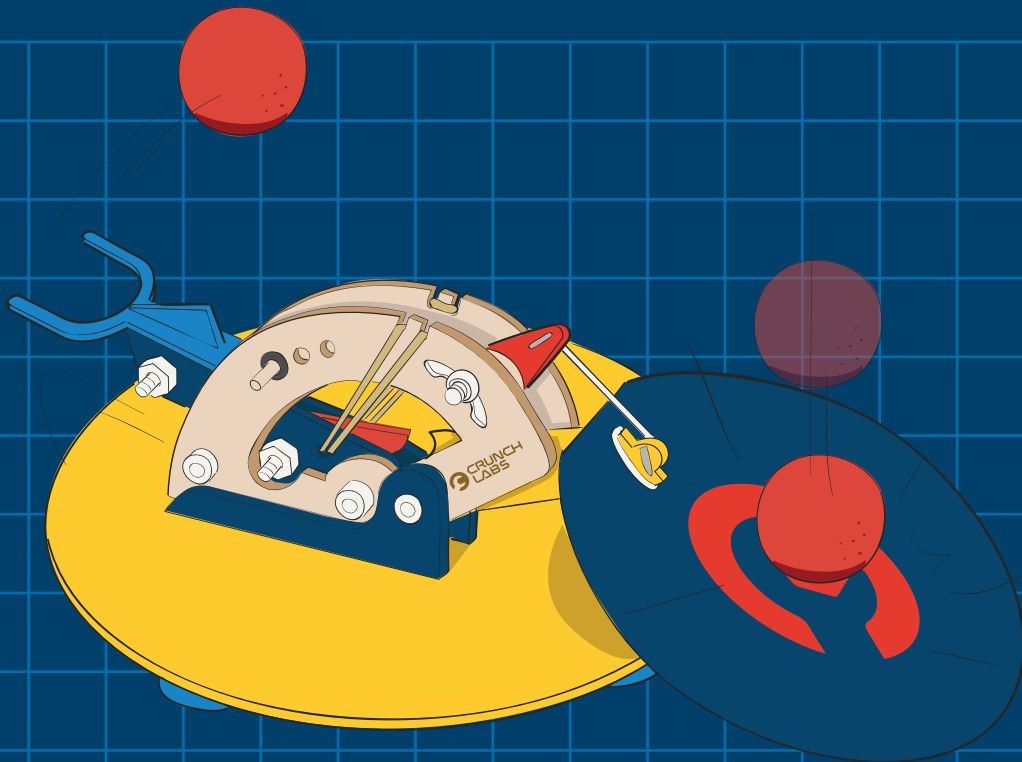




BUILD
BOX ►

DOMINO CATAPULT



NEW VIDEO UNLOCKED

BUILD ALONG & LEARN WITH MARK ROBER



[CRUNCHLABS.COM/PULT](https://crunchlabs.com/pult)

PARTS



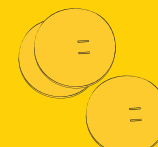
wood pieces



dowels



trigger plates



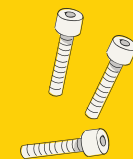
bases



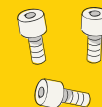
foam feet



twist ties



long bolts



short bolts



hex nuts



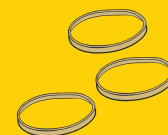
wing nuts



standoffs



spacers



rubber bands



medium
o-rings



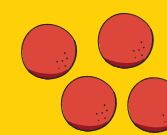
small
o-rings



basket

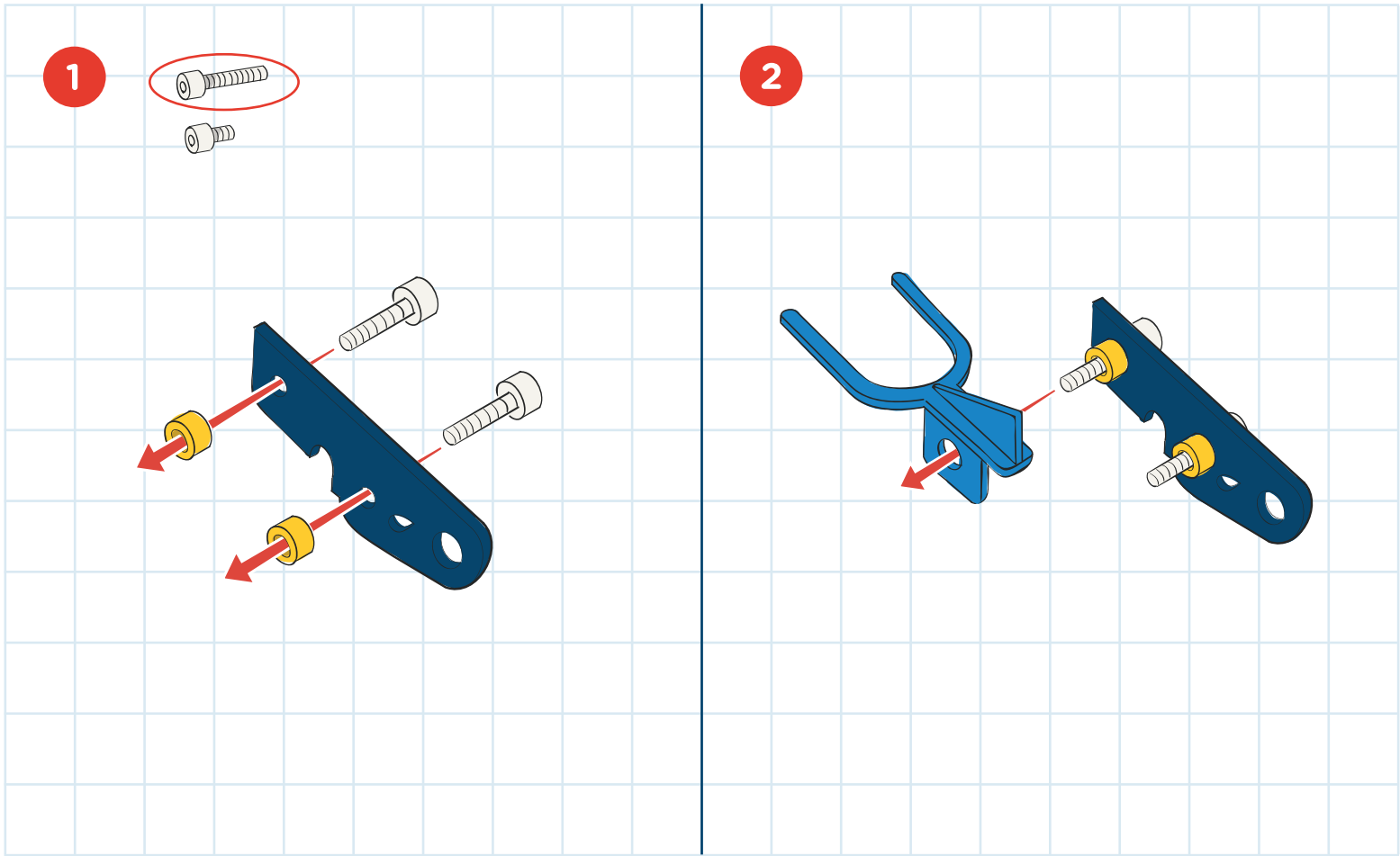


elastic cords

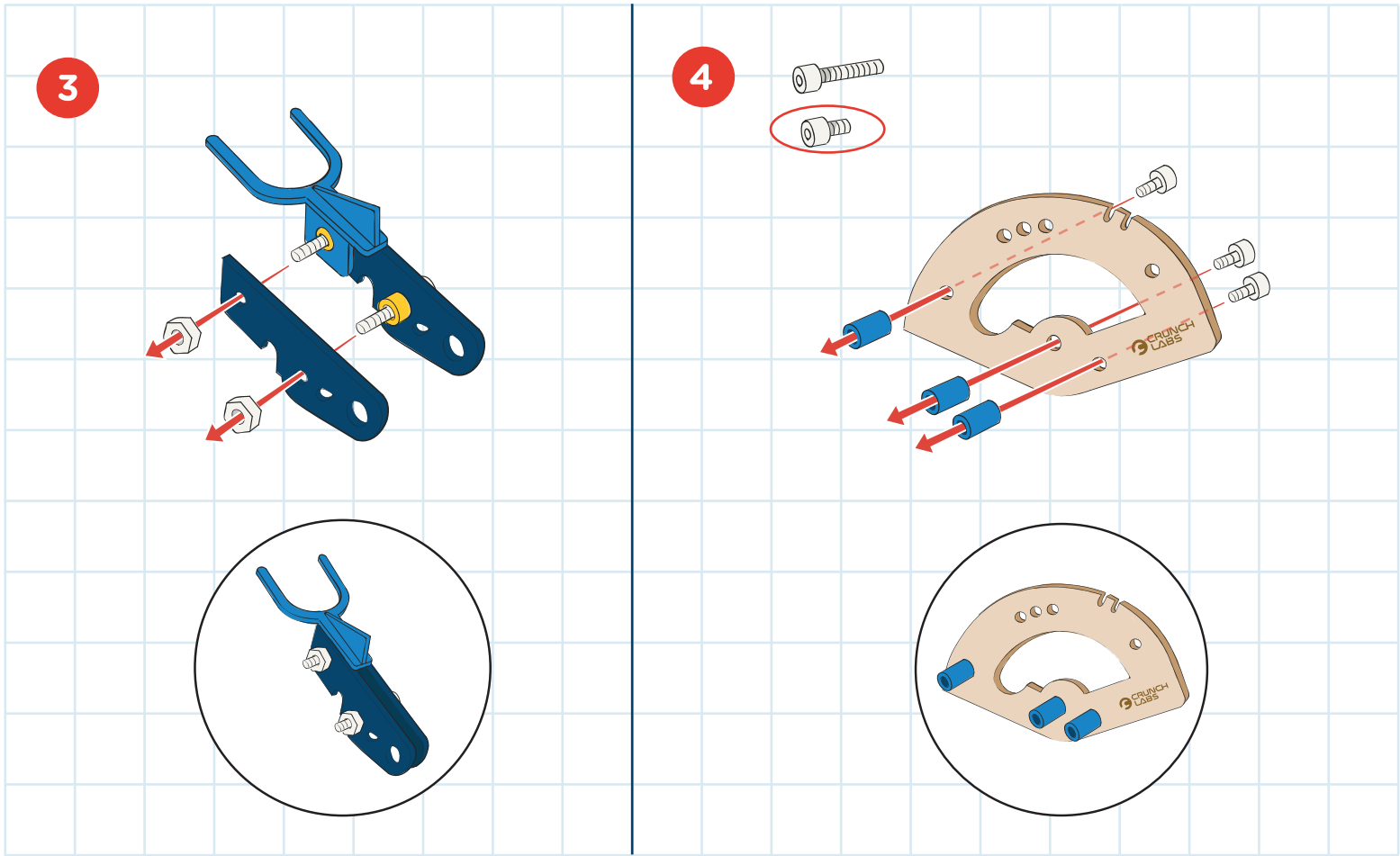


foam balls

BUILD

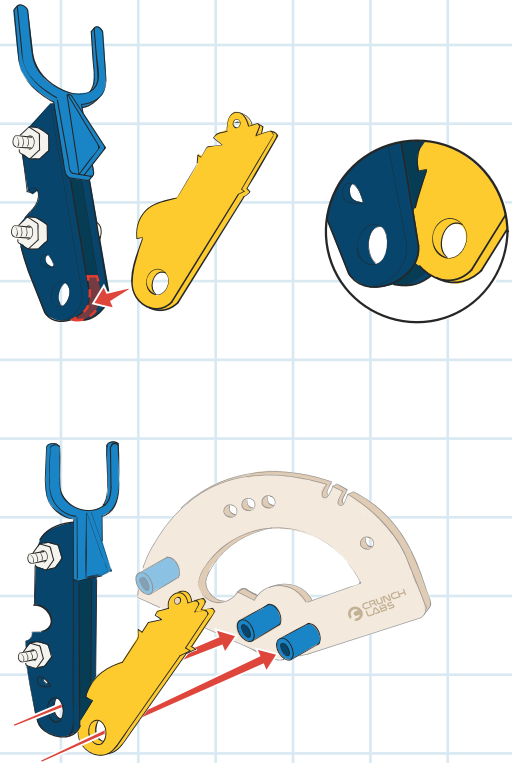


BUILD

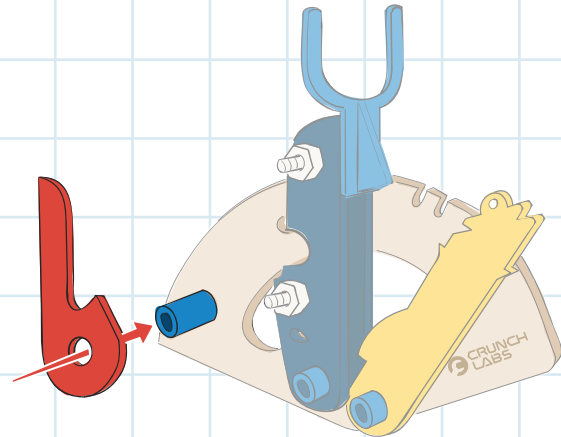


BUILD

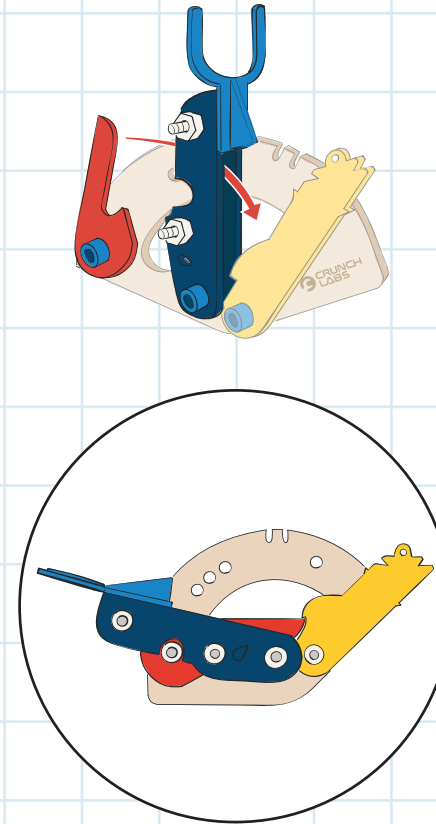
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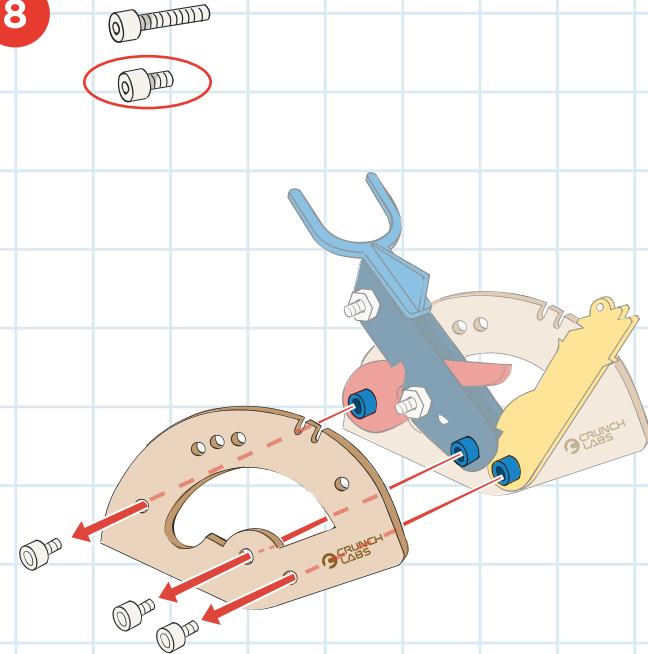
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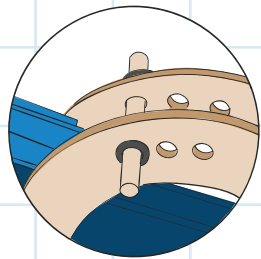
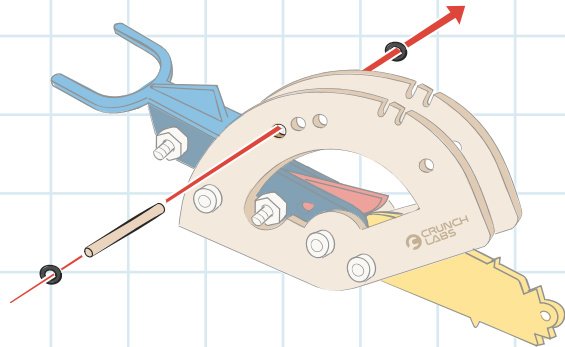


8



BUILD

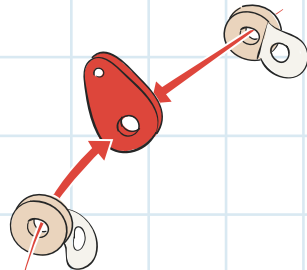
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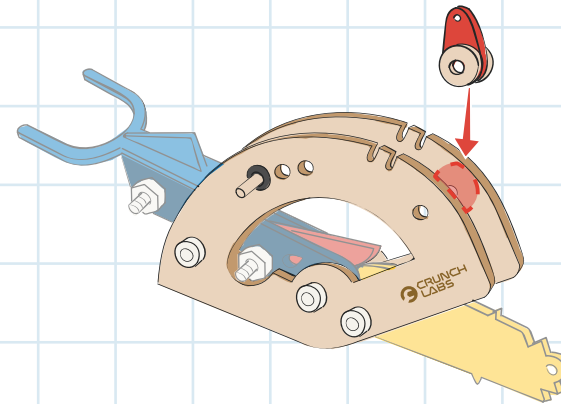
PRO TIP!

This dowel controls the angle, or **trajectory**, of the catapult's launch. This setting will make your ball have the tallest trajectory and shortest distance.

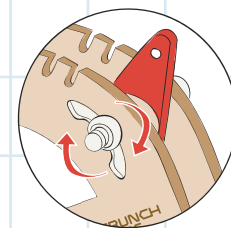
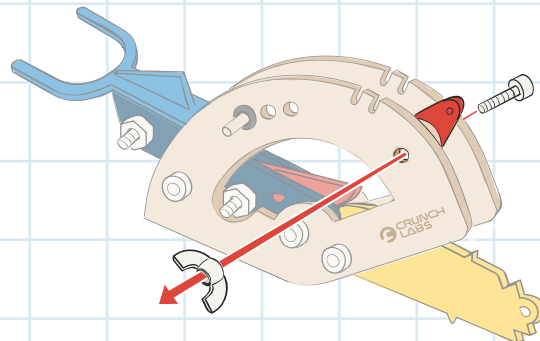
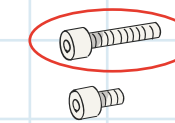
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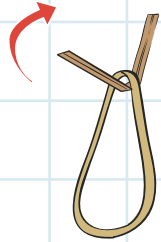
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12



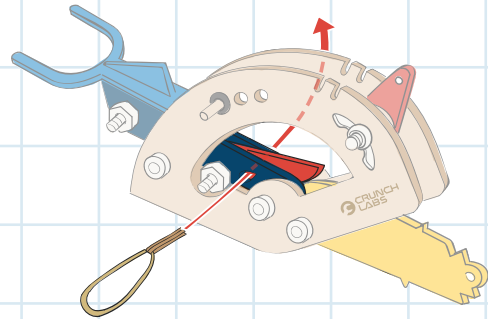
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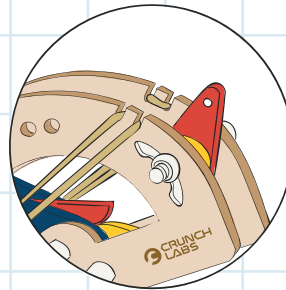
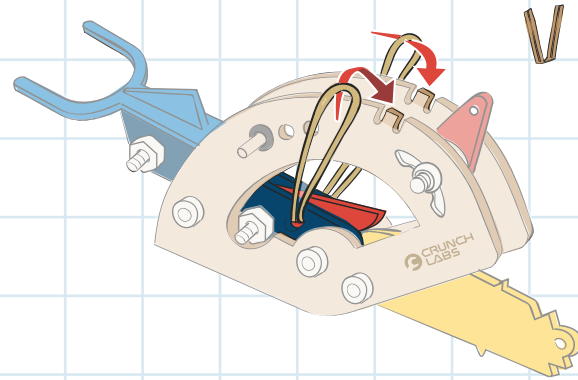
PRO TIP!

Jigs are custom tools that make building things easier. This twist tie jig helps you install the rubber band.

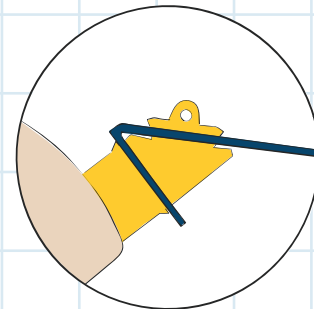
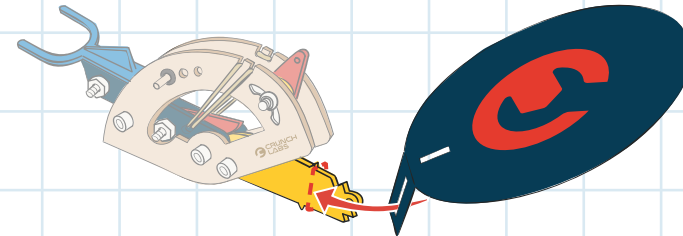
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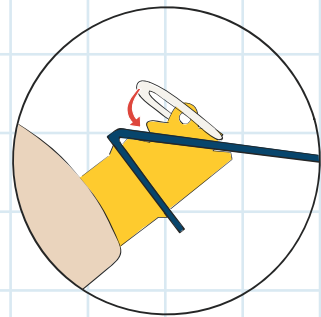
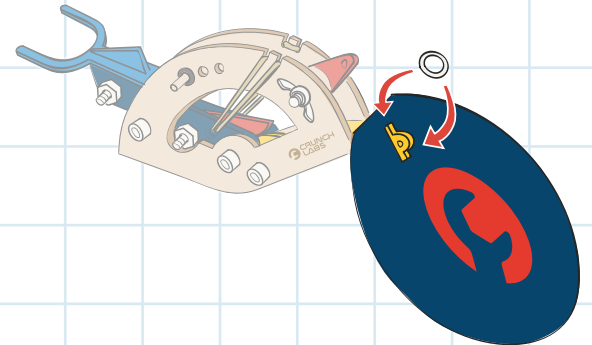
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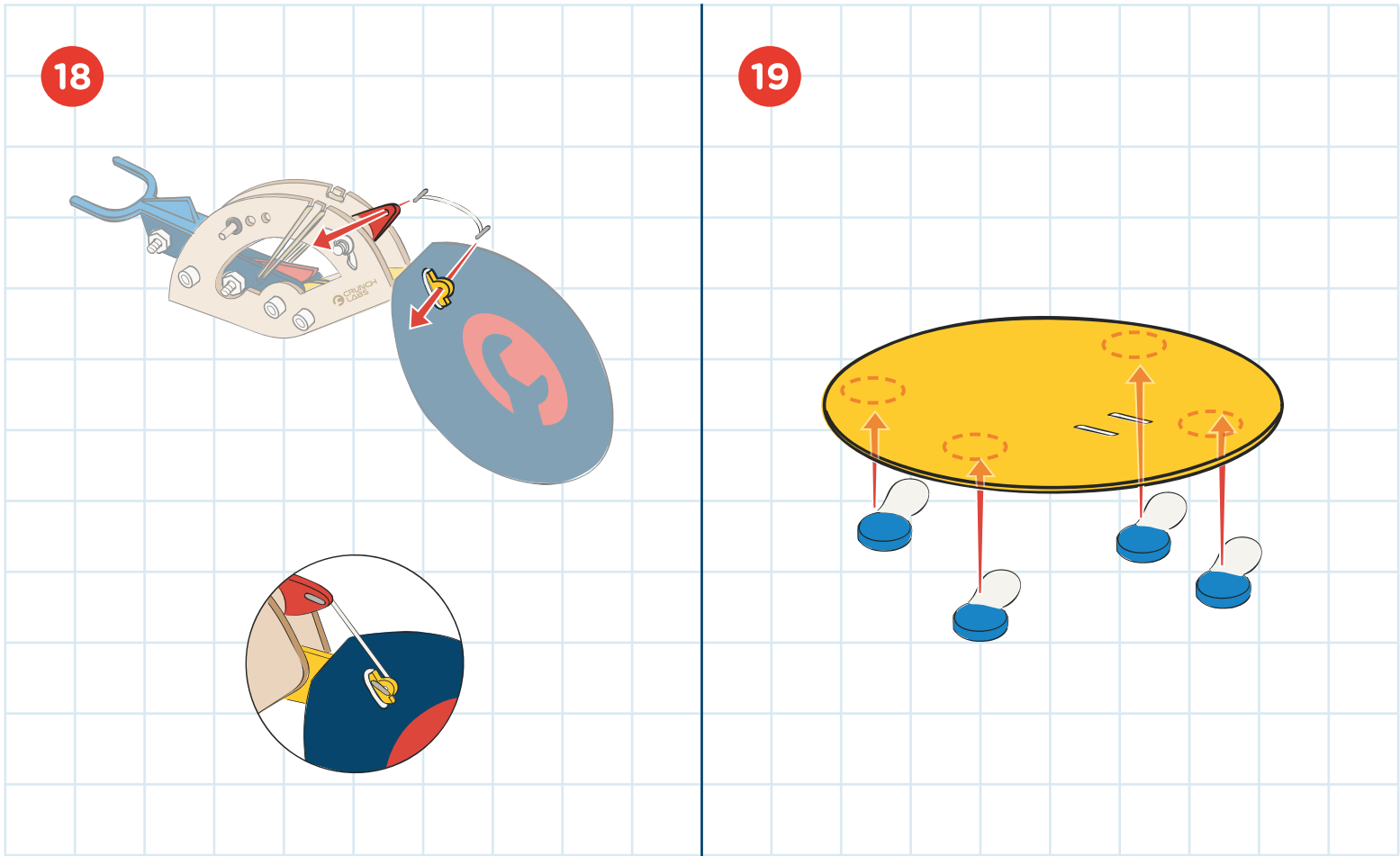
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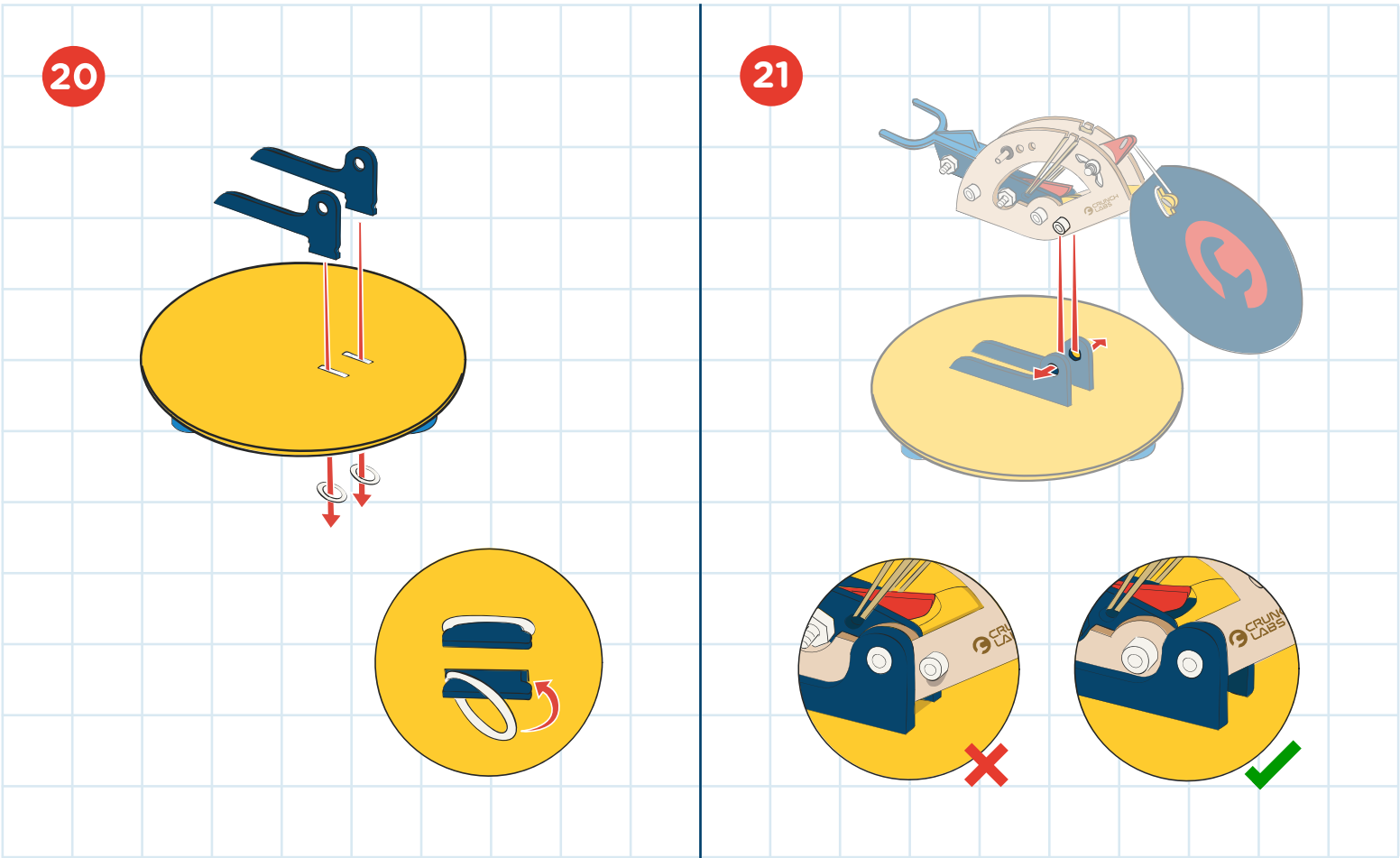
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BUILD

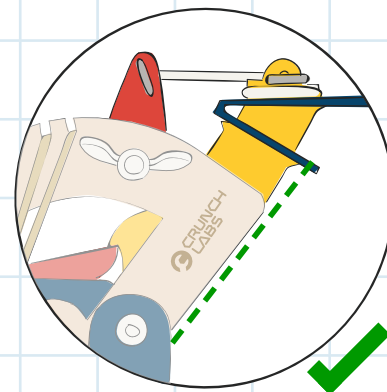
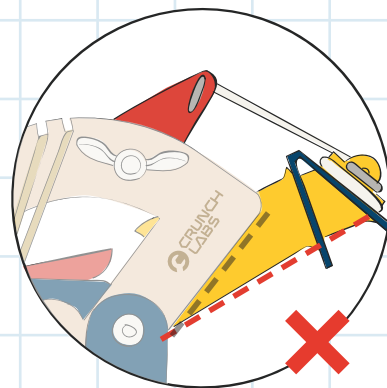
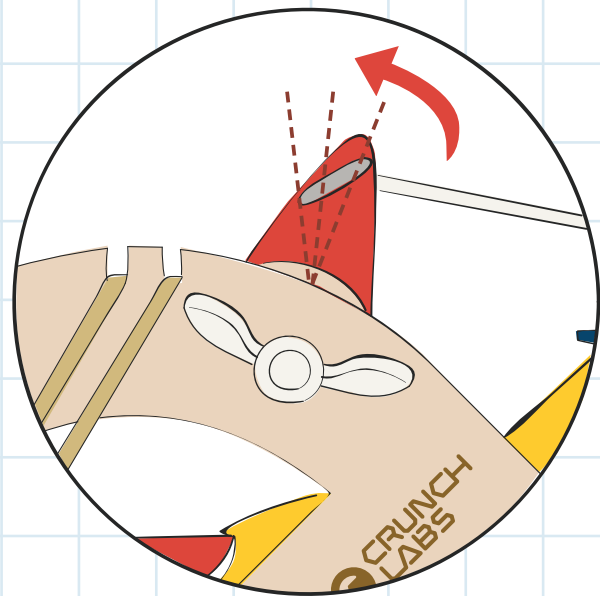


BUILD

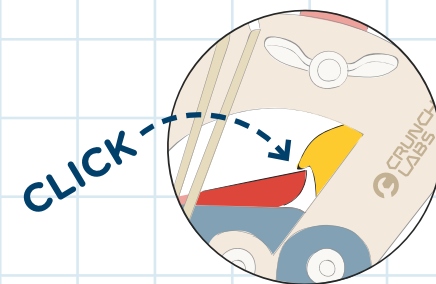
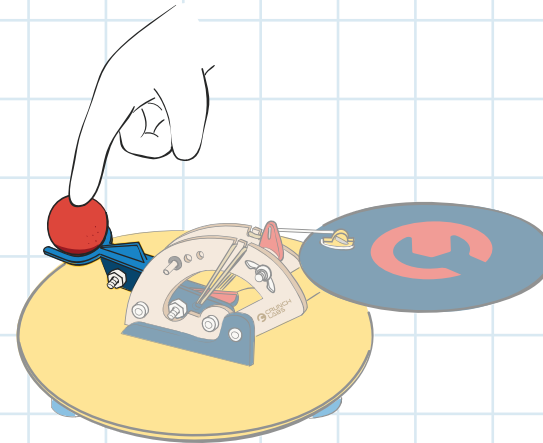


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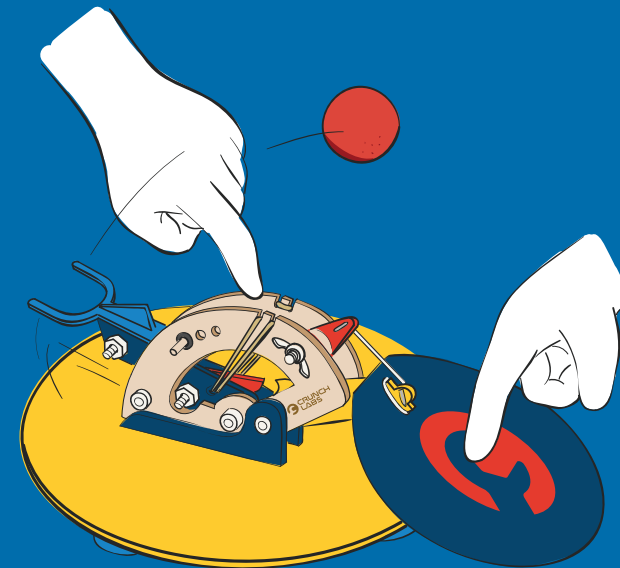
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23



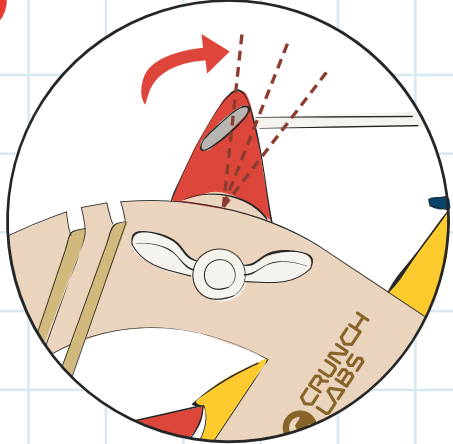
TEST



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

BUILD

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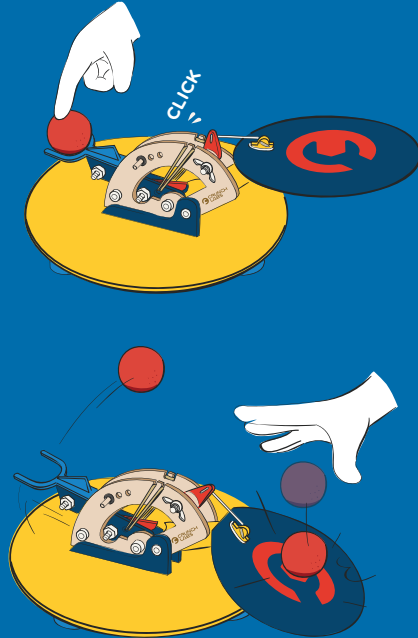


PRO TIPS



Push the little red lever forward to make your catapult more sensitive. To **calibrate** correctly, you should test as you go.

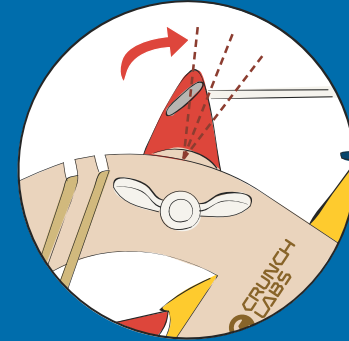
TEST



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

BUILD

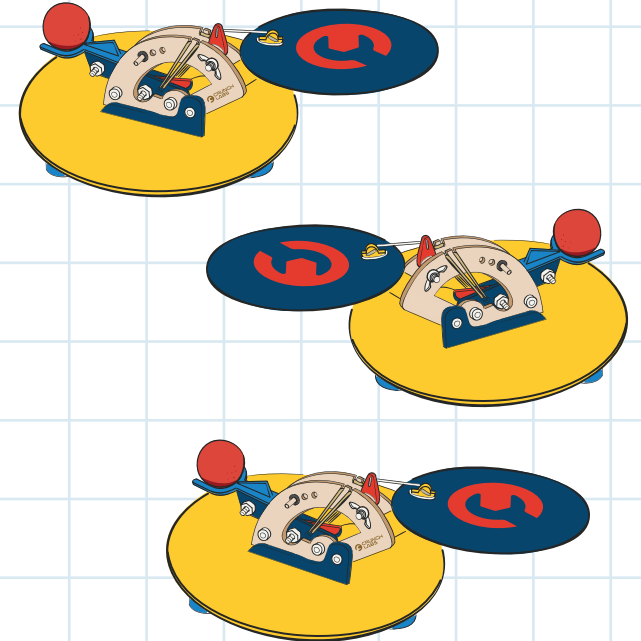
Not launching?



INCREASE the sensitivity of your catapult until it can be triggered by a dropped ball.

BUILT!

x3



PLAY



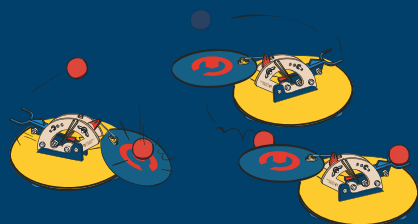
EASY AS 1-2-3

Build all three catapults and have them trigger each other. Start by launching one and see where it lands. That's where you should put the next catapult.



GOING THE DISTANCE

Set your catapults to high power by moving the dowel. The farther apart they are, the harder it is to set off all three! Measure the distances for a high score.



DYNAMIC DUEL

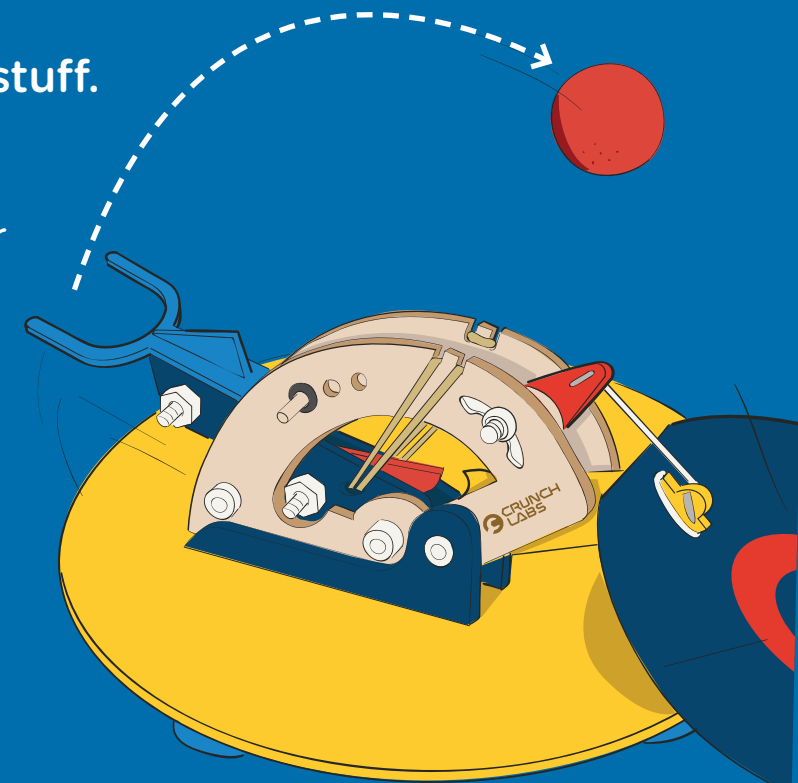
Find a friend and each pick a launcher. Set up a third launcher in the middle. Take turns and see who can trigger the target catapult first.

THINK

Projectile motion is the curved path of an object when launched.

Basically, it's the science of tossing stuff.

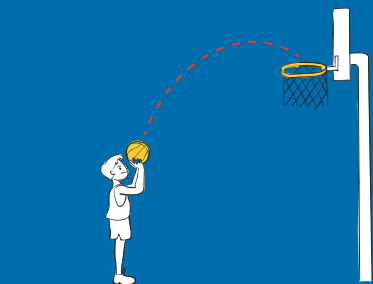
Your Domino Catapults can launch balls to the same spot over and over thanks to the science of projectile motion. The motion of a projectile is affected by the angle (*trajectory*), the force (*velocity*), and gravity. By keeping those things the same each time you launch, you can predict where your ball will land.



THINK

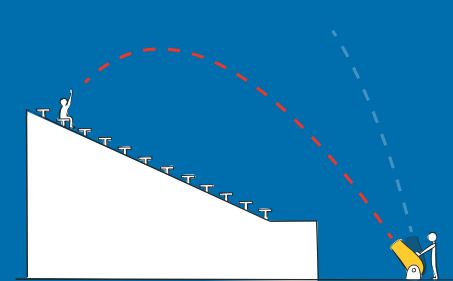
Find projectile motion in other machines!

Usually, it's pretty useful to know where things are going to land. *Especially* when they're flying through the air! One way to adjust a projectile's motion is to change the angle it launches with, or the **trajectory**.



BASKETBALL

When you're playing sports, your body becomes a projectile motion machine. To make a basket, you guess what **trajectory** to throw the ball. When the ball follows the right arc through the air – swish!



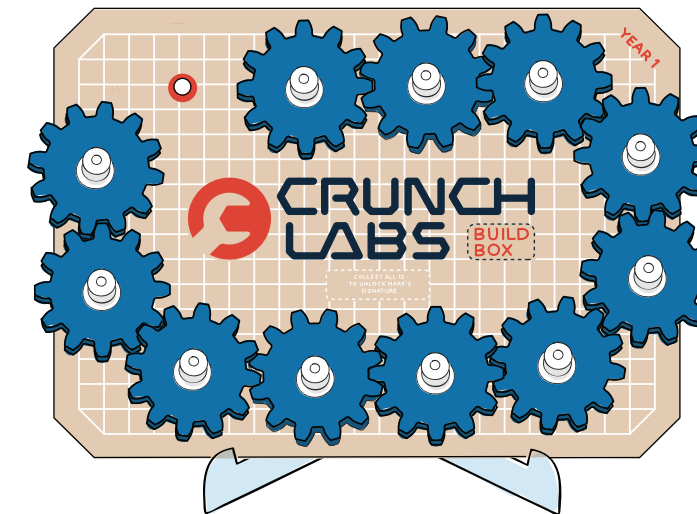
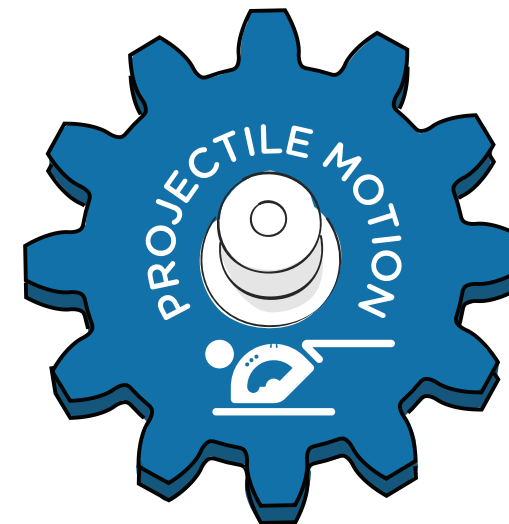
T-SHIRT CANNON

Mark built the world's largest t-shirt cannon to send shirts flying into stadium seats. The first shirt went through the roof! Mark had to adjust the cannon's **trajectory** down to make sure it landed in the seats.

THINK

CONGRATULATIONS!

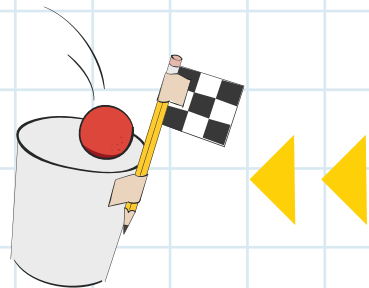
You earned a gear badge for projectile motion



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

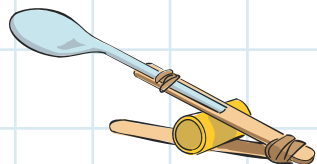
CRUNCH

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



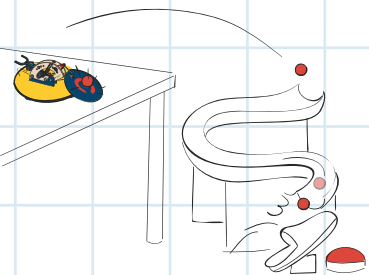
HOLE-IN-ONE

Cut out a paper flag and attach it to a cup or bucket. Set the cup at the end of your catapults as a goal.



DIY CATAPULT

Build a rubber band powered spoon catapult. For an extra challenge, design a way to change the trajectory.



RUBE GOLDBERG MACHINE

Keep the chain reaction going and use your domino catapults to activate something else. Ring a bell or deliver a snack. See how many objects you can use!

SHOW OFF YOUR BUILD



Share your craziest trick shots & coolest mods!

#crunchlabs #dominocatapult    



WARNING: Do not aim at eyes or face. These instructions contain important information, do not throw away.

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.