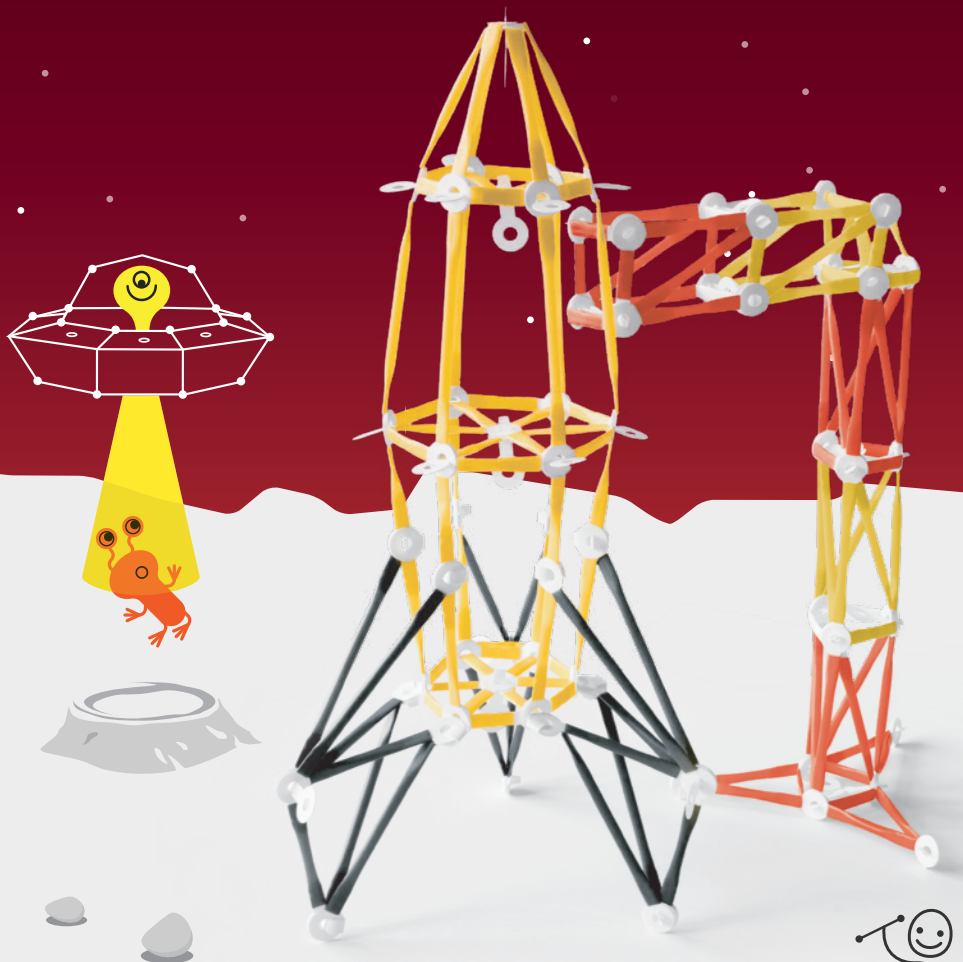


Strawbees.

CRAZY SCIENTIST KIT



ACTIVITY BOOKLET



DEAR MAKER,

Every project you will create with this kit is a process. We believe it is important to encourage multiple attempts to create something new. Through the process of experimentation, testing ideas, prototyping then modifying your project the result that is not important, but the journey and exploration. We encourage everyone to curiously embrace our activities with a great sense of enthusiasm and humor because we believe that problem solving with a positive attitude fosters creativity.

The projects serve as inspiration to get started; we encourage you to use your imagination and modify them for a different outcome each time. When you first use the Strawbees connectors you are beginning the exploration of mechanics and investigating 3D structures used in our daily lives.

Let your ideas take shape and free build, remix, disassemble then build again. You can animate your ideas with simple addition of moving joints making extending arms or an opening umbrella. You can find more activities and support for Strawbees construction-techniques with other materials at learning.strawbees.com.

Welcome to our community of endless ideas put together solely to support your creativity. If you have any questions, we will be happy to address them at strawbees.com/support.

Happy making!

DREAM BIG, BUILD BIGGER!

TIPS AND TRICKS

This is a collection of tips and tricks you can use for understanding the basics of using the connectors. Try making each part as you read through in this guide.

CONNECT & LOCK
CONNECTING TO STRAWS
USING LOCKS
JOINT

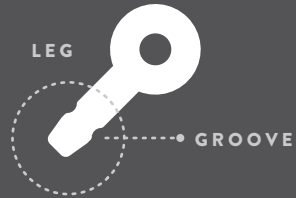
STRAWBEES CONNECTORS

Strawbees are connectors that can be used for combining straws, connectors, cardboard, and many types of materials.

HEAD

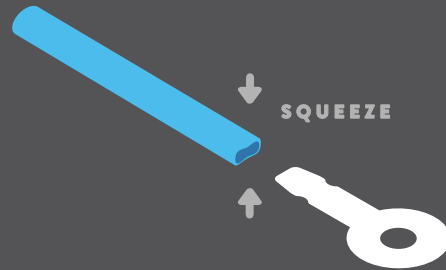


LEG



CONNECTING TO STRAWS

Squeeze the opening of the straw for easy insertion.



CONNECT & LOCK



OR



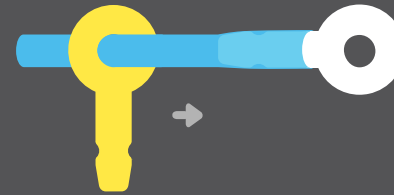
Slip the head into the groove of the leg and **listen for the click**. This will secure connectors and allow rotation.

Push the leg **all the way through** the head to lock in place. The connectors are limited in rotation.

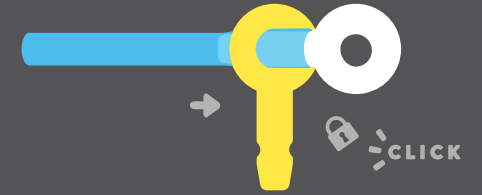
LOCKING STRAWS

You can lock the straws in place to prevent slipping.

1.



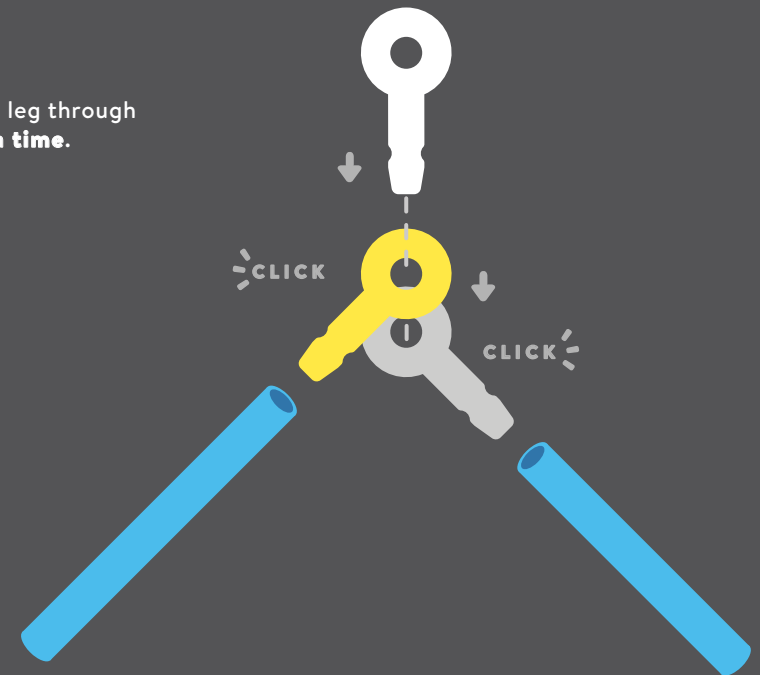
2.



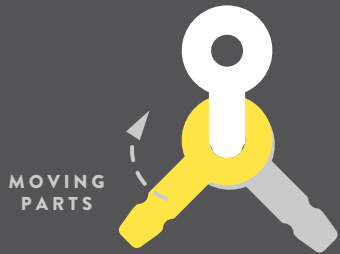
Snap onto the **groove**.

JOINT

Push the Strawbee leg through each head **one at a time**.

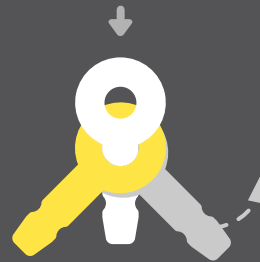


MOVING JOINT



Snap the heads of connectors into the groove of another to create a fully rotating joint.

LOCKED JOINT



Push the leg all the way through to create a joint with limited movement.

FRICTION LOCK



FOLD THE HEAD ALL THE WAY TO THE BACK



PUSH THE LEG THROUGH THE HOLE TO LOCK

With the moving joint fold the head over to the other side and snap it into the groove to create a friction lock. The legs will shift and hold in different positions.

DREAM BIG

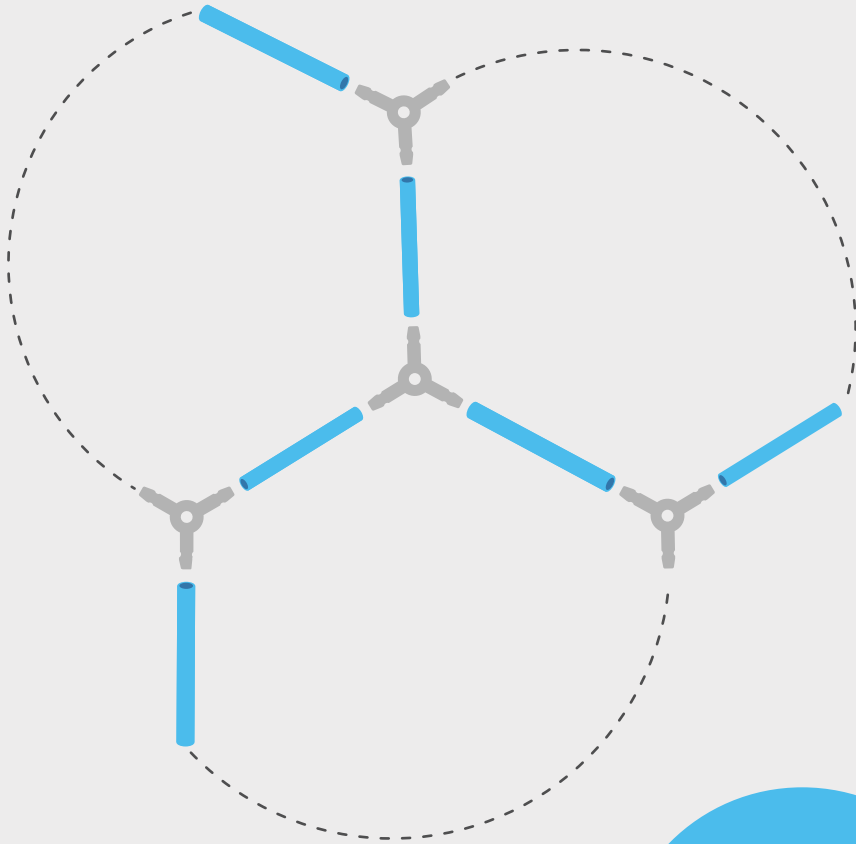
Do you think you can create something with Strawbees just by thinking about it?

Probably not BUT we can keep our thinking hats on and start building instead! Here are a few projects you can start with to get your imagination flowing and your hands building.

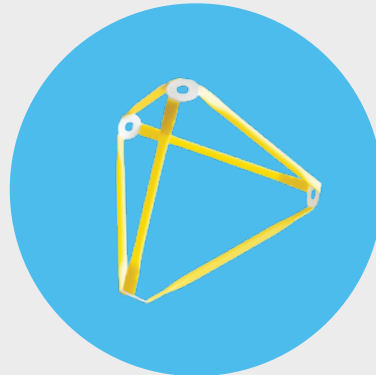
PYRAMID
CUBE
PUPPY
ARM
TABLET STAND
CATAPULT
OCTAHEDRON
SHOE-MERANG
DINO HEAD
DODECAHEDRON
BRIDGE
SPINNER
MORPHING ARM
BUTTERFLY
CATAPULT V2
ICOSOHEDRON
UMBRELLA
DOME
CHALLENGES..

PYRAMID

Pyramids are also known as tetrahedrons, fancy name for this pointed fella. Pro tip: Bend the Strawbee arms to make the edges sharper.

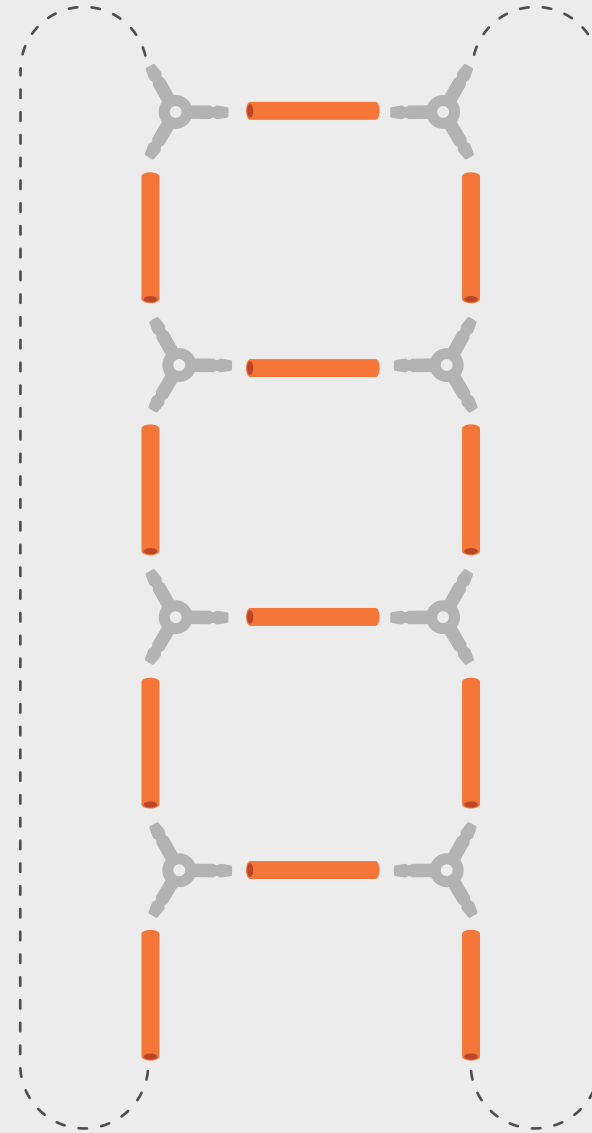


It looks like this in →
the end!

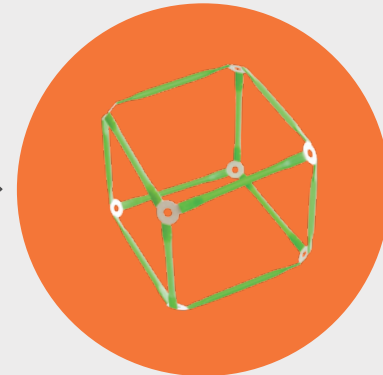


CUBE

You can turn a pyramid into a cube by adding some straws and Strawbees. They are perfect to stack on top of each other.

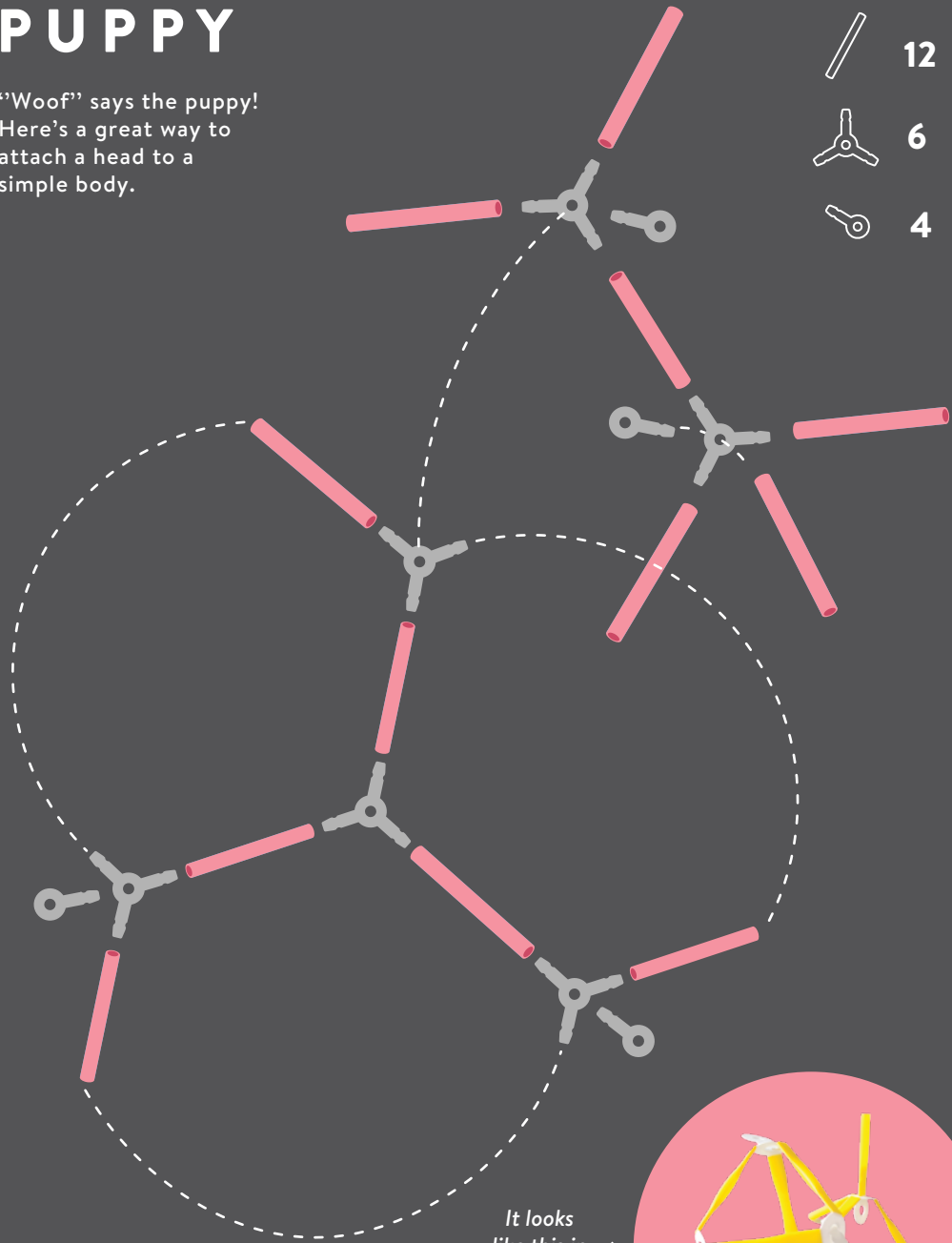


It looks like this in →
the end!



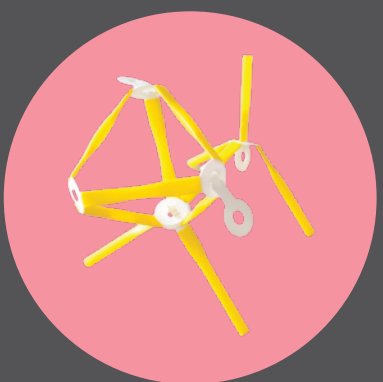
PUPPY

“Woof!” says the puppy!
Here’s a great way to
attach a head to a
simple body.



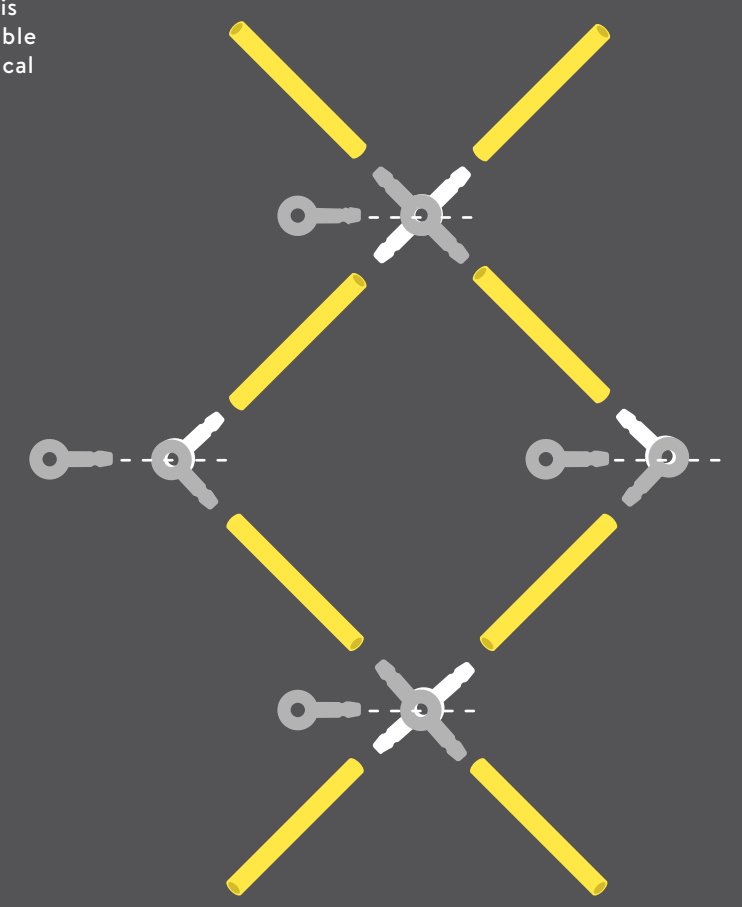
-  12
-  6
-  4

It looks
like this in
the end! →



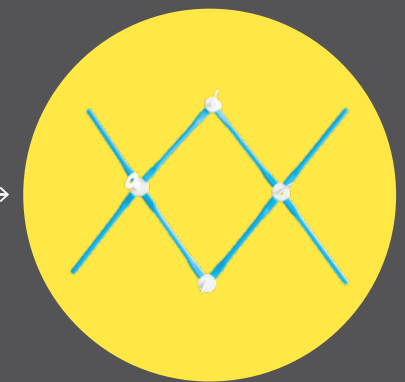
ARM

You can make an arm in
so many ways that it's
even hard to count! This
is a simple but very stable
way to build a mechanical
articulated arm.



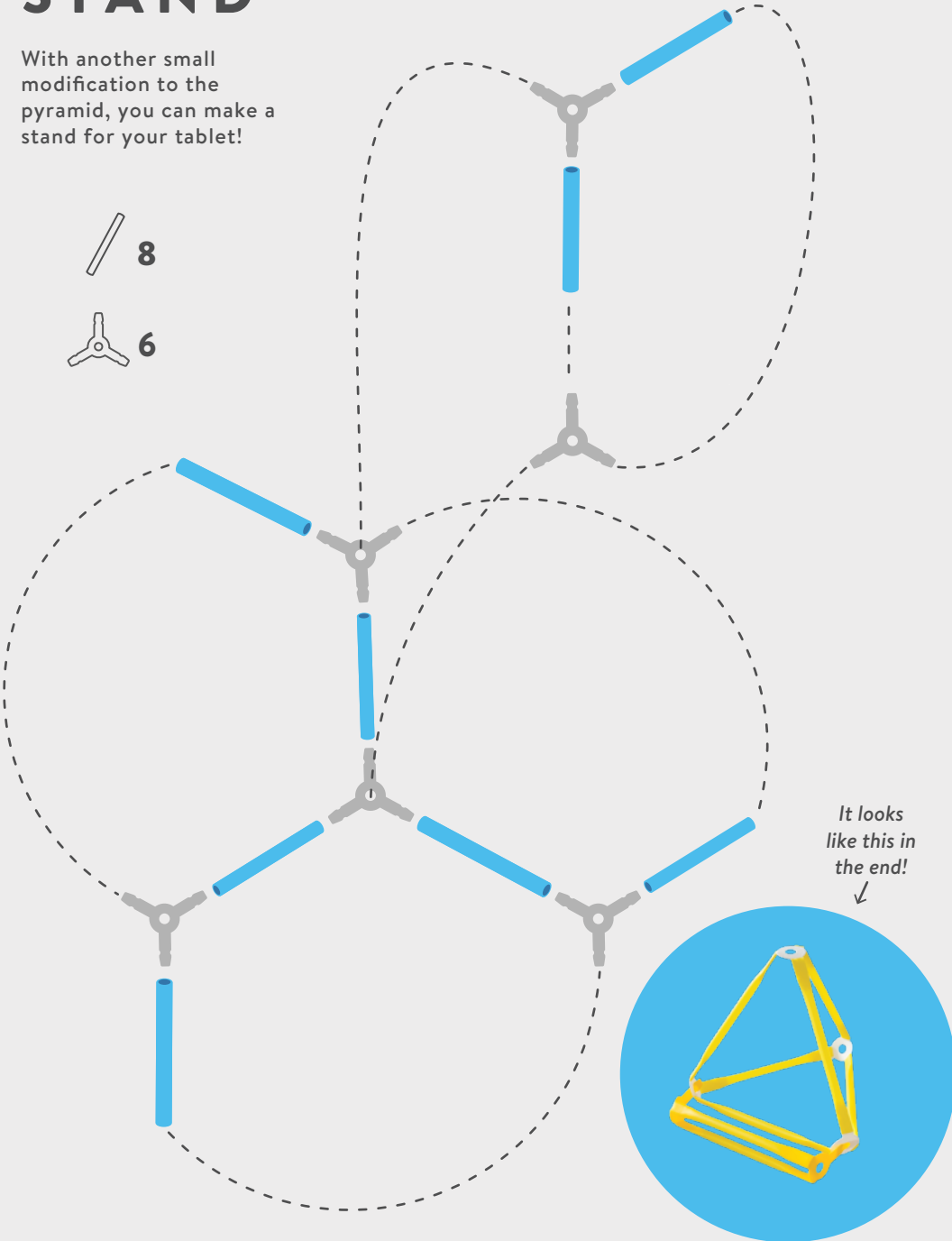
-  8
-  8
-  4

It looks
like this in
the end! →



TABLET STAND

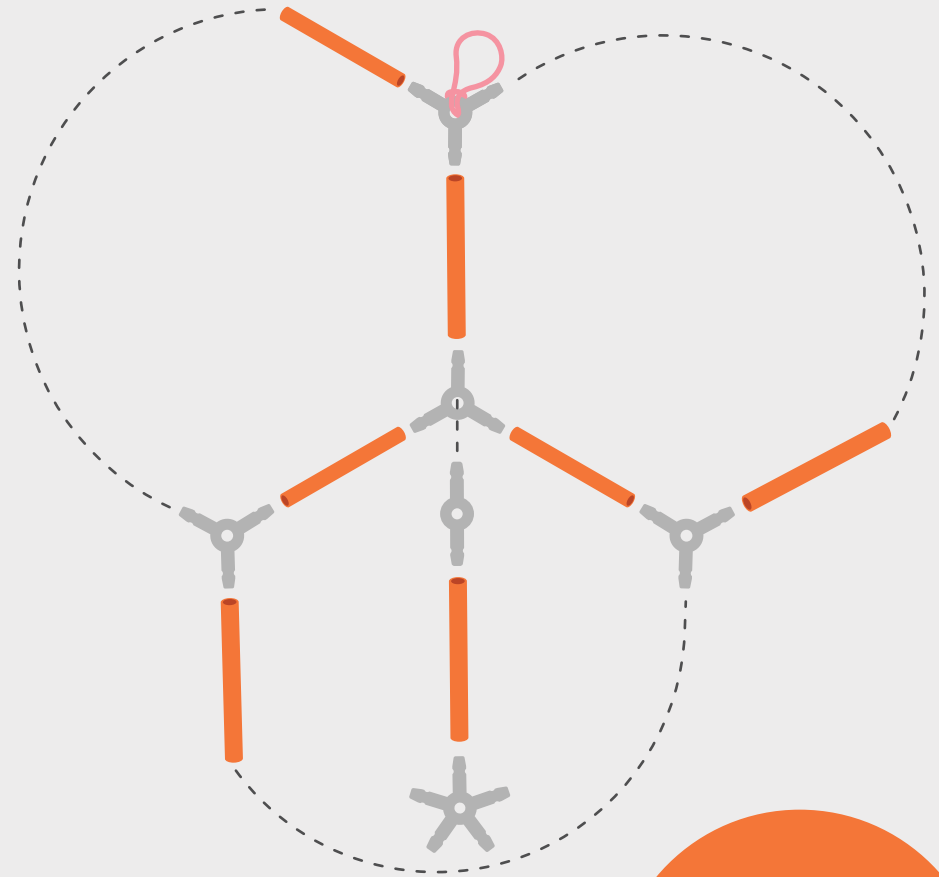
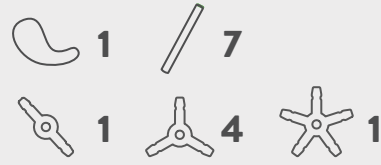
With another small modification to the pyramid, you can make a stand for your tablet!



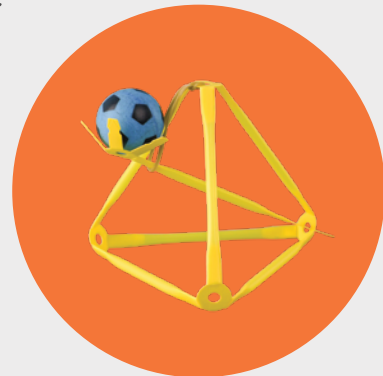
It looks like this in the end!

CATAPULT

Remember the pyramid? We added some new cool features to it!

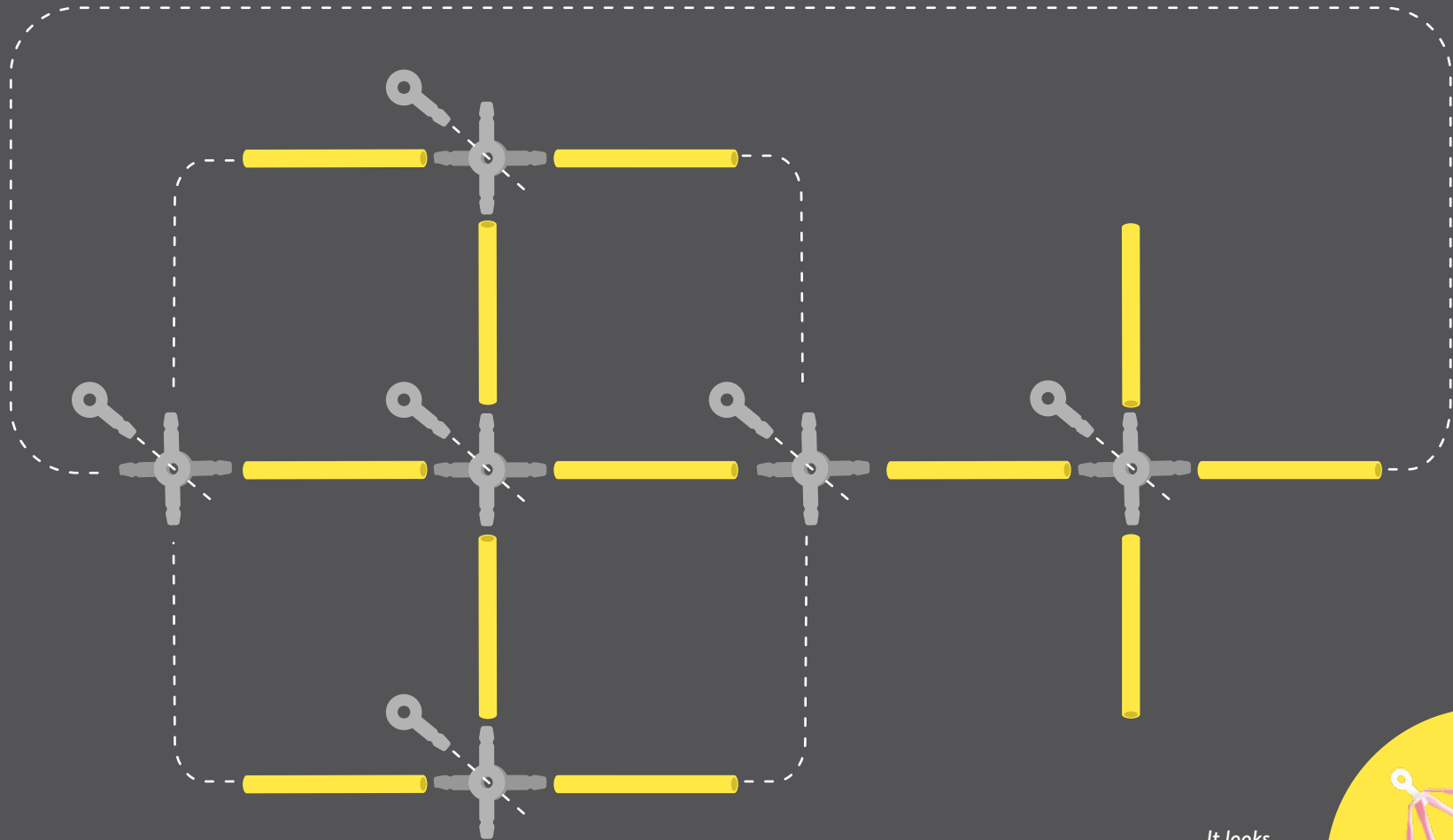


It looks like this in the end! →

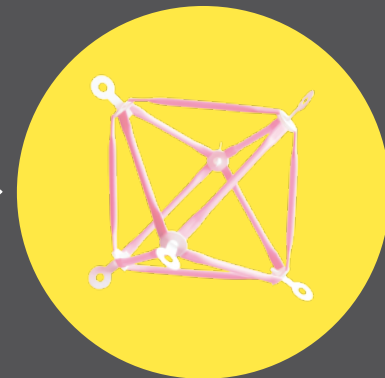


OCTAHEDRON

The octahedron has eight equal faces and is the third platonic solid. Because there are only triangles the shape is very strong.



It looks like this in →
the end!



SHOE-MERANG

Here's a cool shoe-merang that returns to you after you throw it!

1.

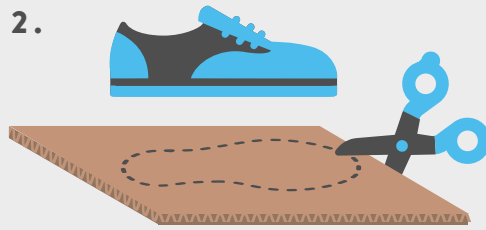
If you are **right-handed**, you should use the left foot as a model.



If you are **left-handed**, you should use the right foot as a model.

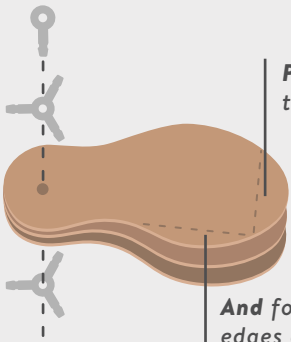


2.



Alternatively, you can cut out these shapes from the inside flap of the box.

3.



Pro tip: Fold these edges up...

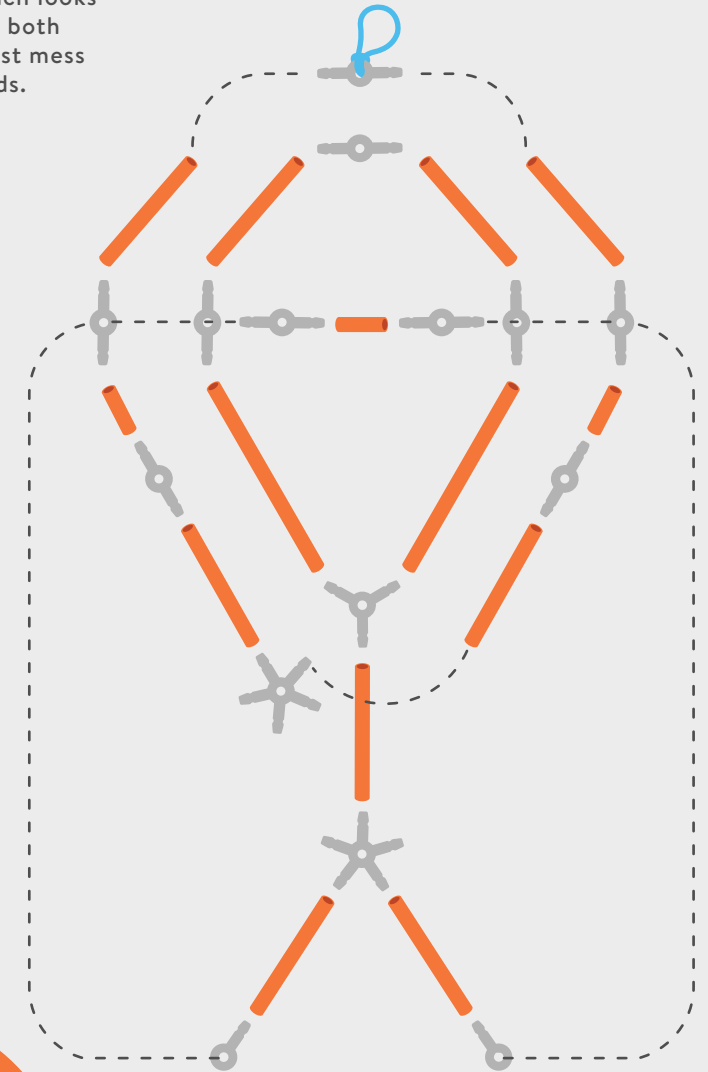
And fold the trailing edges down for a sharper turn!

It looks like this in the end! →

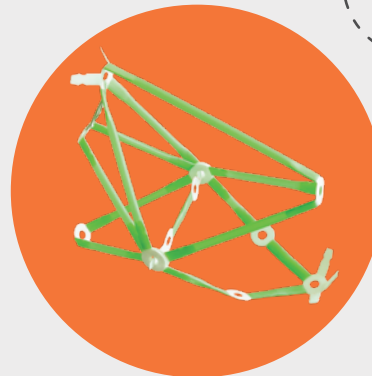


DINO HEAD

With this mechanism which looks like a dino head, you can both handle nasty things or just mess around biting your friends.



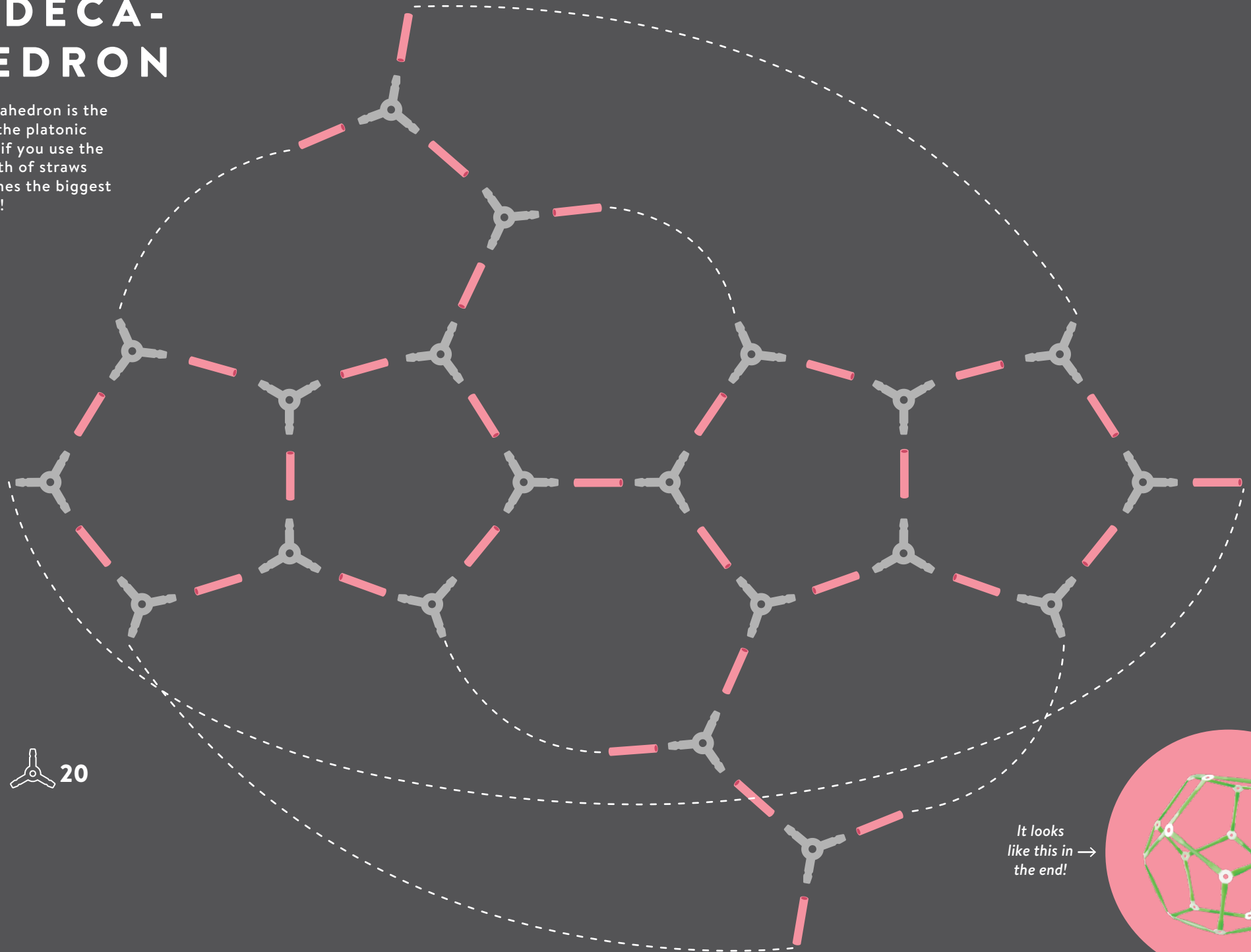
← It looks like this in the end!



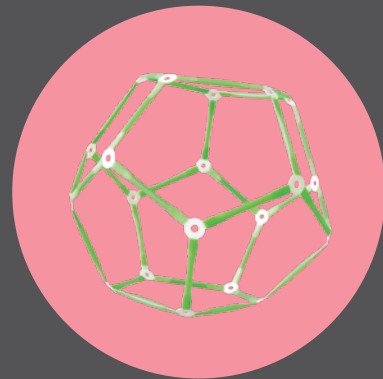
DODECA- -HEDRON

The dodecahedron is the fourth of the platonic solids and if you use the same length of straws this becomes the biggest of the five!

30 20



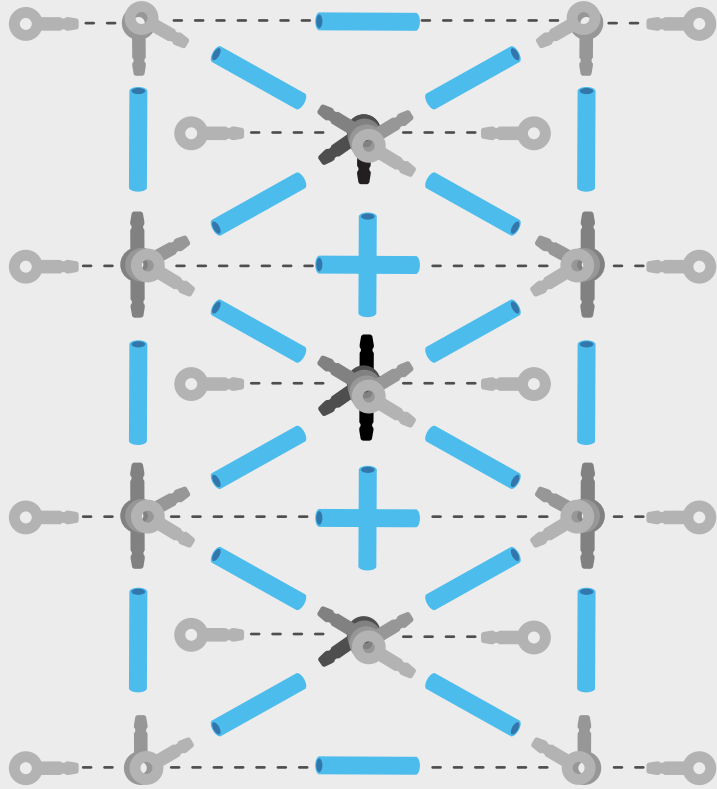
It looks like this in the end! →



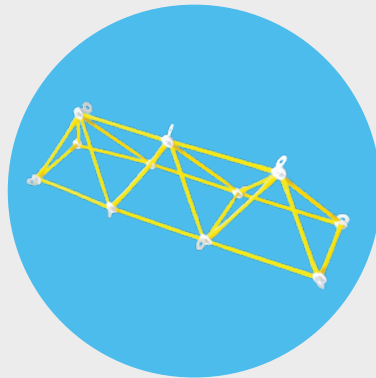
BRIDGE

Bridges are a great way to connect two places and to cross between them. Here's a simple way of building a simple modular bridge.

 24  39  4



It looks like this in the end! →



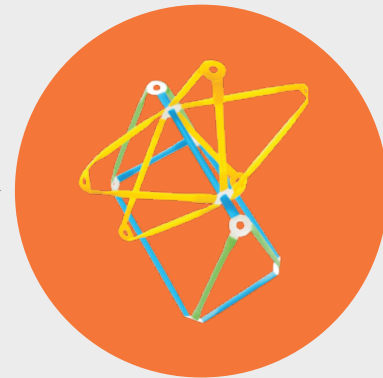
SPINNER

This is a simple solution for making a standing spinning object. Place it under the tap to see it spin really fast.

 15  4  5  6  2

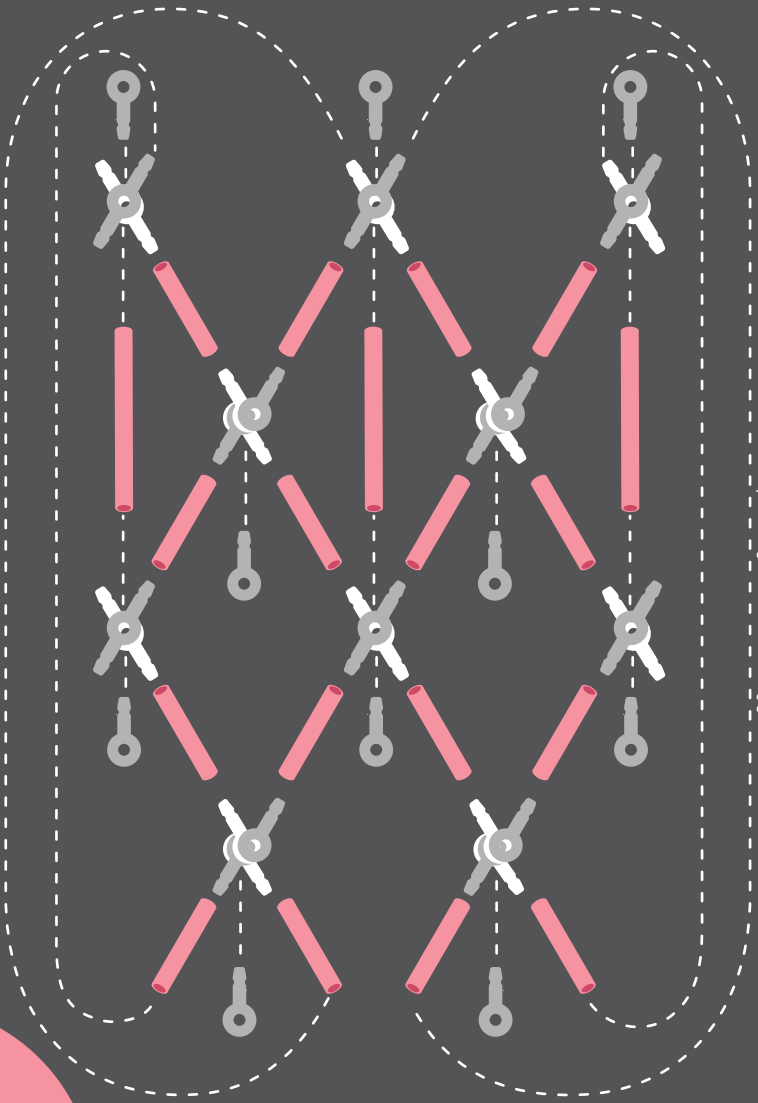


It looks like this in the end! →







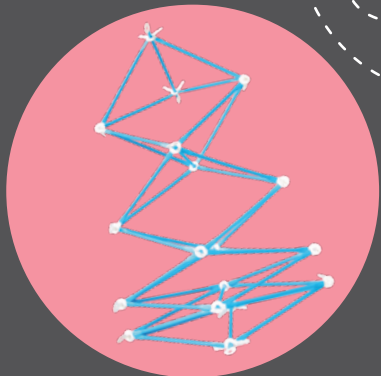
MORPHING ARM

This is a wonderful example of a structure that you can repeat over and over again. It is collapsible which means it can compress and expand and can twist and bend in interesting ways. This instruction shows the first two repetitions but you can continue making as many as you like!



continue repeating to make it bigger

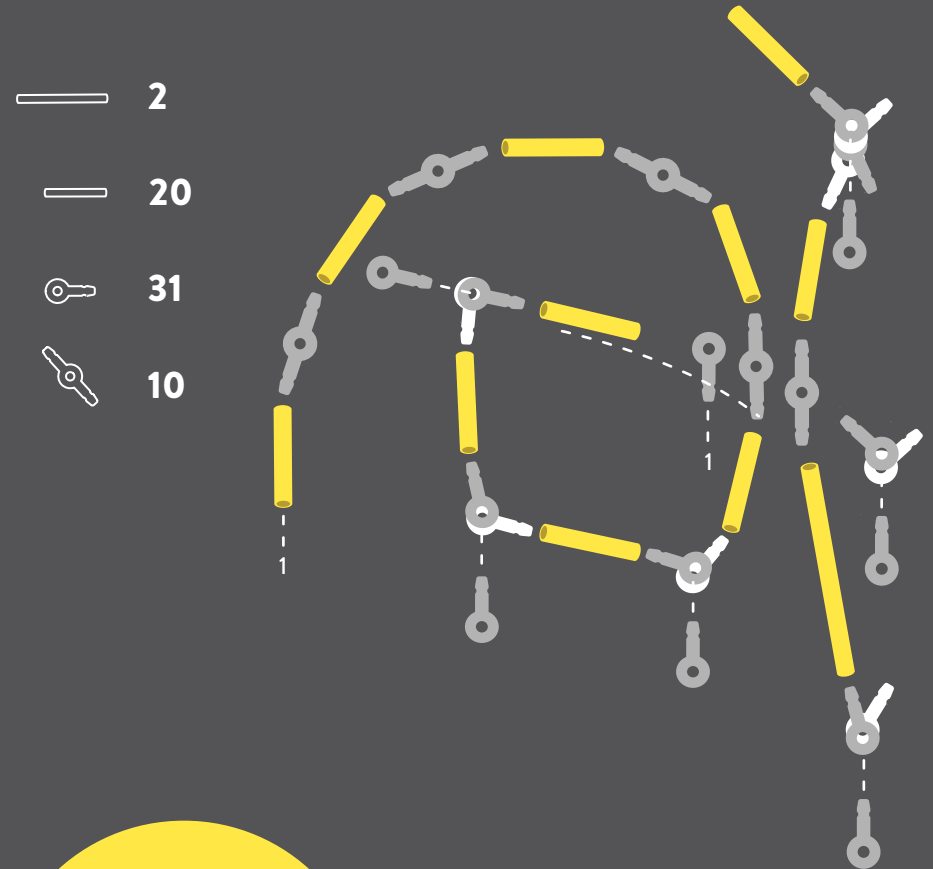
-  3+
-  16+
-  11+
-  5+



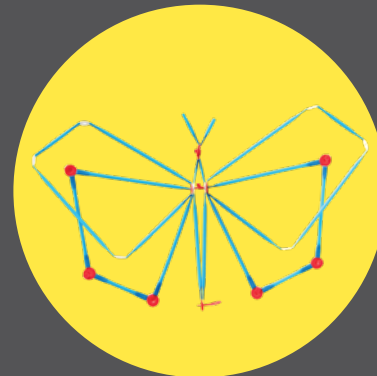
← It looks like this in the end!

BUTTERFLY

The butterfly is a wonderful symmetric creature. We have celebrated this by making only half the butterfly so all you need to do is mirror it to build the other side.



Complete the other half..

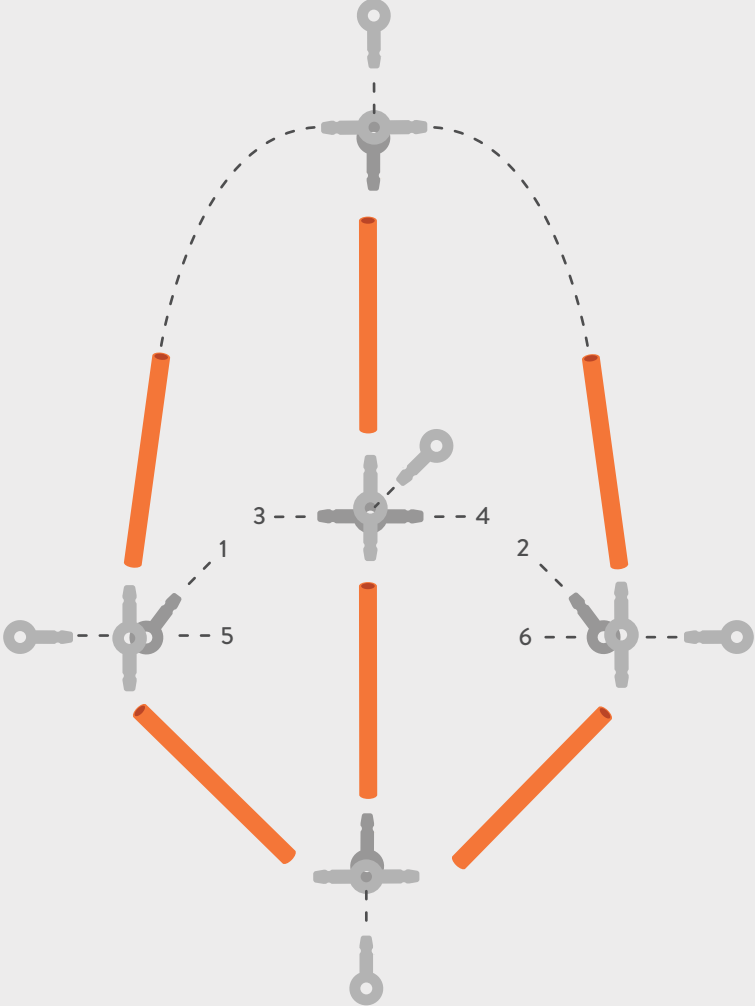
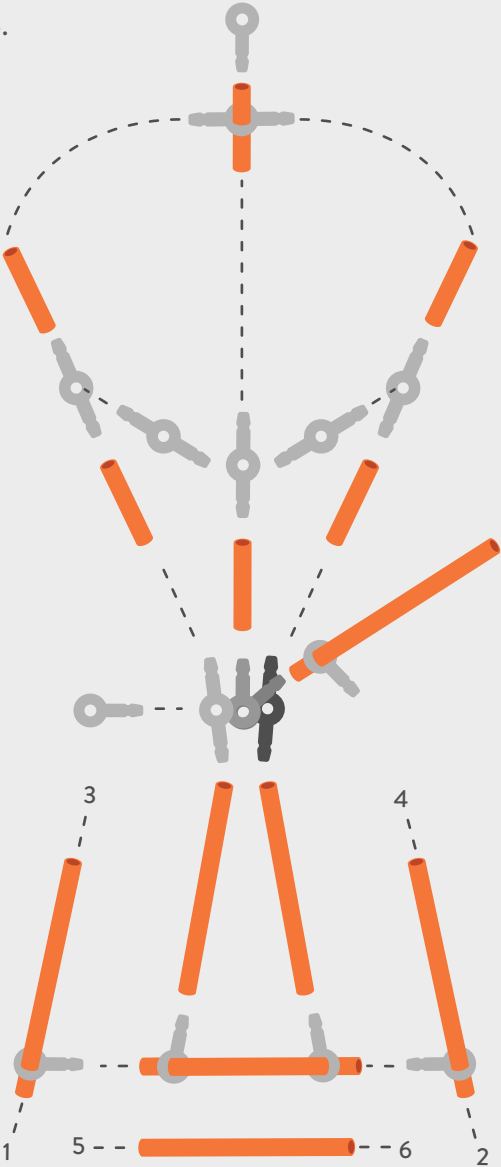


← It looks like this in the end!

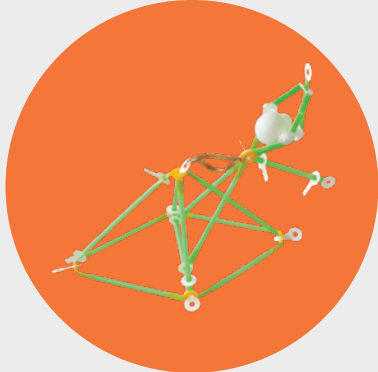
CATAPULT V2

This is an advanced version of the catapult. It can seem slightly trickier to build but on the other hand it's designed for better precision and a longer range.

-  1
-  13
-  6
-  18
-  14



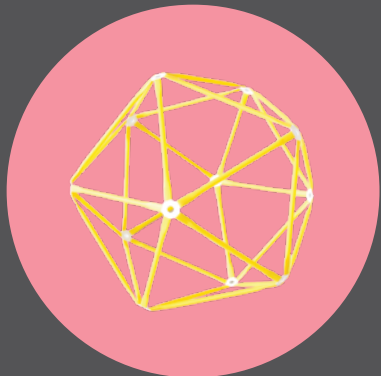
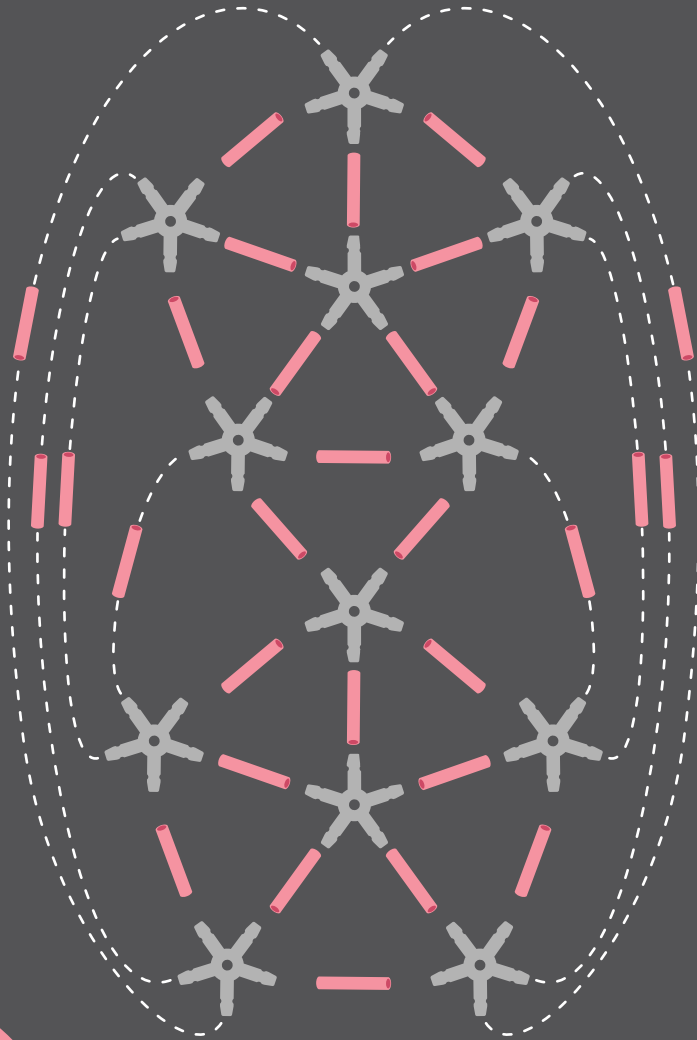
It looks like this in → the end!



ICOSHEDRON

The icosohedron with it's 20 sides is the most complex platonic solid and since it is made of only triangles, it's very strong!

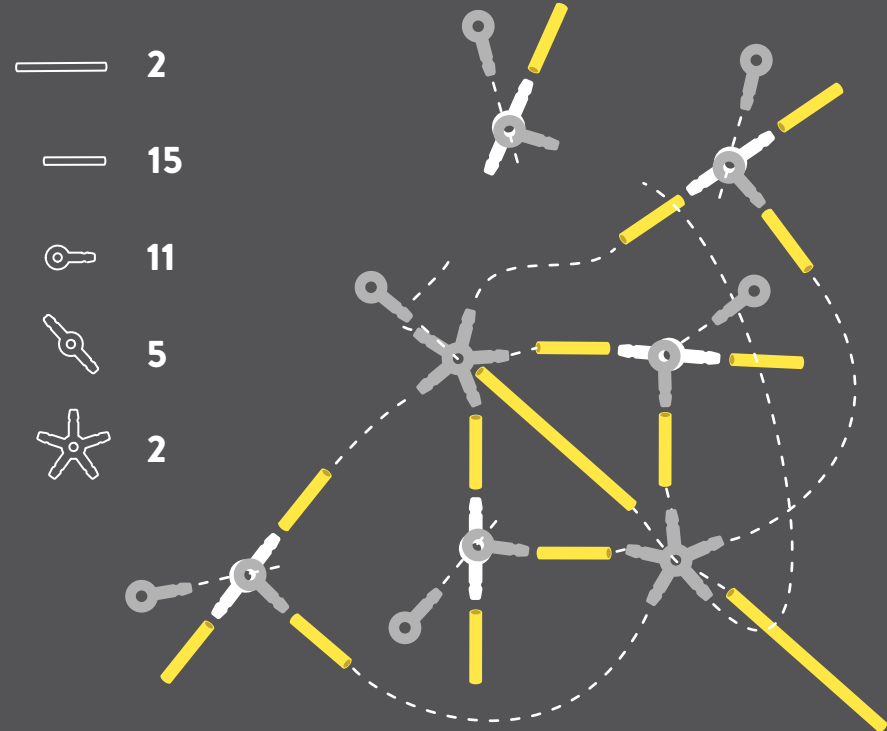
-  30
-  12



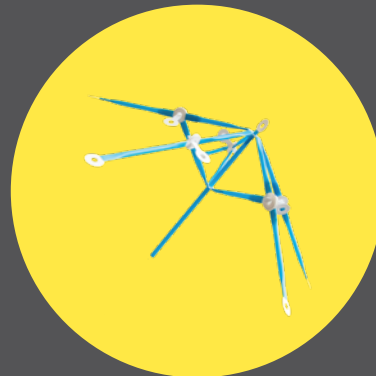
← It looks like this in the end!

UMBRELLA

Learn how an umbrella works by making one yourself. This has all the best features of an umbrella, except protecting you from rain.



-  2
-  15
-  11
-  5
-  2

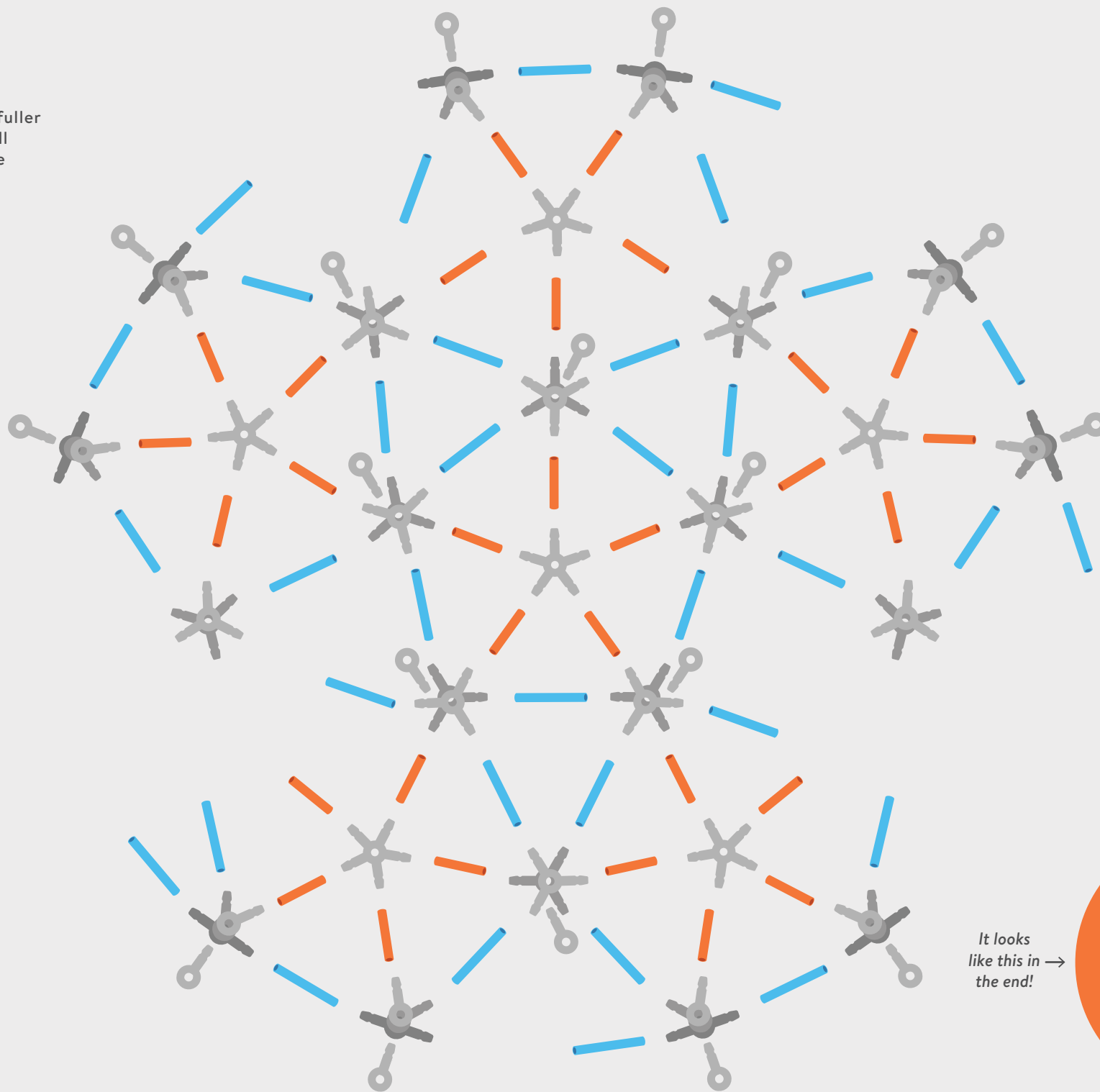


← It looks like this in the end!

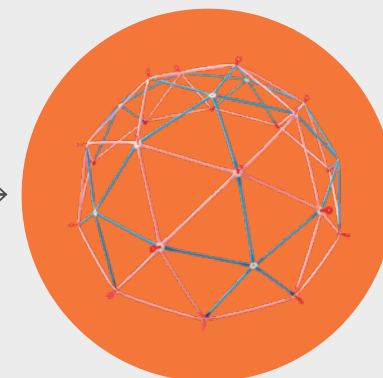
DOME

Everybody loves domes.
Invented by buckminster fuller
and based on tensegrity all
dome are a version of the
icosahedron.

-  24cms
-  35
-  21cms
-  30
-  40
-  10
-  20



It looks
like this in →
the end!



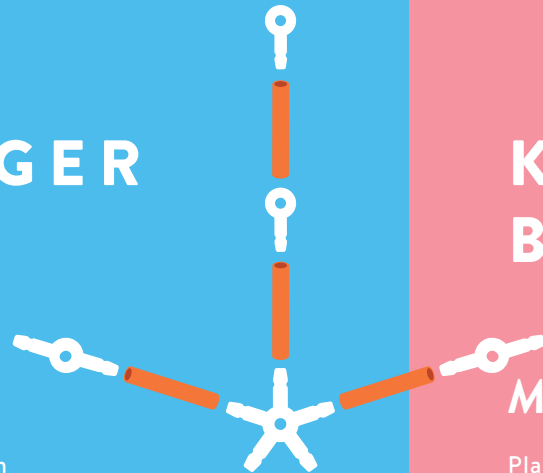
THE BUILD BIGGER CHALLENGES

THE WIDEST

What is the widest thing you can build hanging from the roof that is not allowed to touch the floor?

Set a maximum building time for your first try. When you finish, think about how you can improve it. Now try again with half the time.

TIP: You can hang a Strawbee or a straw with some string and tape from the ceiling or walls.



KEEP BUILDING!

MORE VARIATIONS

Play is a continual process. It's important to continue modifying, improving and making variations of your creations all the time.

Pick one of your creations and use the words below to change it! Try to come up with your own words too! For example can you make your creation..

THE TALLEST

What is the tallest thing you can build?

Gather some friends and take turns. Each person can place either a Strawbee or a straw per turn. After you're done, how many straws and Strawbees can you take off and still keep it standing up?

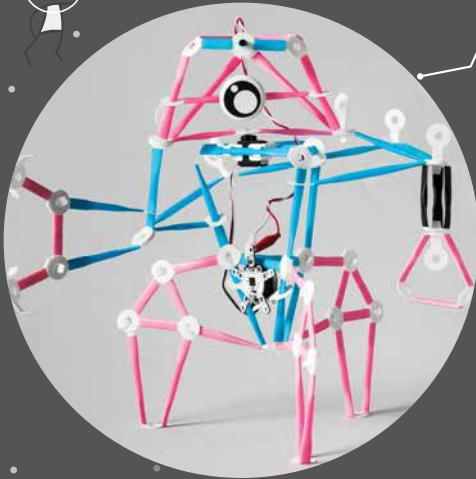
TIP: Check out the tallest constructions around you and try to figure out what makes them strong and resistant.



- BIGGER
- TALLER
- WIDER
- SIMPLER
- MORE COMPLEX
- CUTER
- STRONGER
- FASTER
- SLOWER
- SPIKIER
- ROUNDER
- ELEGANT
- SHY
- CROOKED
- STRAIGHT



MORE FROM THE STRAWBEES UNIVERSE



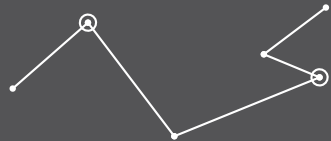
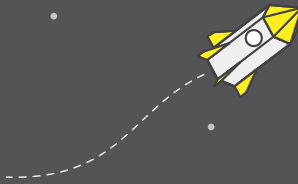
CODING&ROBOTICS KIT

The perfect kit to learn electronics, mechanics and programming.



IMAGINATION KIT

Stimulate your creativity with storytelling and problem solving challenges!



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