



WELCOME TO THE
CREATIVE ROBOTICS CLUB

WHAT DO WE DO AT THE **CREATIVE ROBOTICS CLUB?**

We learn how to use electricity,
robotics and code to make things

We make art, design, or social robotics
– we support all disciplines

We reuse and repurpose where we can

We have fun

HOW DO WE RUN CREATIVE ROBOTICS CLUB?

We are still working this out!

**This semester we are going to try and make
interactive companion robots.**

WE ARE OPEN TO YOUR FEEDBACK!

Are there things you want us to talk about?

A different way of running you think will work?

Skills you want to share?

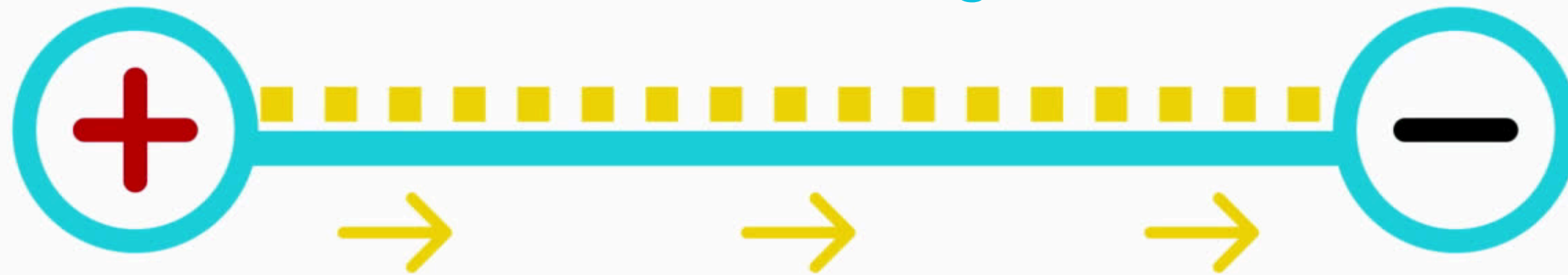
We are a club for students, and we welcome your
suggestions and input

BUT FIRST LETS TALK ABOUT...

ELECTRICITY

HOW DOES ELECTRICITY WORK?

Current moves from
Positive to negative



Positive: 5v, 3.3v, +, Vin, etc

Negative: GND, Ground, -, \perp

Positive



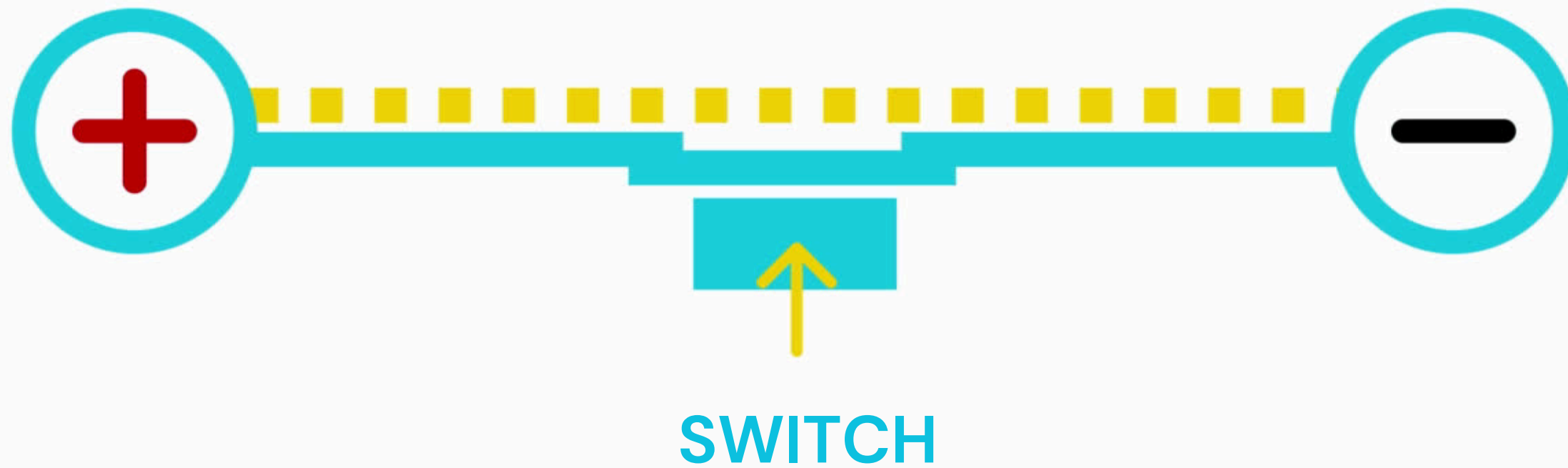
Negative

**Positive and negative must be
connected for electricity to flow**

When the connection is
broken nothing will work



**We can use this to our advantage to
add switches, or know why our project
isn't working**



We can add things in the path to change how the electricity flows

We won't get to this today, but it's nice to know



TODAY:



DC gear motor

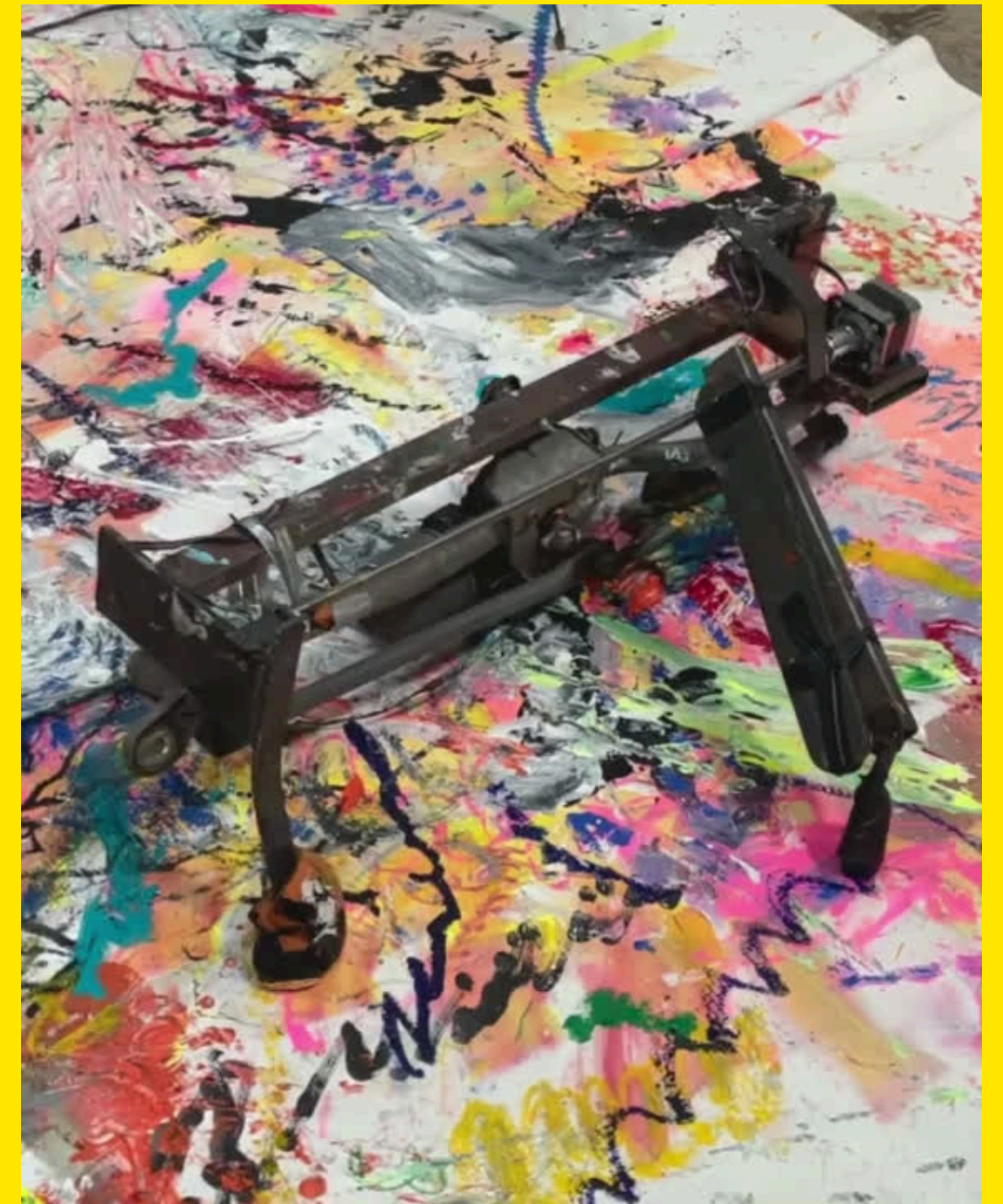
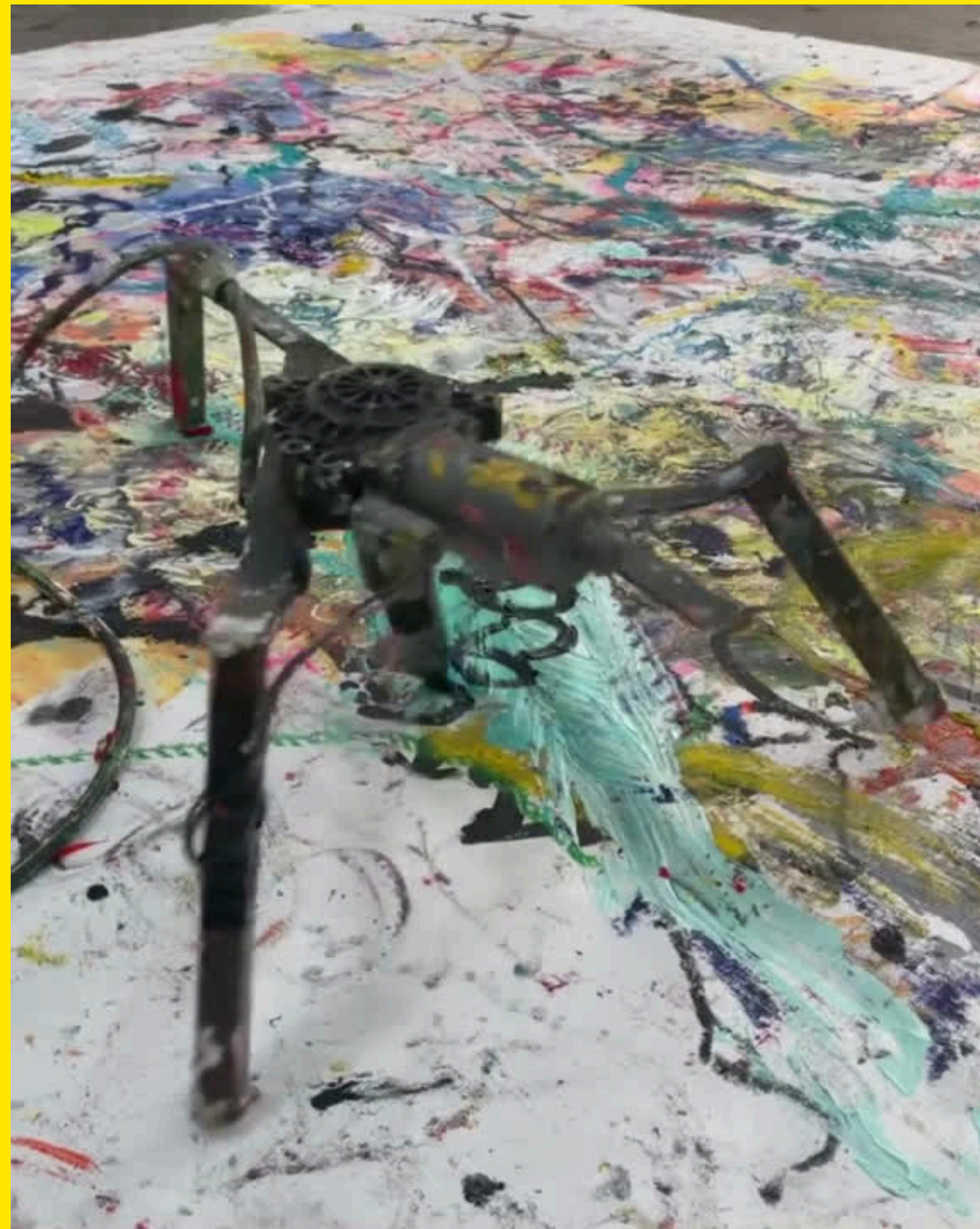


AA Battery [1.5v]

AA Battery holder



With a single motor we can make painting robots like this:



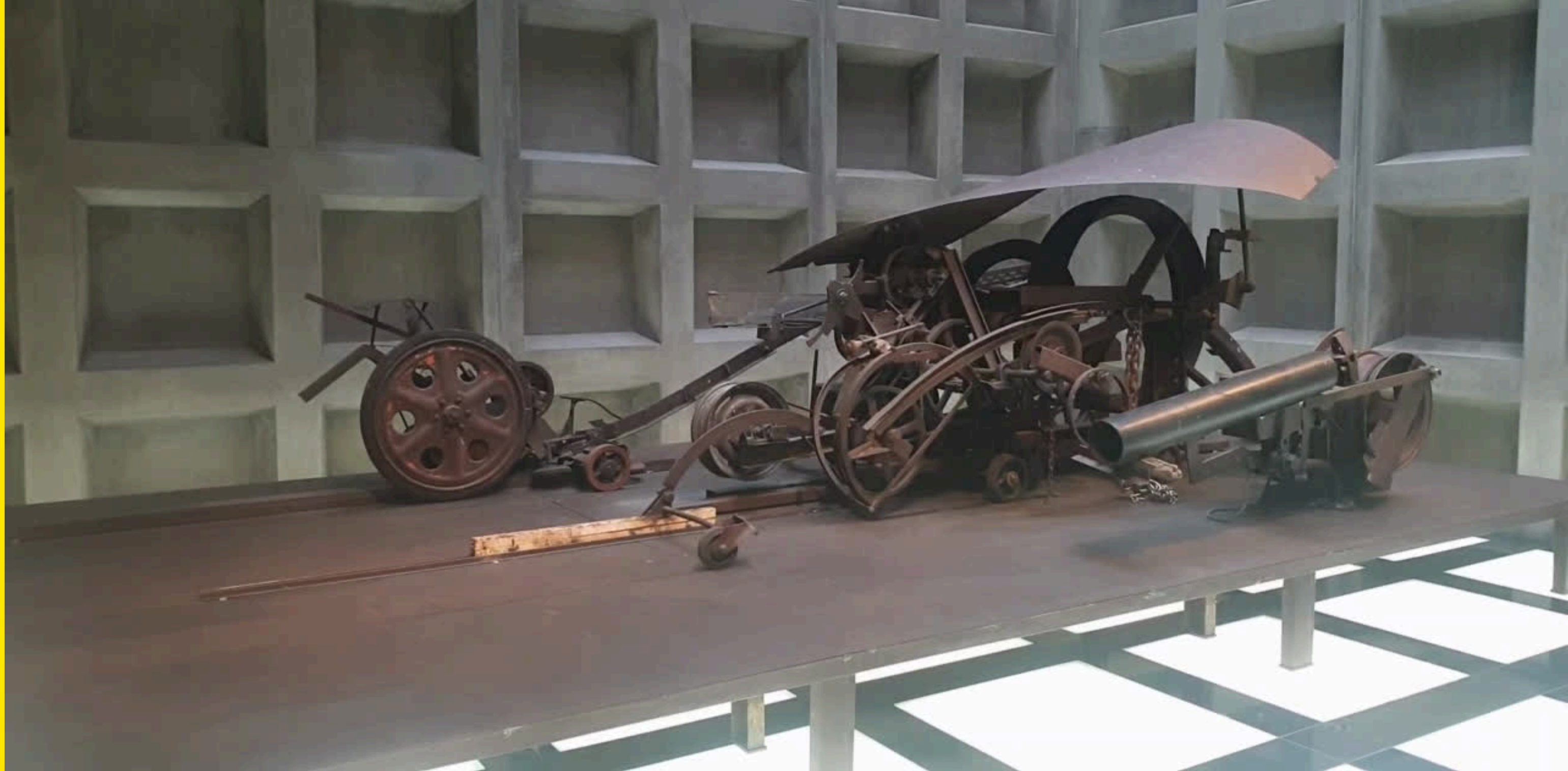
Lolo y Sosaku "Painting Machines" 2021

...or speculative robots like this:



Wonbin Yang *Condimentum trigonus fp1*, 2014

Great artists have made work using 1 motor and scrap:



Jean Tinguely *Memorial to the Sacred Wind or The Tomb of a Kamikaze*, 1969

“Can I break it??”

“Can I break it??”

NO!

Well, maybe, but probably not

**Materials supplied
by UNSW Makerspace:**



DC gear motor \$1.36



AA Battery [1.5v] \$0.68



AA Battery holder \$0.35

“Can I hurt myself??”

“Can I hurt myself??”

NO!

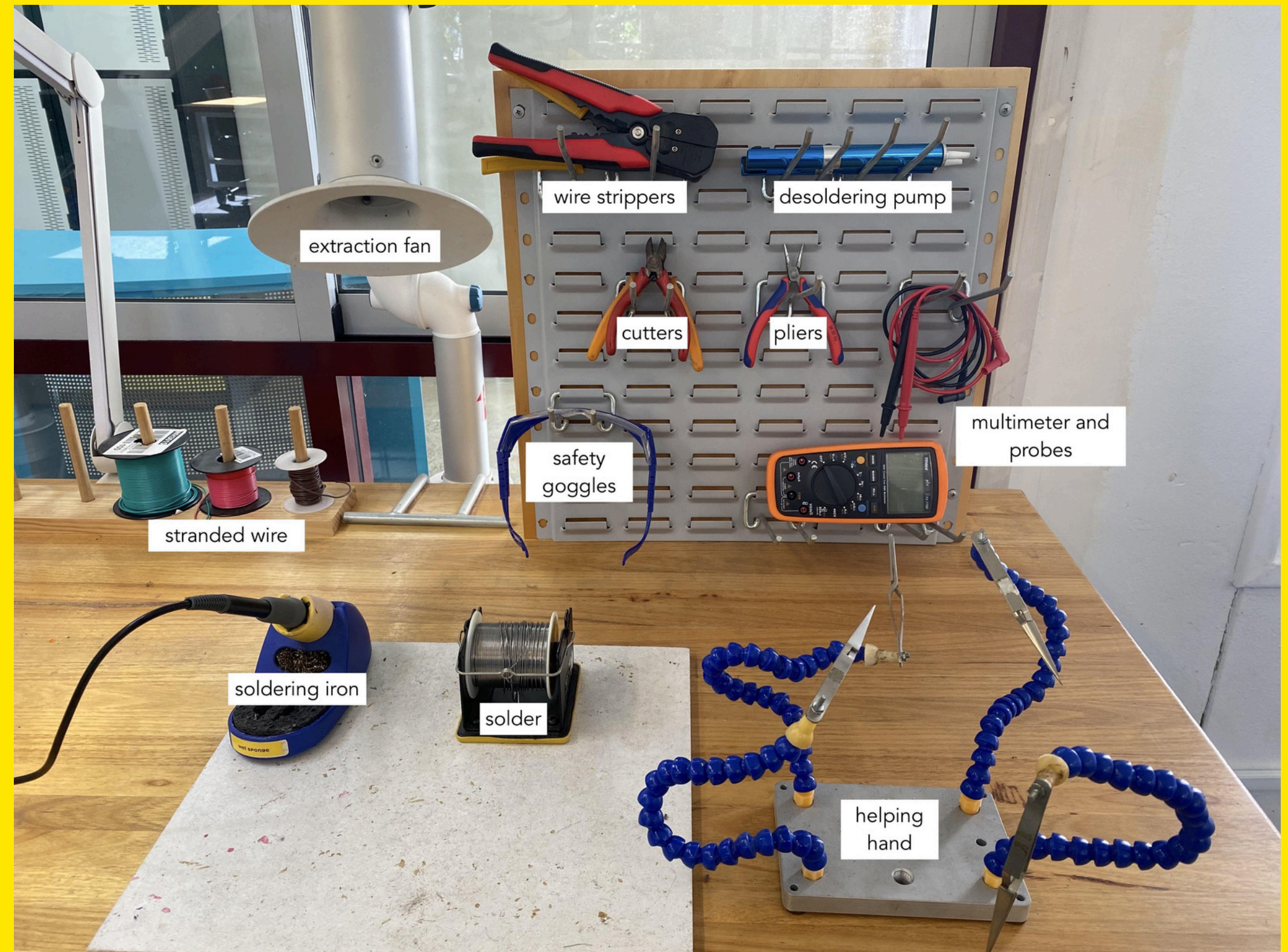
Well, maybe, but probably not

Let's talk about **SOLDERING**

1. Safety

Before we begin we need to do three things:

1. Turn on extraction fan
2. Turn on soldering iron
3. Put on safety glasses



Let's talk about **SOLDERING**

2. Before we solder

Now the soldering iron is hot lets
prepare to solder

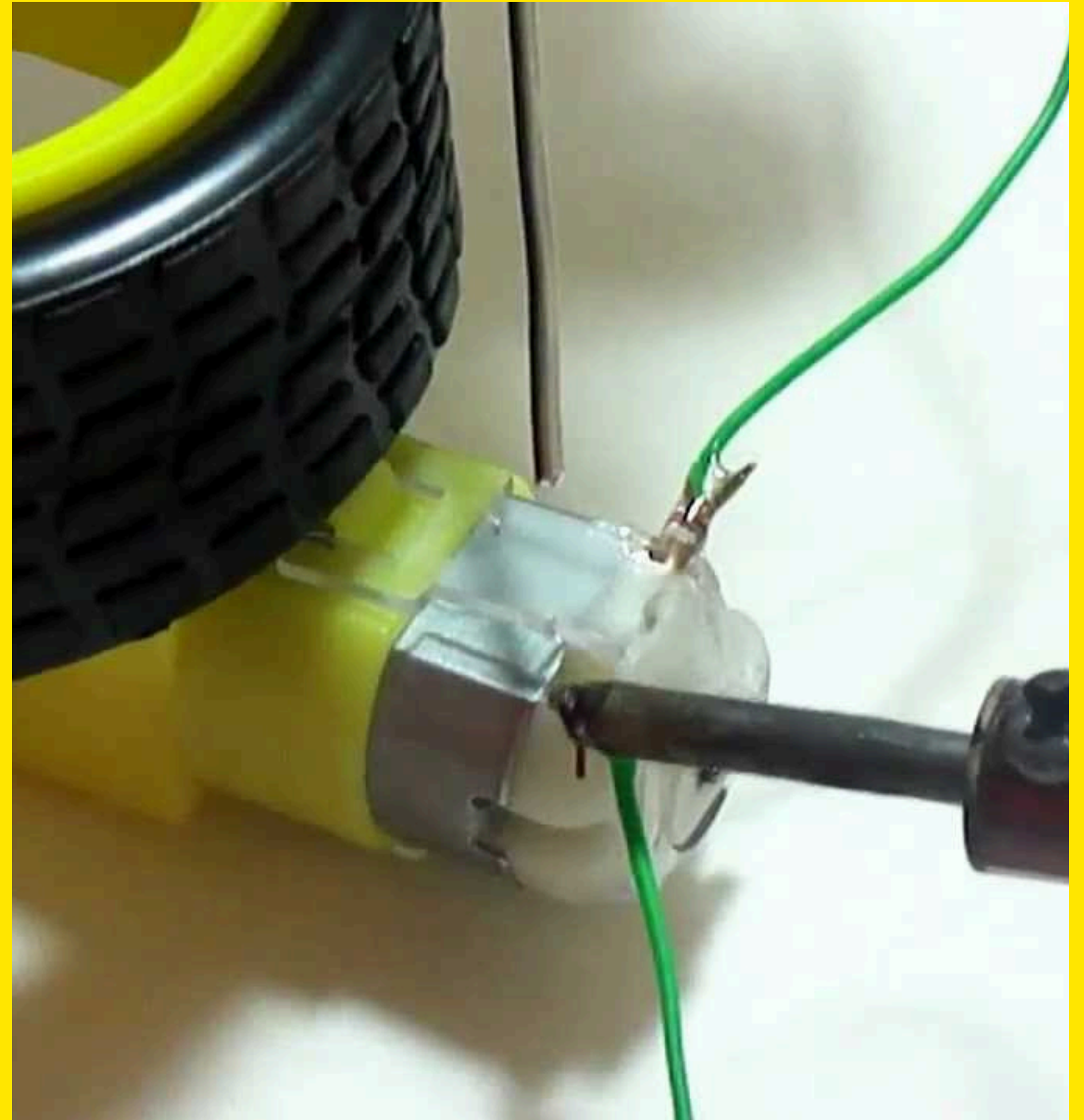
1. Test the iron by melting a
small amount of solder
2. Clean the iron using the brass
sponge or damp sponge



Let's talk about **SOLDERING**

3. Soldering

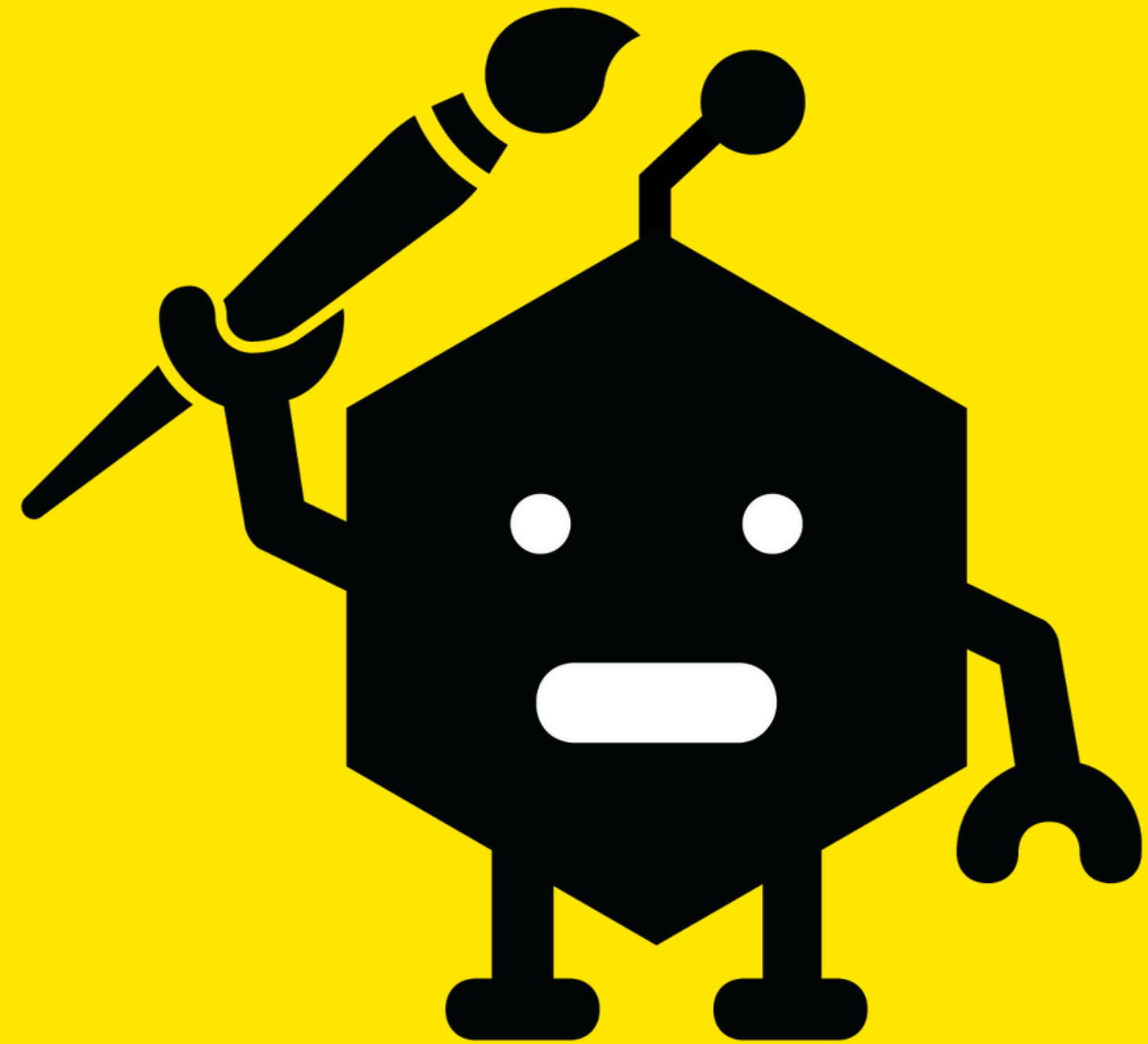
1. Heat, then add solder to the exposed wire
2. Heat, then add solder to the tab on the motor
3. Place the end of the wire on the tab on the motor
4. Apply the iron to the wire and tab while adding a small amount of solder



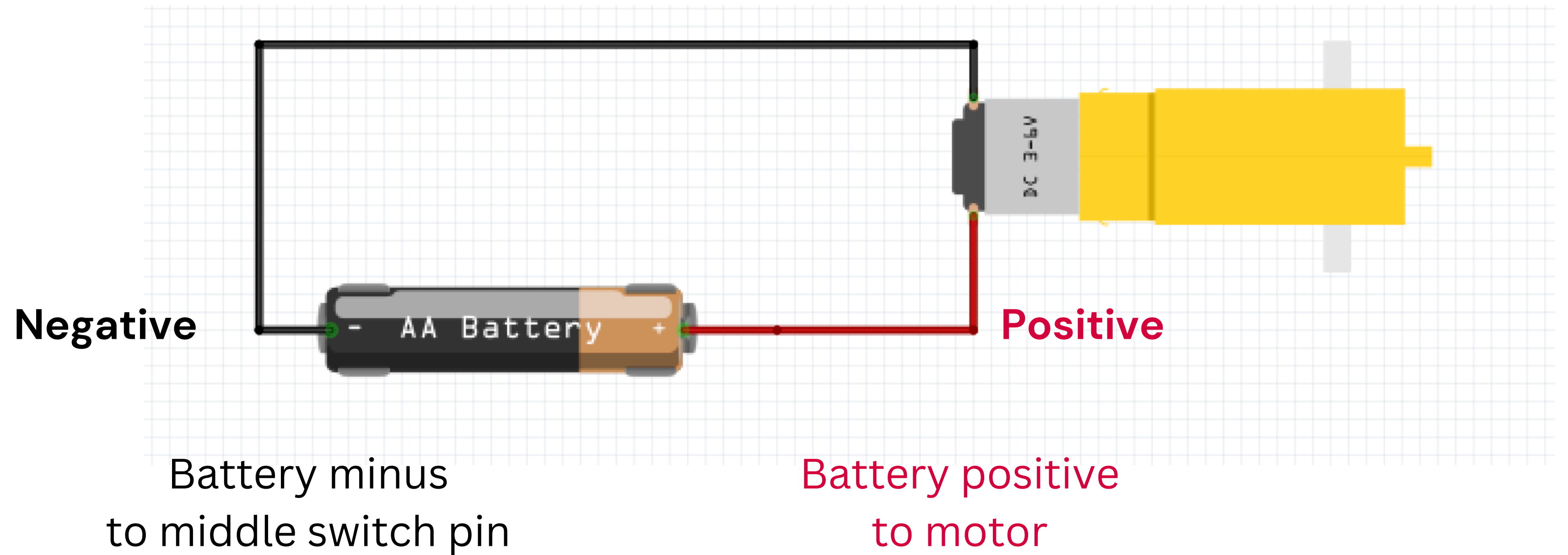
Let's talk about **SOLDERING**

4. Considerations

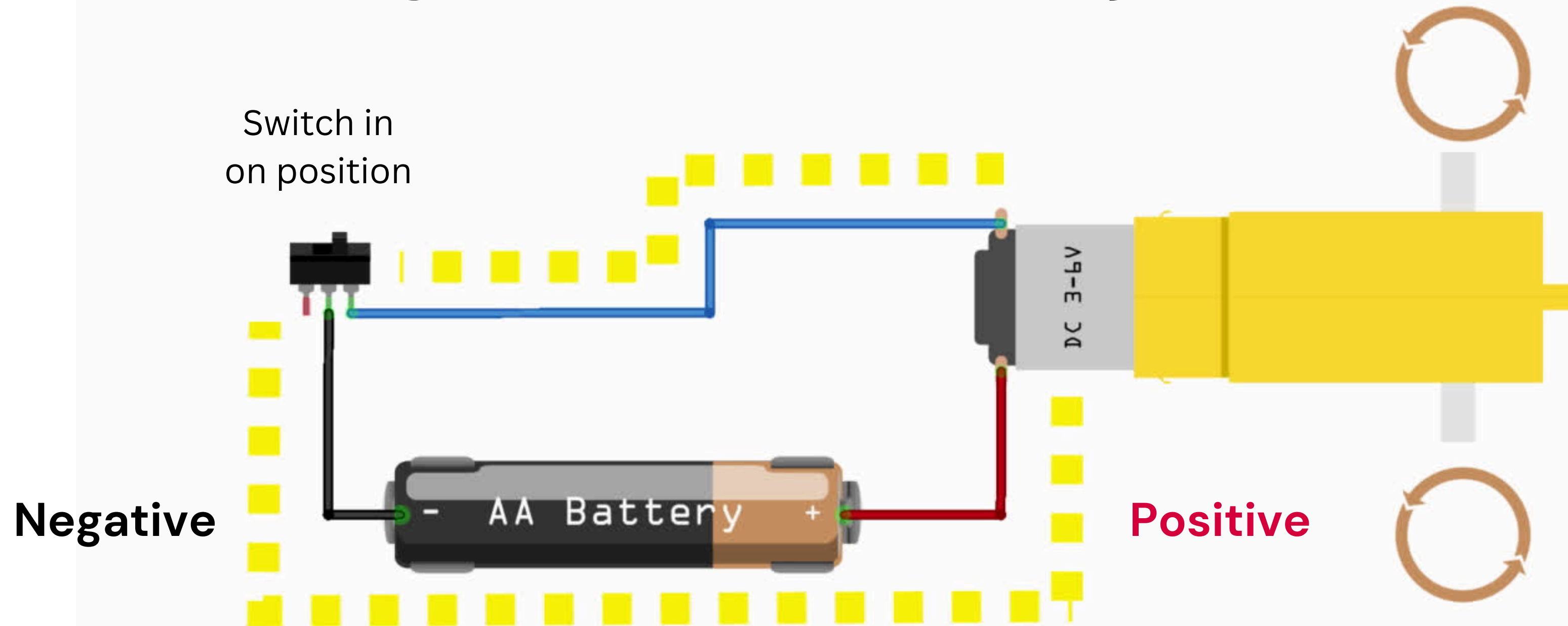
1. **Take it slowly!** It's easier to add more solder than to remove solder
2. **Heat both surfaces!** Hold the soldering iron in place for a few seconds before applying the solder.



Let's try it out!



Visualising the flow of electricity:

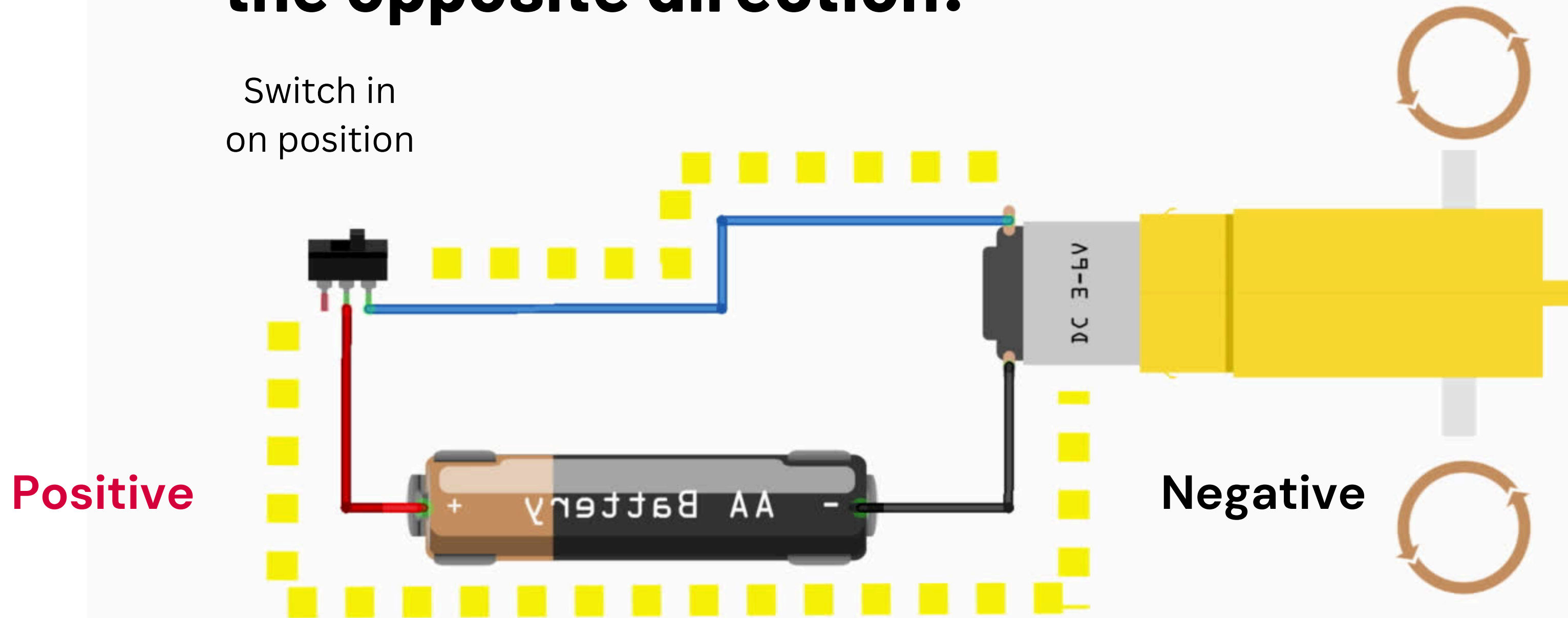


**“What if I wire up the
positive and negative wires
the other way around?”**

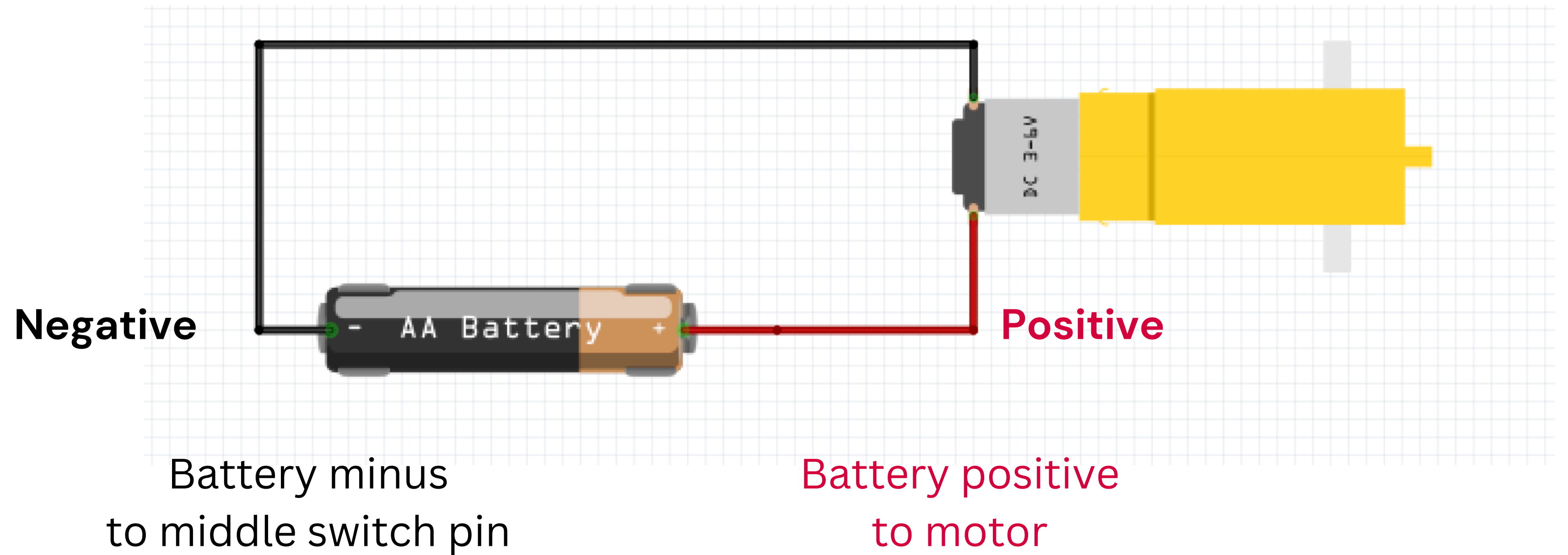
**Many parts require electricity to
flow in a specific direction, but DC
motors don't**

So, if you change wires, the motor will spin in the opposite direction:

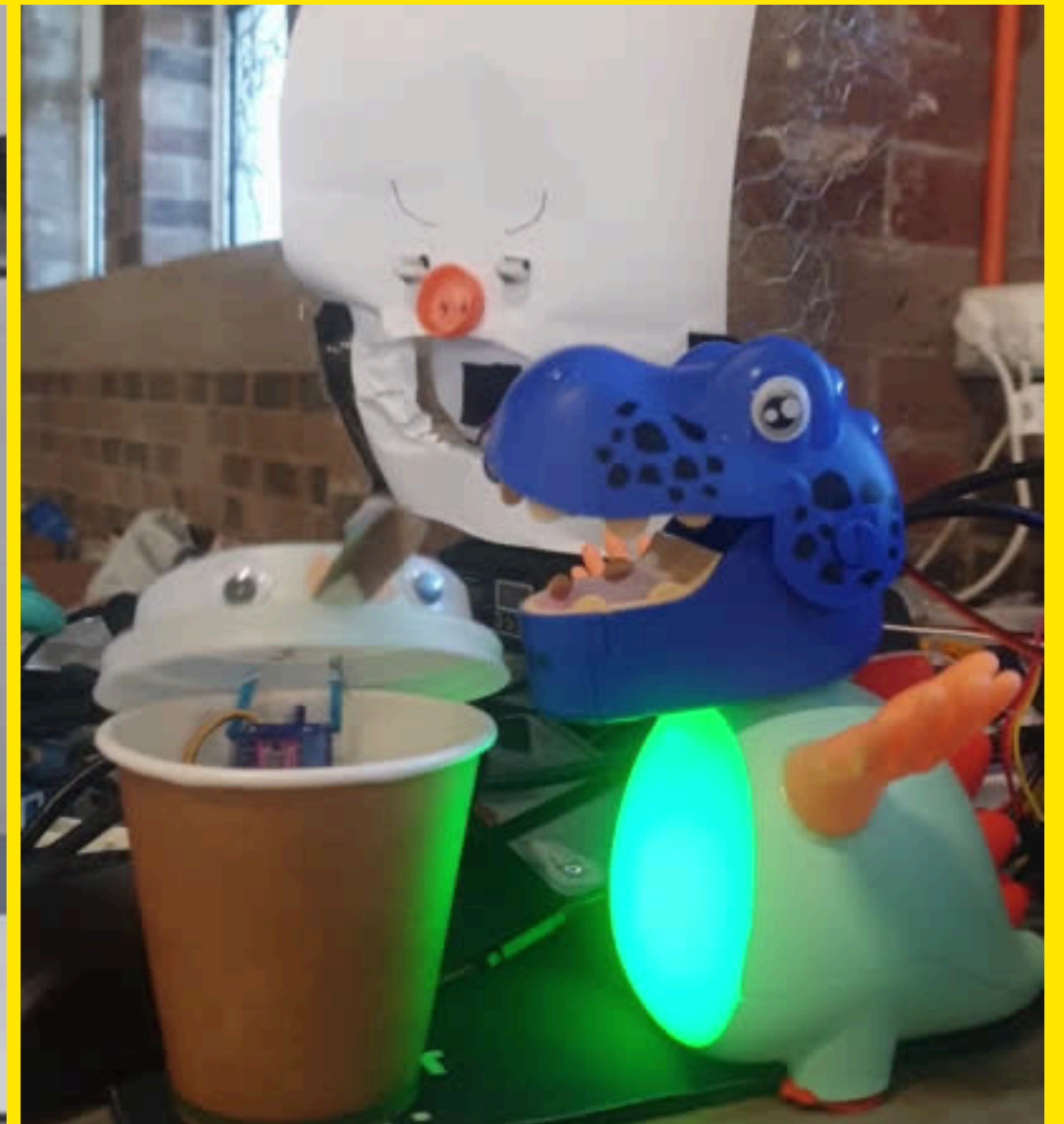
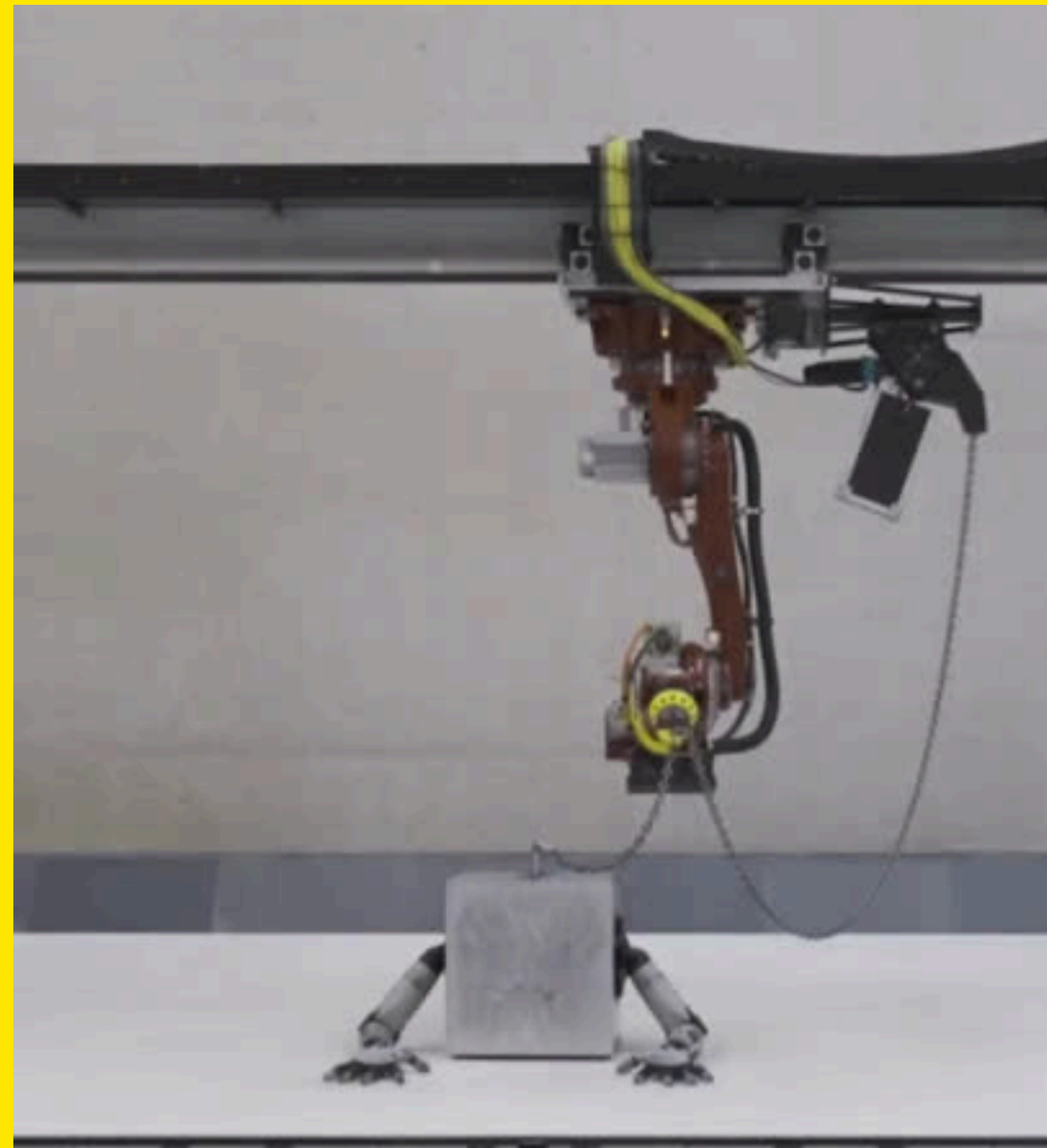
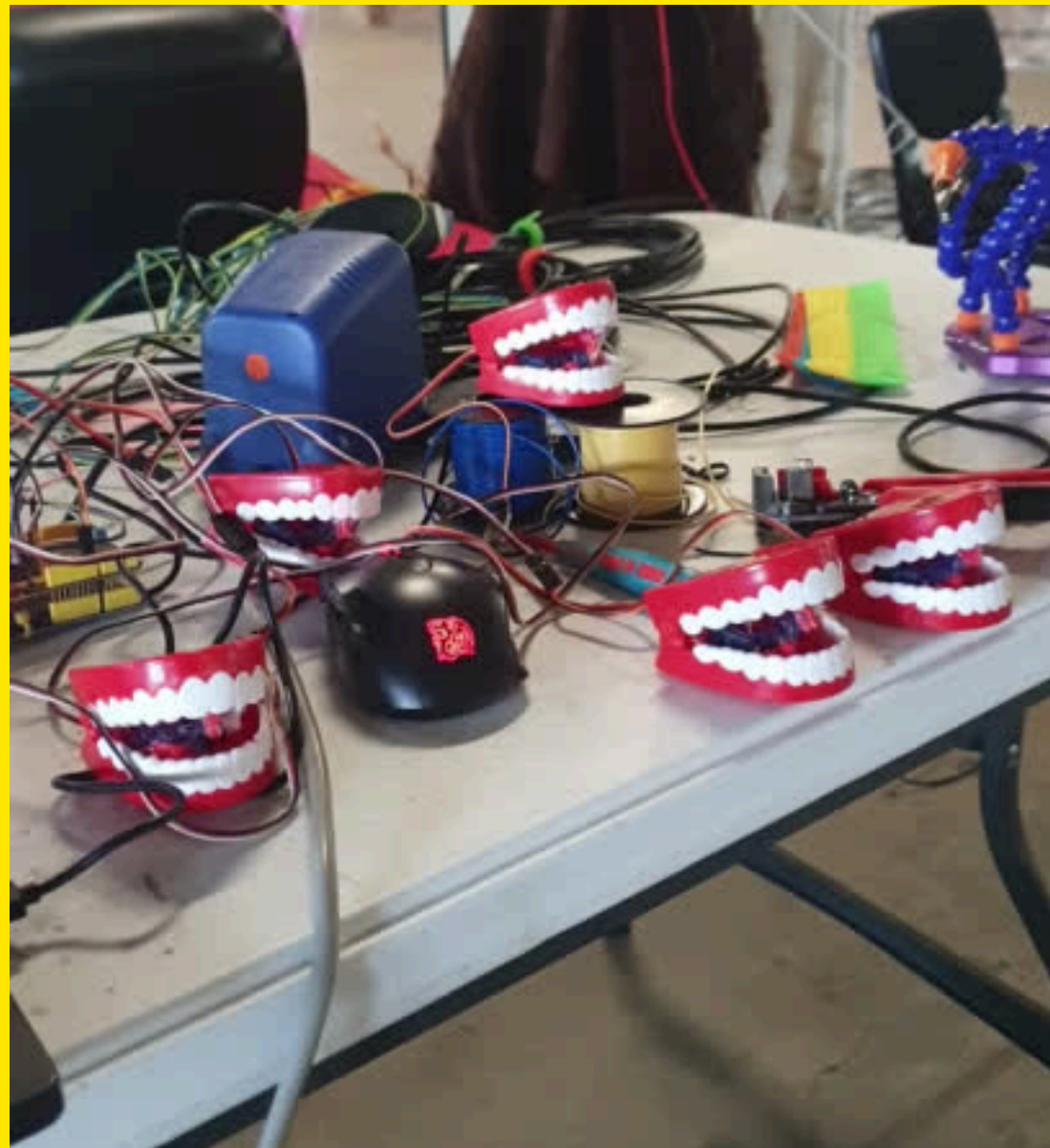
Switch in
on position



Let's try it out!



Next week at the **CREATIVE ROBOTICS CLUB**



SERVO MOTORS

THANK YOU FOR ATTENDING THE
CREATIVE ROBOTICS CLUB

Experiments

