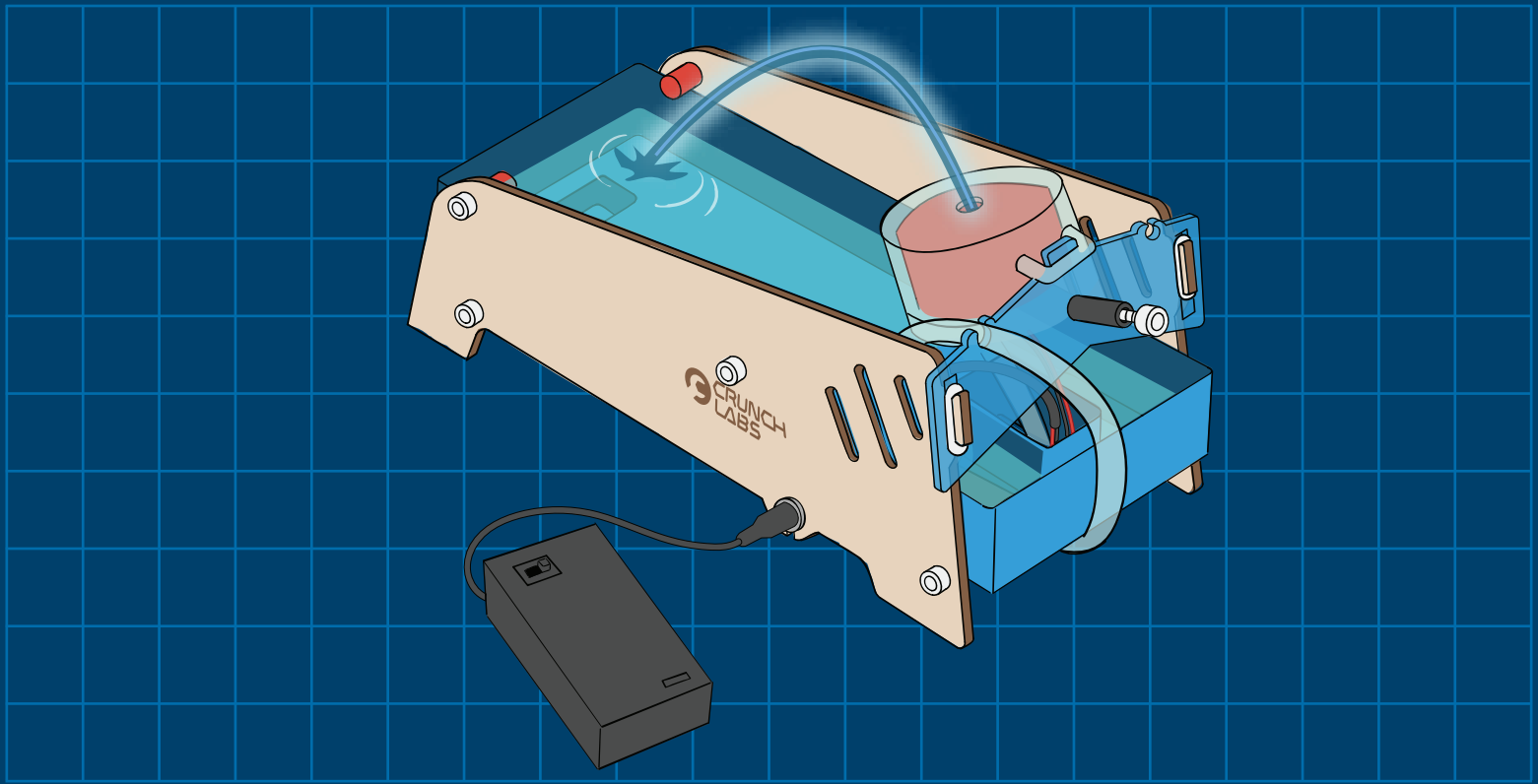
CRUNCH LABS

BUILD BOX

LAMINAR FLOW FOUNTAIN

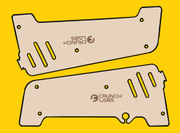


NEW VIDEO UNLOCKED

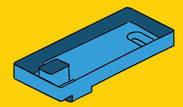
BUILD ALONG & LEARN WITH MARK ROBER

CRUNCHLABS.COM/FLOW

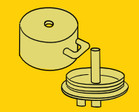
PARTS



wood pieces

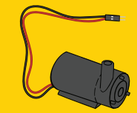


water tray



fountain parts

standoffs



motor

acrylic wall

barrel jack connector

LED light

o-rings

sponge

bolts

large o-ring

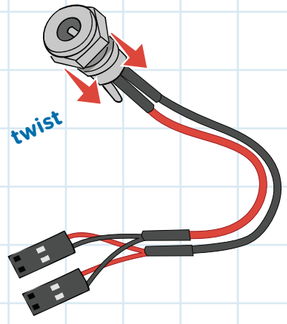
battery pack

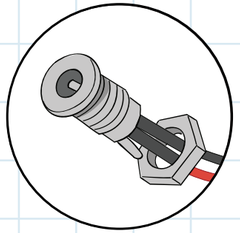
tubes

ball

For missing and replacement parts, visit “My Account” at crunchlabs.com and we’ll ship them to you for free.

1


twist



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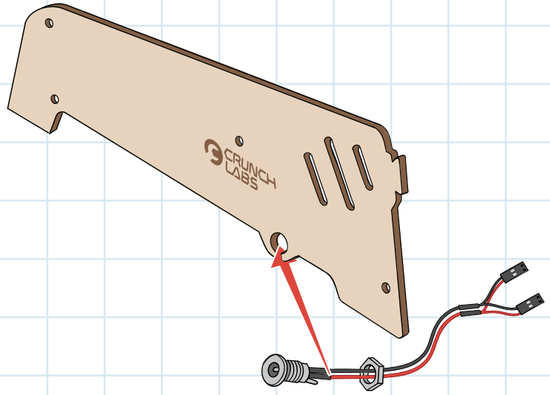
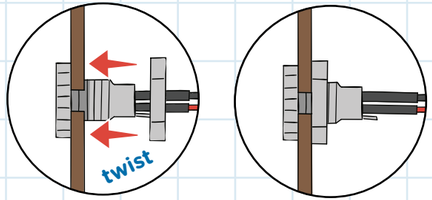

CRUNCH LABS


twist

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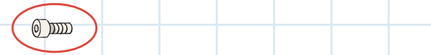
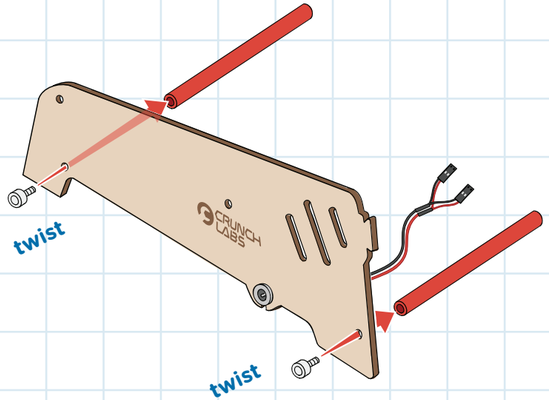
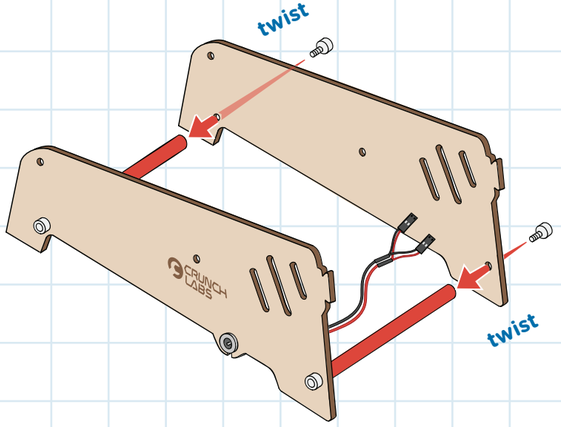
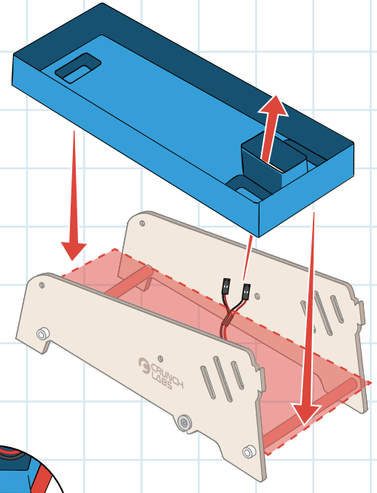


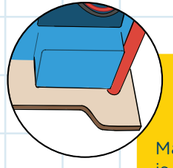

CRUNCH LABS
twist
twist

4


CRUNCH LABS
twist
twist

5

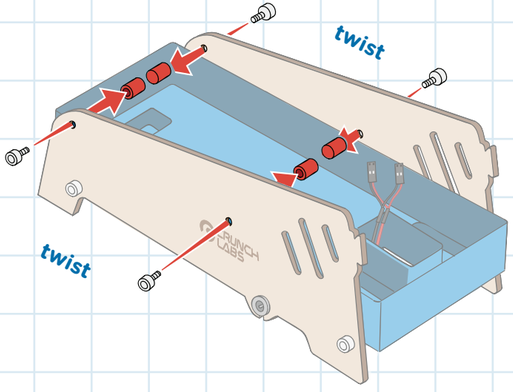




PRO TIP!

Make sure the dip in the tray is up against the rod.

6



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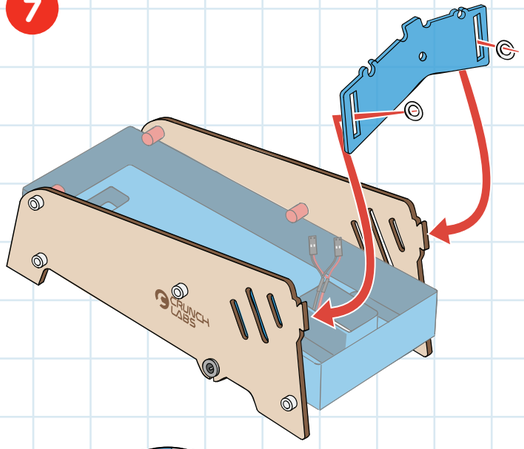

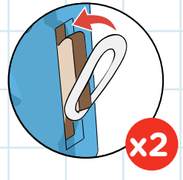

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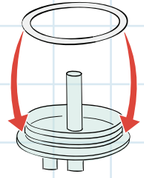

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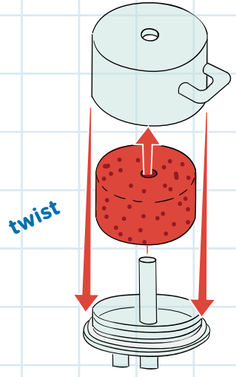

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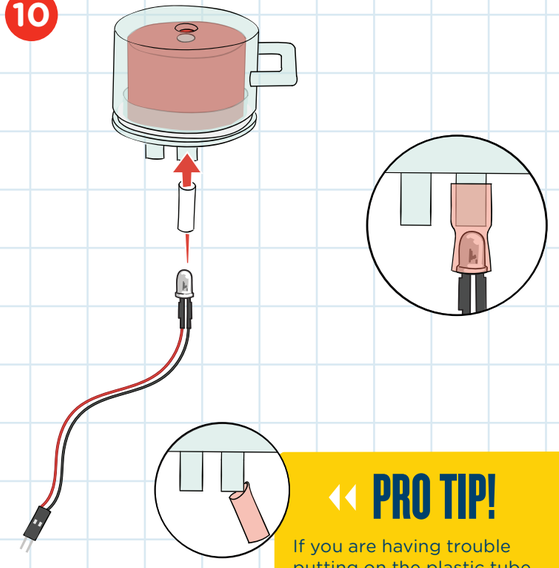
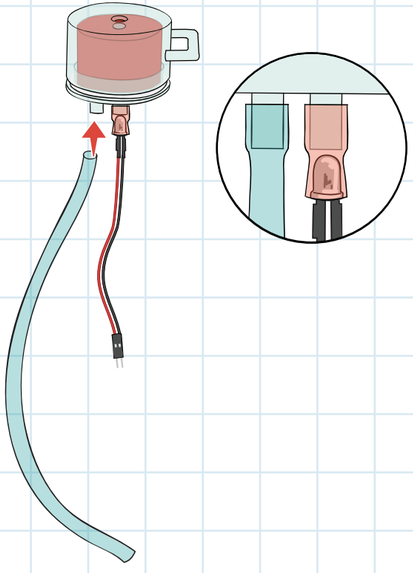


PRO TIP!

If you are having trouble putting on the plastic tube, try starting from an angle and twist while pushing.

11



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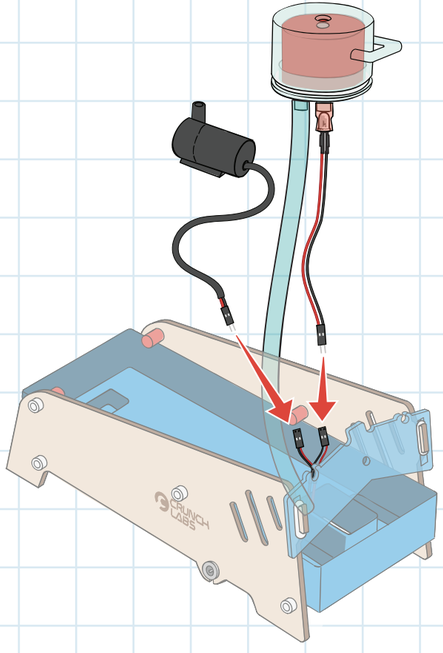

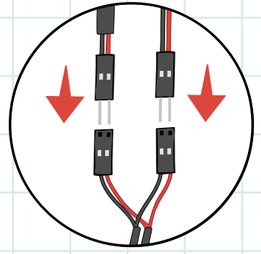

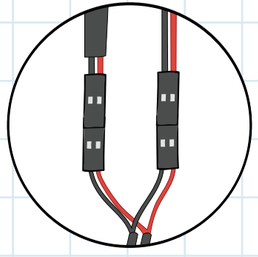

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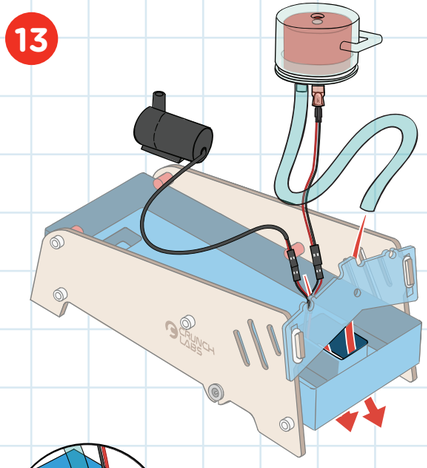
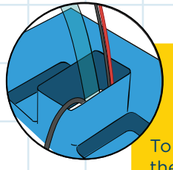
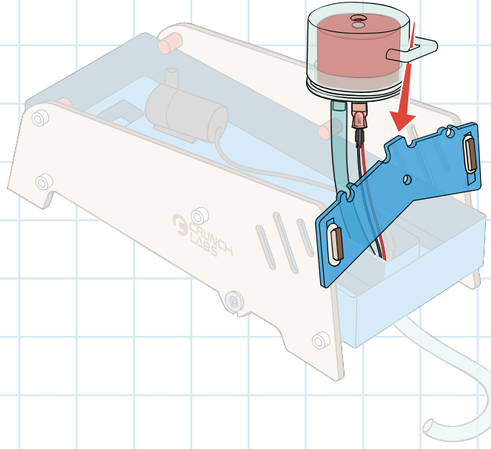




PRO TIP!

To protect the electronics from the water make sure you push the tubes and wires under the tray.

14



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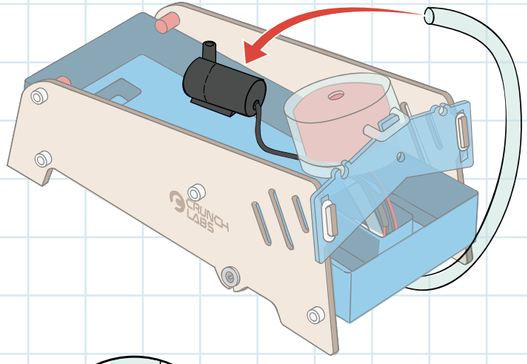

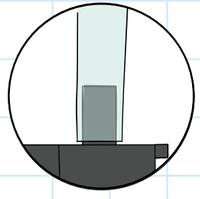

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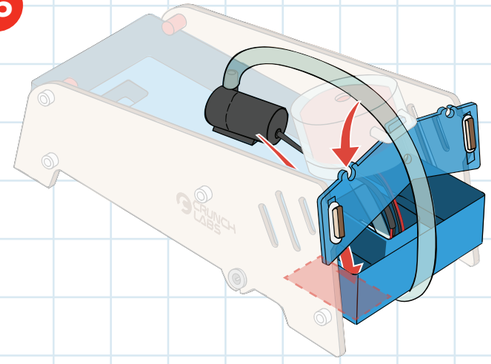
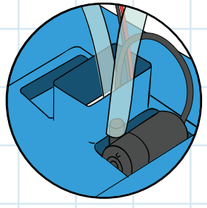
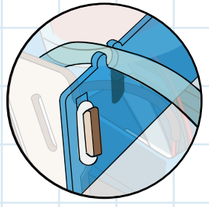
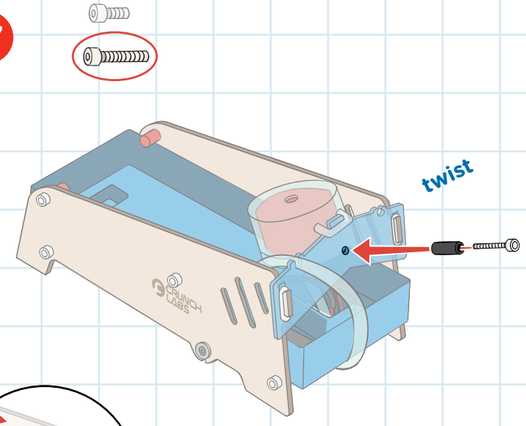


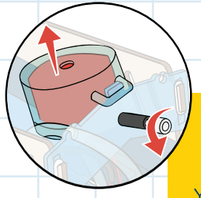




BUILD

17

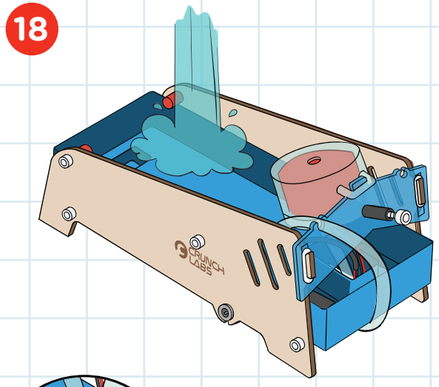


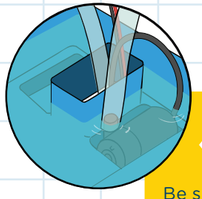


PRO TIP!

You can adjust your fountain's angle by turning the bolt clockwise.

18

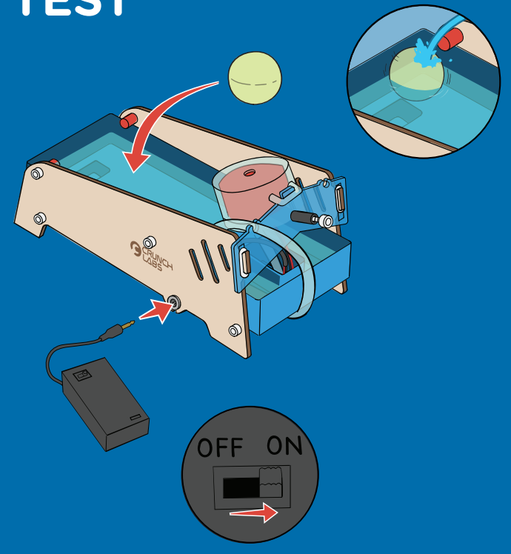




PRO TIP!

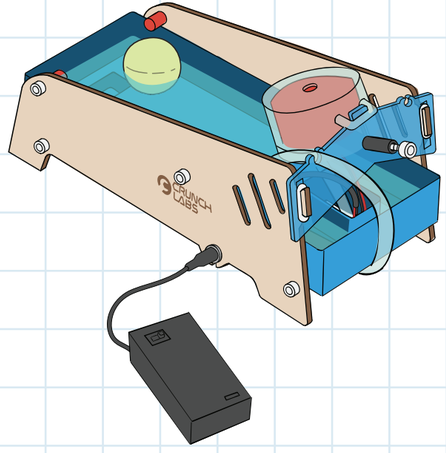
Be sure to add enough water to fully submerge the motor.

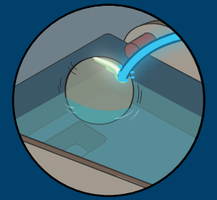
TEST



Having trouble? Watch the video at crunchlabs.com/flow

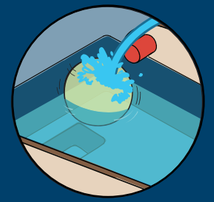
BUILT!





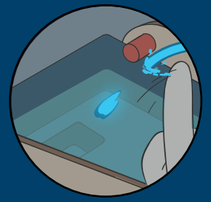
SPIN THE BALL

Spin the glowing ball in different directions.



WATER BALL

Capture the ball in the water stream and steer it around.



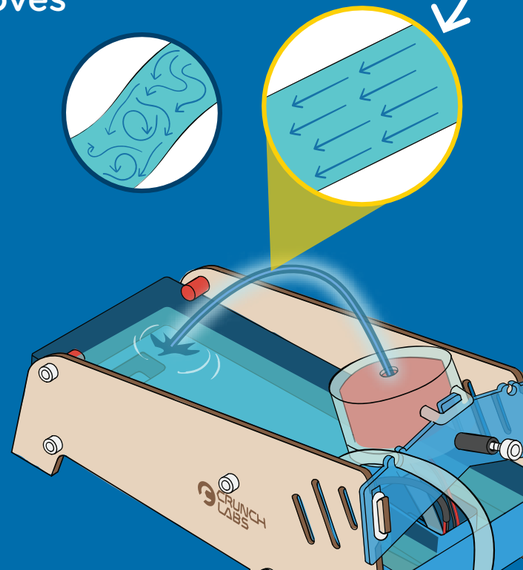
BREAK THE STREAM

Break the water stream with your finger to create “tracers”.

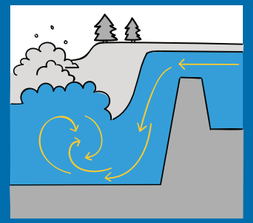
Laminar flow occurs when particles of the fluid follow smooth, parallel paths. In contrast, there is turbulent flow, which is characterized by mixing and swirling.

Laminar flow is when all of the fluid moves together in one direction.

Sometimes a stream of water will look like it’s frozen in time – this is a tell-tale sign of laminar flow! It means that all the particles of water are following parallel paths, resulting in an effect that looks frozen in time. In addition to being quite mesmerizing, laminar flow is used in many delicate processes such as chemical reactions, or growing crystals for electronic components.

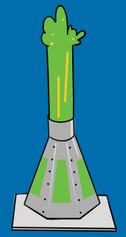


In engineering, the smooth and uniform properties of laminar flow can be leveraged to create pristine surfaces, or precise interactions. On the other hand, laminar flow can also be used artistically for unique effects.



FOUNTAIN OF COLORS

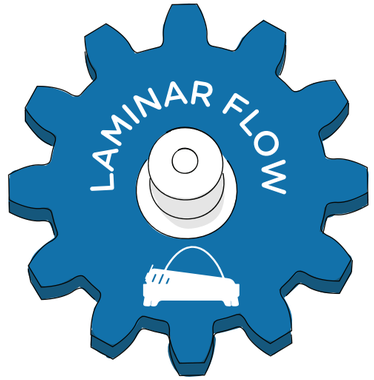
Certain weir dams and fountains will have sections of water that look smooth and frozen in place. These streams of water can be lit up with various colors to produce cool effects!

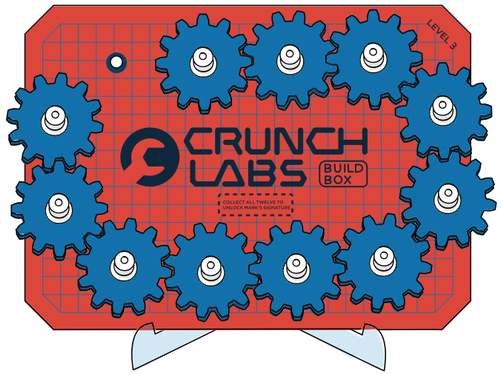


DEVIL'S TOOTHPASTE

In Mark's Video "Devil's Toothpaste" he uses the correct nozzle that is needed for laminar flow.

CONGRATULATIONS! You earned a gear badge for laminar flow



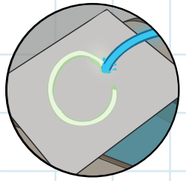


Don't forget to add your gear badge to your gear train!

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

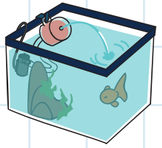
LIGHT UP!

Change your LED color!



DRAWING WITH WATER

Try drawing on glow paper!



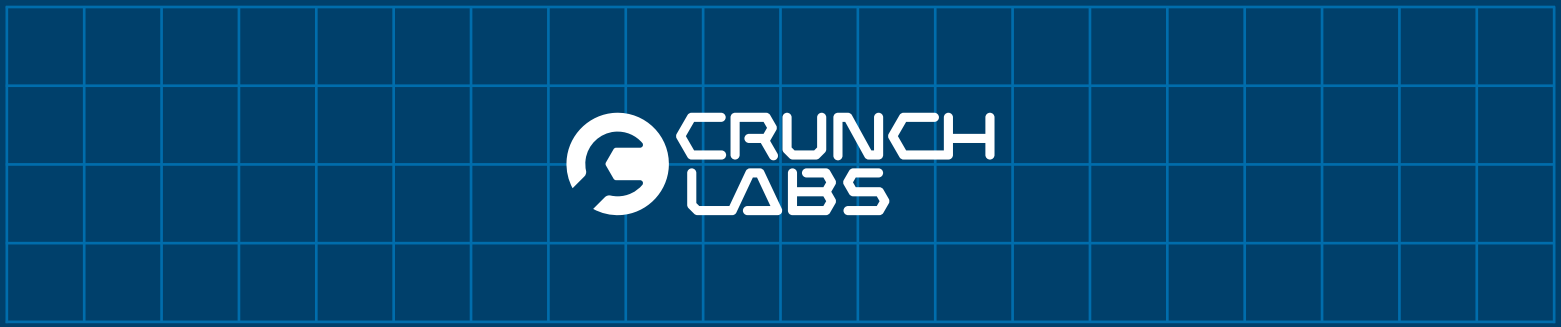
DISPLAY MODE

Move your fountain-head to a new home!

SHOW OFF YOUR BUILD

Share your funniest moments & 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 round trip 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****.*

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