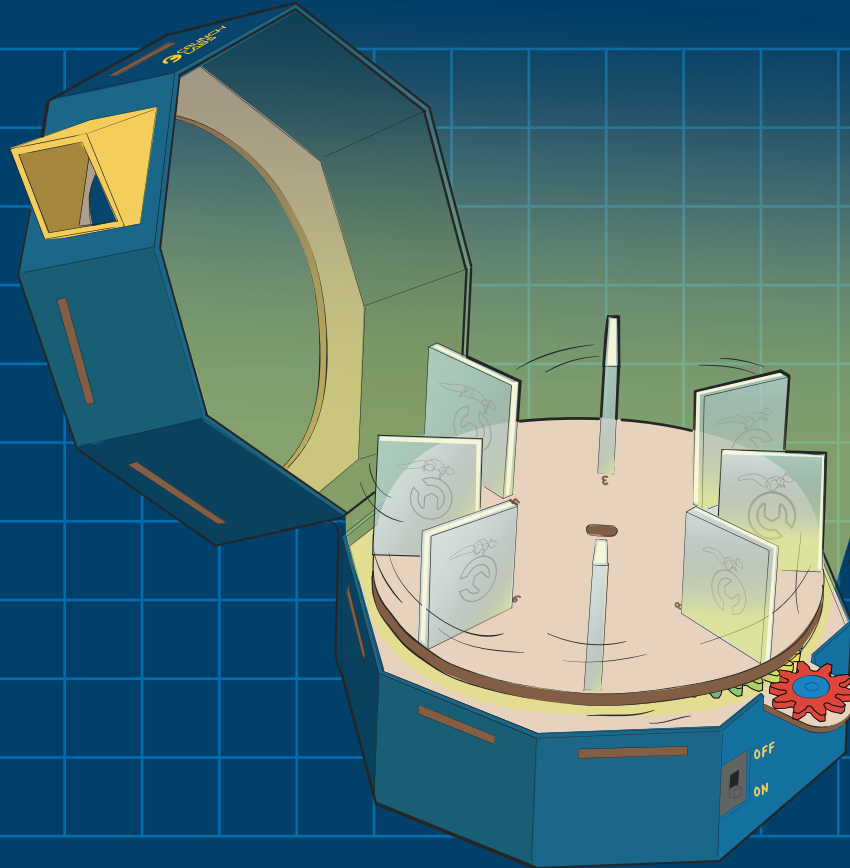




BUILD  
BOX



STROBE  
LIGHT ANIMATOR



# NEW VIDEO UNLOCKED

BUILD ALONG & LEARN WITH MARK ROBER

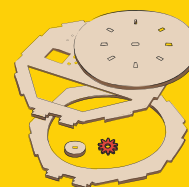


[CRUNCHLABS.COM/STROBE](https://crunchlabs.com/strobe)

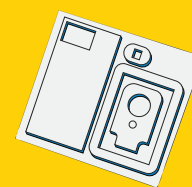
## PARTS



cardboard set



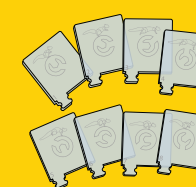
wood pieces



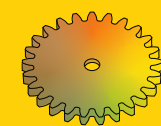
adhesive foam



acrylic figures



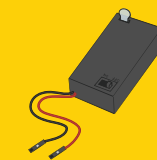
animation set



color wheel



rivets



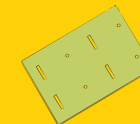
battery pack



wires



porthole



hinge



small o-rings



large o-rings



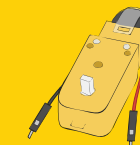
short elastic cords



long elastic cords

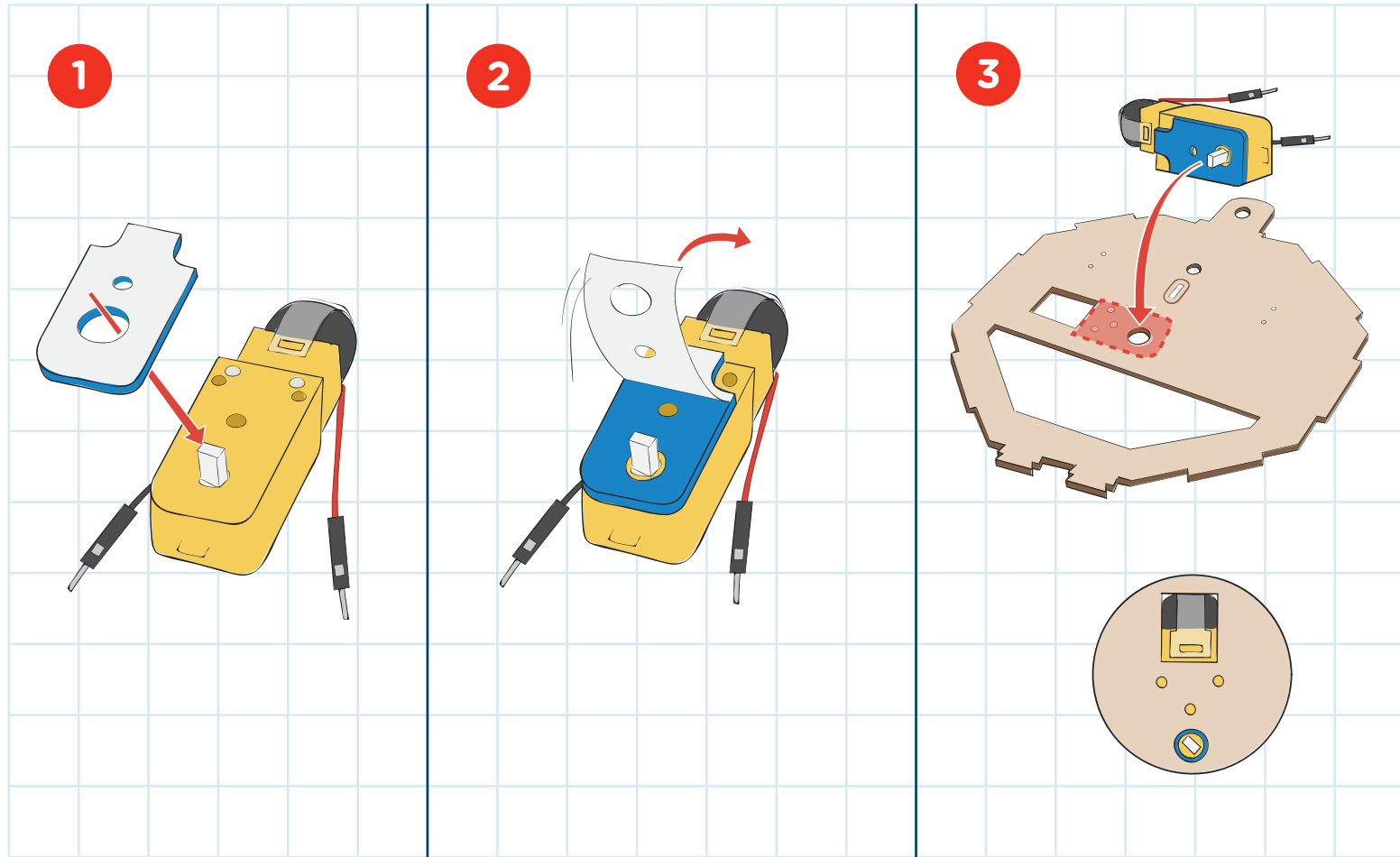


LED

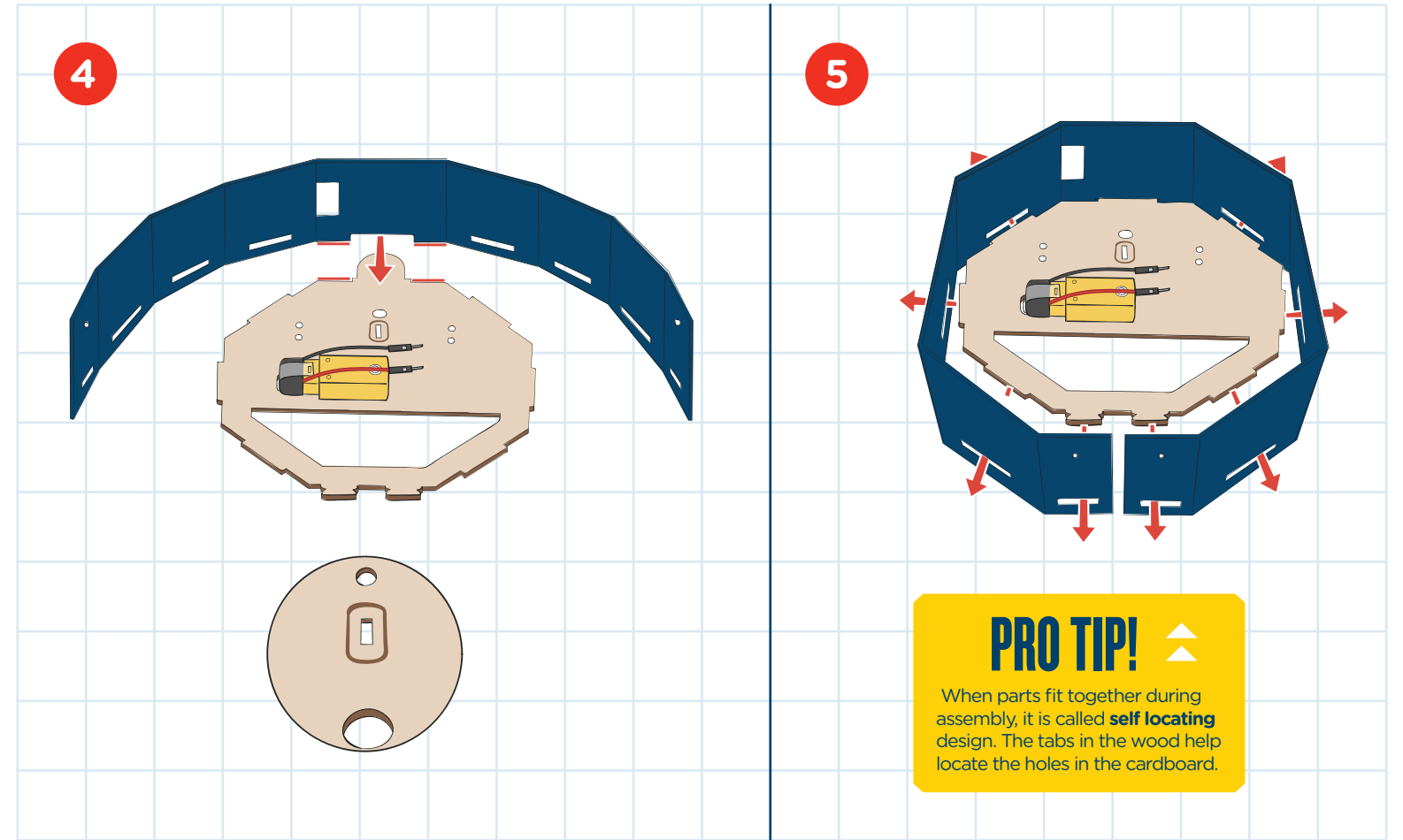


dc motor

# BUILD

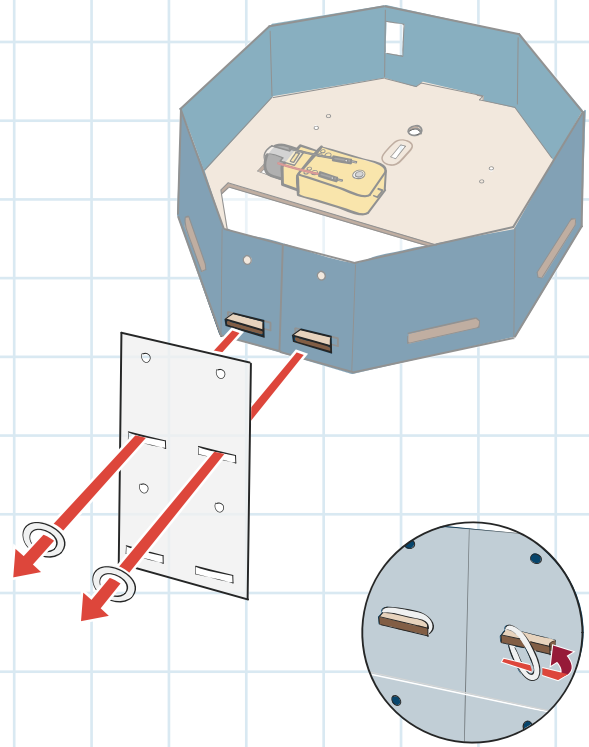


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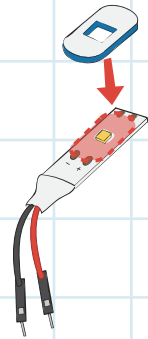


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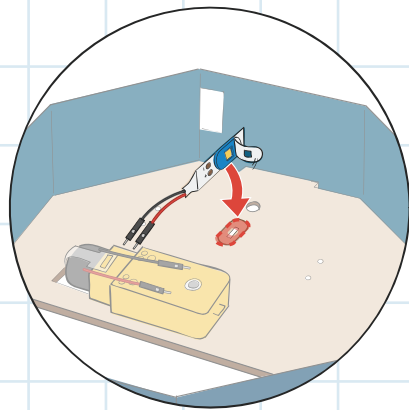
6



7

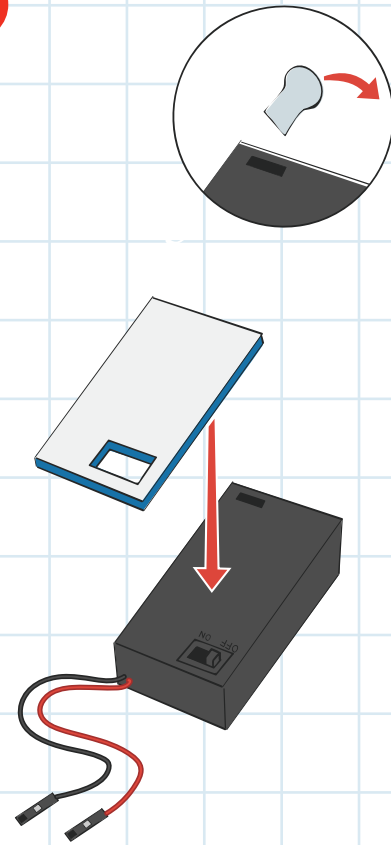


8

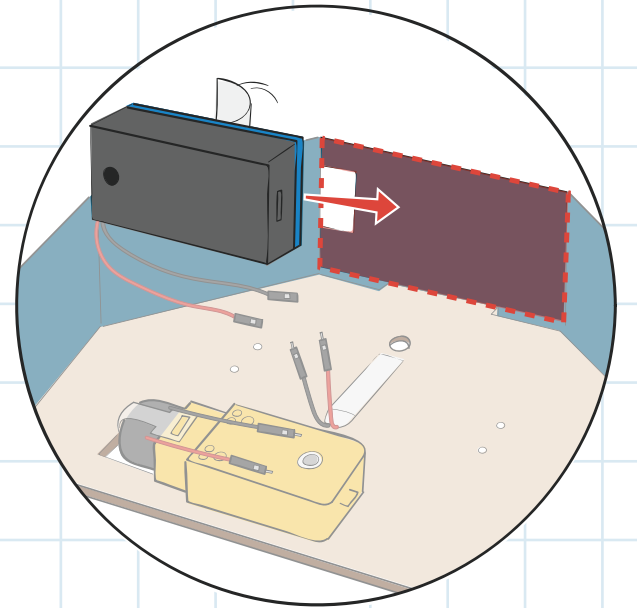


# BUILD

9

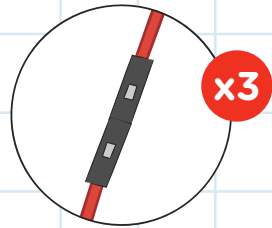
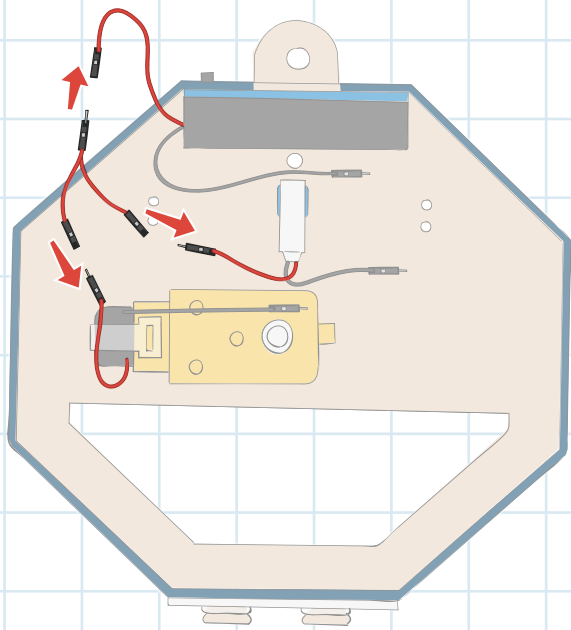


10

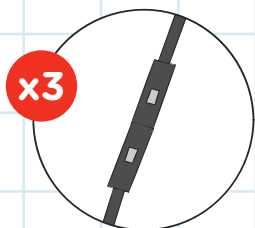
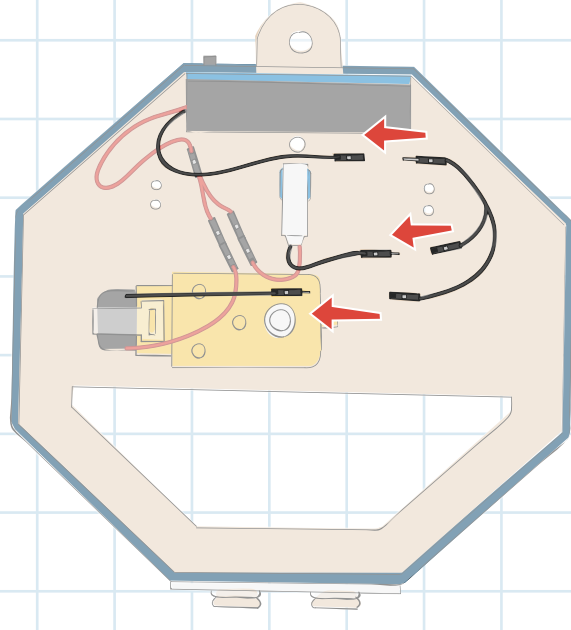


# BUILD

11

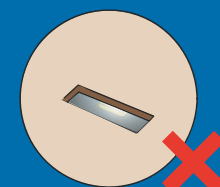
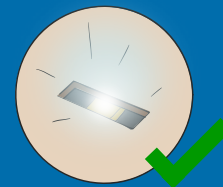
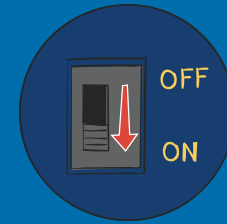
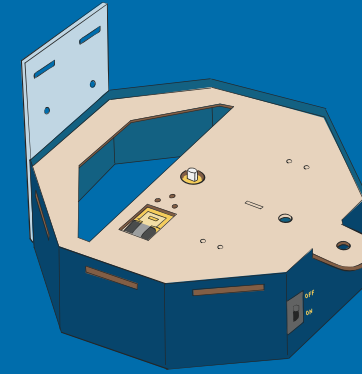


12



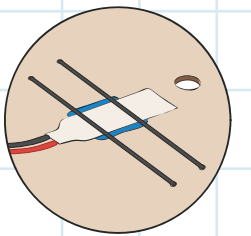
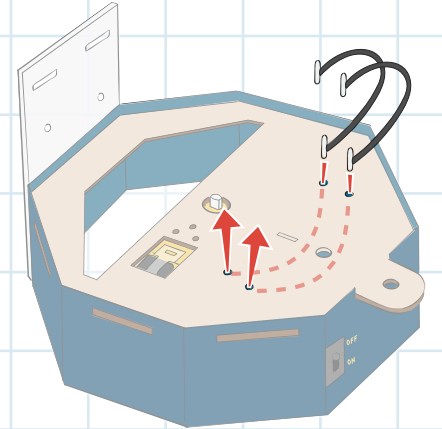
# BUILD

## TEST



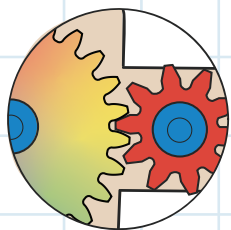
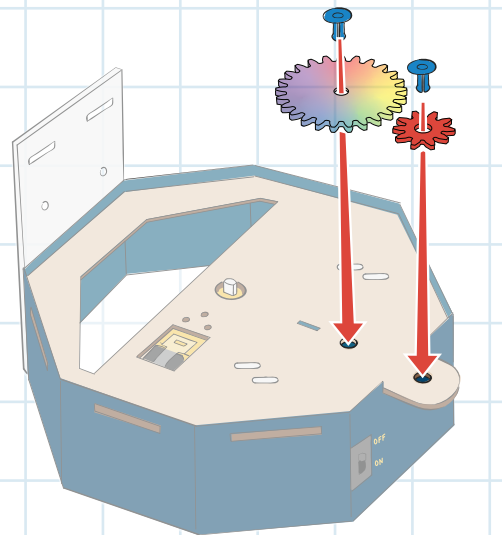
Having trouble? Watch the video at [crunchlabs.com/strobe](http://crunchlabs.com/strobe)

13

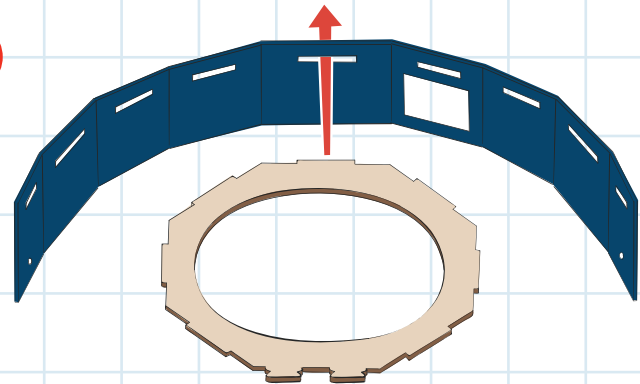


# BUILD

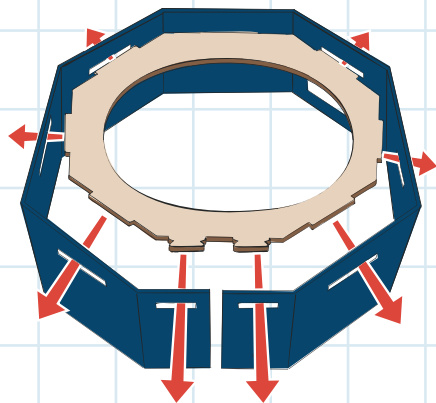
14



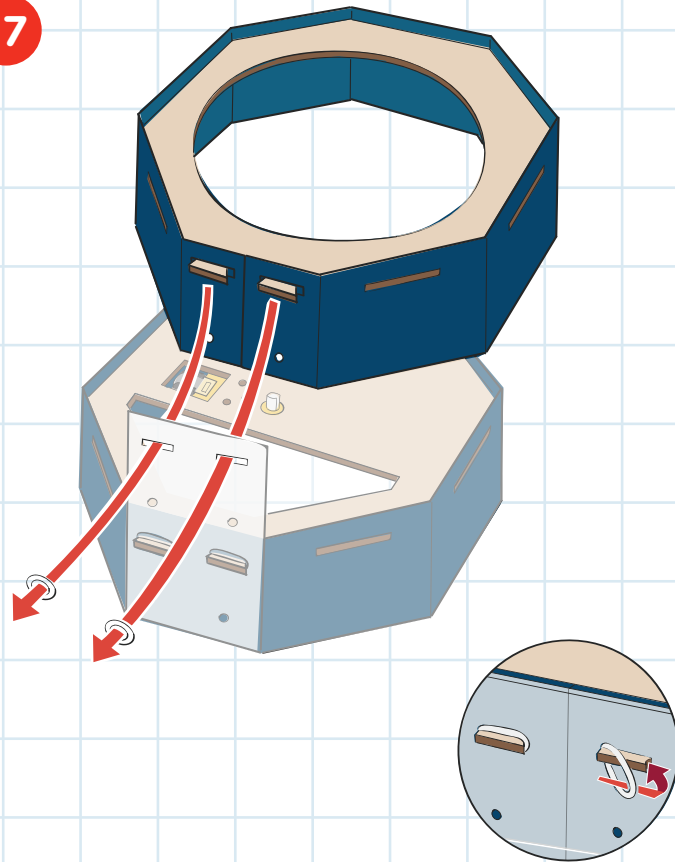
15



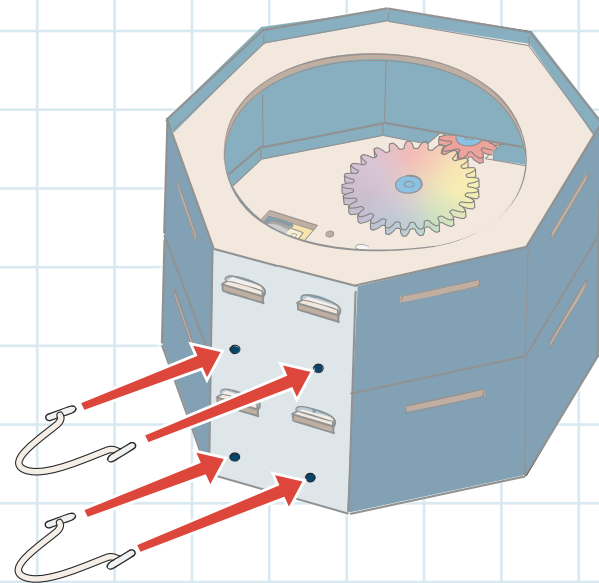
16



17

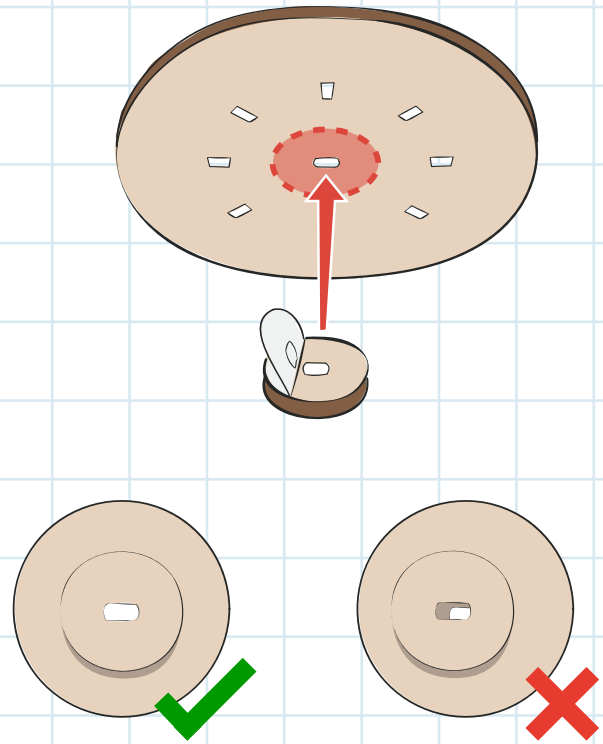


18

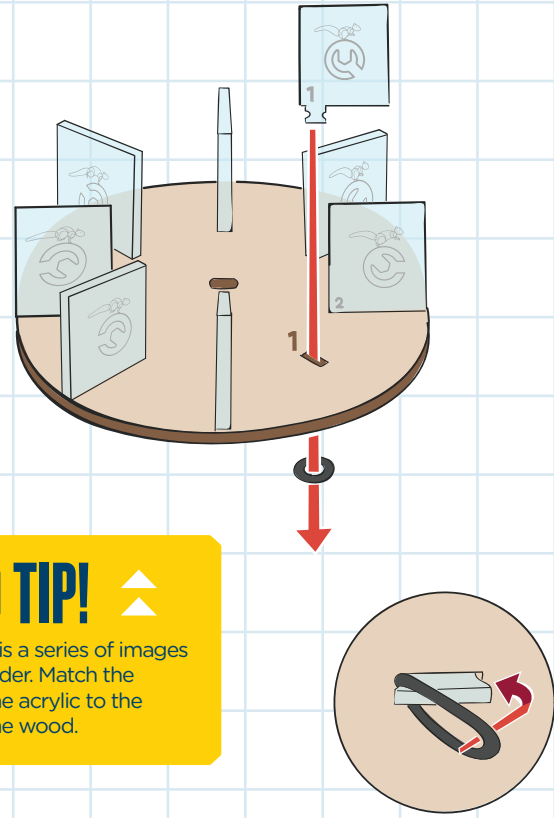


# BUILD

19



20

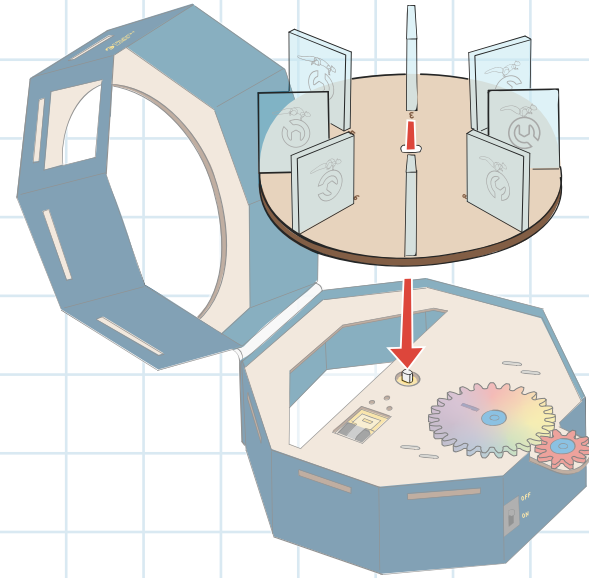


## PRO TIP! ▲

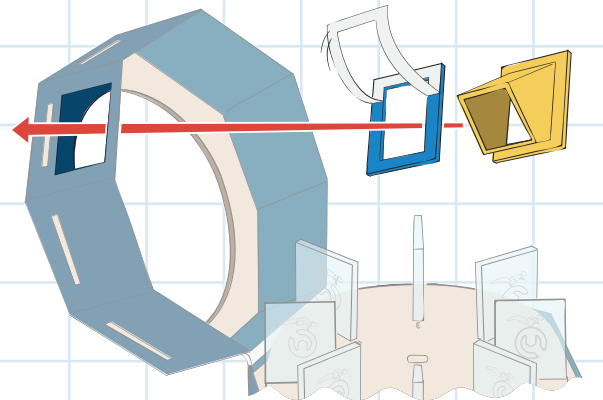
An **animation** is a series of images in a specific order. Match the numbers on the acrylic to the numbers on the wood.

# BUILD

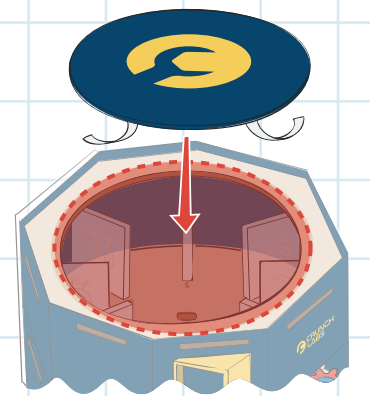
21



22

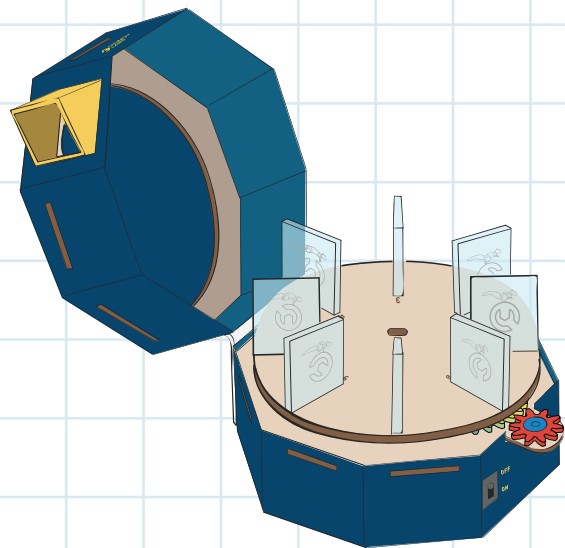


23

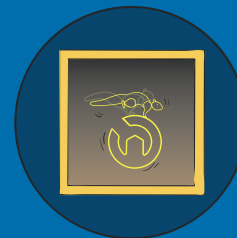
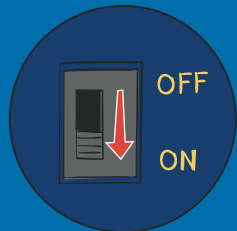
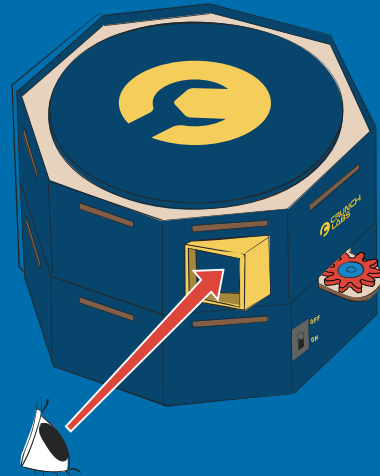


# BUILD

BUILT!



# TEST



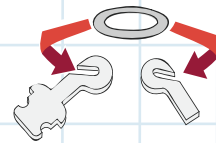
Having trouble? Watch the video at [crunchlabs.com/strobe](http://crunchlabs.com/strobe)

# PLAY

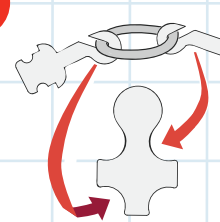
# ASSEMBLE THE FIGURES

Use the clear o-rings to build all 8 poseable acrylic figures. Together, they can make a custom animation!

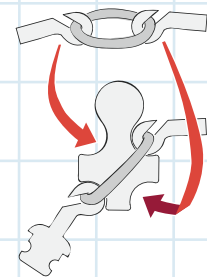
1



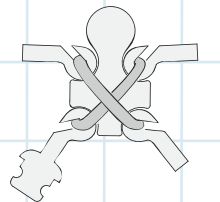
2



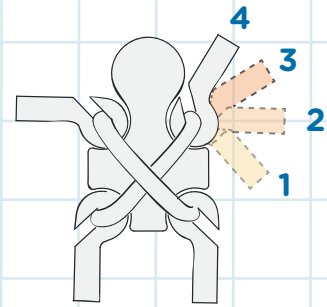
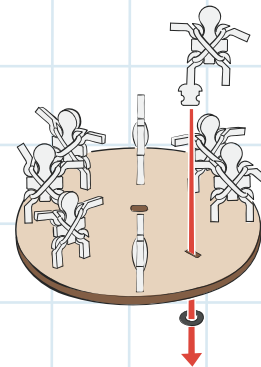
3



4



5



◀ **PRO TIP!**

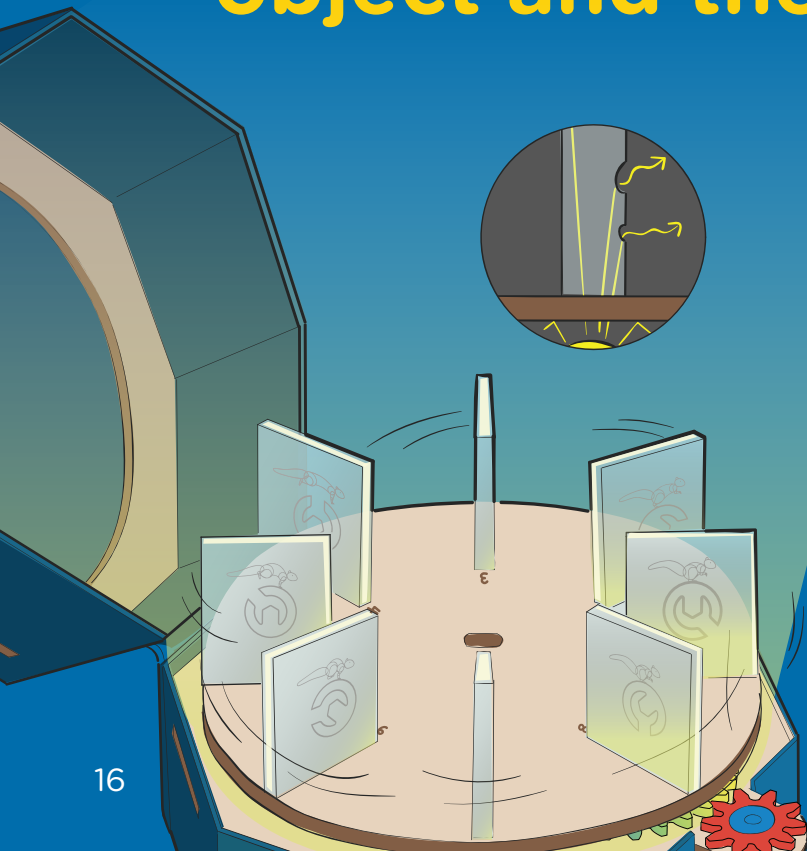
**Animations** look best when each image blends together smoothly. Smooth out your animation by making small, gradual changes from one figure to the next.



# Light reflection is light hitting an object and then bouncing off of it.

Basically, it's light changing directions.

The squirrel animation is made by etching tiny scratches into clear acrylic. The light wants to pass up through the top of the acrylic, but when it hits the scratches, it gets reflected out the front. That's why the squirrels appear to be glowing when they pass over the light.



# Find light reflection in other things!

A lot of cool objects use light reflection to their advantage. By reflecting light, engineers can move the light source wherever they need to. Some designs can even hide the light source altogether!

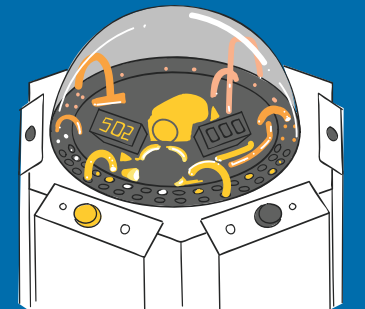
## EXIT SIGNS

A lot of exit signs use light reflection to make their text bright & easy to read. Thanks to 'edge lighting', the light source doesn't distract from the text.



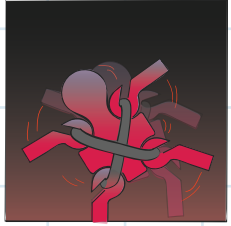
## ARCADE GAMES

Mark once built a robot to outsmart arcade games. Arcade games use all sorts of light reflection to make games playable and exciting.



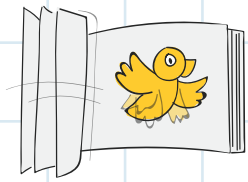
# CRUNCH

It's crunch time! Use your engineering superpowers to keep building.



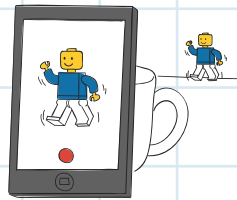
## ANIMATION LOOP

An animation that 'loops' can seamlessly repeat itself. Try to animate your character into a never ending dance loop!



## FLIP BOOK

You can practice different animations in the corners of sticky note pads or notebooks. Stick figures make great flip book characters!



## STOP MOTION

To keep animating, get a stop motion animation app with an adult's help. Cast your toys in your very own movie!

# SHOW OFF YOUR BUILD



Share your fun animations & coolest mods!  
**#crunchlabs @crunchlabs**    



**WARNING:** Improper assembly can short circuit batteries.

#### **BATTERY SAFETY**

Remove exhausted batteries. Do not mix old & new batteries. Do not mix alkaline, standard (carbon-zinc), or rechargeable batteries. Do not recharge non-rechargeable batteries. If using rechargeable batteries, remove them from the toy before charging. Rechargeable batteries should be charged under adult supervision. Do not short-circuit supply terminals. Do not connect this toy to a power supply greater than two AA batteries. **How to remove batteries:** 1. Remove screw and lid from battery pack. 2. Remove batteries. **How to insert batteries:** 1. Remove screw and lid from battery pack. 2. Insert two new batteries into the battery pack with correct polarity (+ and -). 3. Replace lid and secure the screw on the battery pack.

#### **SWEEPSTAKES**

**Each CrunchLabs build box contains the chance to WIN a trip to visit CrunchLabs with Mark Rober! Sadly, you are not a prize winner this time. Check inside your next build box for another chance to win.**

*Trip includes roundtrip transportation and two (2) night's hotel accommodations for a family of four (4). Approximate value: \$4,500. NO PURCHASE NECESSARY. Open to legal U.S. residents, 18 years of age or older. Void where prohibited. For complete Official Rules, including promotion end date and information on how to obtain a free game ticket, visit [www.crunchlabs.com/win](http://www.crunchlabs.com/win).*

This toy is intended for use by children over the age of eight years. These instructions contain important information, do not throw away.