The “*I KNOW MY PARTS of the NXT KIT CHALLENGE*”.

Use the following directions to complete the project. Show the teacher the final completed project and get a score!!

**STEP ONE**:

1. Match and connect two *4x2 lift arms* using two *1X2 pegs*. (They should be L shaped with legs and feet)

Parts:

2 -4X2 lift arms

2 -1X2 pegs

4 -friction axle pegs

2 - 5 axle

2-1X3 axle joiner (double cross)

1. Place a blue *friction axle peg* into each of the axle holes of the lift arms.
2. Connect these pegs to 2 *1x2 axle* *joiners* to the friction axle pegs so they are facing the same direction but opposite of “feet” of the lift arms.
3. Insert a *5-axle* into each *axle joiner* so the axles are vertical.
4. On each 5-axle, place a *straight axle joiner*. The beam peg holes should face toward each other.
5. Place a *friction axle peg* into the beam hole so axle part is facing out
6. Connect *1x3 black angle joiner (double cross)* to each axle peg so they are vertical
7. Show Ms Burroughs when done.

**STEP TWO**:

Parts:

2-10 axles

1-straight axle joiner

4-1/2 bushings

4-15 beams

2- 1X16 stud beams

1 - 7 beam

5-axle

4 1x2 pegs

41x3 pegs

1. Slide 2-*10 axles* through the *1x3 axle joiners* from the previous step
2. Connect them in the middle using a *straight axle joiner*.
3. Put 1-*1/2 bushings* on each end of axles
4. Create a triangle by connecting two *15 beams* to the first and fifteenth hole of the *1X16 beam with studs* using a *1x2 peg* and a *1x3 peg*.
5. Slide the *10-axle* through the ends of the beams (should form a triangle). Repeat steps 3 & 4 on for a second triangle attached to the other side of the *10 axle*
6. Place a ½ bushing on the 10 axle on the left hand side
7. You should now have something that looks like a swing set.
8. Connect the *7-beam* to the right side of your swing set: connect with a *1x2 peg* and *1x3 peg* at the 8th hole of the *15-beam* (cross brace).
9. Place the *5-axle* in the middle of the *7-beam*.
10. Place a *½ bushing* on either side of the *5-axle*

Show Ms Burroughs when you’re done.

**STEP THREE**:

2-24 tooth gear

2- 40 tooth gear

6 axle

axle peg

bushing

motor

3 axle

2 motors

1 50 cm wire

8 axle

large wheel

1. Place one *24-tooth gear* on the exposed 10-stud axle at the top of the assembly of the right side triangle.
2. Connect another *24-tooth gear* using a *tan axle peg* to the 4th hole from the top of the left 15 beam of the same triangle.
3. Connect one *40-tooth gear* to the 5 axle in the middle of the right triangle
4. Connect the other 40 tooth gear using the 3 axle to the center of the orange part of the motor.
5. Attach a 50 cm wire to the motor
6. Attach another motor to the other end of the 50 cm wire
7. Put a 8 axle through the orange center part of the 2nd motor
8. Slide a large wheel onto the 8 axle of the 2nd motor
9. Spin the large wheel…..you should be generating electricity and your “legs & feet” should be swinging!!