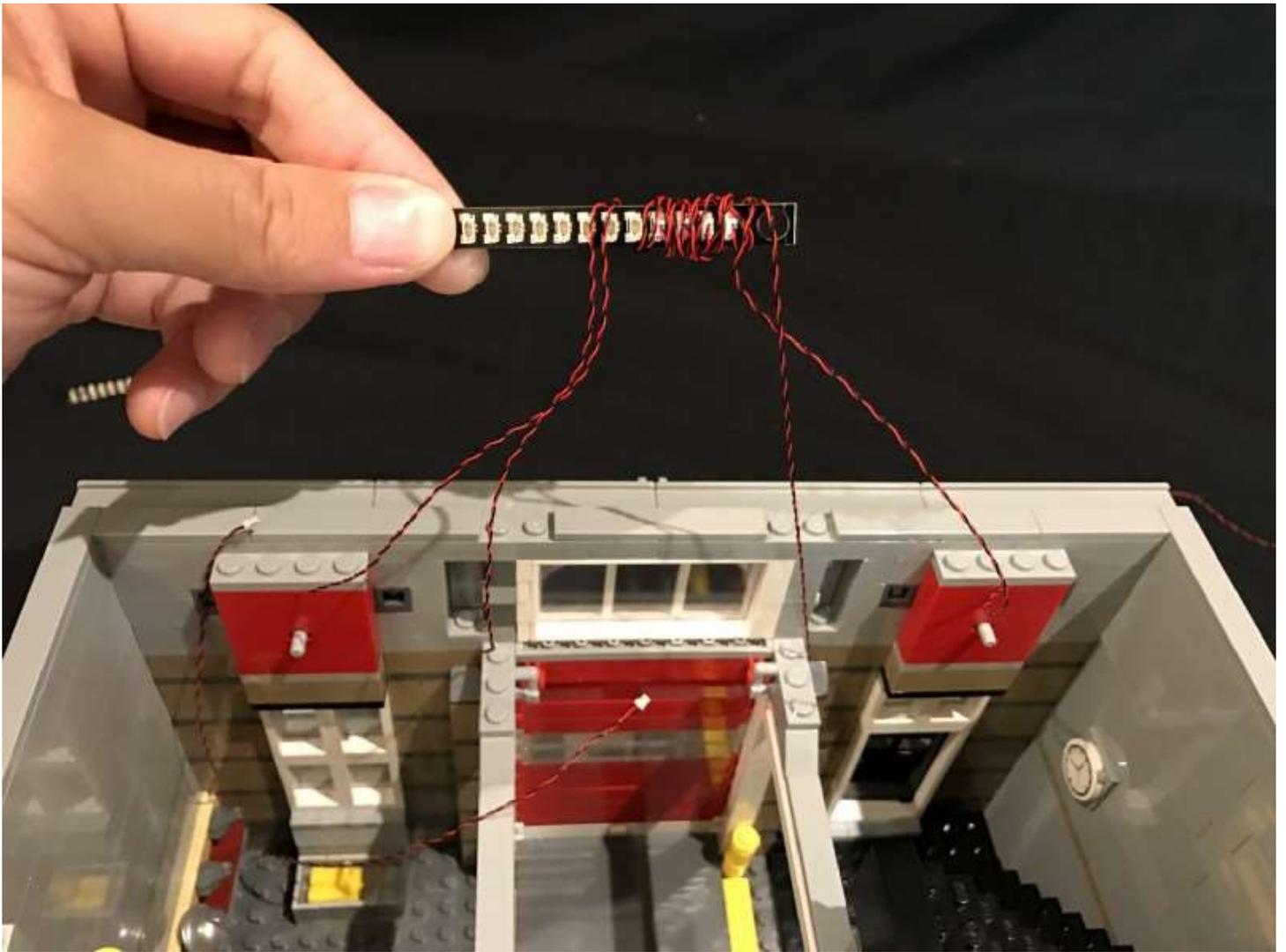
10.) Take the **12-Port Expansion board** and then connect the cables from the bit lights above the gold fireman hats to the ports on the right.



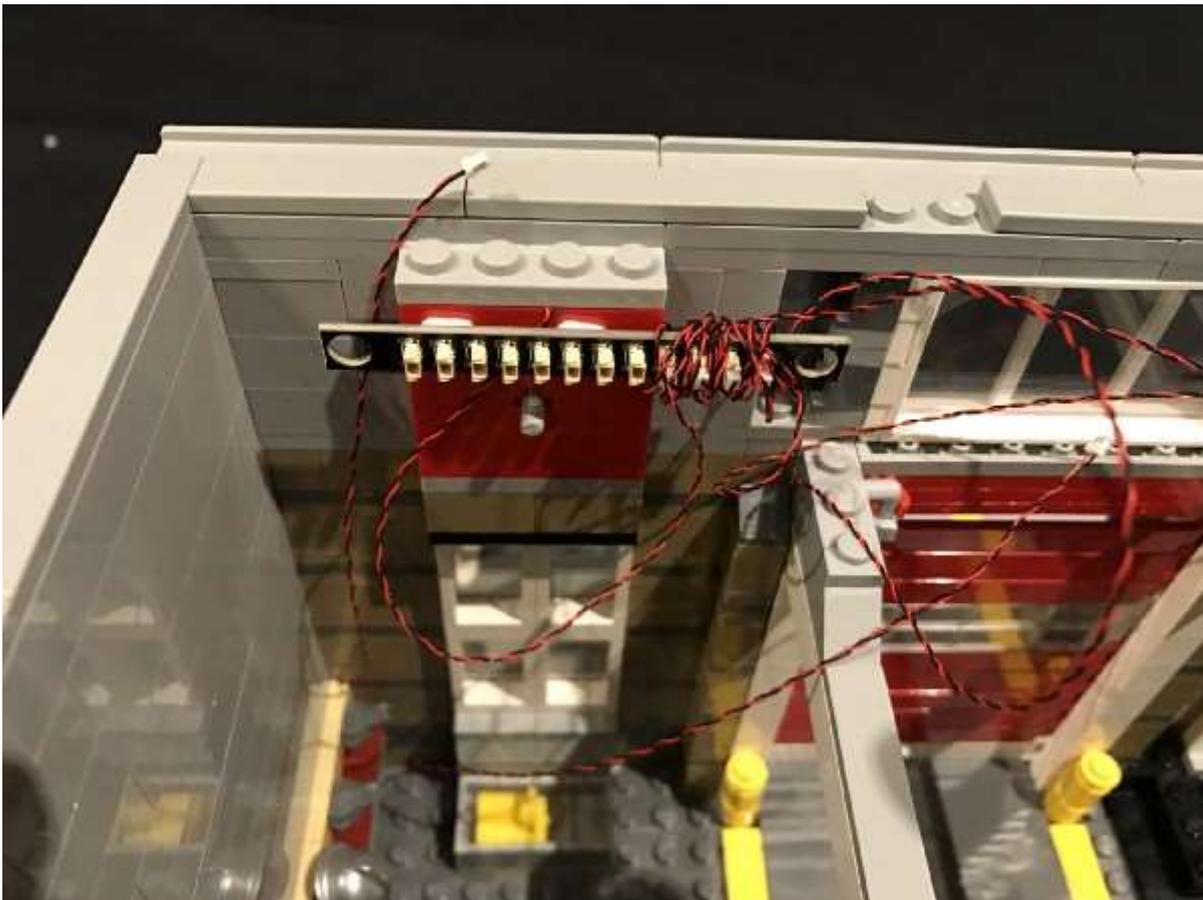
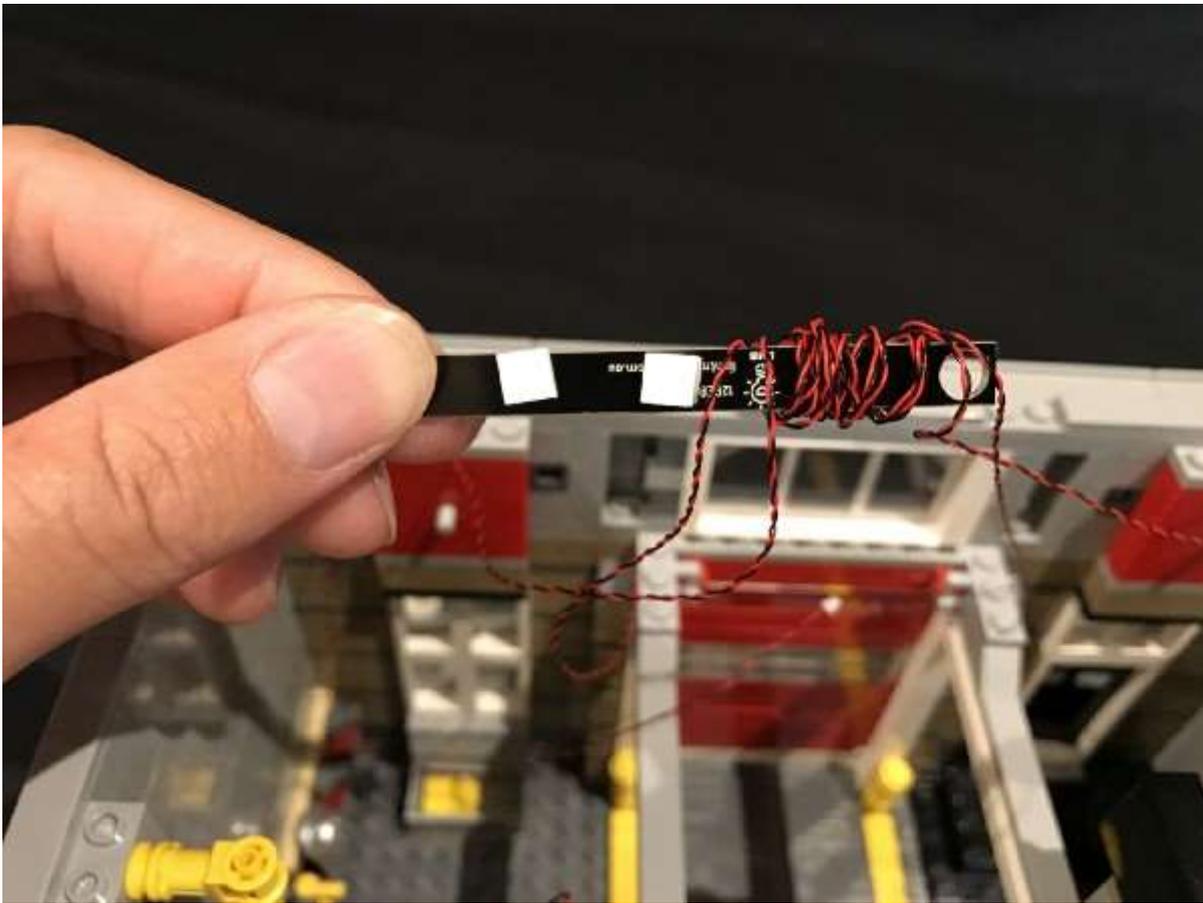
Wind the cables around the expansion board 2–3 times and then take the cables from the door lamps and connect them to the next available ports.



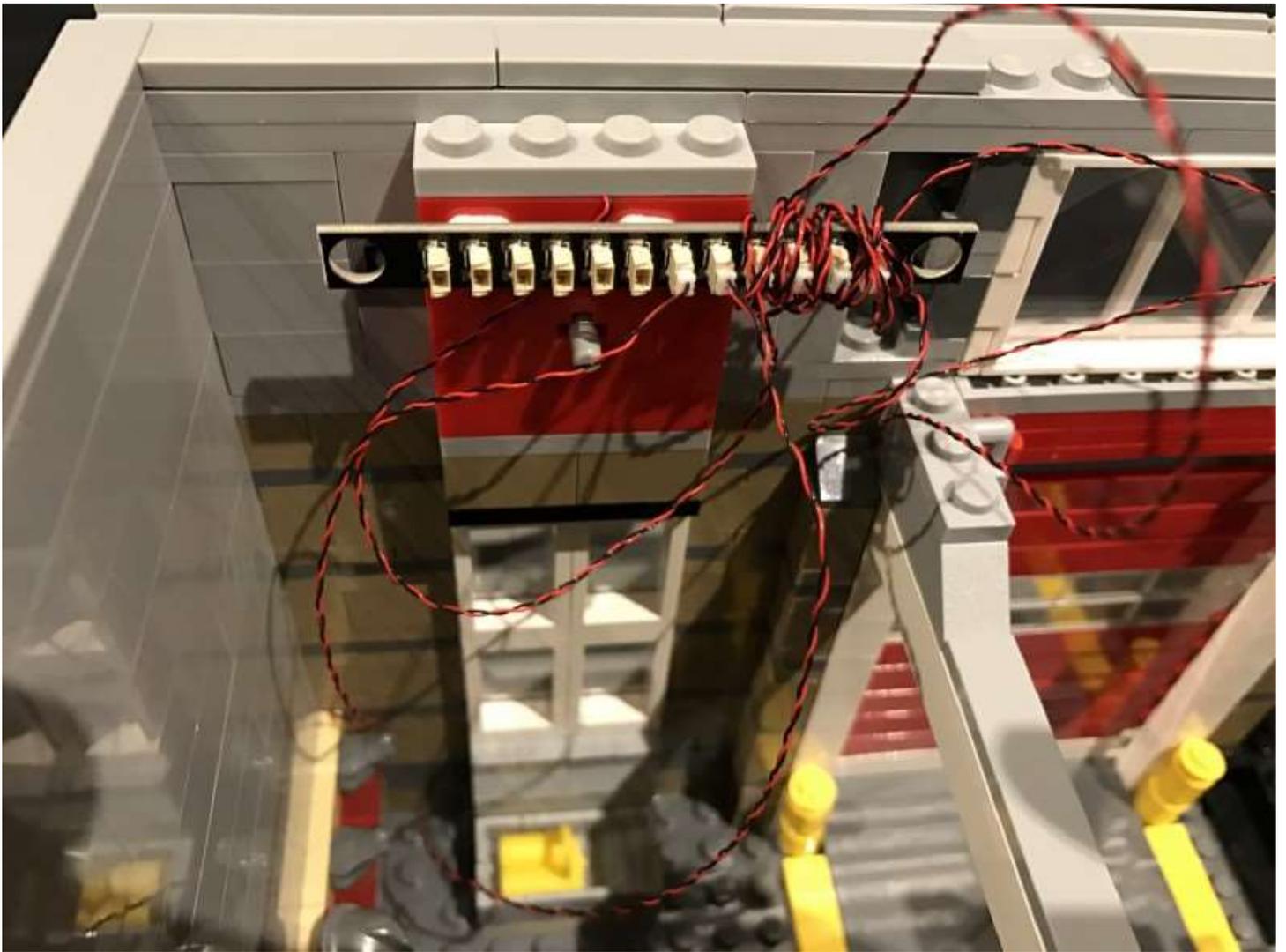
Wind all 4 cables around the expansion board 4–5 more times.



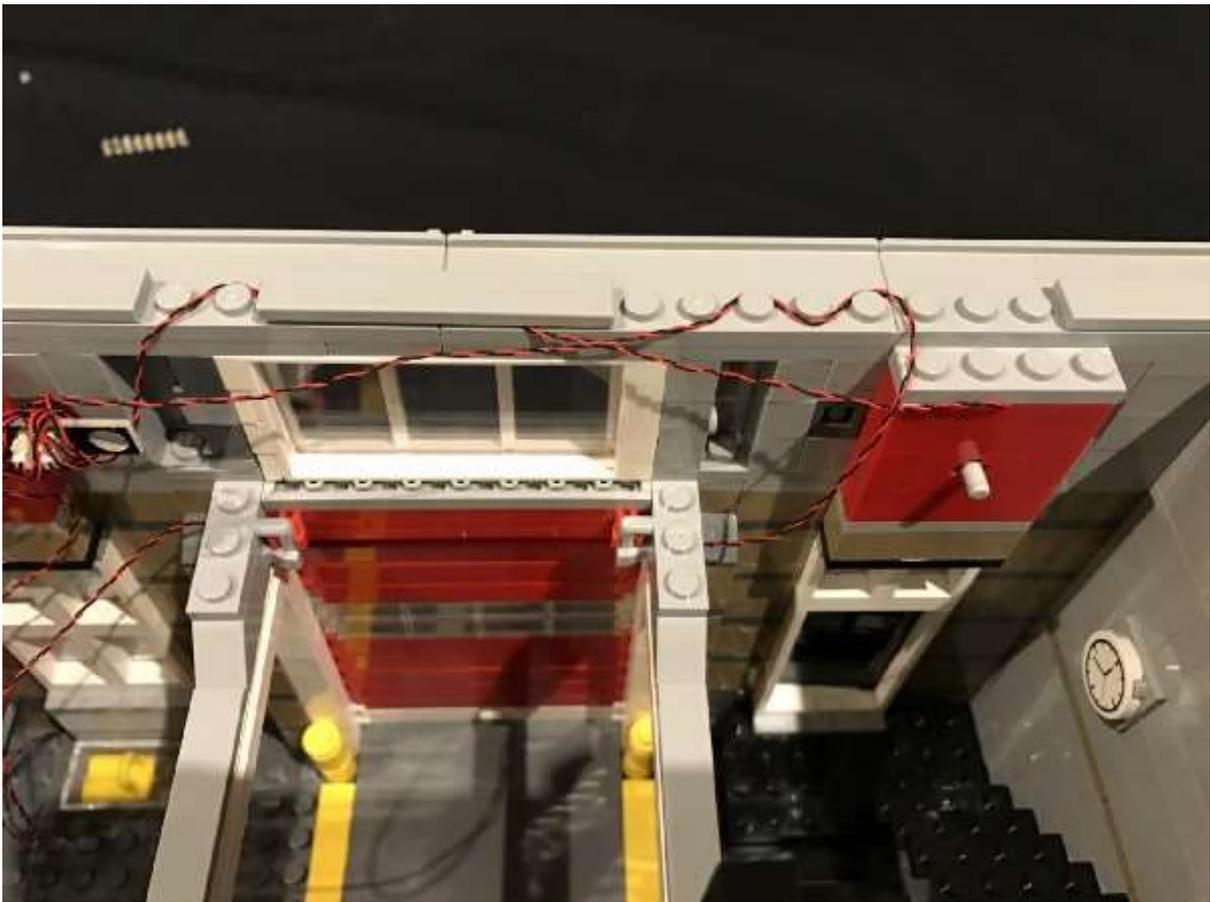
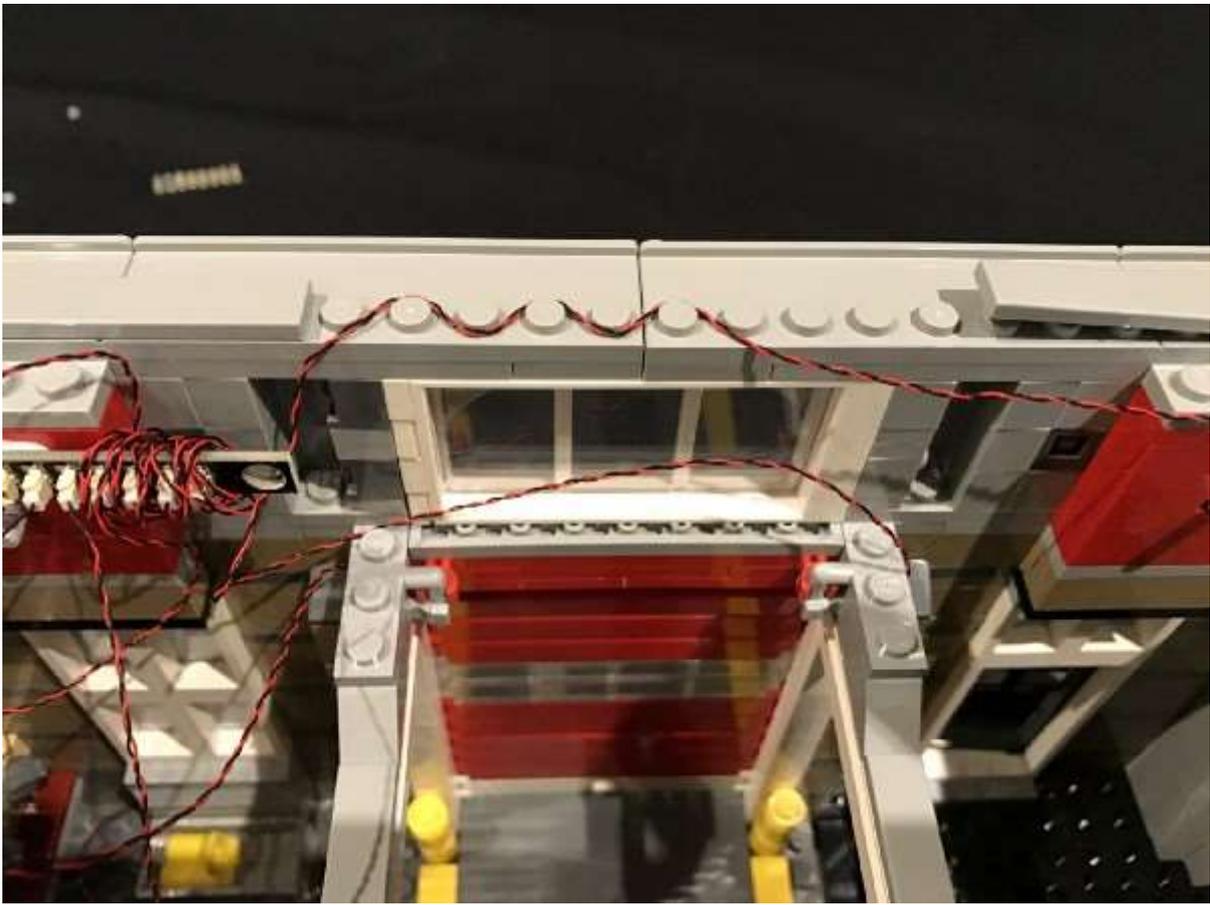
11.) Stick 2x adhesive squares to the back of the expansion board and then mount the expansion board to the inside of the wall in the following position.



12.) Connect the cables from the lamp post and blue flashing light into the next available ports on the expansion board.

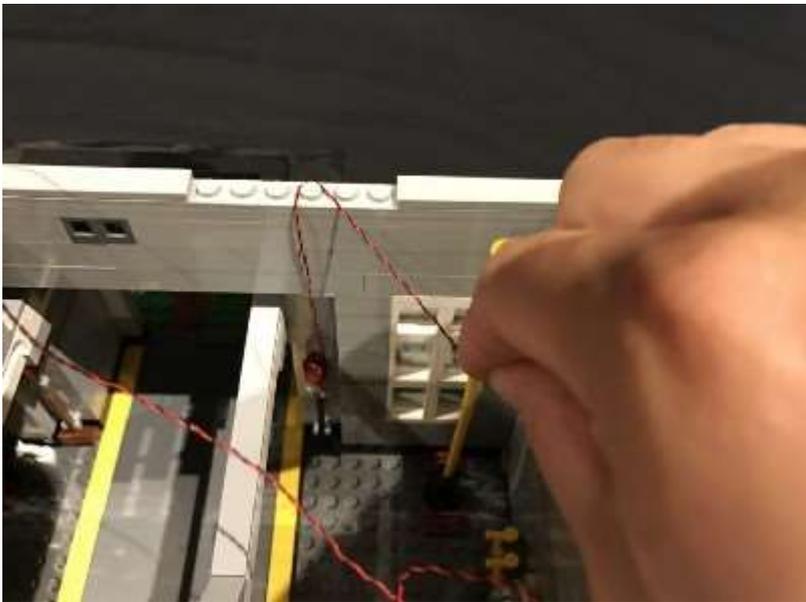
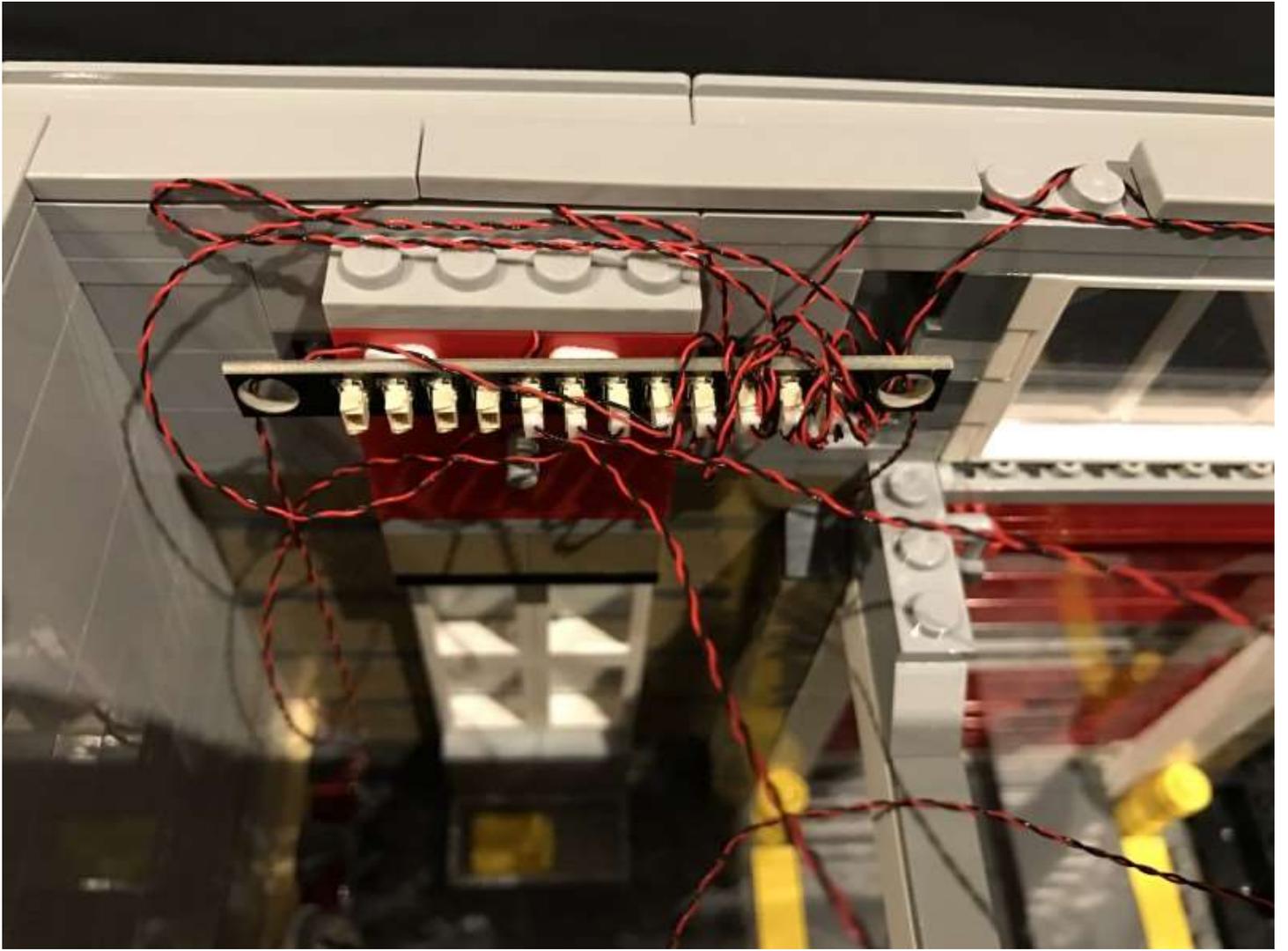


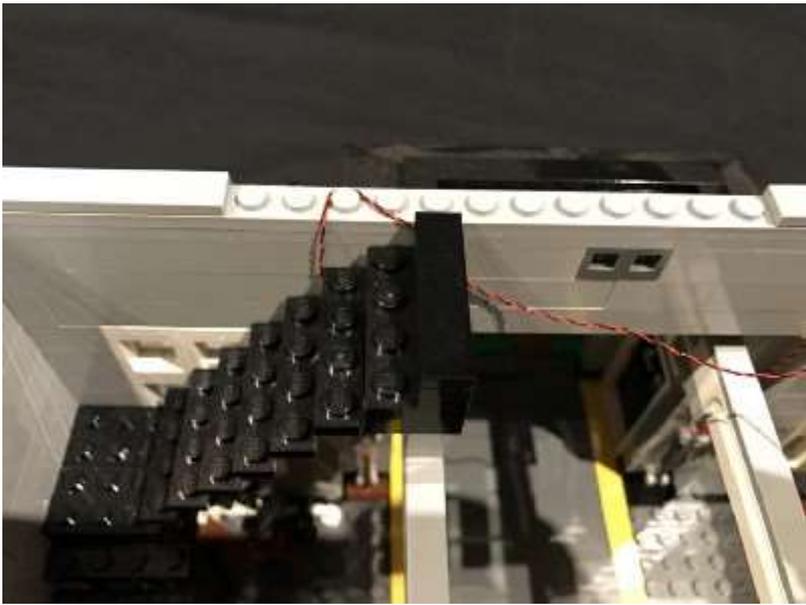
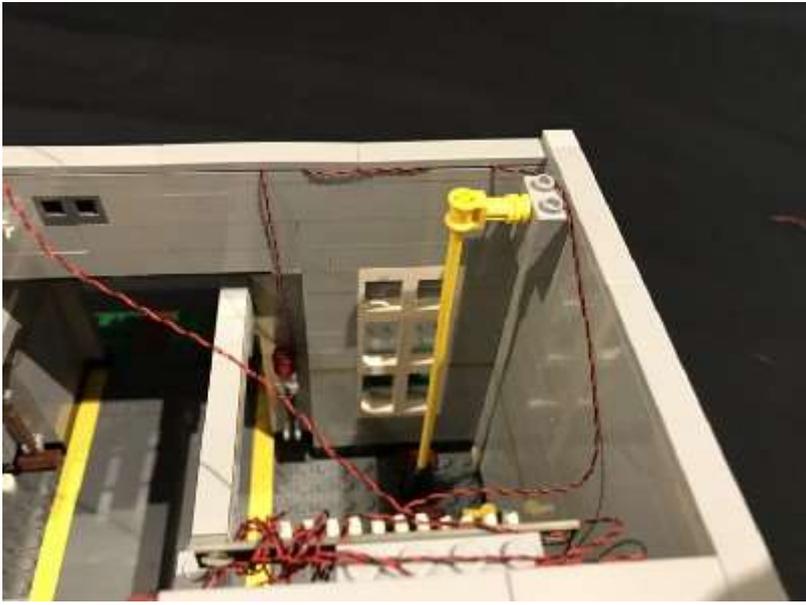
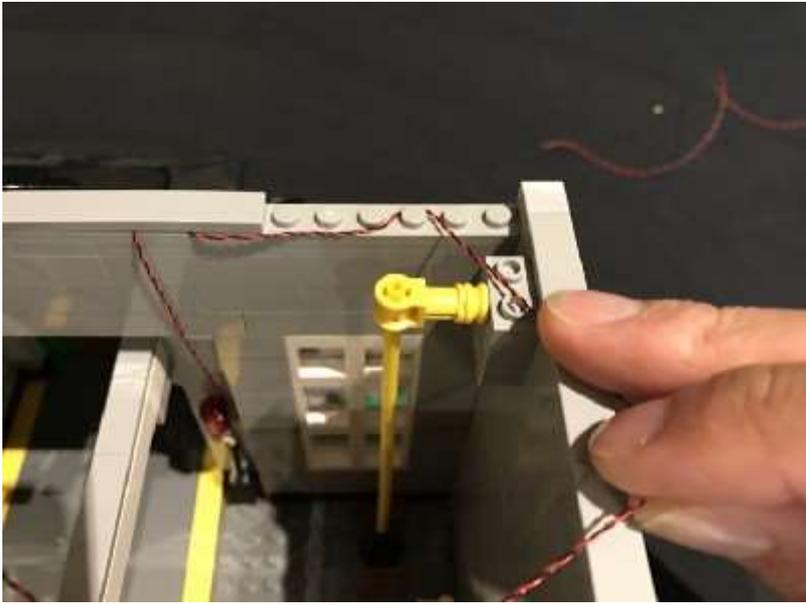
13.) It's time to neaten up the cabling. Do your best to hide all the excess cabling underneath the LEGO tiles on the top of the floor ensuring your cables are neatly laid in between the studs as shown below. The key here is to ensure there are no cables visible from the outside looking into through the doors and windows.

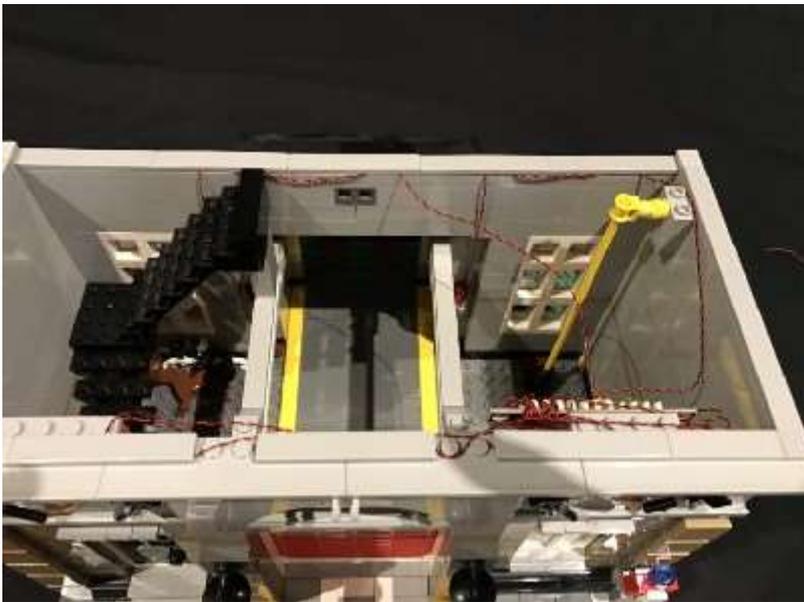
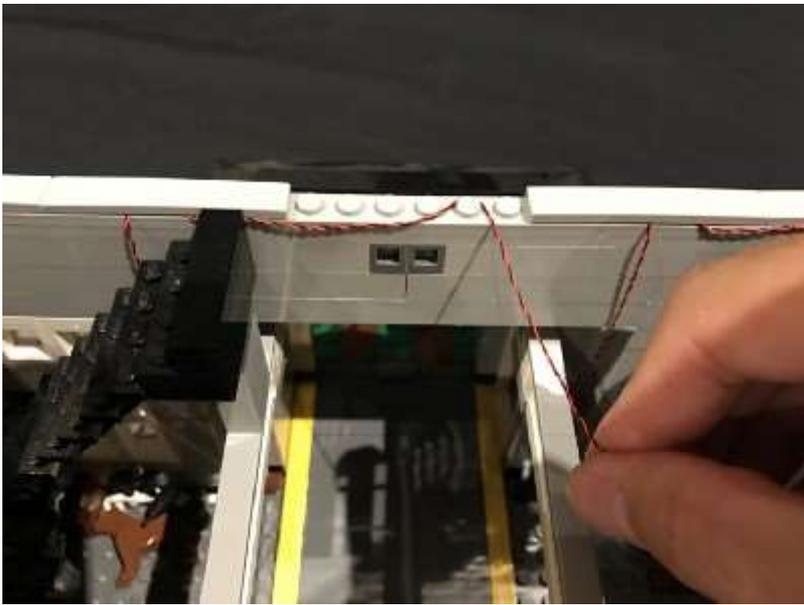




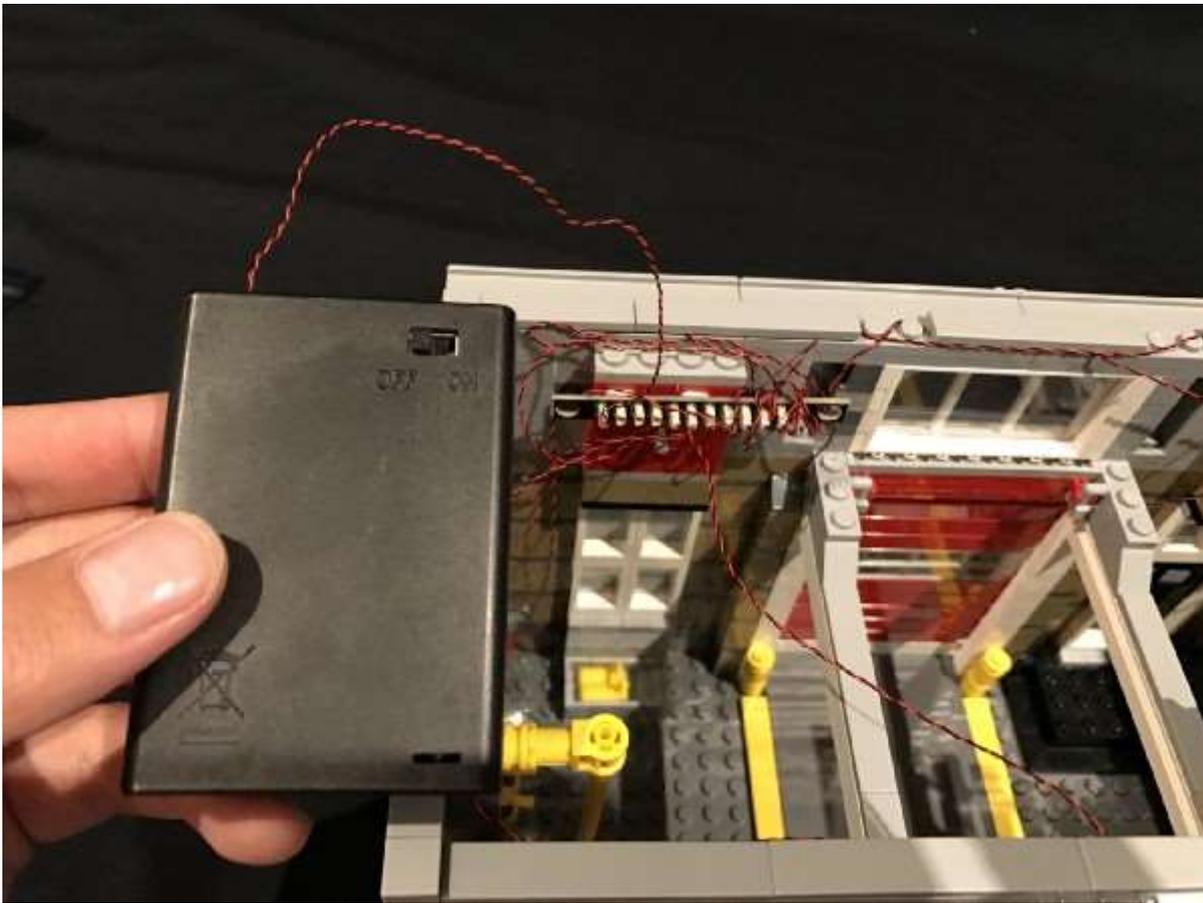
14.) Take the two cables from the flashing red lights and connect them to the next available ports on the expansion board then eliminate excess cabling by hiding them underneath LEGO tiles on the top.





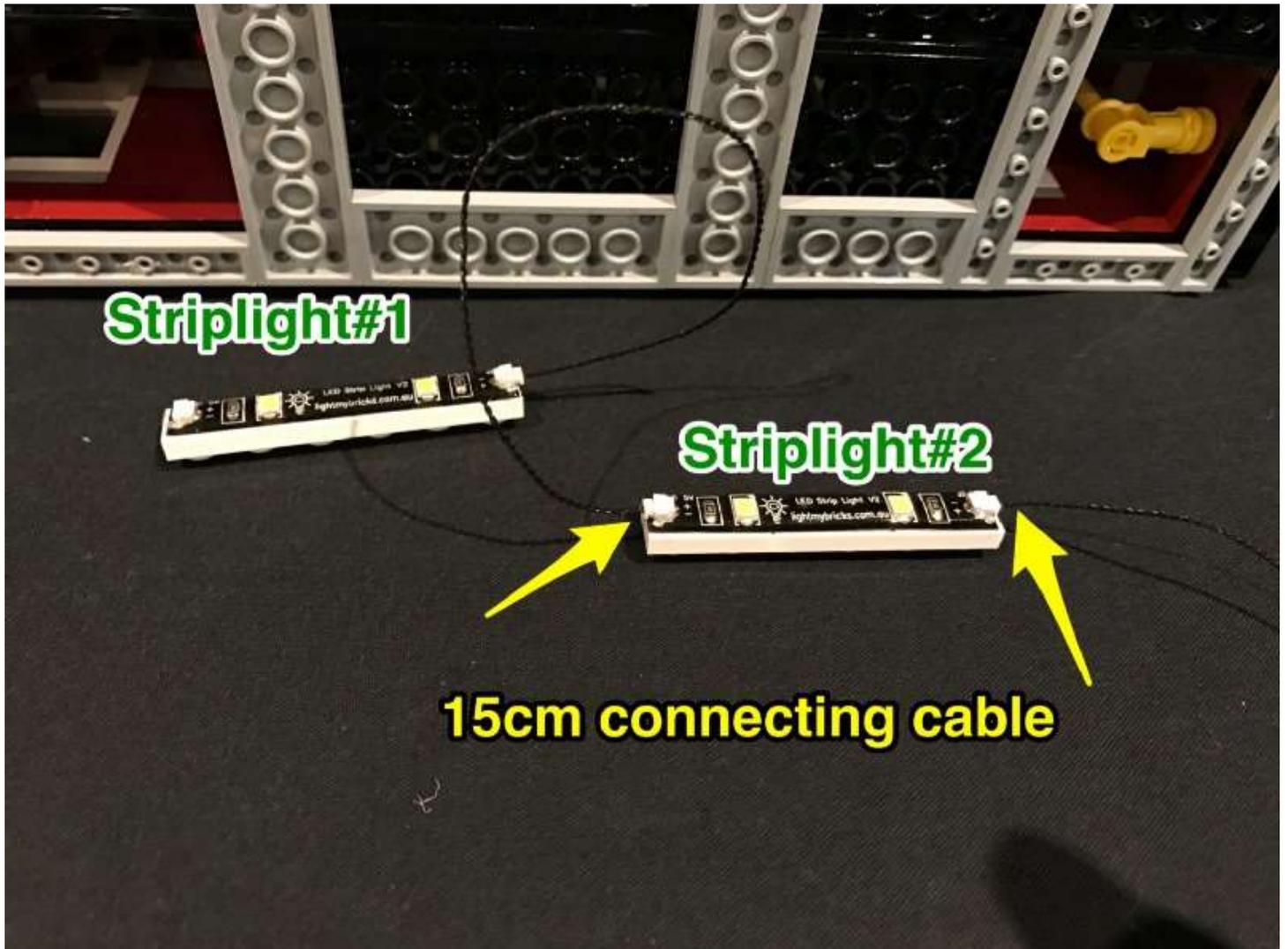


15.) It is now time to test our current lighting we have installed so far. Take the **AA Battery Pack** and insert 3x AA batteries to it. Connect the battery cable into one of the spare ports on the 12-port expansion board and then turn 'ON' to verify all is working OK.



16.) We will now move onto installing ceiling lights. Take 2x **LED Strip Lights** and 2x **15cm Connecting cables**. Connect the strip lights together using one of the cables and connect the other cable into the right port of the strip light on the right. Seeing as

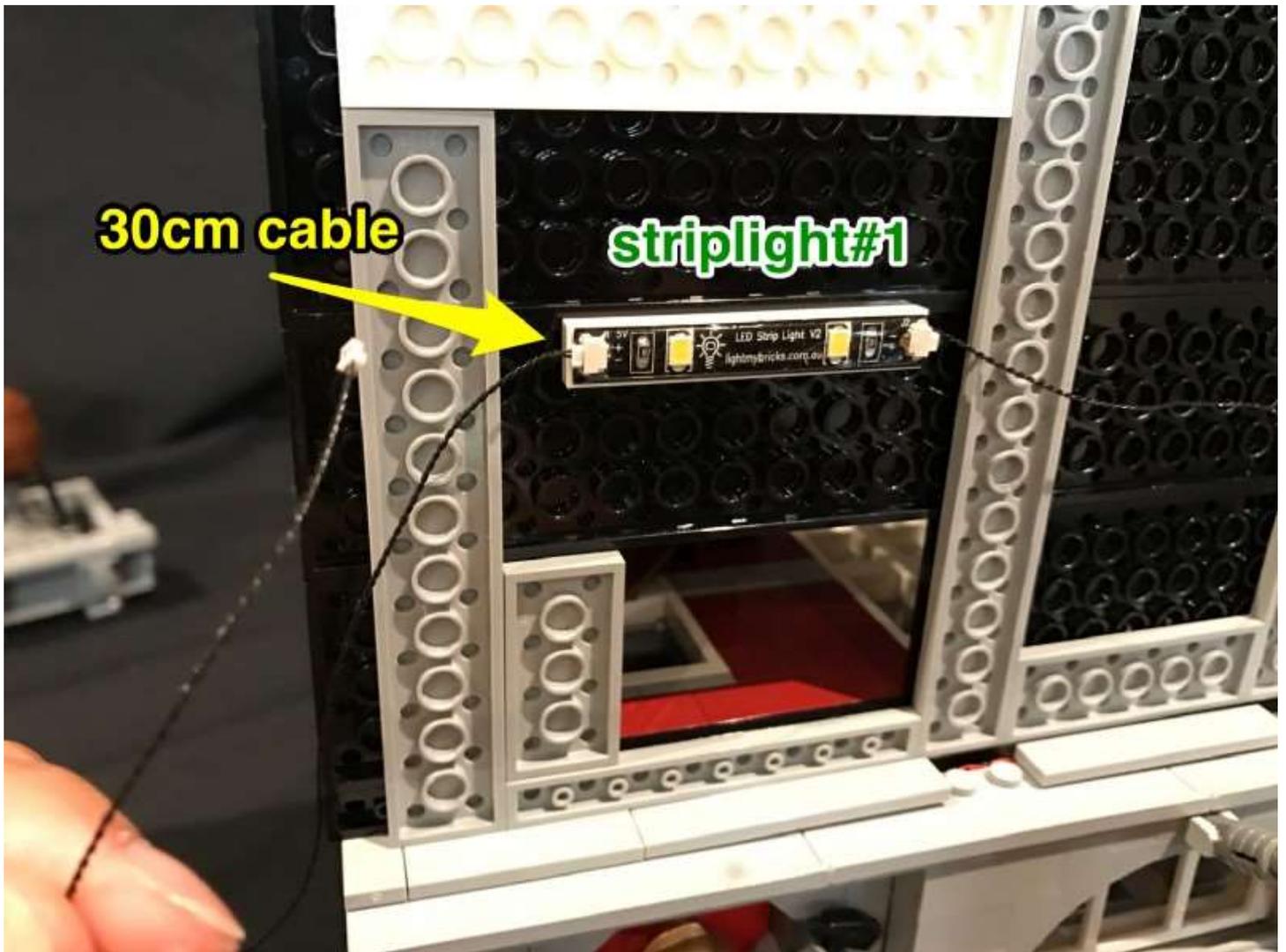
though we will be using several strip lights, we will identify these as **striplight#1** and **striplight#2**.



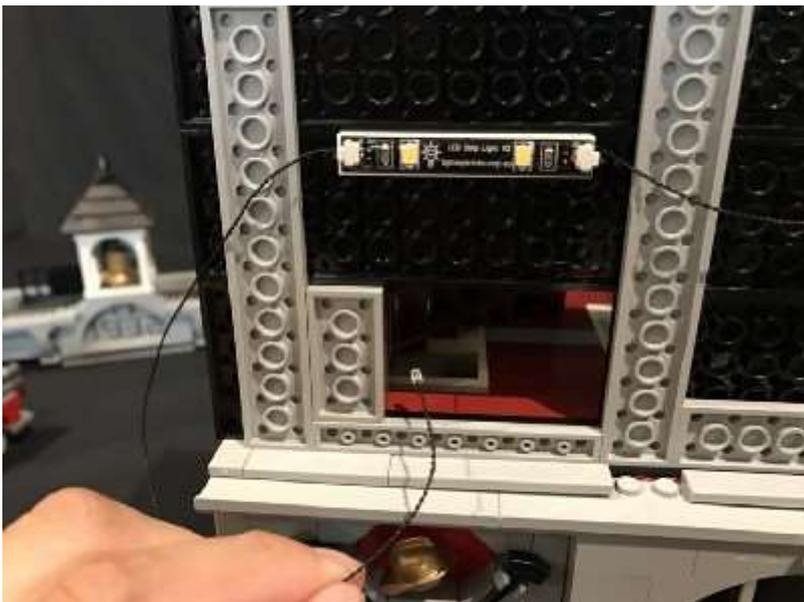
Take the top floor (without the roof) and turn it onto it's back and then mount/stick (depending on whether you are using LEGO plates to mount) the Strip Lights to the following positions underneath the top floor.

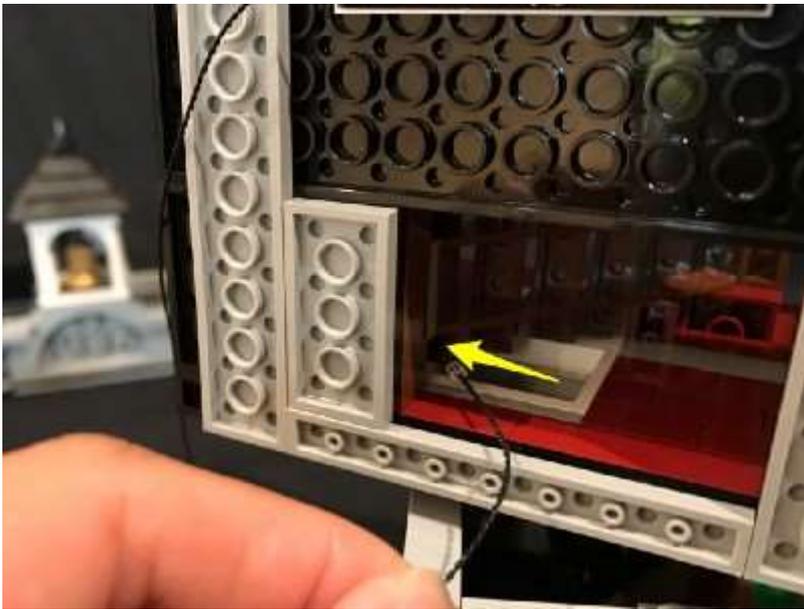


17.) Take a **30cm Connecting Cable** and connect this to the left port of striplight#1.



Thread the other side of this cable up through the spacing between the bottom step and wall which leads to the top floor. Pull the cable up from the inside of the top floor.



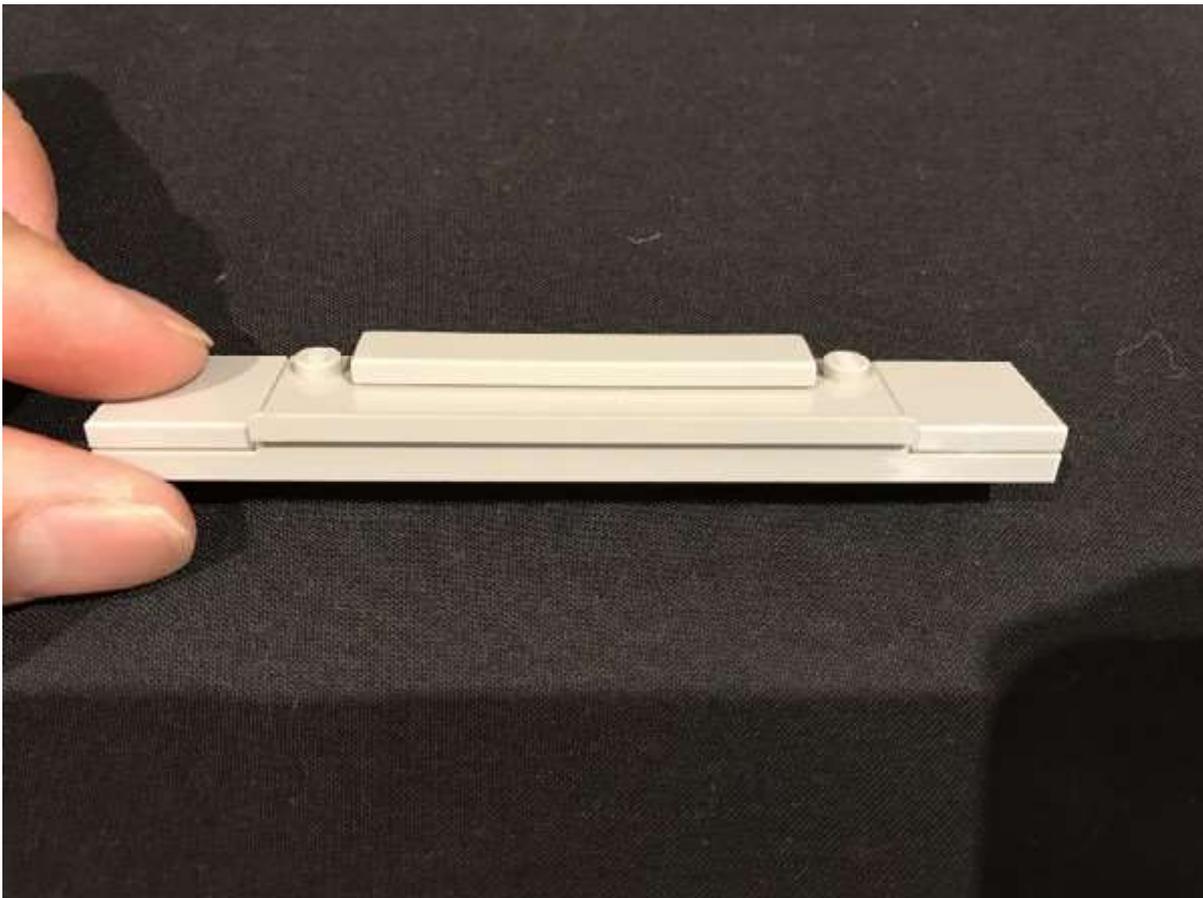


18.) Lift the top floor up over the bottom floor and then connect the other side of the cable from striplight#2 to one of the spare ports on the 12-port expansion board. Reconnect the top floor in place.



19.) We now need to install a strip light above the top window. Remove the middle section tiles from the top of the second floor.

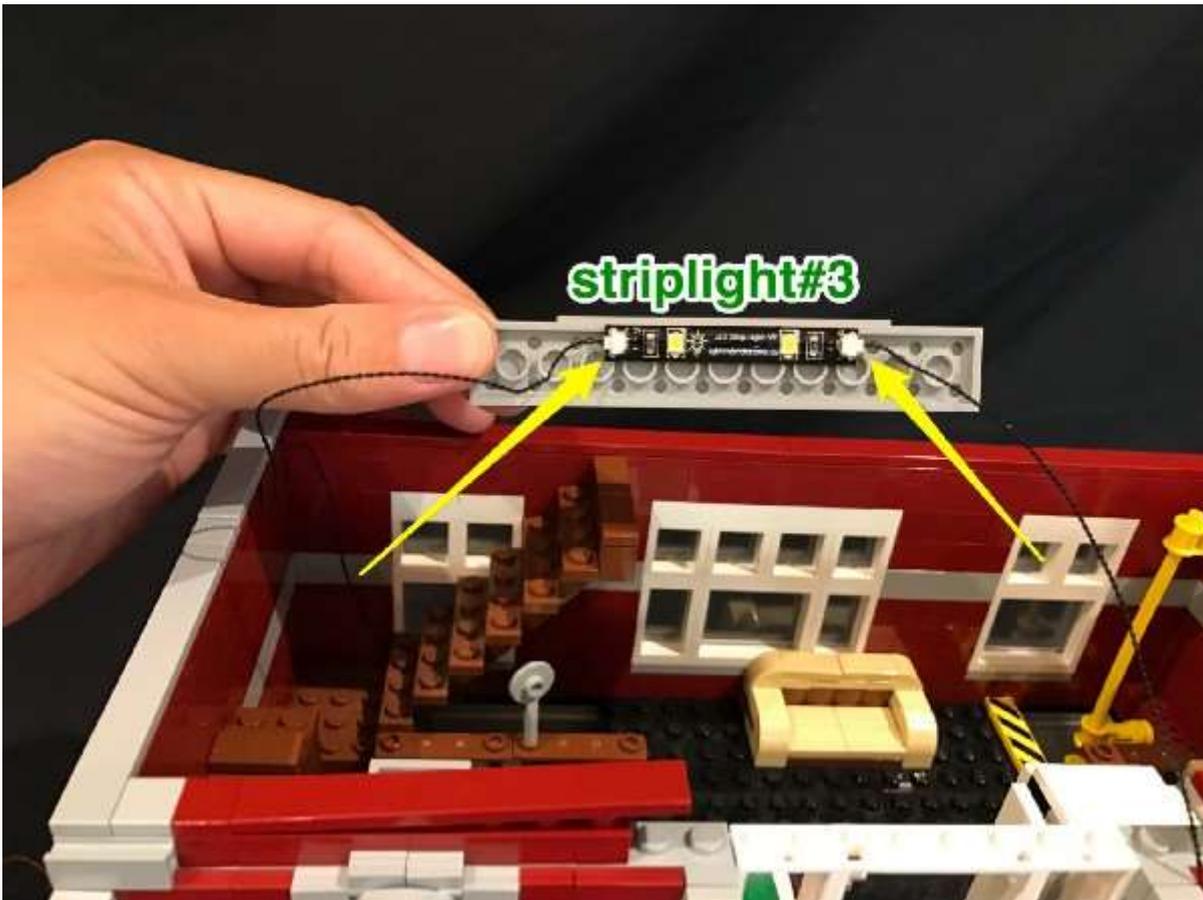
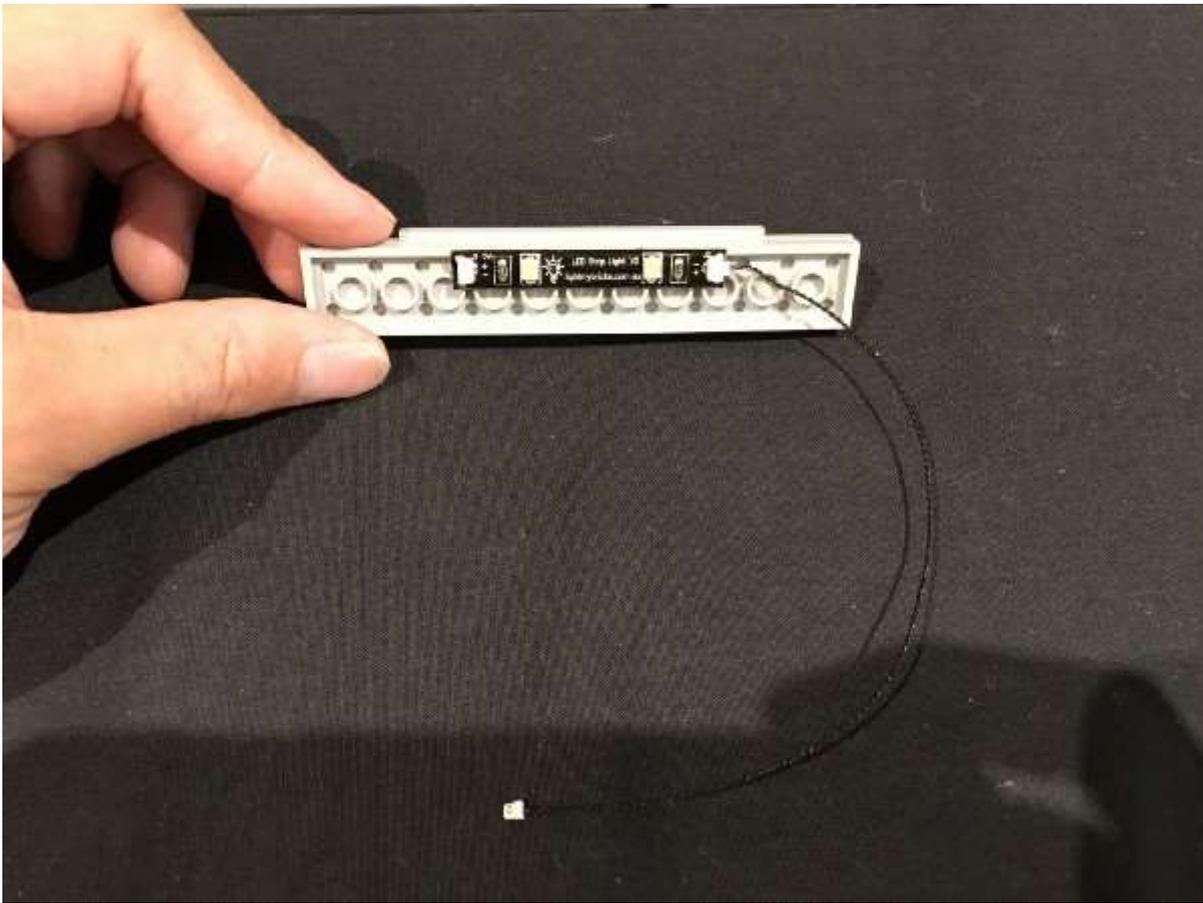




Take a **LED Strip Light (striplight#3)** and stick it to the following position underneath this section. I've chosen to stick the strip light rather than mount using LEGO plate as I don't want the strip light to be too visible.



20.) Take a **15cm connecting cable** and connect it to the right port of the striplight#3 and then connect the 30cm cable we pulled up from the level below to the left port.



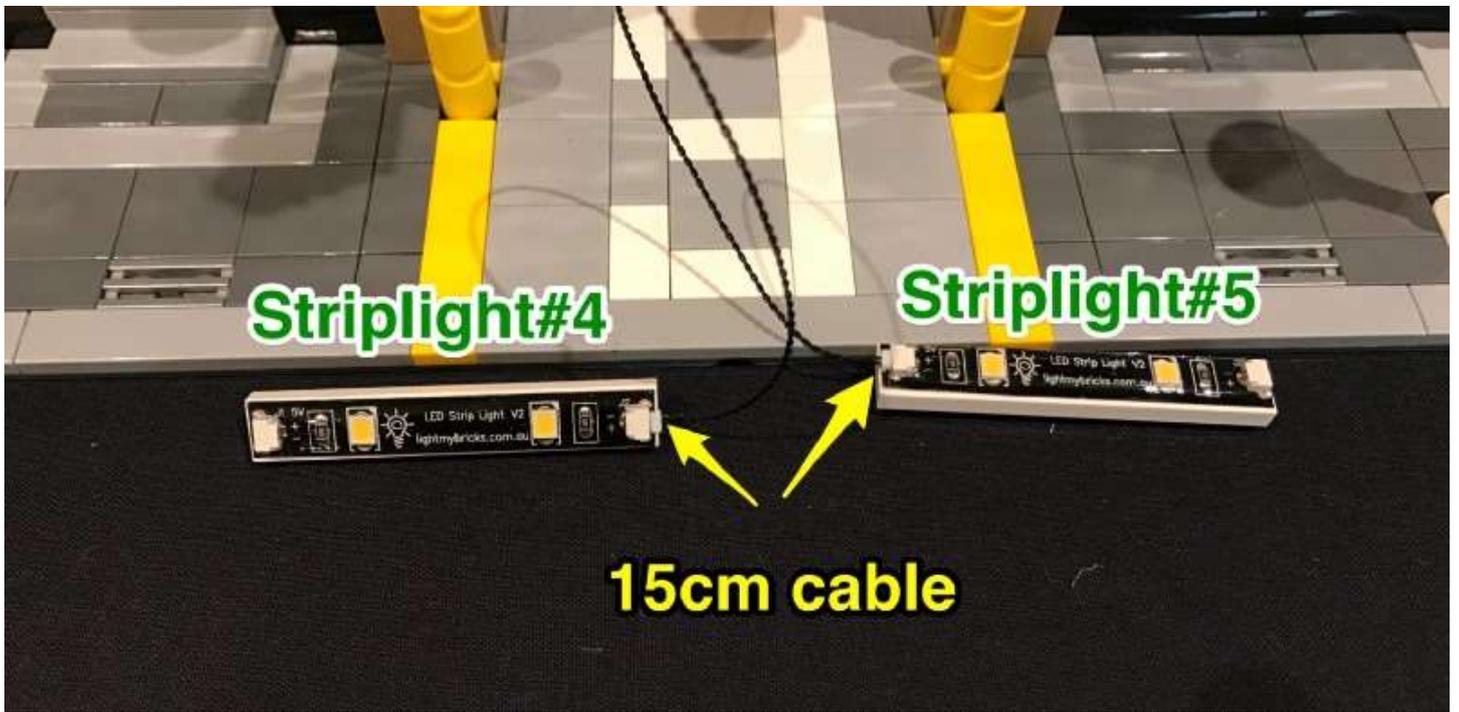
21.) Reconnect this section back to the top of the building ensuring the cables are laid behind.



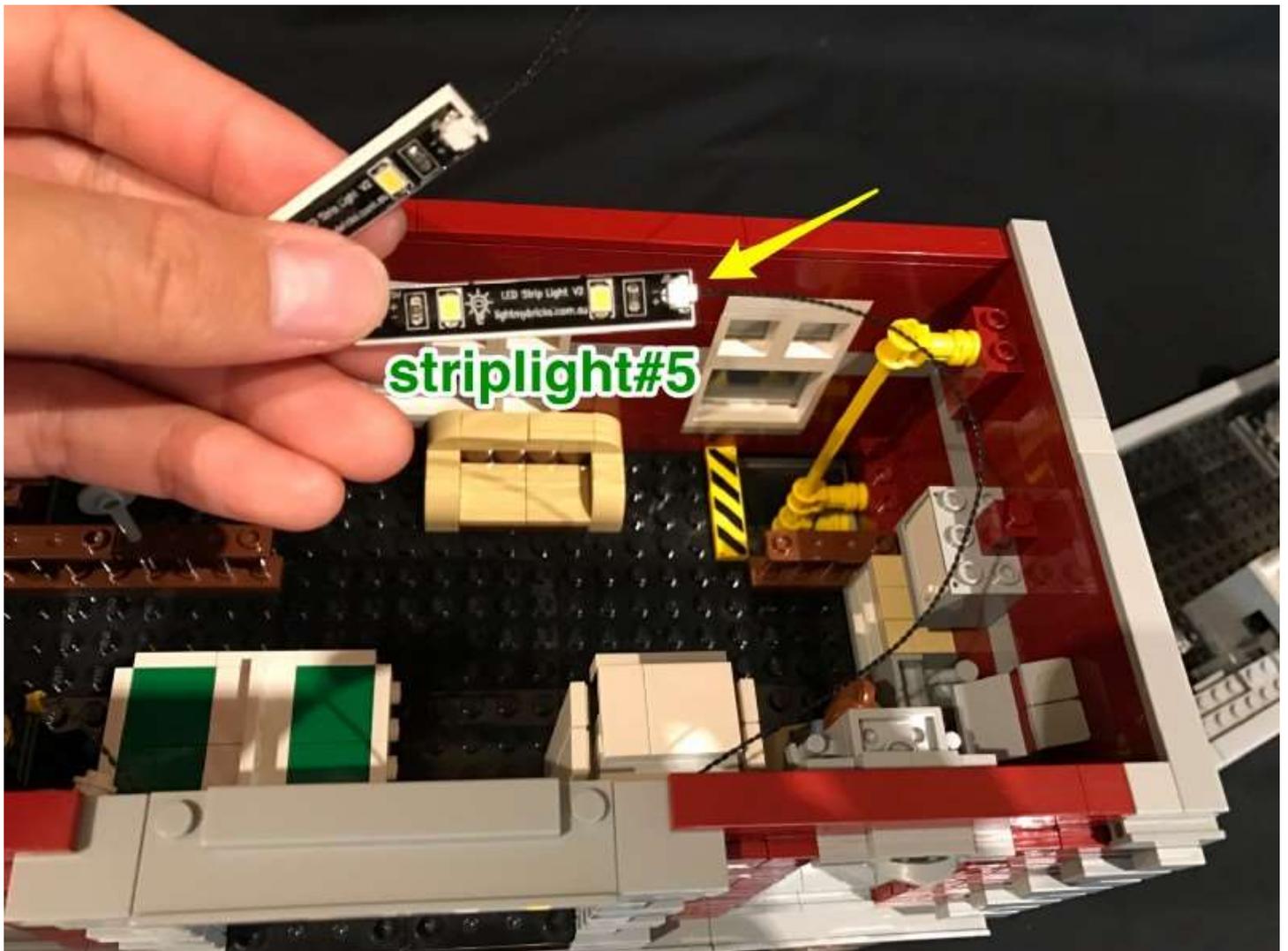
22.) To prevent the 30cm cable from being seen from the outside looking in, secure this under the grey tile on the back left of the top floor as per below.



23.) Take another 2x **LED Strip Lights** (striplight#4 and striplight#5) and connect them together using another **15cm Connecting Cable**.



Connect the 15cm cable from striplight#3 into the right port of striplight#5



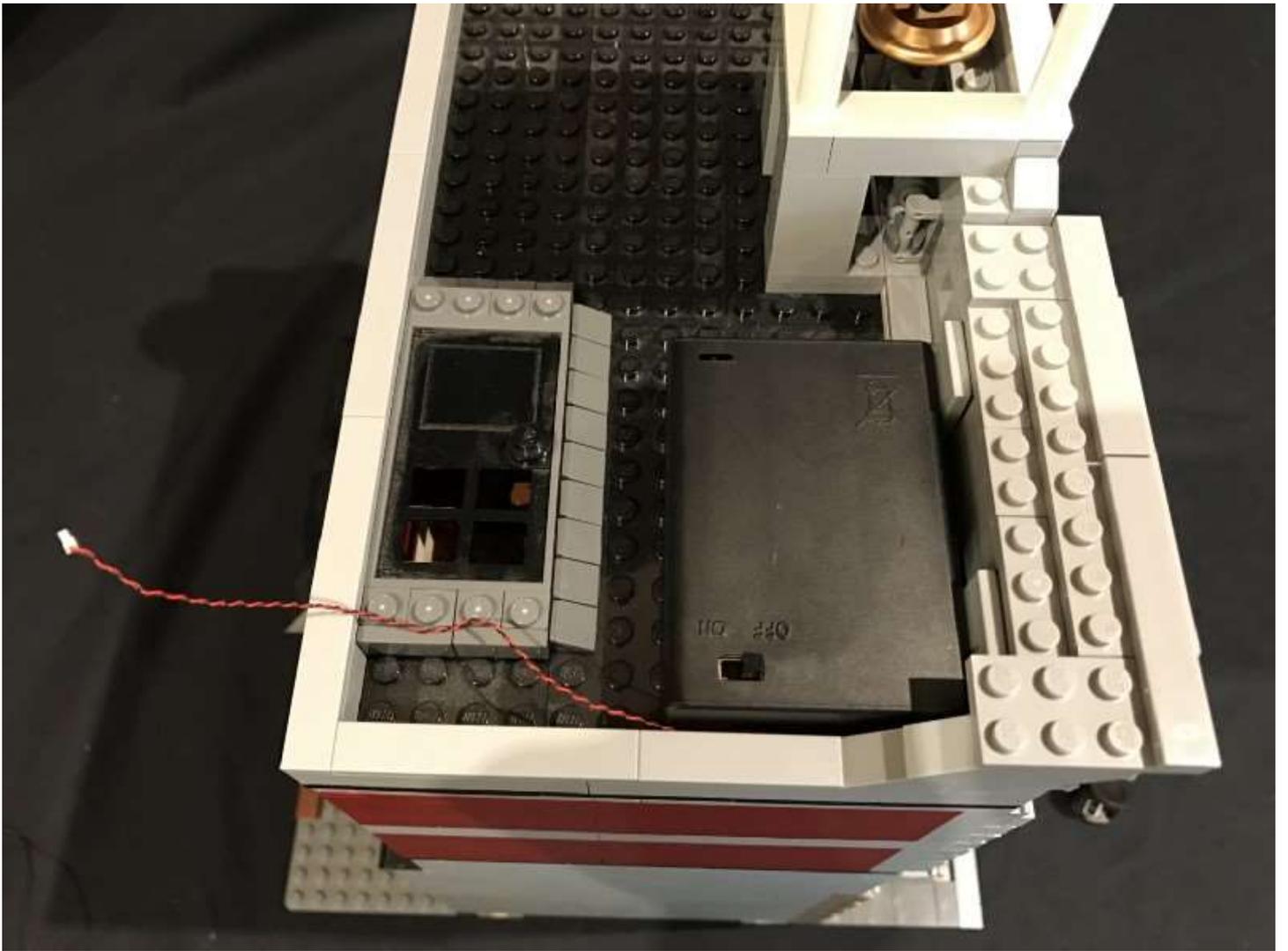
24.) Take the roof of the fire brigade and then turn it onto it's back to allow us to then mount/stick the 2 strip lights to the following positions.



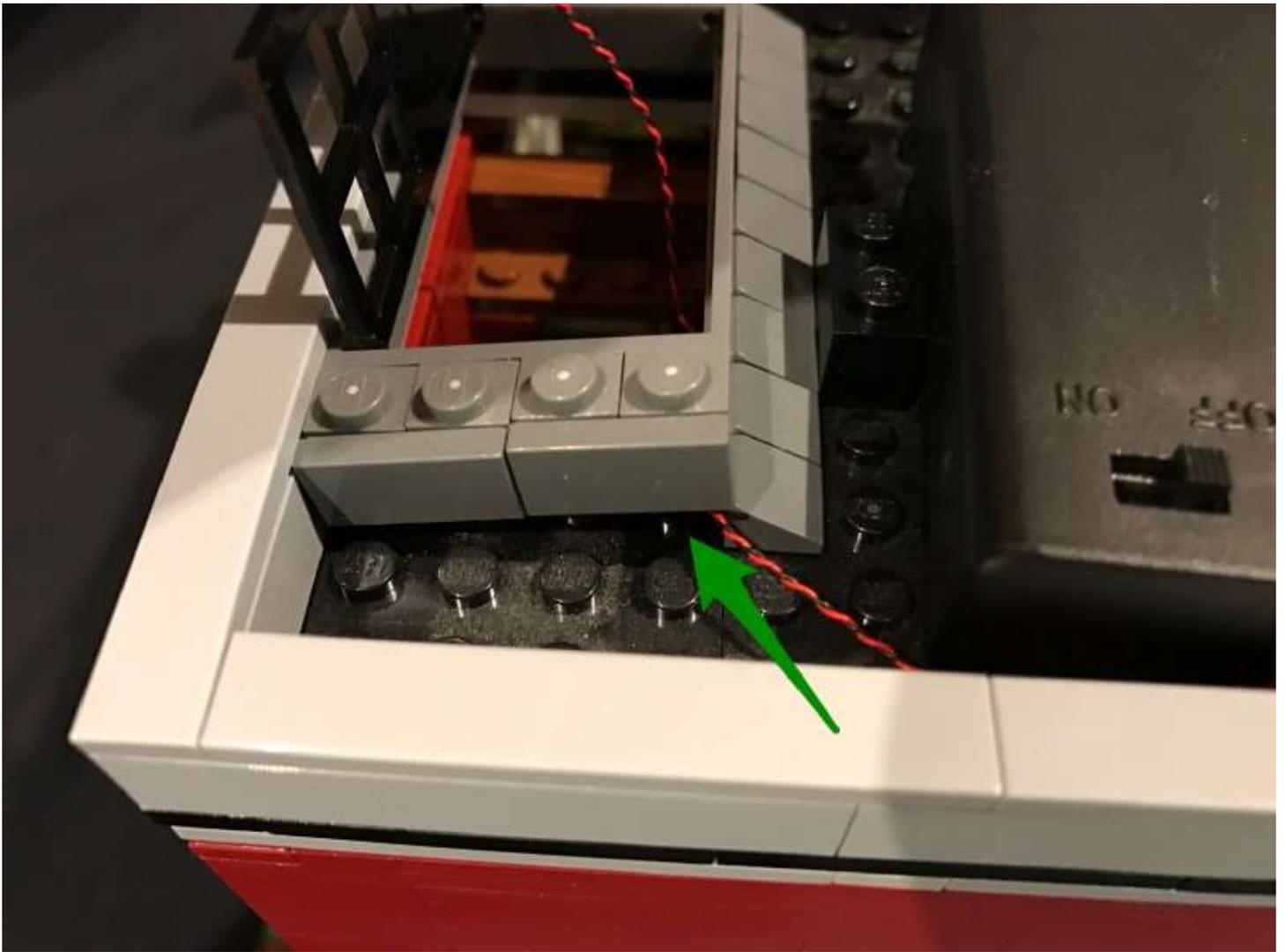
To prevent the 15cm cable in the middle from dangling down, loop the cable behind the edge striplight#4. *This can only be done if you are using LEGO plates to mount the strip lights.*



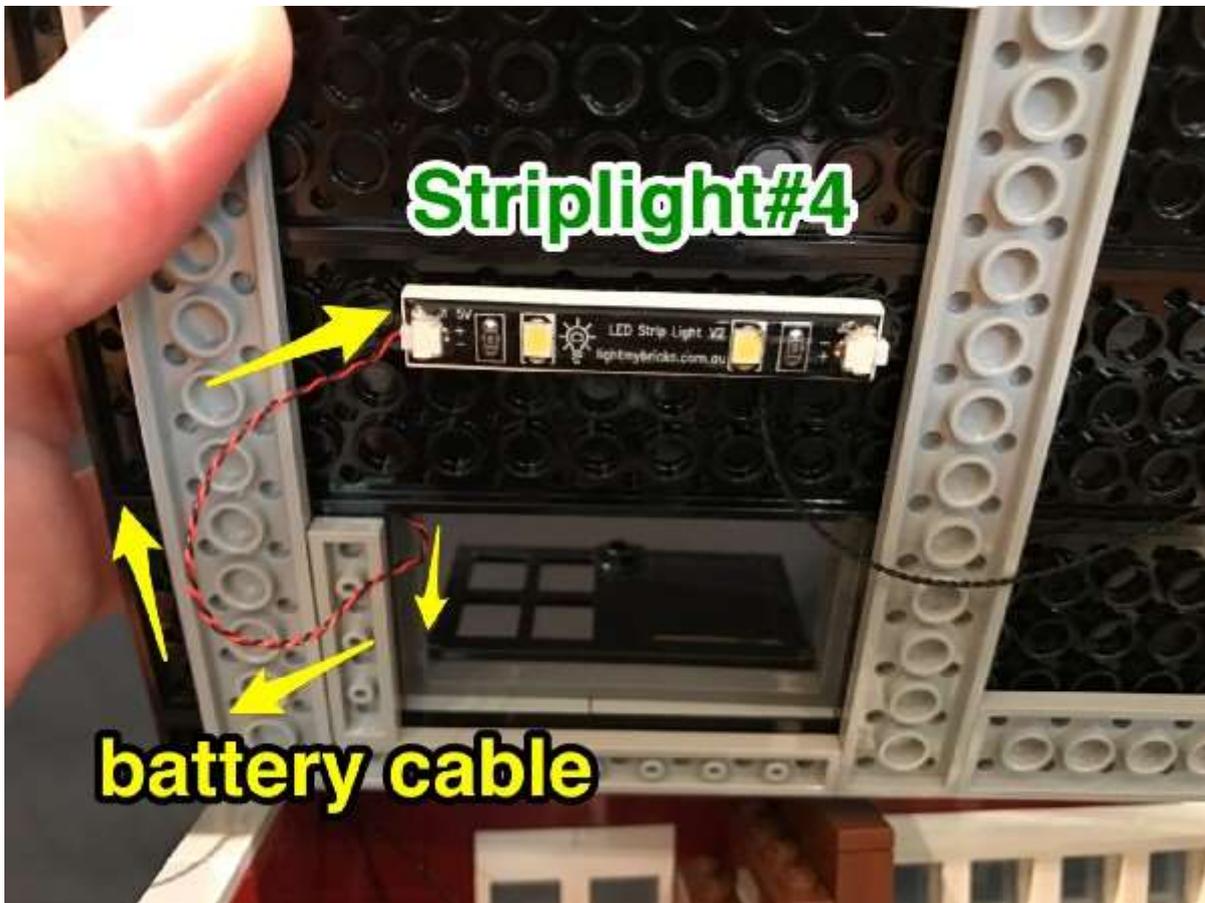
25.) Take the **AA Battery Pack** and place it on the roof in the following position.



Lift up a few of the dark grey Lego pieces surrounding the door and then thread the battery cable down below in between this gap.



Connect the battery pack cable to the left port on striplight#4 and then secure everything back in place before then reconnecting the roof.



This now completes installation of the Light My Bricks LED light kit for the LEGO Fire Brigade.

Turn the battery pack 'ON' and ENJOY!

