
CRC
CREATIVE
ROBOTICS
CLUB

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?**

WEEKS 2 - 5: Skill acquisition

We will learn new skills, try new ideas, grow our knowledge each week

WEEKS 7 - 10: Project support

Have the things you've learned in Weeks 2 -5 got you itching to make something? Do you have assignments that need electronics or programming support?
We are here to help.

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?

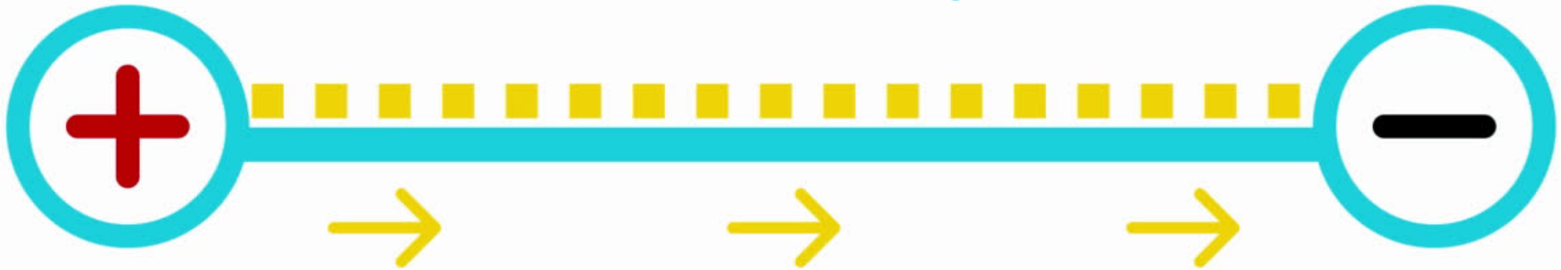
We are a club for students, and we welcome your suggestions and input

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, -, ⏚

Positive

Negative

Positive and negative must be connected for electricty 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

SWITCH

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

We wont get to this today, but it’s nice to know

TODAY:

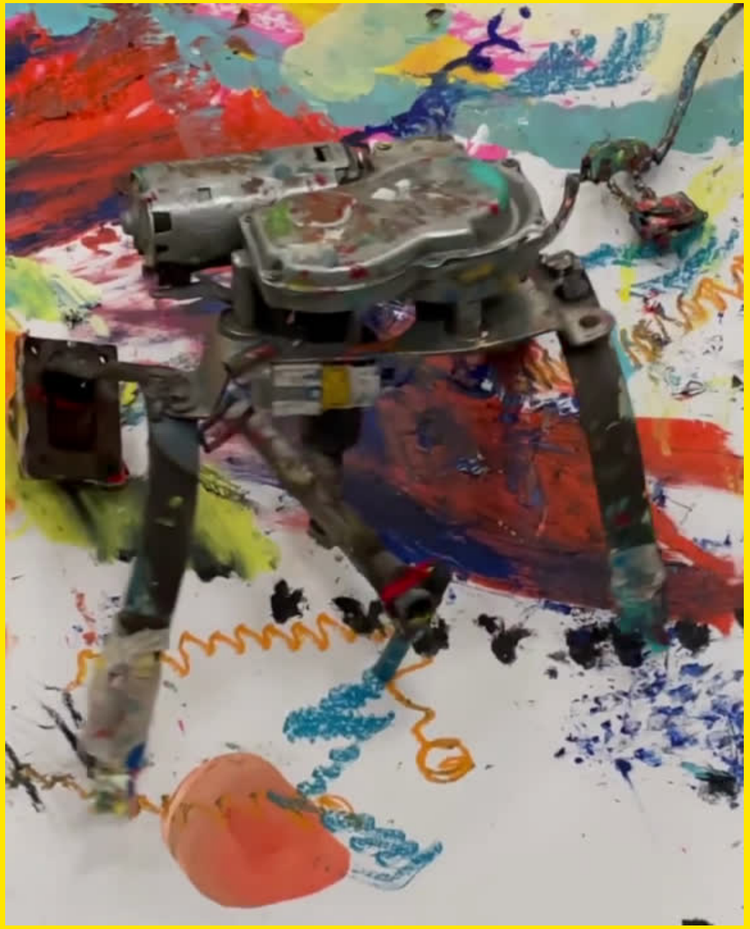
DC gear motor

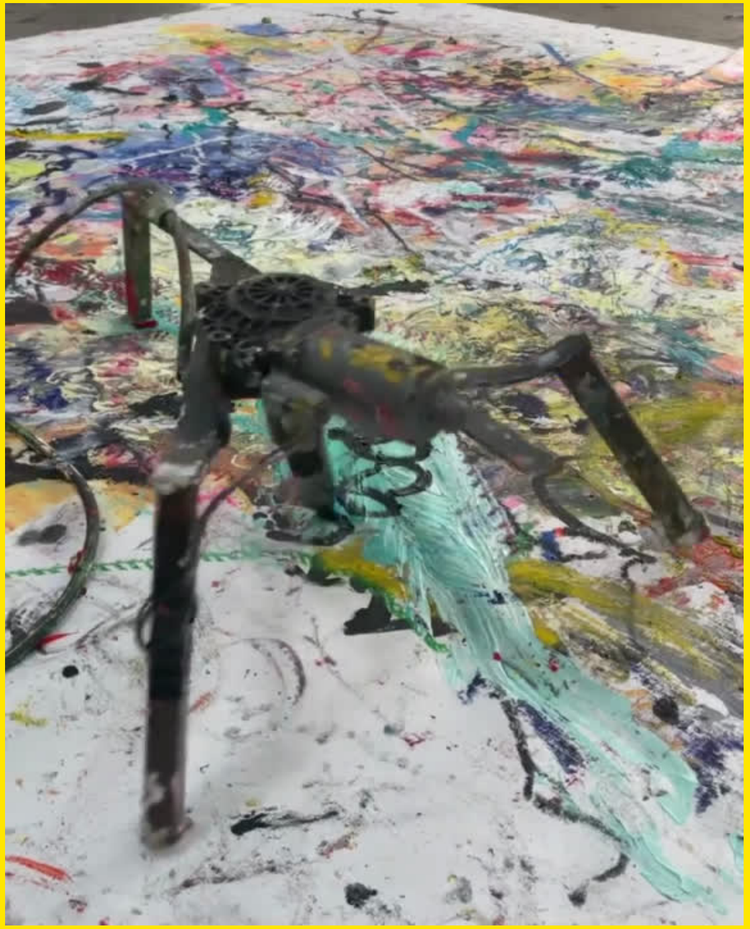
AA Battery [1.5v]

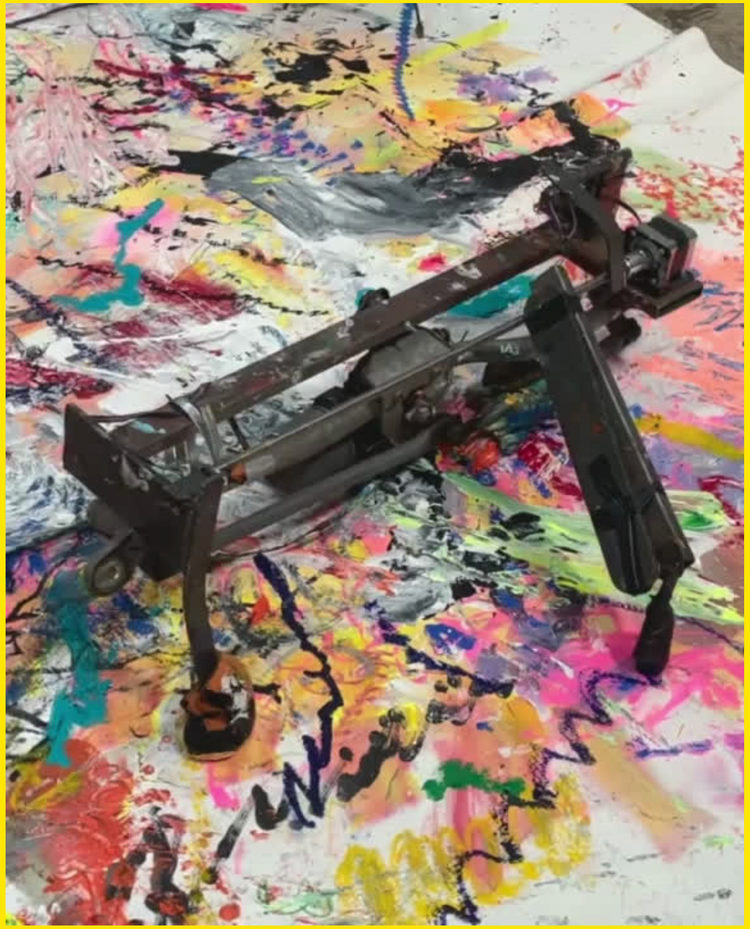
AA Battery holder

Switch [optional]

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





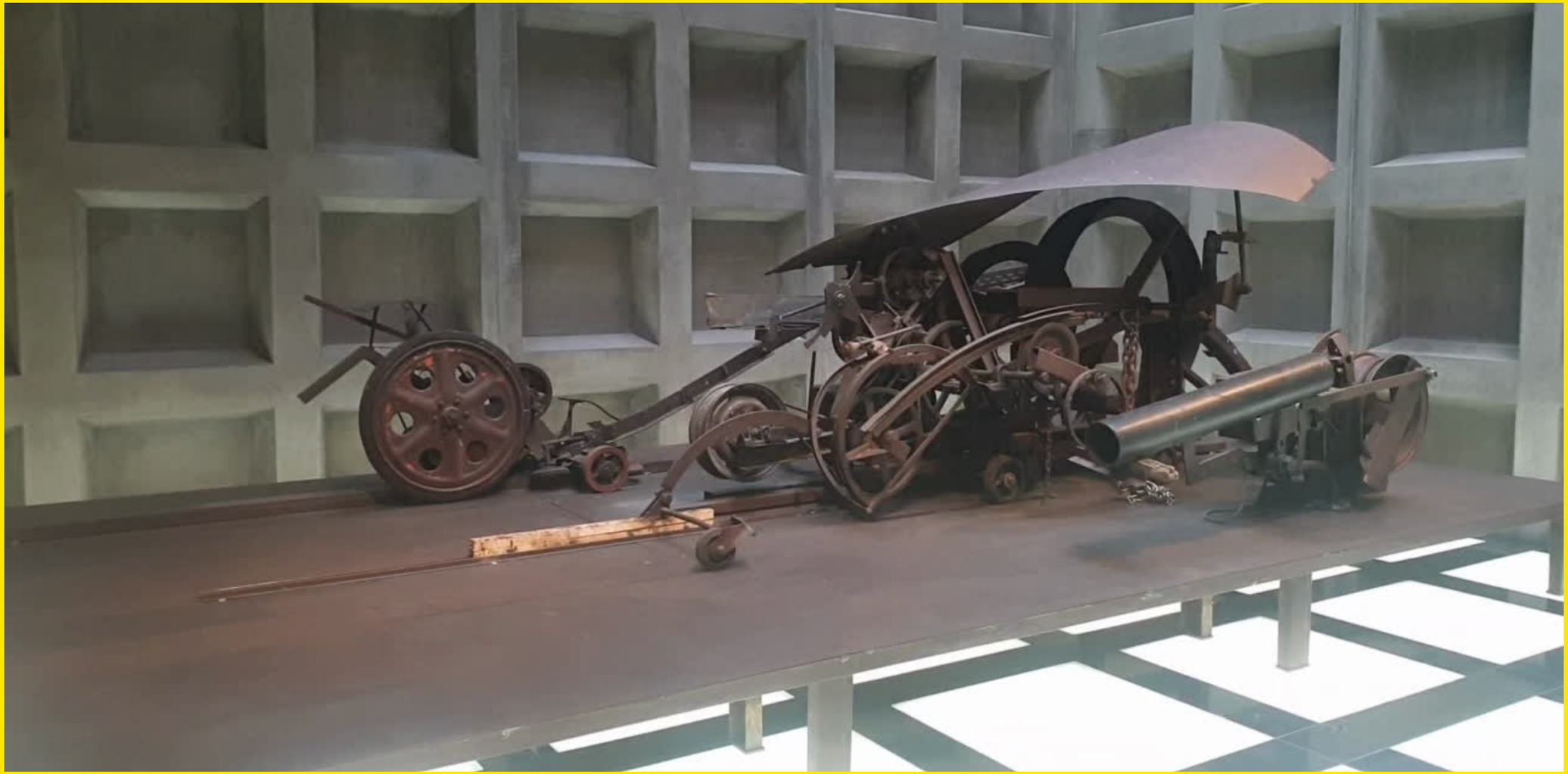


Lolo y Sosaku “Painting Machines” 2021

...or speculative robots like this:

Wonbin Yang *Condimentum trigonus fp1*, 2014

Great artists have made work using 1 motor and scrap:



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

“Can I break it??”

“Can I break it??”

NO!

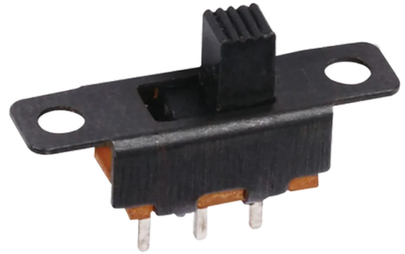
Well, maybe, but probably not

Materials supplied by Creative Robotics Lab:

DC gear motor $1.36

AA Battery [1.5v] $0.68

AA Battery holder $0.35



Switch [optional]
$0.00 (Recycled)

“Can I hurt myself??”

“Can I hurt myself??”

NO!

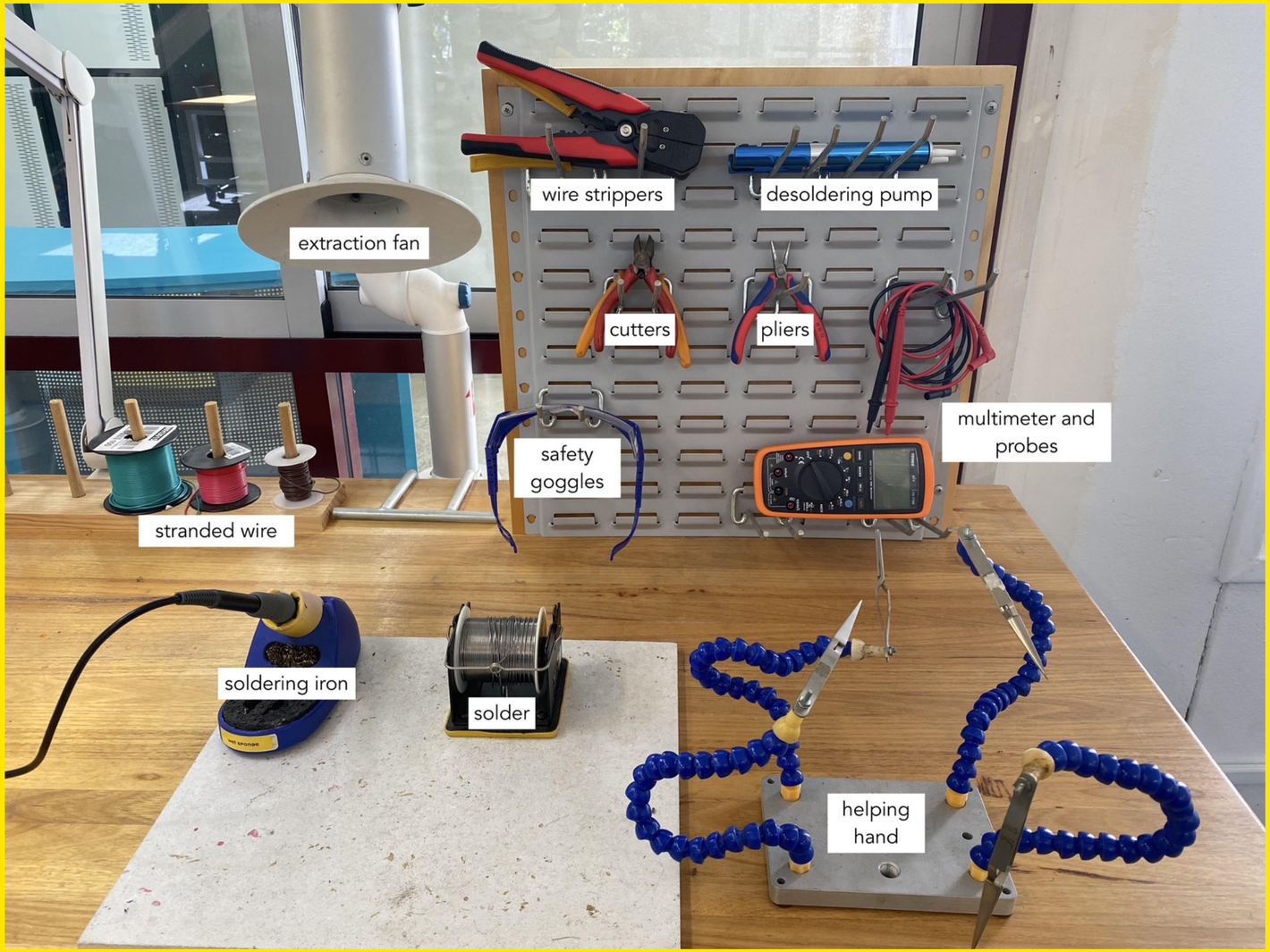
Well, maybe, but probably not

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

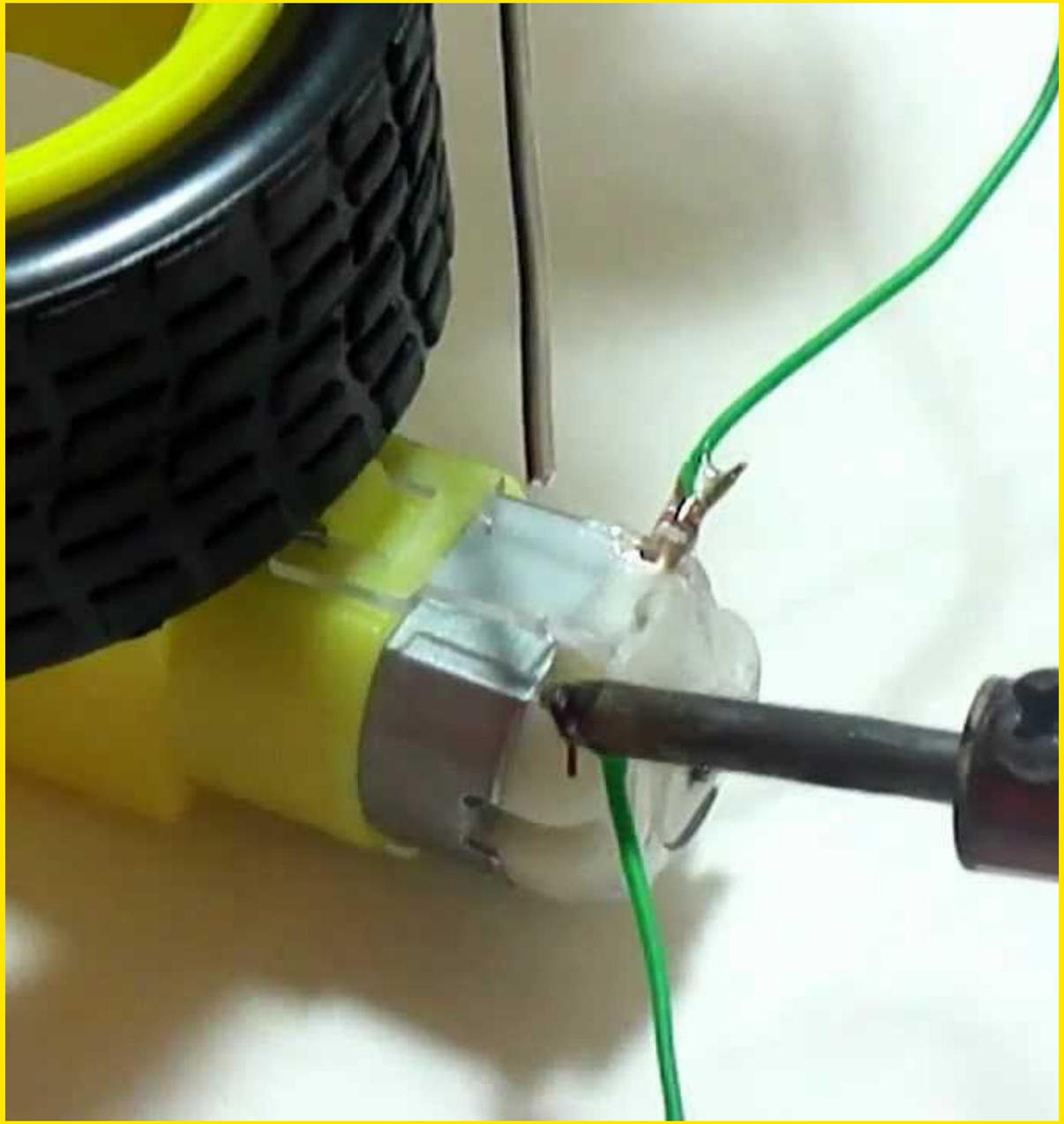
Now the soldering iron is hot lets prepare to solder

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

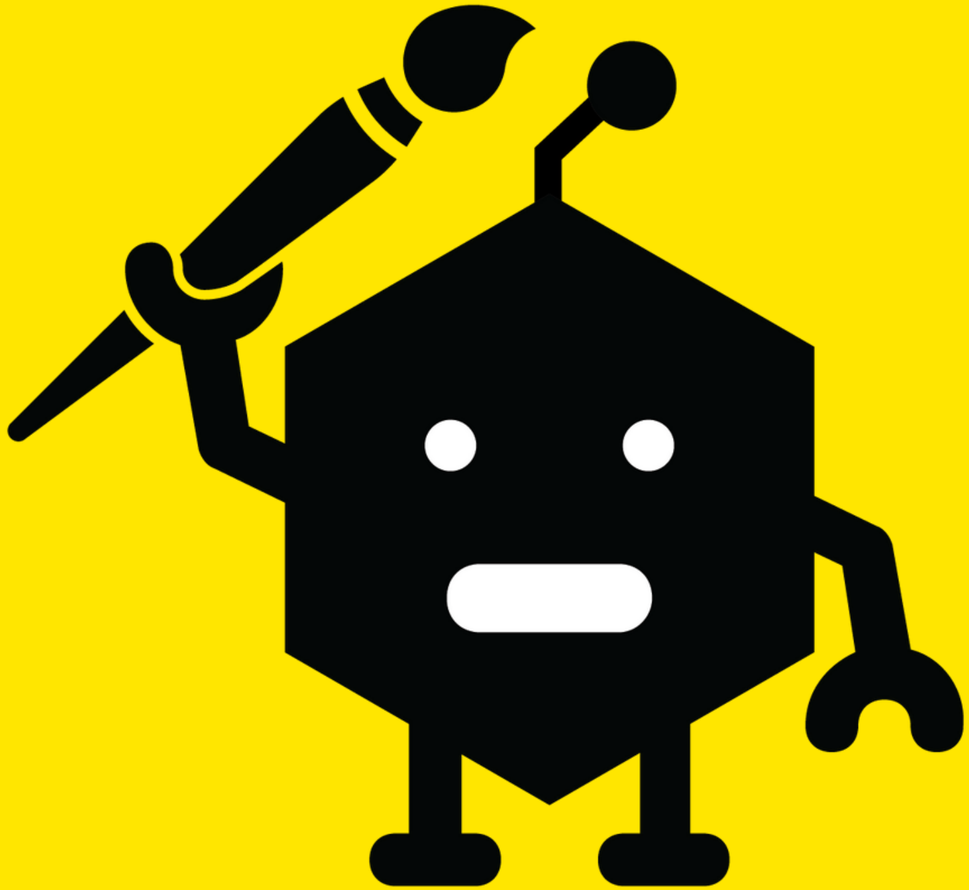
1. Heat, then add solder to the exposed wire
2. Heat, then add solder to the tab on the motor
3. Place the end of the wire on the tab on the motor
4. Apply the iron to the wire and tab while adding a small amount of solder



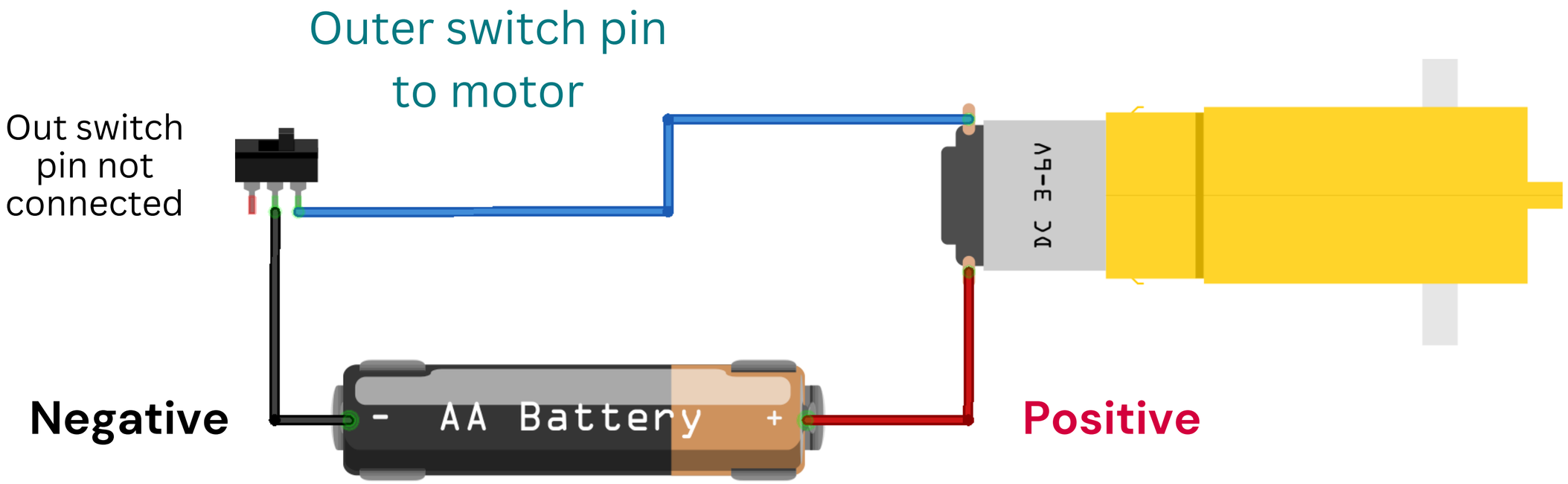
Let’s talk about **SOLDERING**

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!

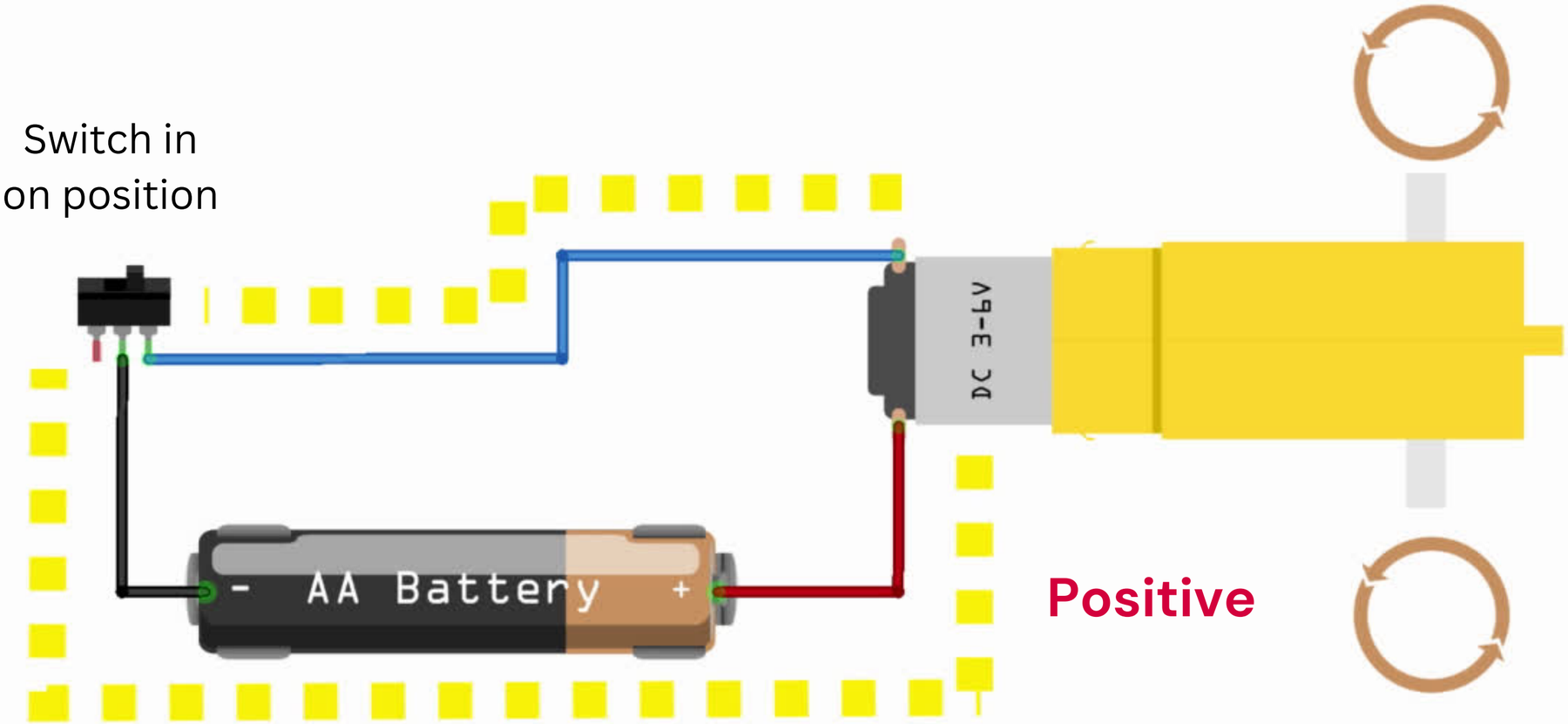


Battery minus
to middle switch pin

Battery positive
to motor

Visualising the flow of electricity:

Switch in
on position



Negative

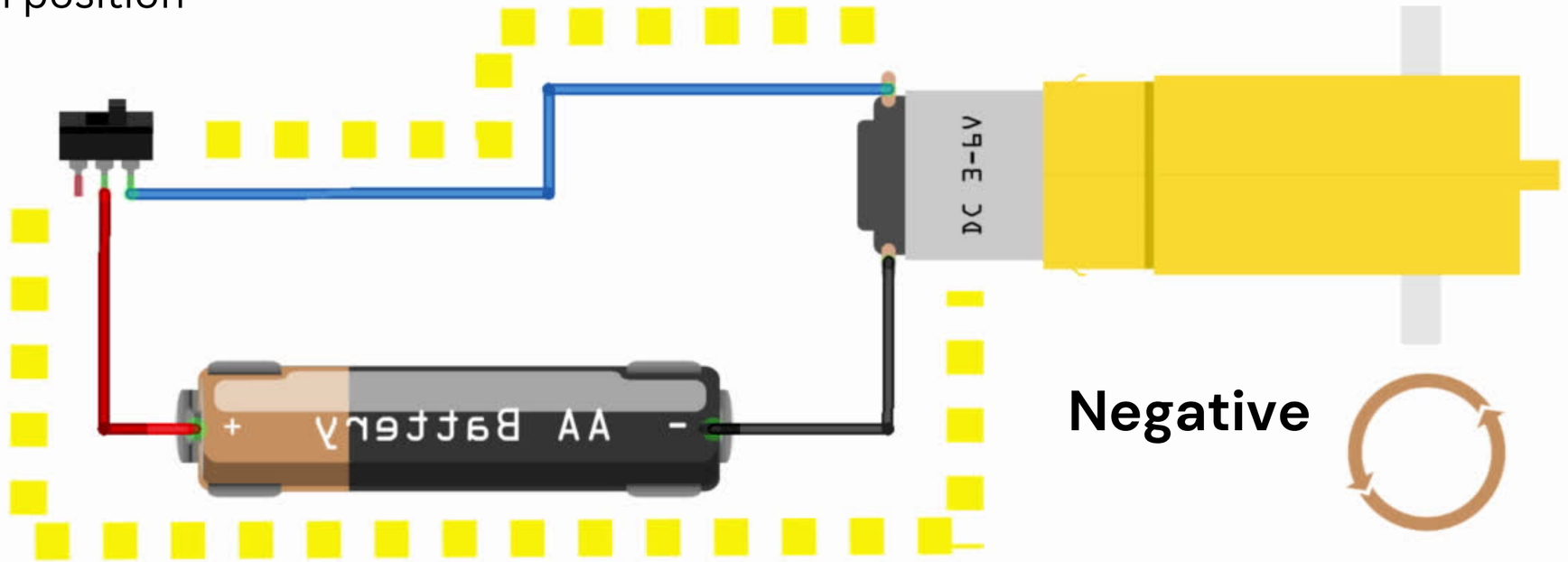
Positive

“What if I wrire 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:

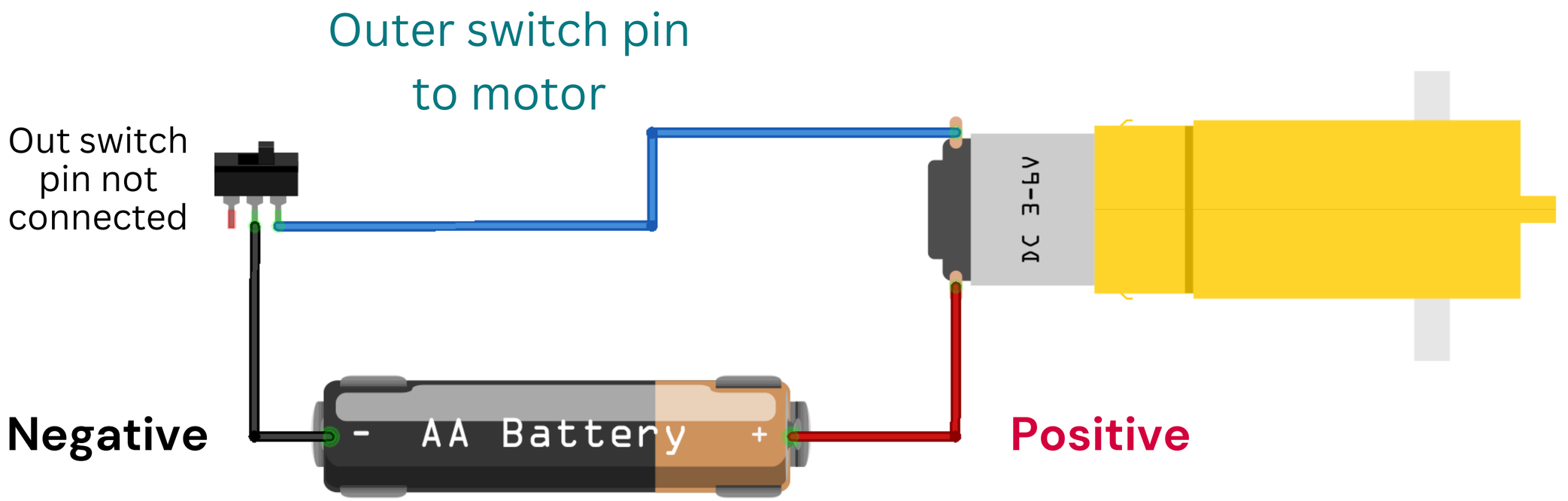
Switch in
on position



Positive

Negative

Wiring:

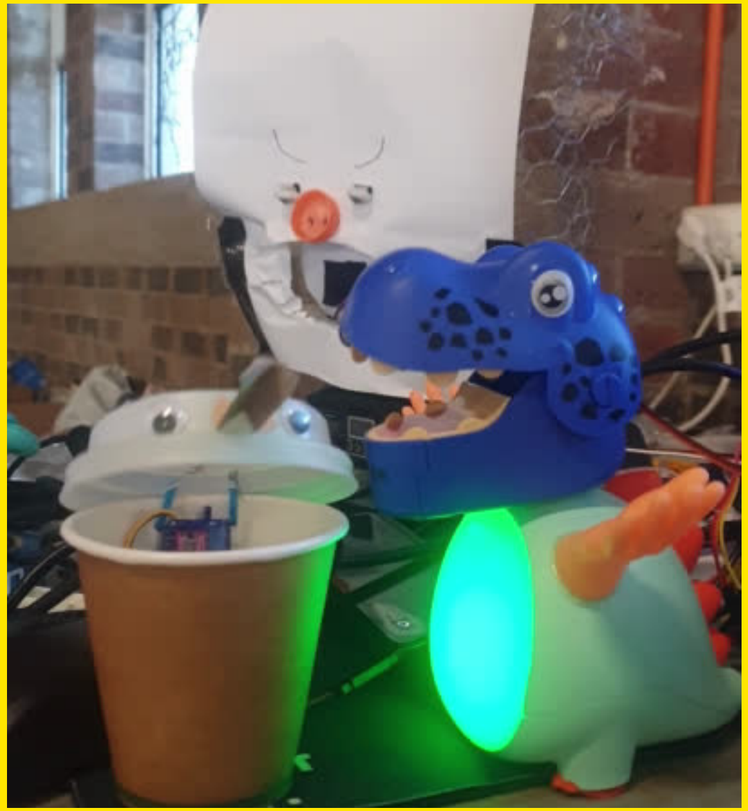


Battery minus
to middle switch pin

Battery positive
to motor

Next week at the

CREATIVE ROBOTICS CLUB



SERVO MOTORS

THANK YOU FOR ATTENDING THE

CREATIVE ROBOTICS CLUB