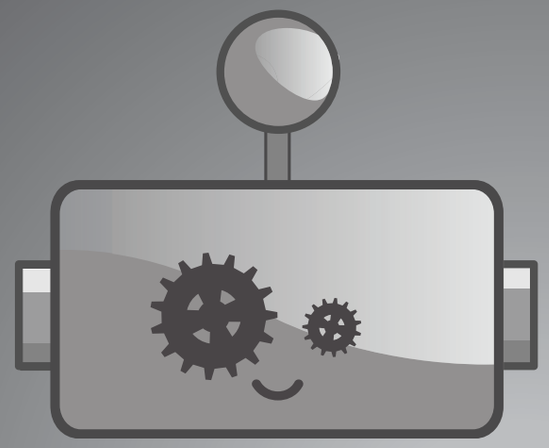
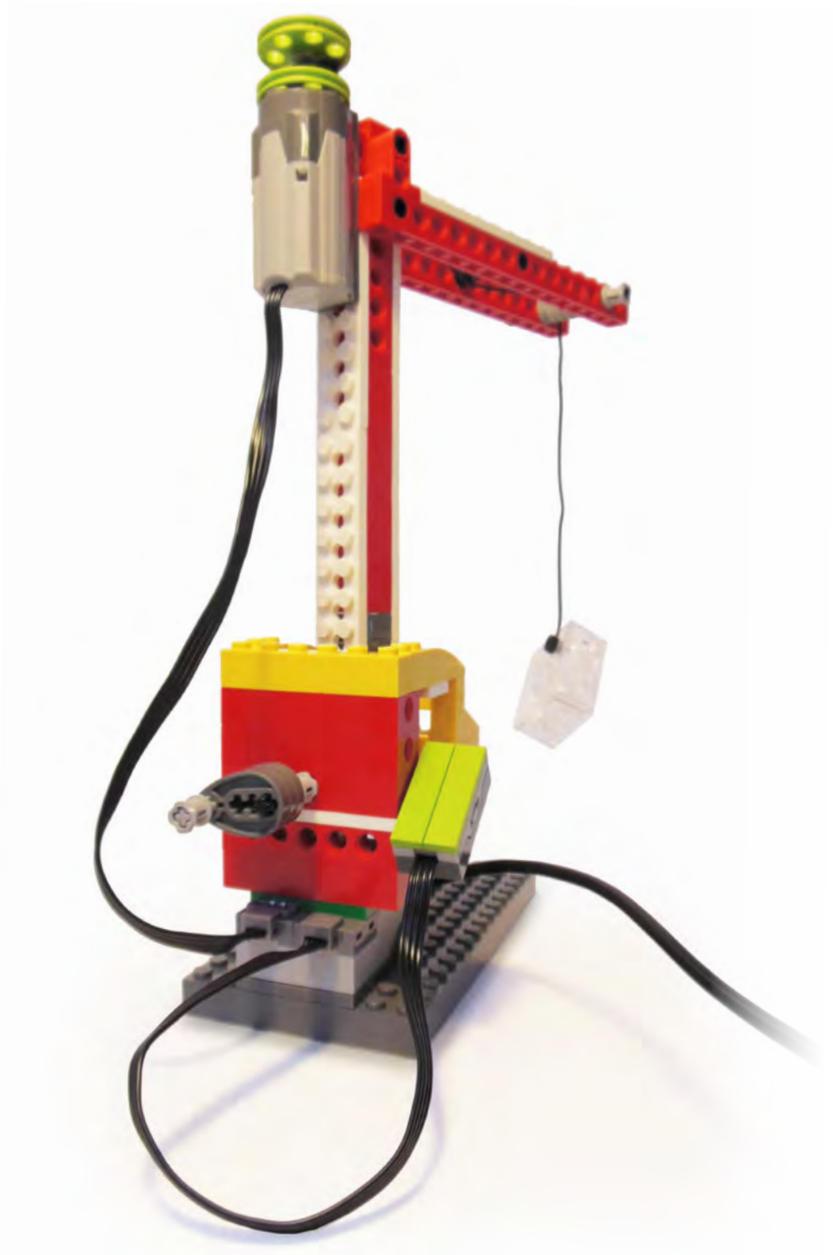


TINY TECHS CLUB

Creativity | Science | Technology

Crane

LIFT YOUR LOAD!! Change the weight of the load to see if the Motor power required changes. Use the Tilt Sensor as a control to raise and lower the load.



Step 1

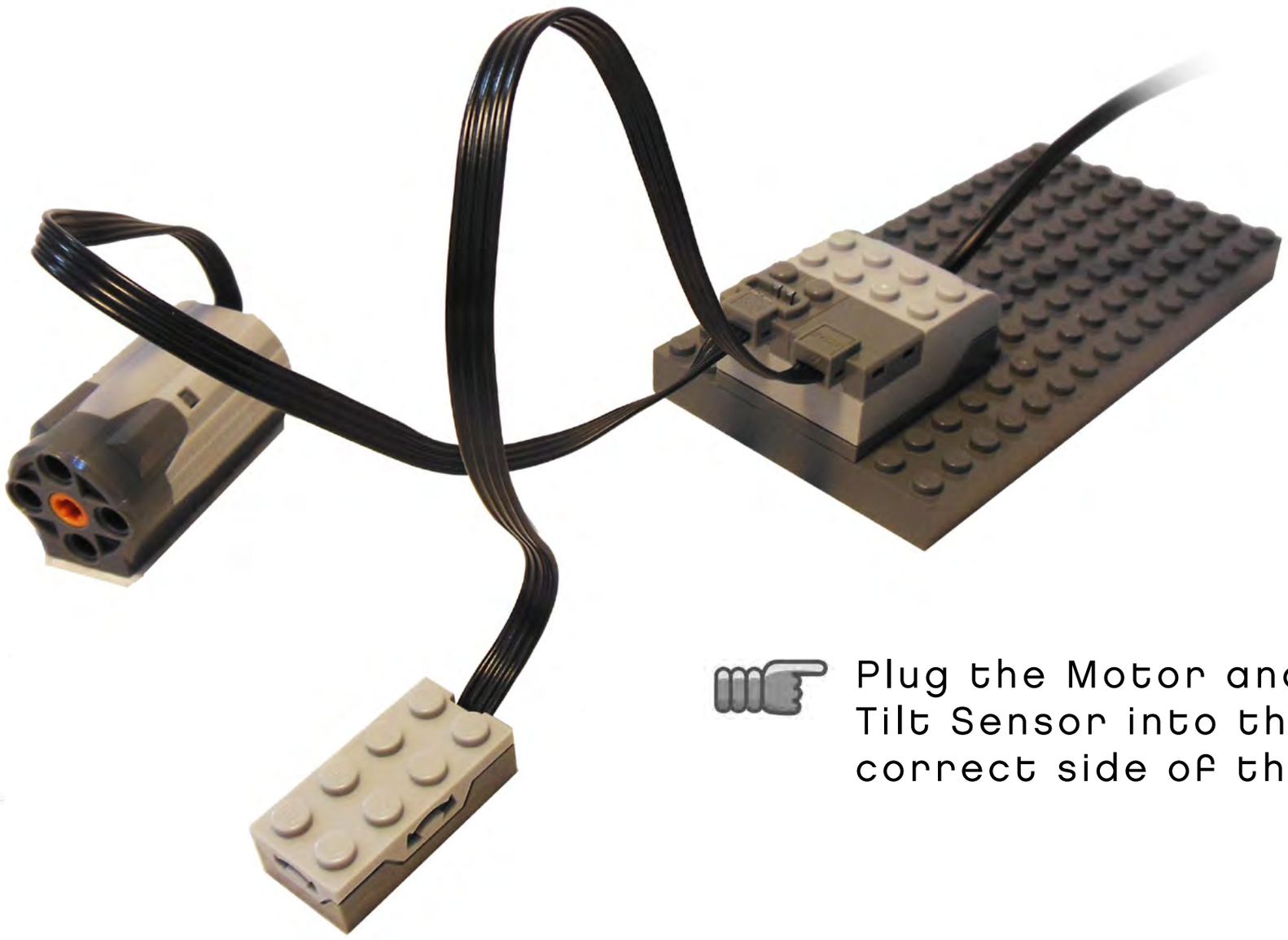
You will Need:

Hub

Motor

Grey Brick
8x16

Tilt Sensor



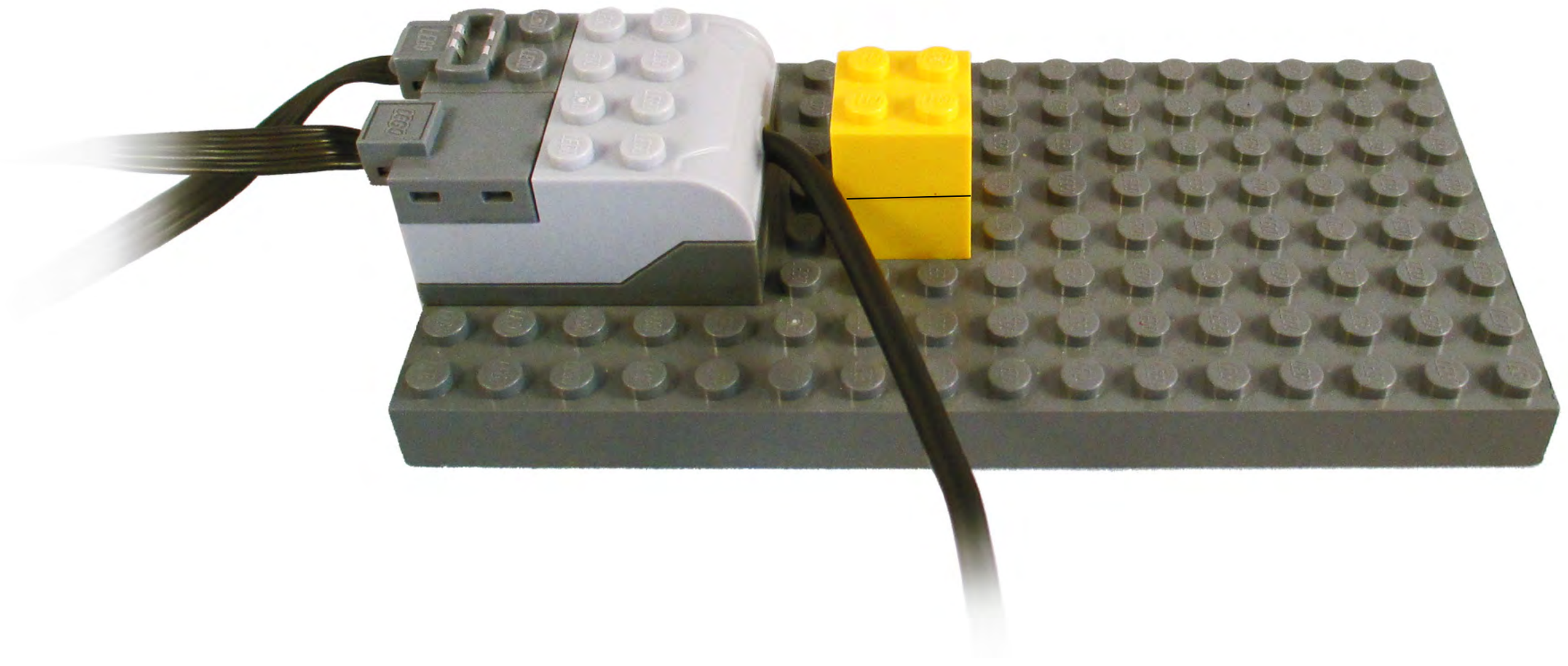
Plug the Motor and the Tilt Sensor into the correct side of the Hub.

Step 2

You will Need:

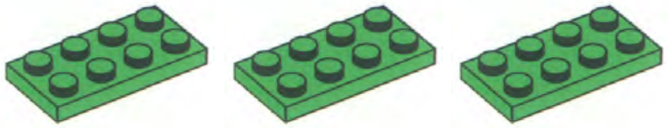
Yellow Brick
2x2

Yellow Brick
2x2

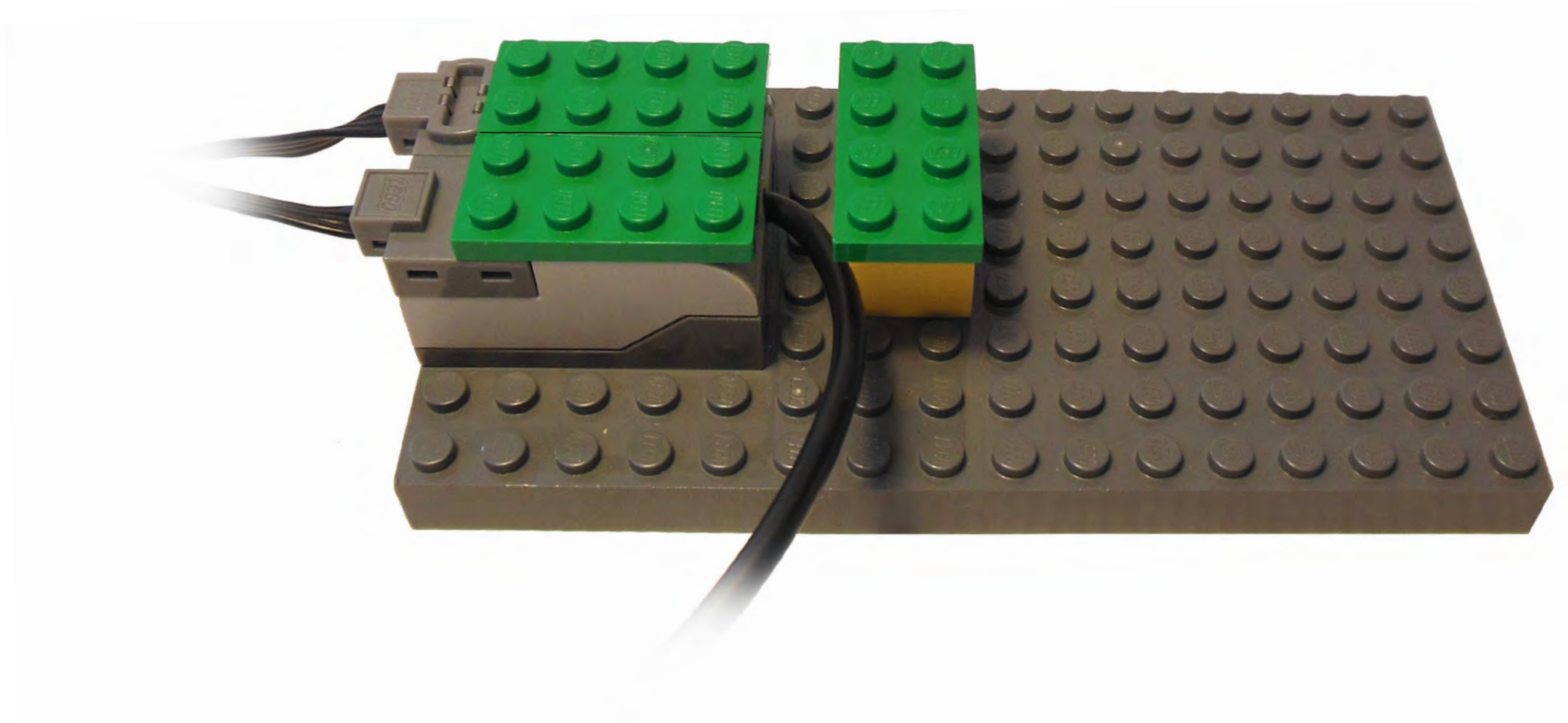


Step 3

You will Need:

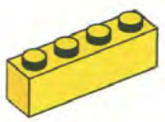


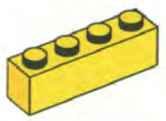
Green 2x4 Green 2x4 Green 2x4

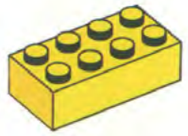


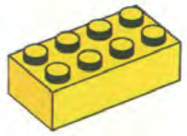
Step 4

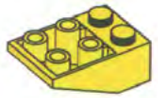
You will Need:

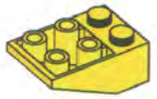

Yellow 1x4


Yellow 1x4

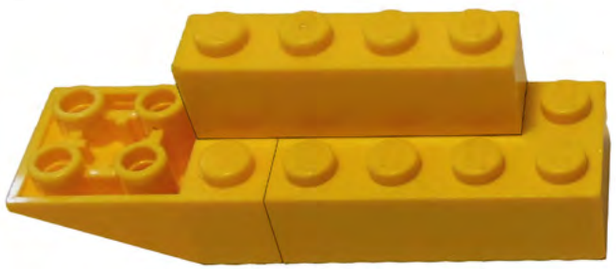

Yellow 2x4


Yellow 2x4

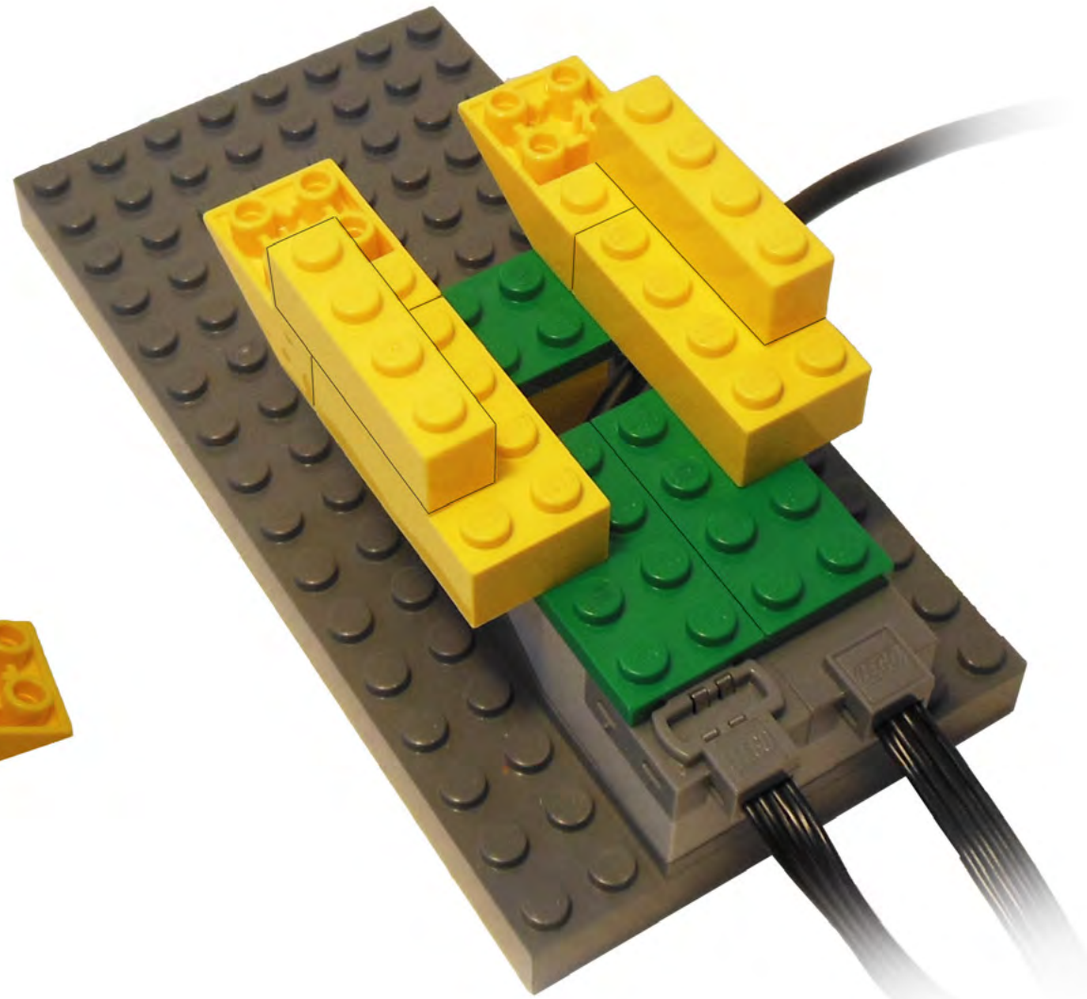

Yellow Inverted Wedge 2x3


Yellow Inverted Wedge 2x3

a.

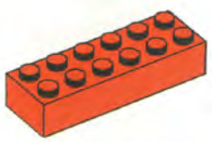


b.



Step 5

You will Need:



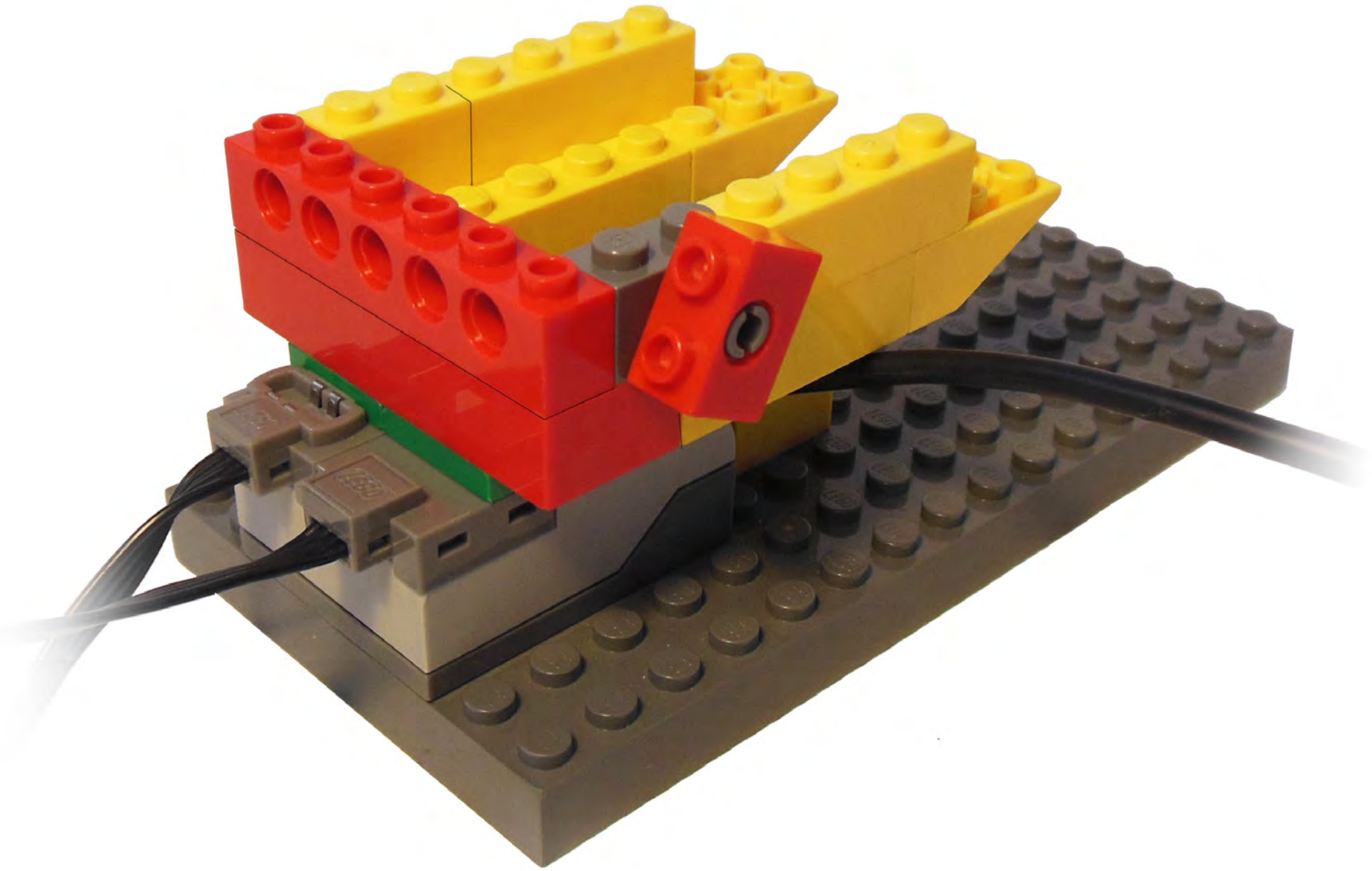
Red 2x6

Red 1x6
with Holes

Red 1x2
with Holes

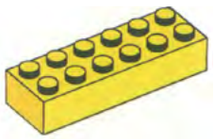
Yellow 1x2

Grey 1x2
with peg



Step 6

You will Need:

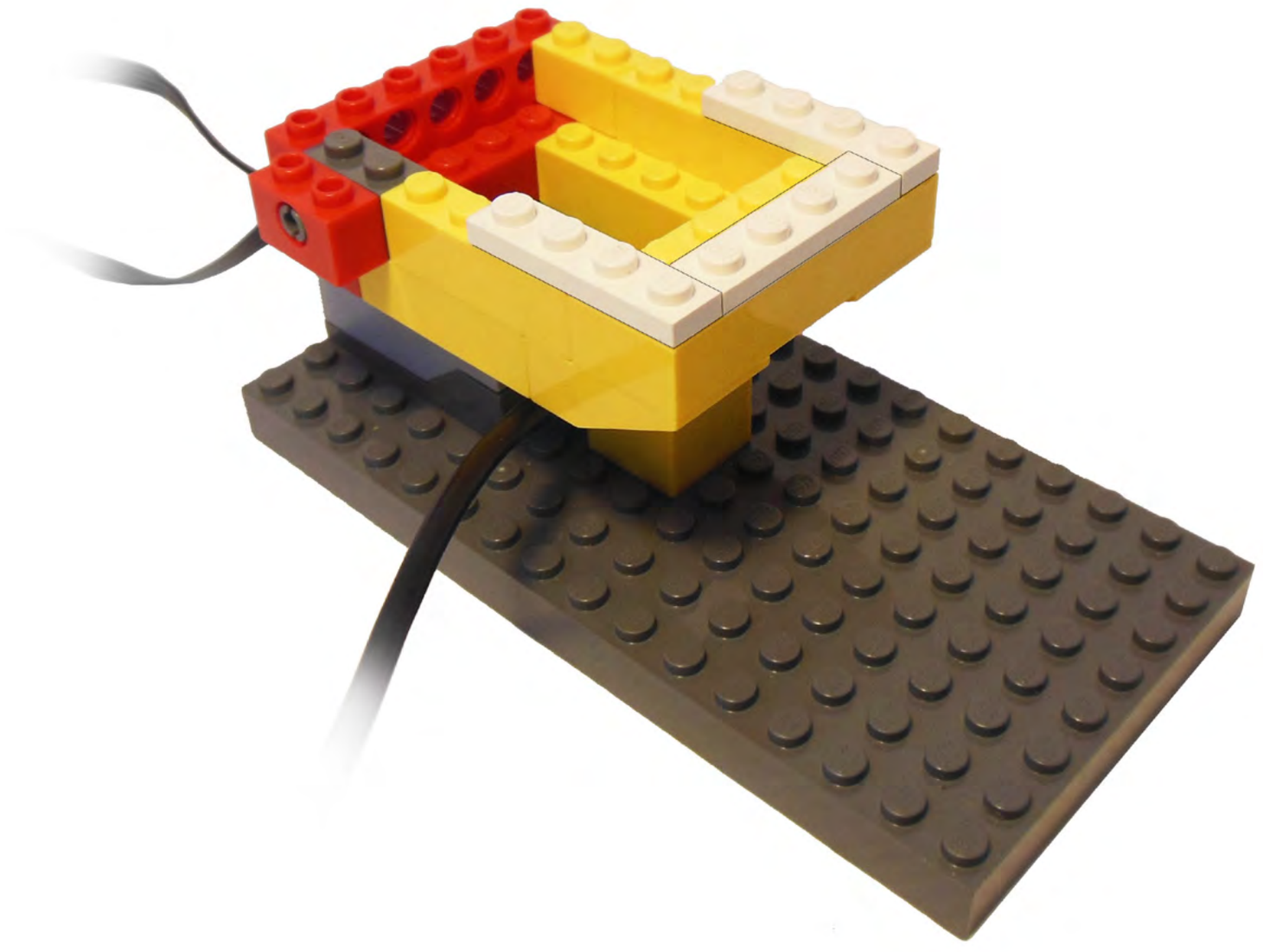


Yellow 2x6

White 1x4

White 1x4

White 1x4



Step 7

You will Need:


Basic Gear


Cam


Cam


Cam

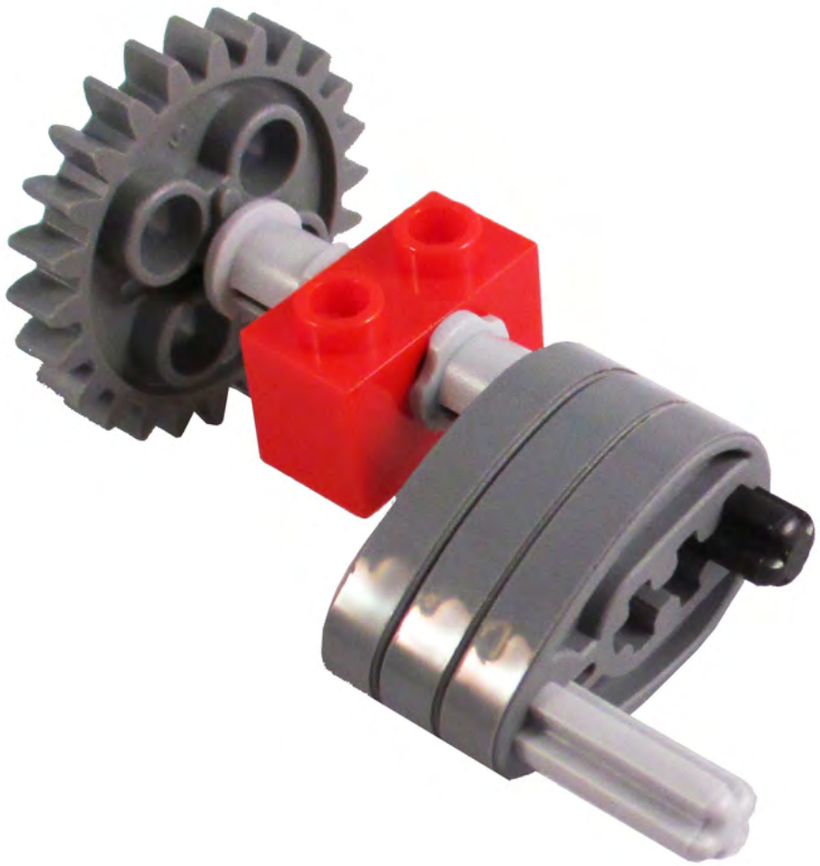

Bushing


Bushing


Red 1x2 with holes


#6 Axle


#3 Axle



Let the Axle stick out of this end a little.

Step 8

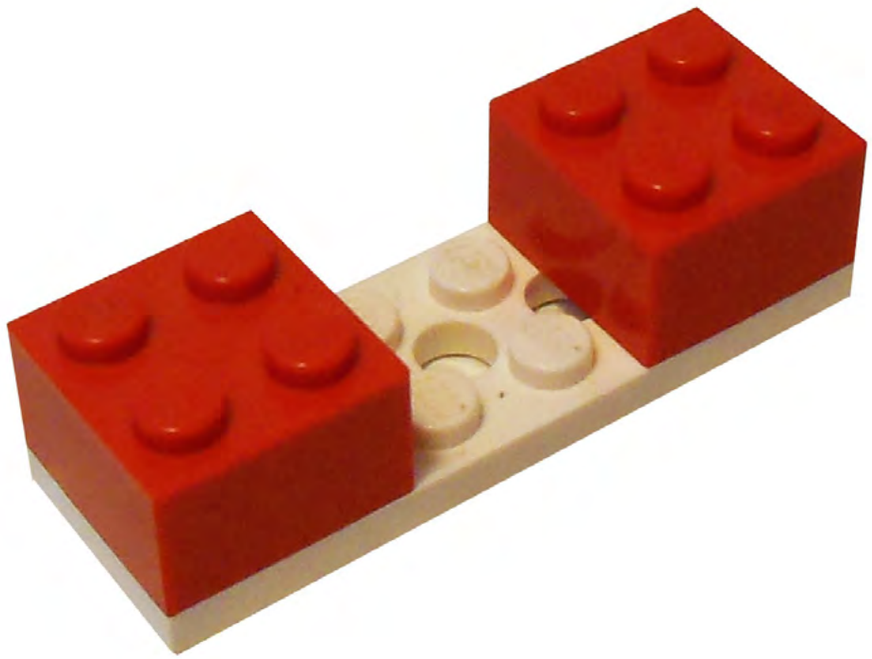
You will Need:

White 2x6

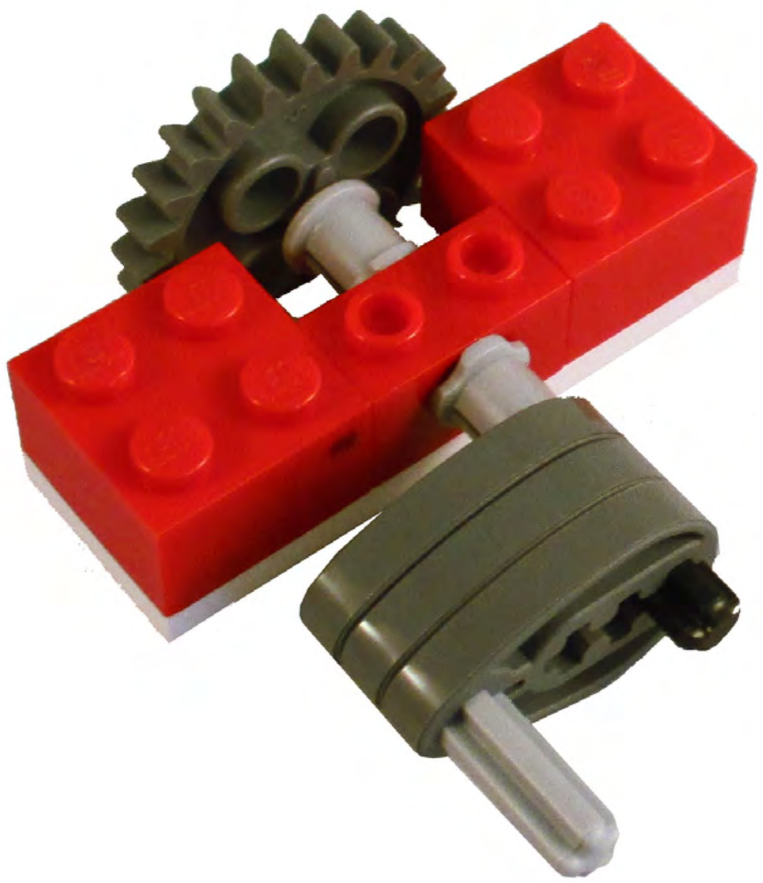
Red 2x2

Red 2x2

a.



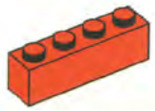
b.



Step 9

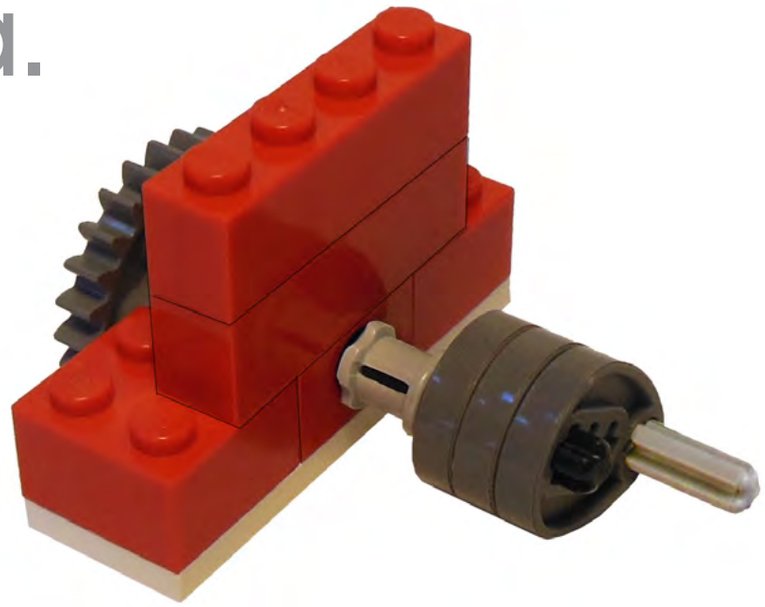
You will Need:

Red 1x4

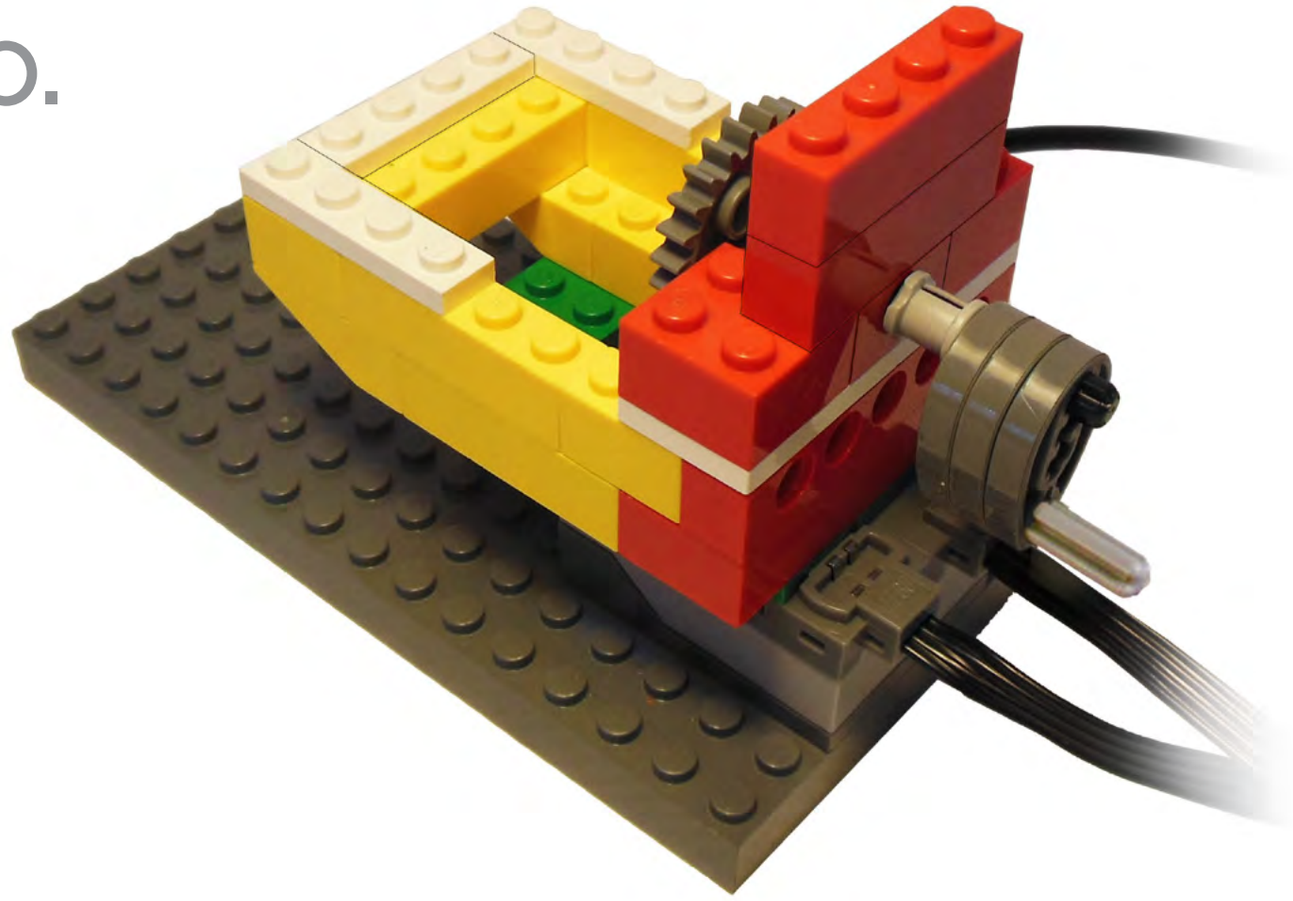


Red 1x4

a.



b.



Step 10

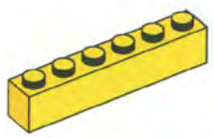
You will Need:

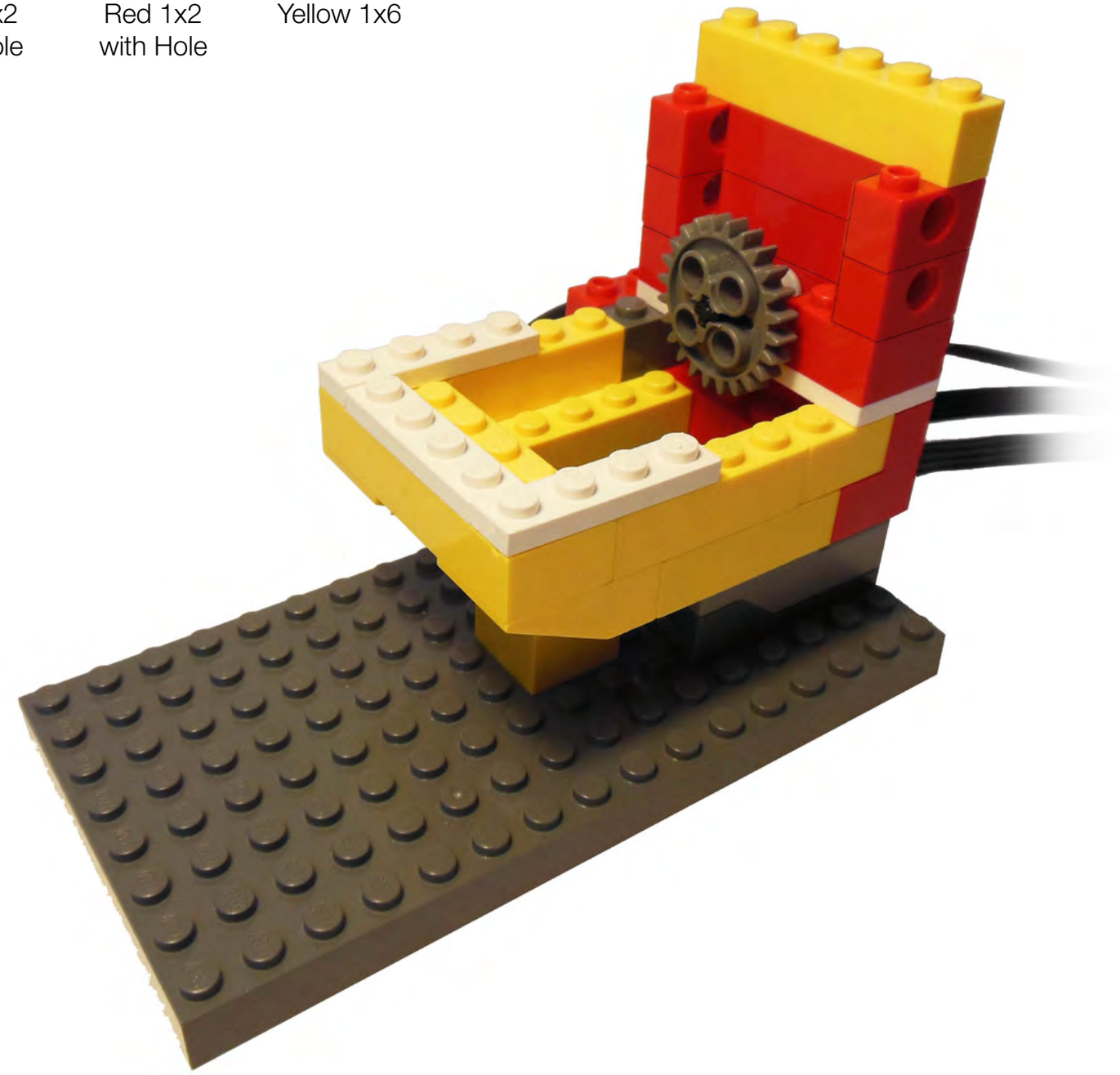

Red 1x2
with Hole


Red 1x2
with Hole


Red 1x2
with Hole


Red 1x2
with Hole


Yellow 1x6



Step 11

You will Need:


White 2x6


Bushing

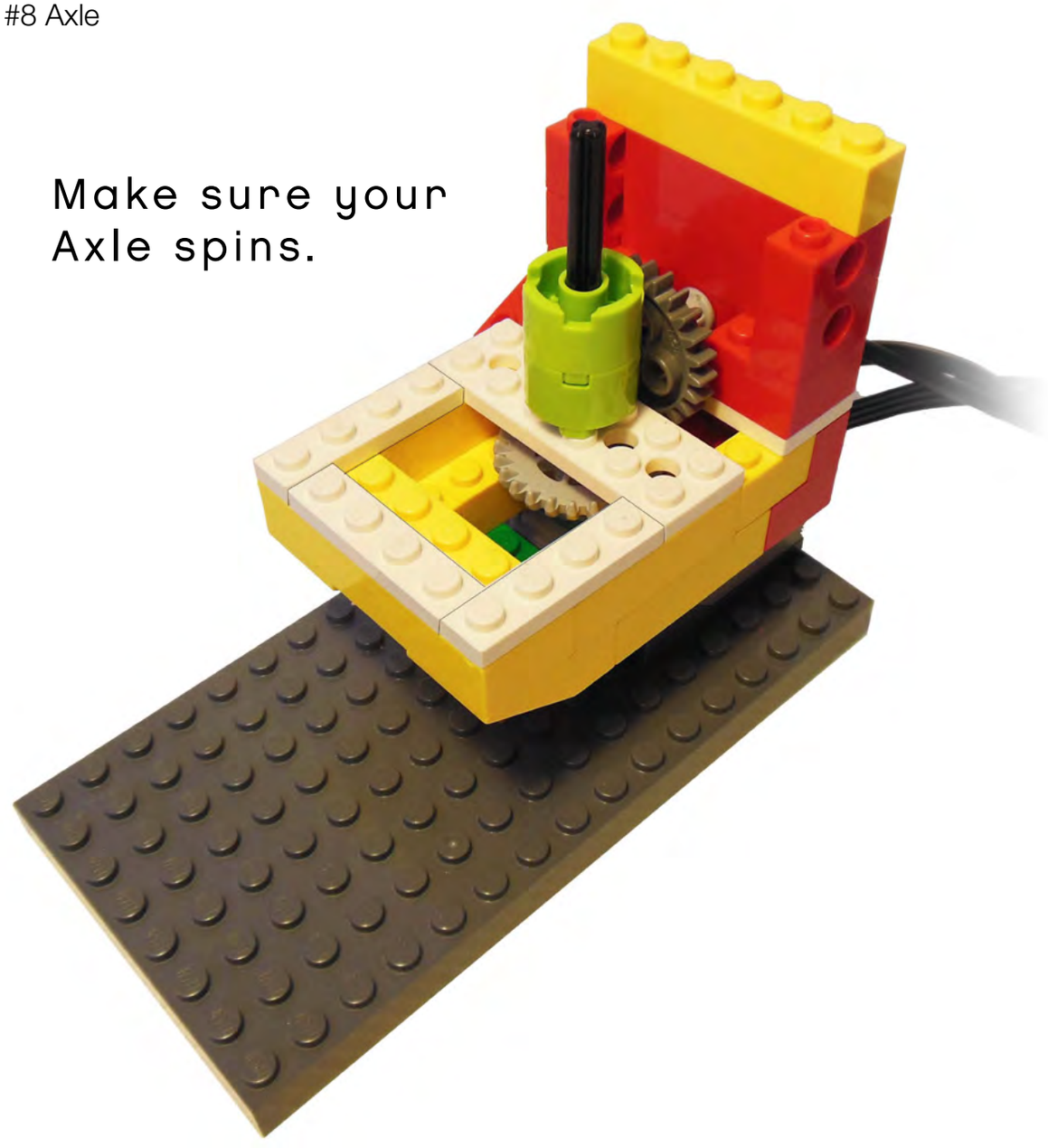

Crown Gear


Green Round Brick


Green Round Brick

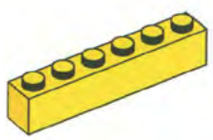

#8 Axle

Make sure your Axle spins.

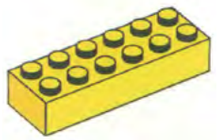


Step 12

You will Need:



Yellow 1x6

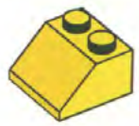


Yellow 2x6

Yellow 1x3 Wedge

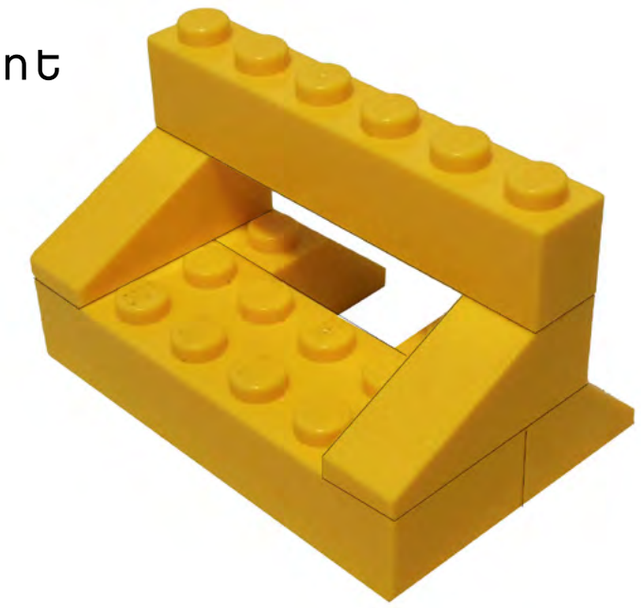
Yellow 1x3 Wedge

Yellow Wedge 2x2

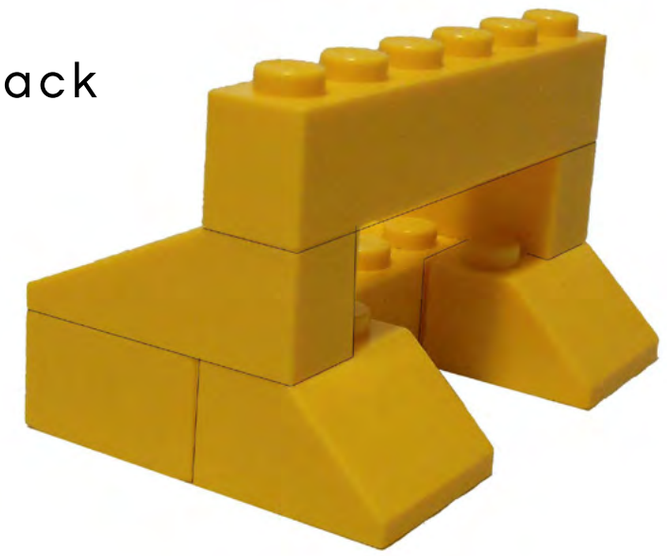


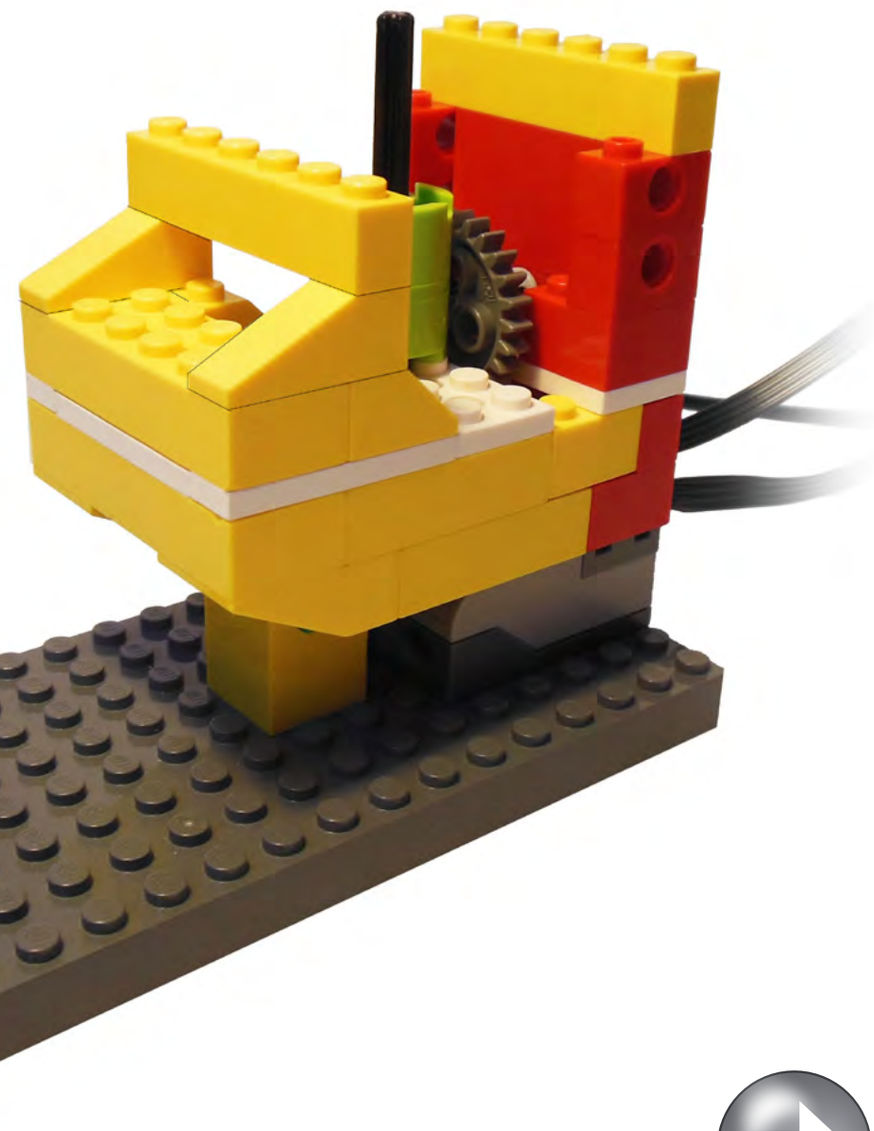
Yellow Wedge 2x2

Front



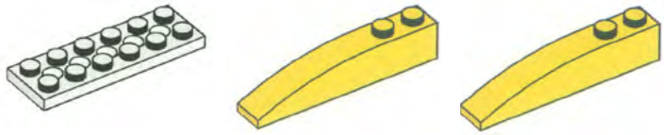
Back



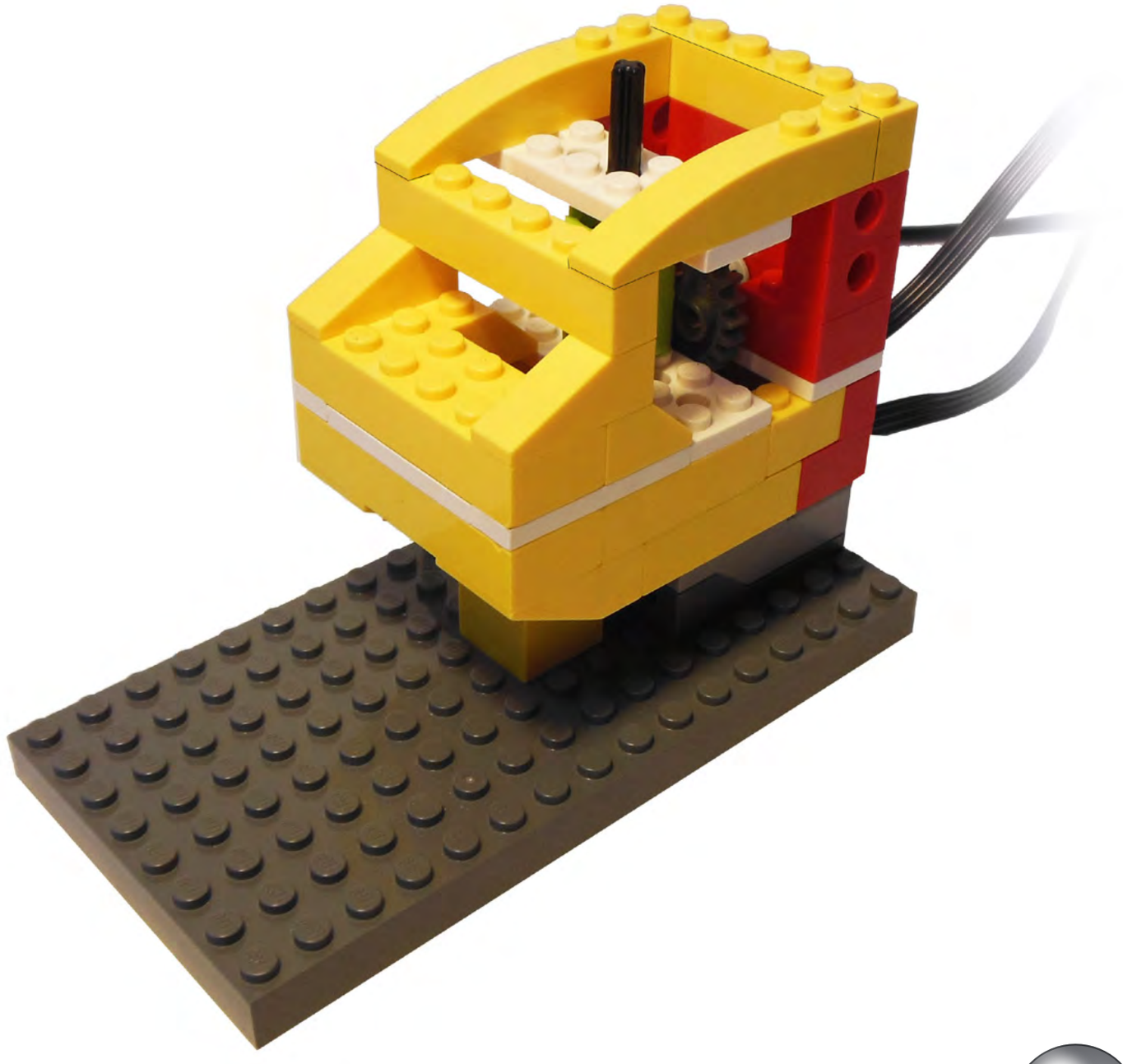


Step 13

You will Need:



White 2x6 Yellow Bow Yellow Bow



Step 14

You will Need:


Black Pin


Black Pin


Black Pin


Black Pin


Grey 1x2 with Cross Hole

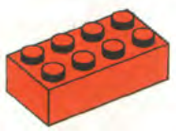

Grey 1x2 with Cross Hole

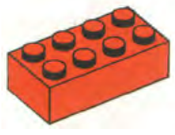

White 2x8


White 2x8


White 2x8


White 2x8


Red 2x4


Red 2x4


Red 1x8 with Holes


Red 1x8 with Holes

Step 15

You will Need:

Black Pin

Black Pin

Red T-Plate

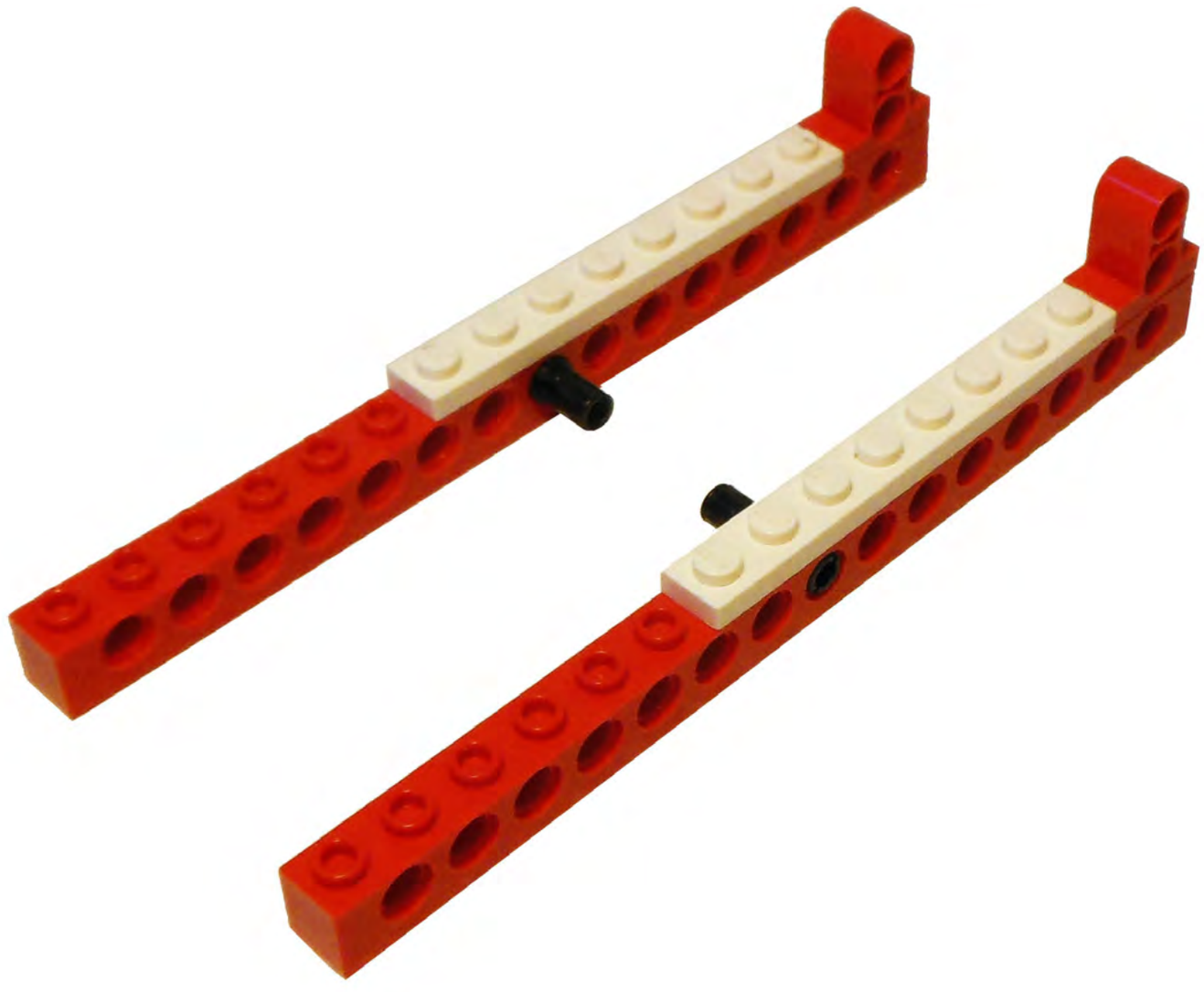
Red T-Plate

White 1x8

White 1x8

Red 1x16
with Holes

Red 1x16
with Holes



Step 16

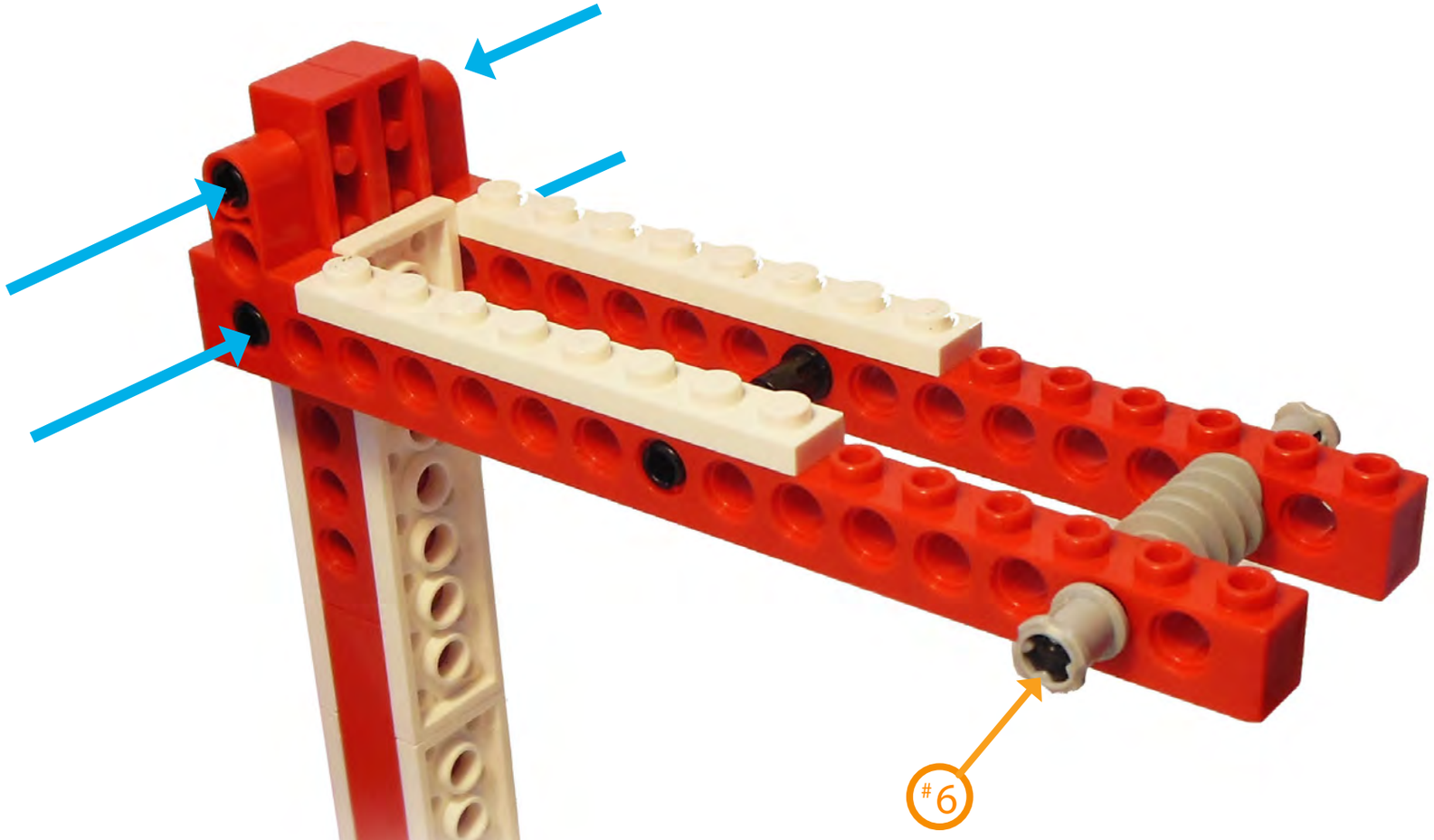
You will Need:

6 Axle

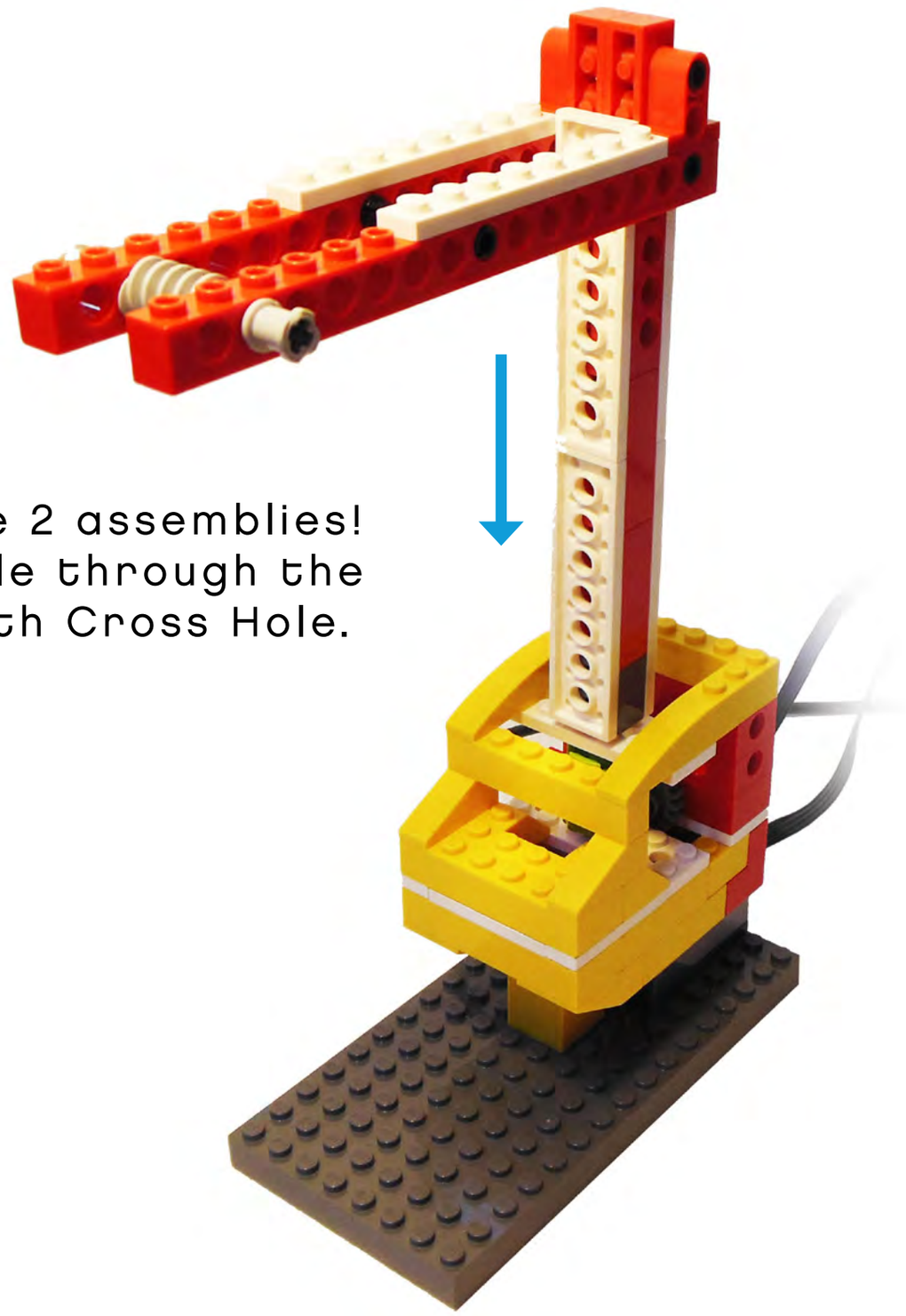
Bushing

Bushing

Worm Gear



Step 17



Combine the 2 assemblies!
Slide the Axle through the
Grey 1x2 with Cross Hole.

Step 18

You will Need:


Green Pulley Wheel

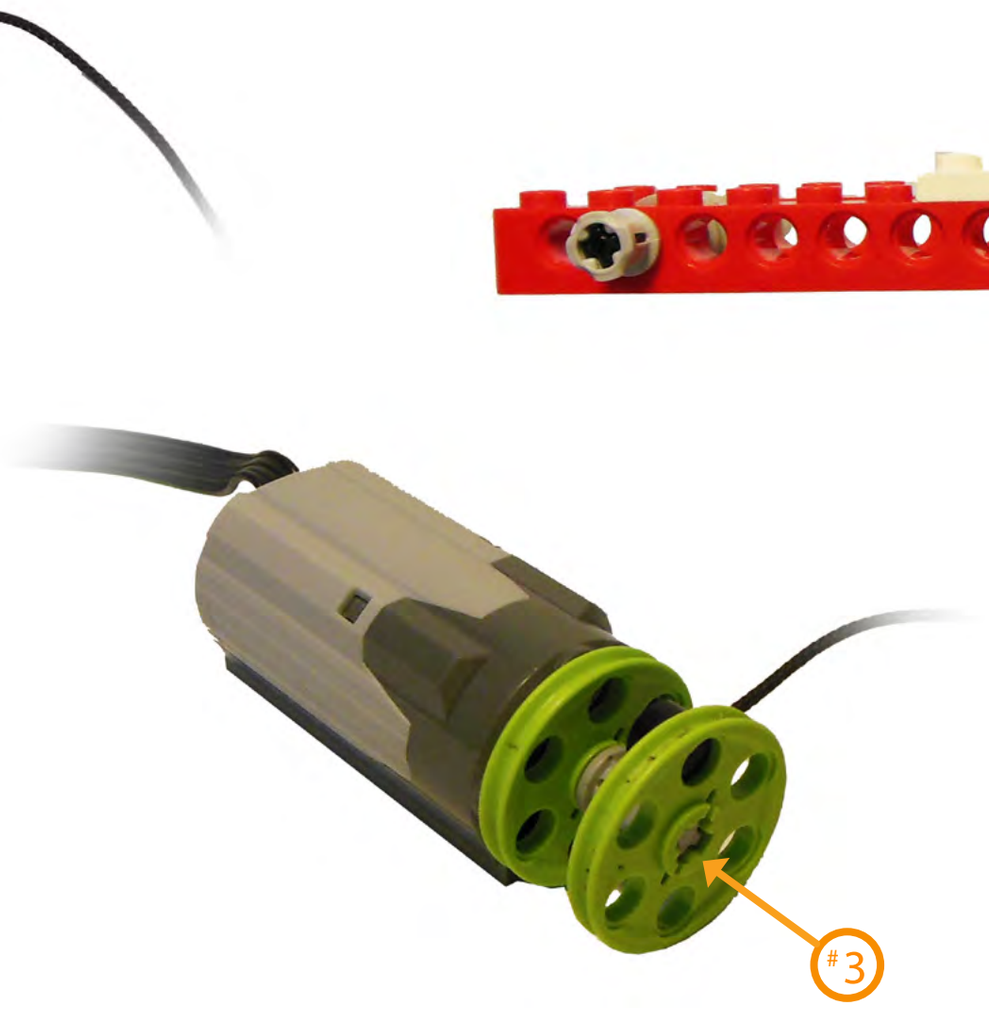

Green Pulley Wheel

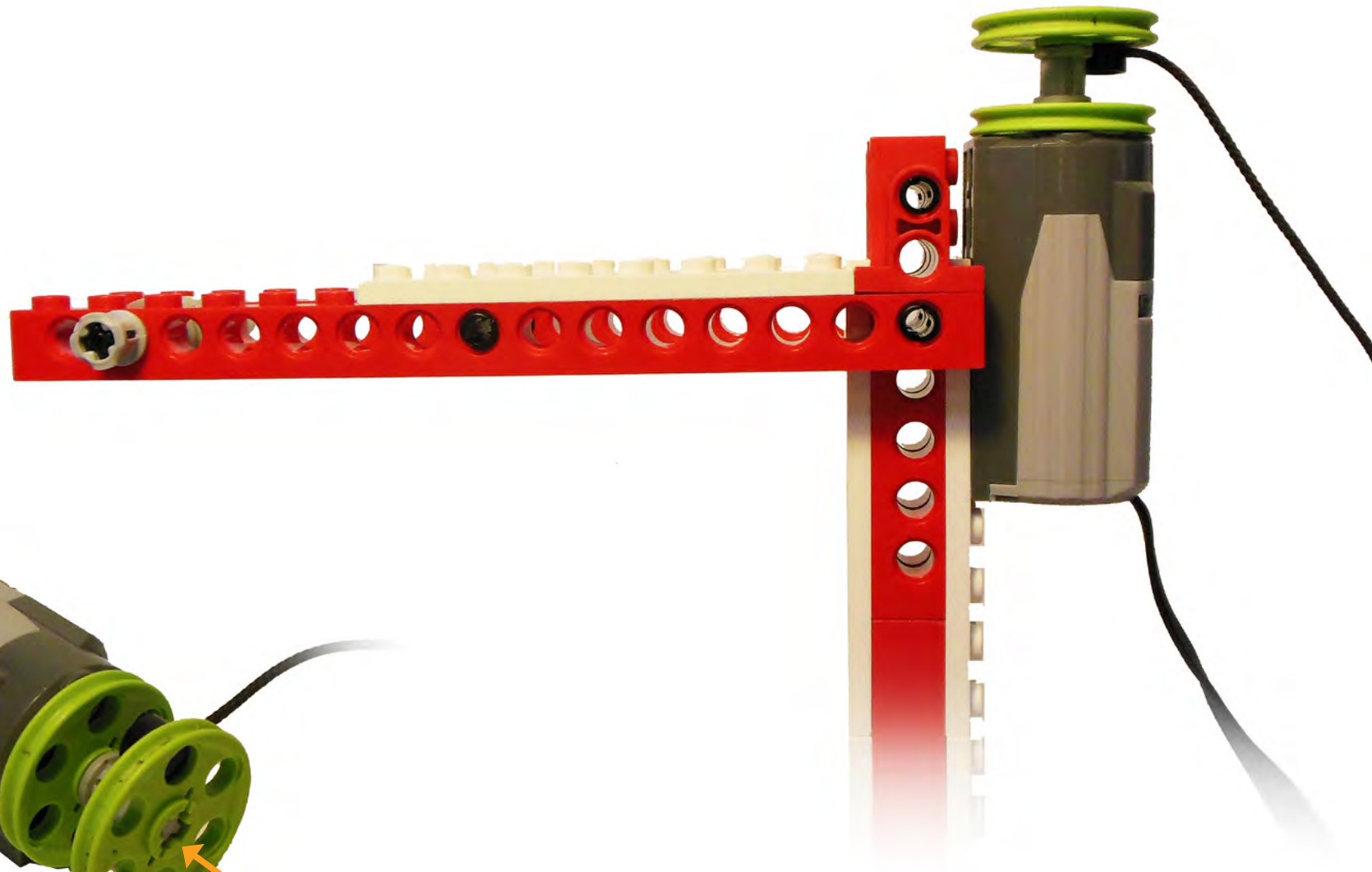

Cord


#3 Axle


Bushing


Motor





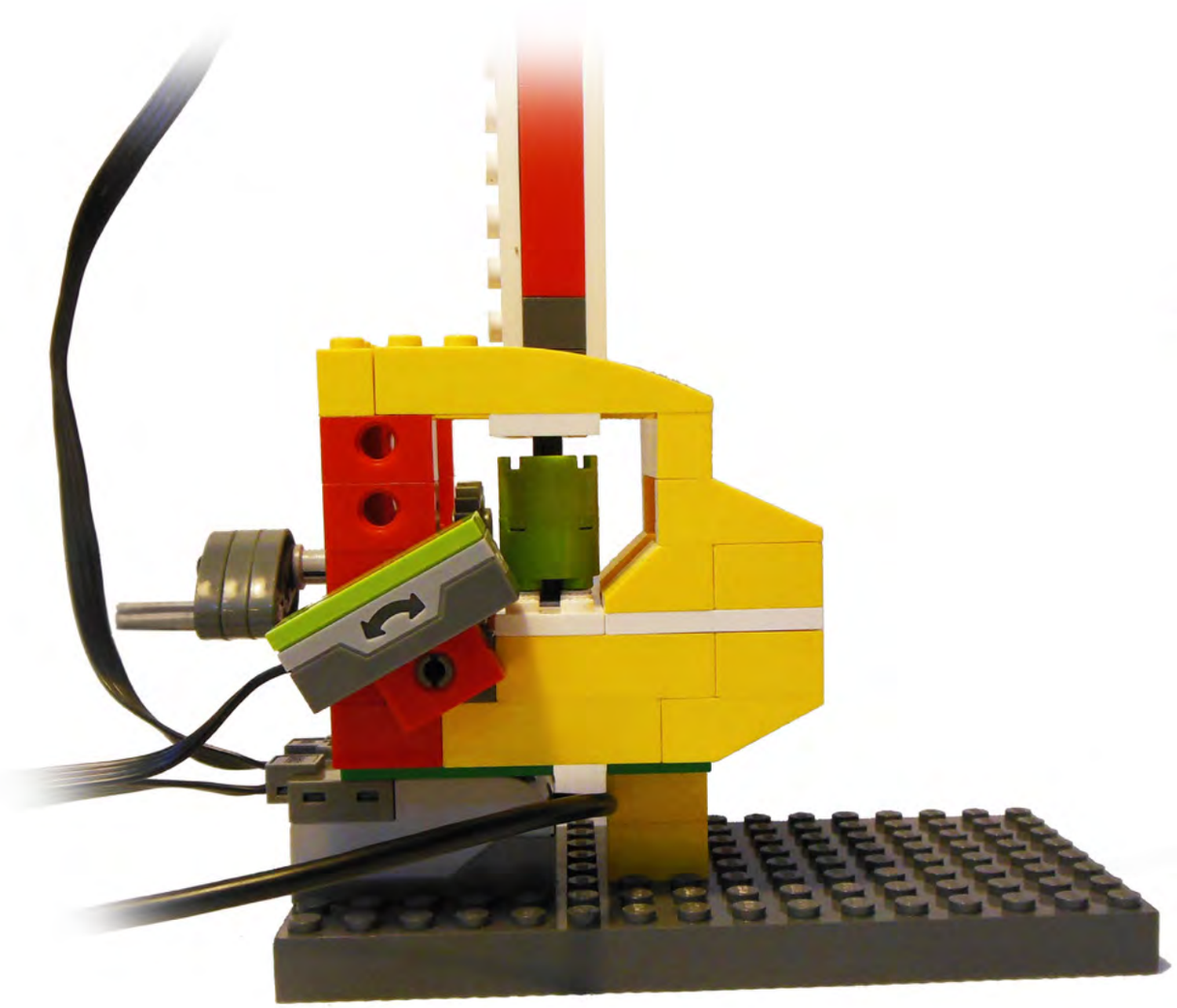
Step 19

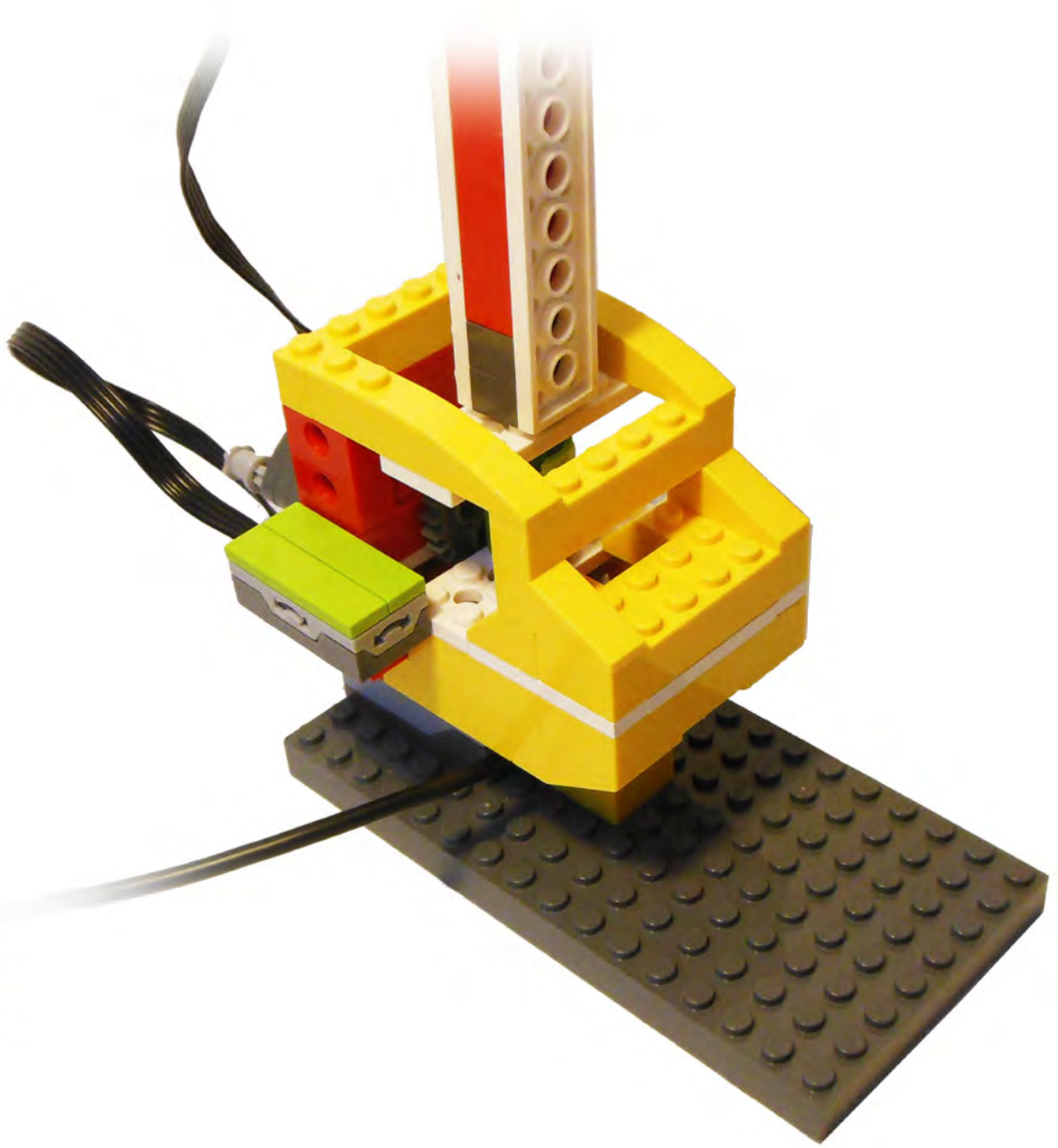
You will Need:

Green Flat Tile

Green Flat Tile

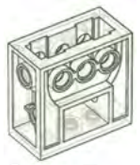
Tilt Sensor



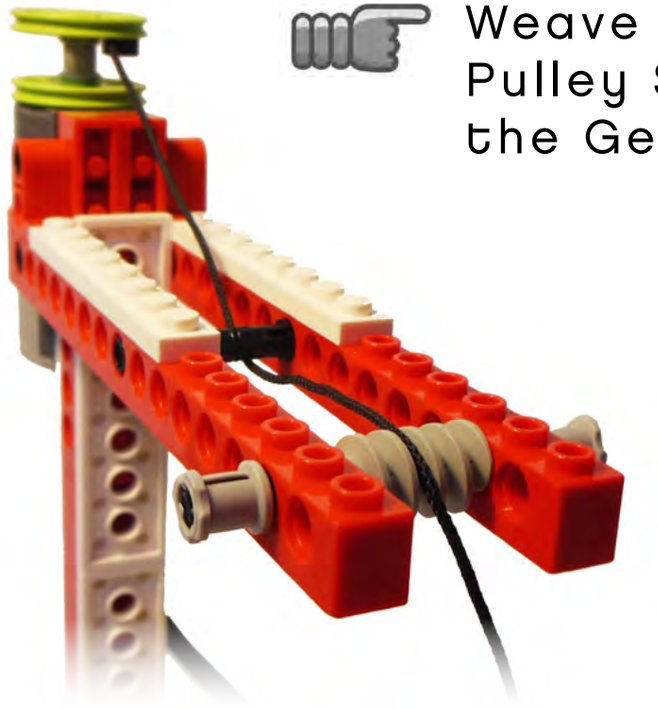


Step 20

You will Need:



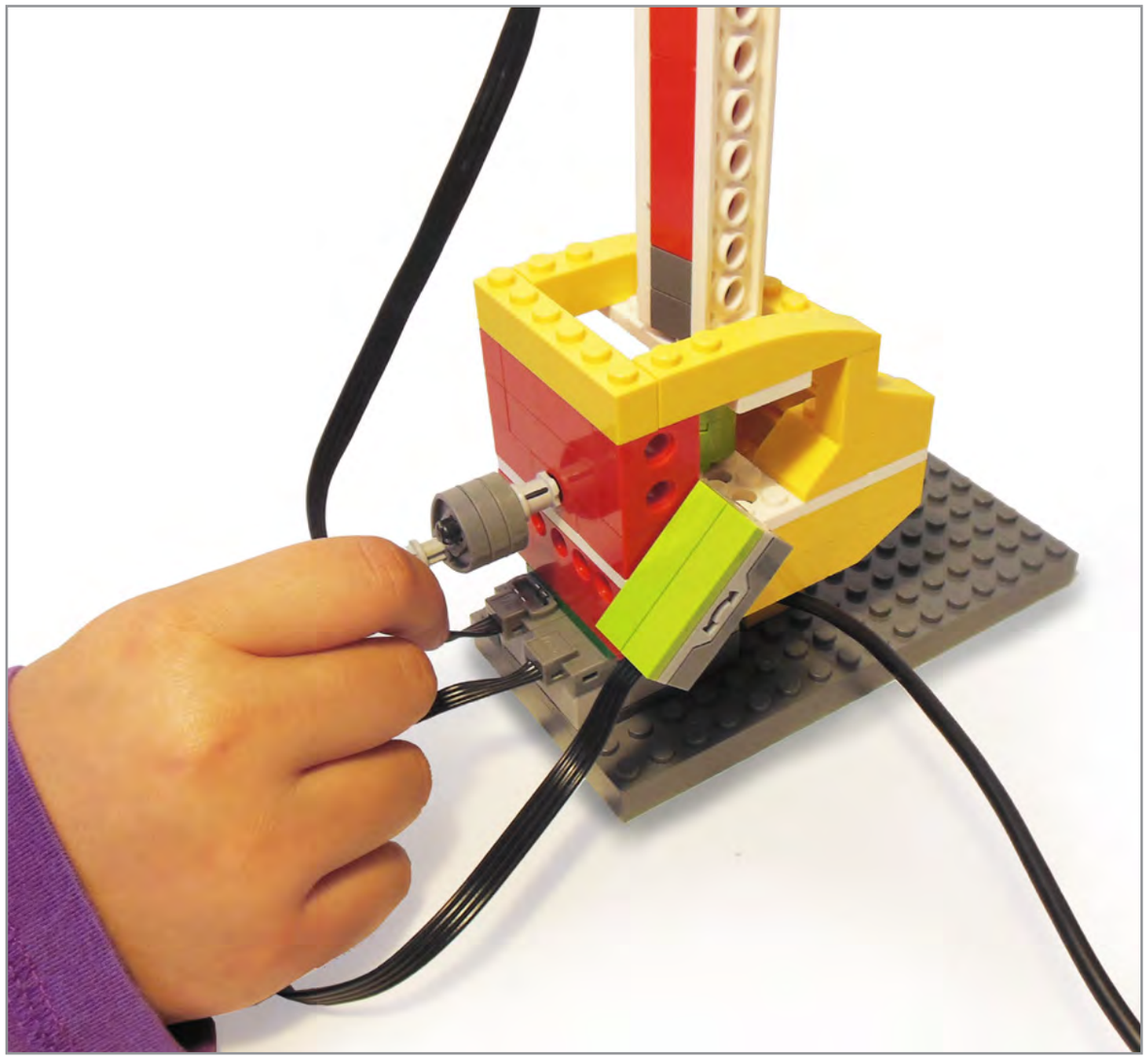
Gear Box



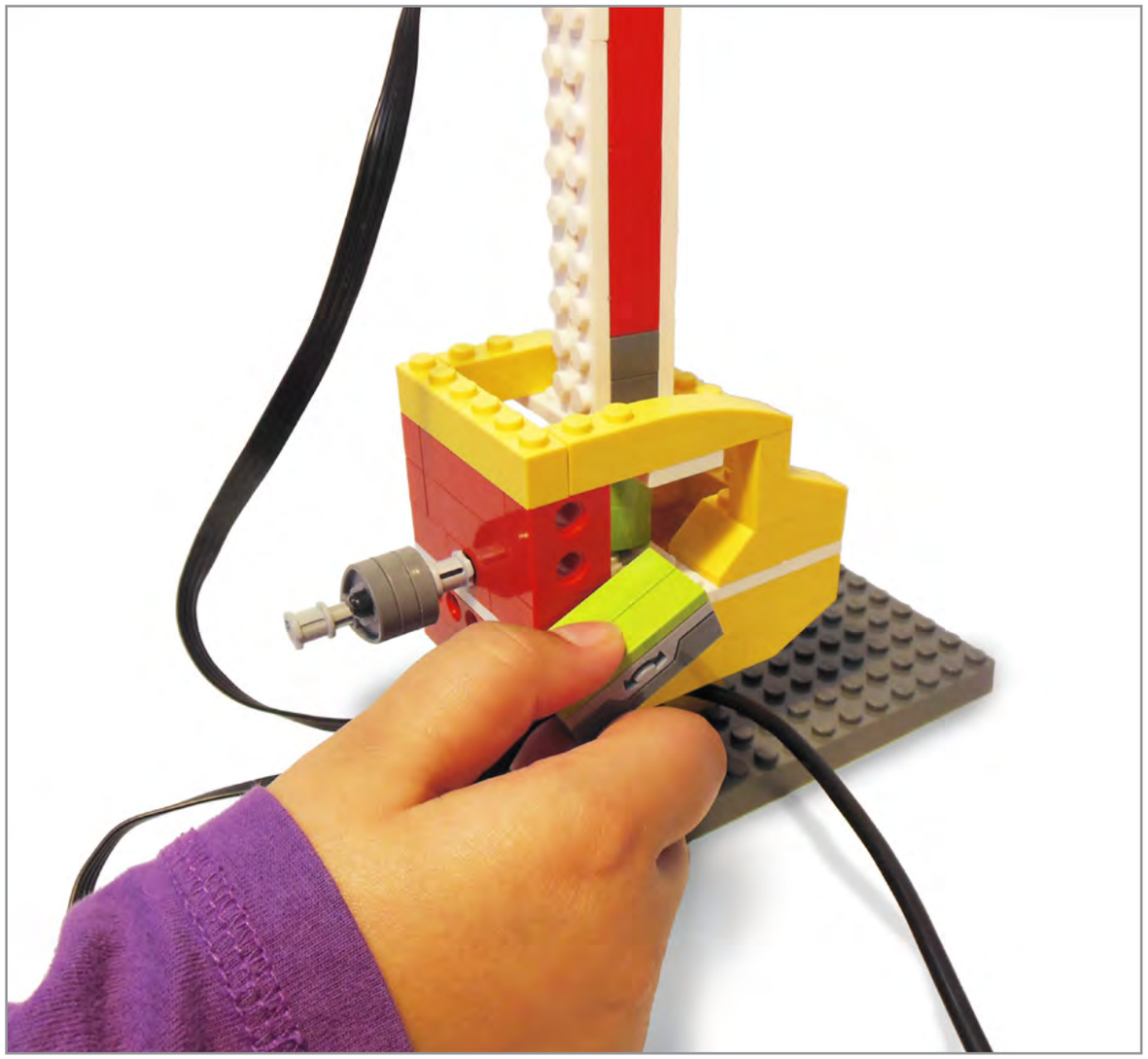
Weave the Cord through the Pulley System and attach it to the Gear Box.

Your Crane is Built!...
Time to Program it!

Position your Crane by turning the crank!!



Lift your load with the Tilt Sensor as a control!!



Programming

This program makes your Tilt Sensor a control! The cord will raise and lower when the Tilt Sensor is adjusted.

Raise

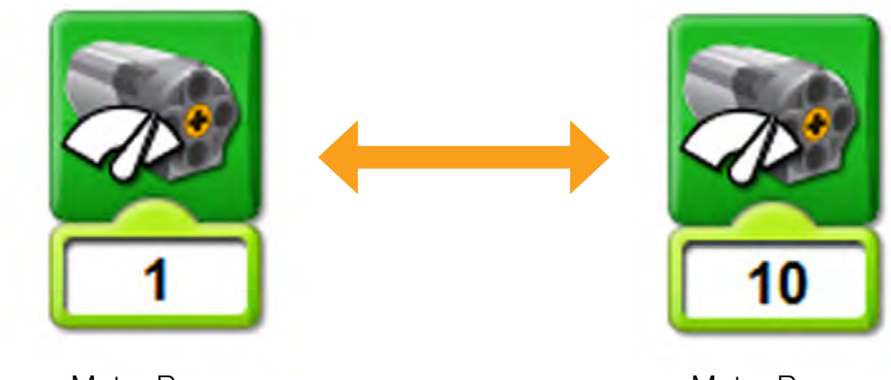
Stop

Lower

1. Minimize these instructions and open the LEGO® WeDe® software.
2. Program your robot with the program above.
3. If you finish, open the instructions and continue to the extension activities!

Extension 1

Change the weight of your load!
Now that it's heavier do you need more Motor Power?
Do you need the same amount of Power to raise and lower?



Motor Power
1

Motor Power
10