

Maker Challenge!

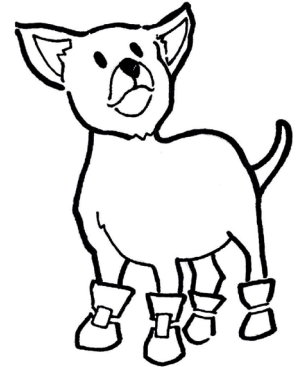
By costume maker & fabricator Izi Morley



Calling all Little Inventors!

Take the Maker Challenge set by costume maker & fabricator Izi Morley and try four different activities along the way to get your creativity flowing and help you build up to designing an ingenious invention.

Can a shoe do something new and incredible? Explore sensations in your feet. Create some new rubbery materials. Invent and make a shoe like the world has never seen before!



Izi's invention challenge



Invent a
sensational super
shoe

Give these four activities a go
to help guide you through the
challenge!

- 1. Whose shoes?** Everybody has shoes, but what do they do? Shoes can do all sorts of things for different people
- 2. What are shoes made from?** Learn about and reimagine the different parts of a shoe.
- 3. Lets get making!** Make a shoe from things you find at home
- 4. What can a shoe do?** Get some invention inspiration

INVENTION SHEET.

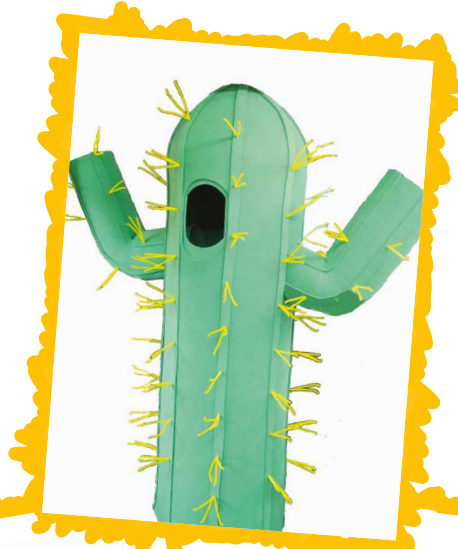
Invent a sensational super shoe



Izi is a costume maker and fabricator for film & TV.

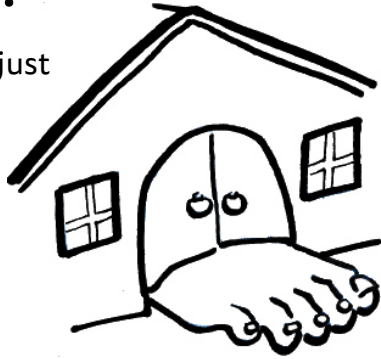
Izi loves using different materials to explore outfits and accessories for interesting and wacky characters. Sometimes the characters live in space, sometimes they are Victorian and sometimes they aren't even human!

Just like you all of these fictional characters need shoes to get around. Here are some pictures of Izi's work and some shoes she has made.



Whose shoes?

Feet, feet, feet! A shoe is just a house for your foot.

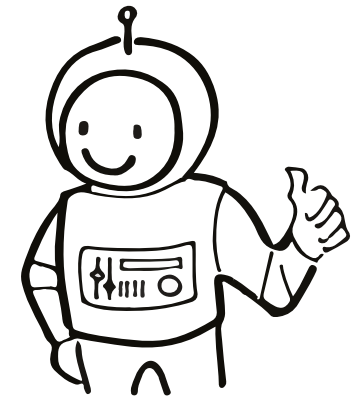
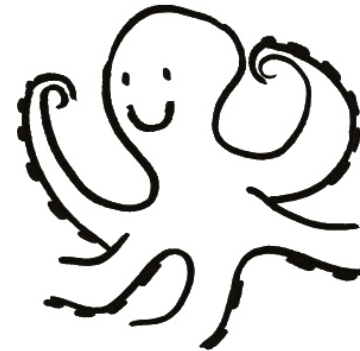
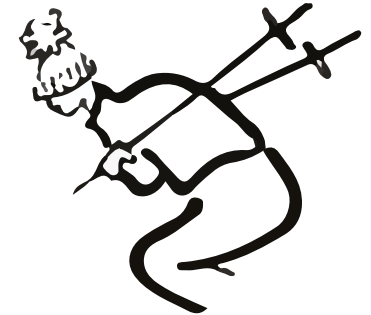
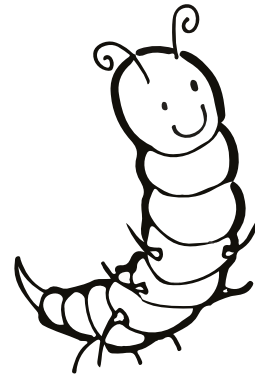


Draw the shoes for these characters to get you going. Think about the environments they live in and what they need their shoes to do...



Everybody has shoes, but what do they do?

- Shoes can protect your feet from extreme temperatures, sharp ground and stop wild animals from nibbling your toes.
- Shoes can make you taller or help you move faster with wheels or rockets.
- Shoes, like slippers, can warm you up and relax you.
- Flippers can help you swim.
- Tap dancing shoes make a lot of noise!
- Clowns use their shoes to make people laugh
- Climbers use their shoes to grip the walls of skyscrapers.



Info Sheet: What Are Shoes Made Of?



Shoes have a sole, an insole and an upper.

The upper hugs the top of your foot.

The insole cushions and tickles the bottom of your foot.

The sole creates an even surface and protects your foot from the ground.



What is a Material?

Lots of simple shoes are made from the common materials rubber, leather and plastic. A material is just something that you use to build or make an object ; wooden sticks, hair, cardboard packets, jelly, bubble wrap, pasta and flowers can all be materials too!

What materials do you have in your house?

In your recycling box?

Can you use natural materials from your park or garden?

What about edible materials from the kitchen?

Write a quick list of things you could use as a material...

.....

.....

.....

.....

.....

.....

Sole

Lets make samples for the sole of your shoe

PVA is a plastic glue that can encase other objects to easily create a whole new material.

1. Gather some colourful/interesting small objects from around your home, the park or garden. Look in your recycling bin, your dry food cupboards and ask your parents what you can use.
2. Take your collected objects and pack them tightly into a shallow plastic lid or onto cellophane
3. Squeeze PVA into the lid to fill the gaps in between your objects
4. Leave it on the windowsill in the sun to dry out for 24 hours
5. Once completely dry peel off the new material you have made



PVA Glue

Glitter Beads

Seed Pods



Pasta

Stamps

Leaves

Beans

Flowers

Lemon Peel



Colourful card cut into shapes

Coloured Lids

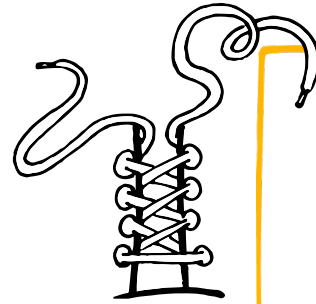
You can build up a really thick material by doing this in layers. Make a sample and let it dry. Then repeat the process on top of your first layer.



REMEMBER: if you choose to make a whole tray of new fancy sole material for your actual shoes, it may take 2-3 days in a sunny place to dry out before you can use it.

Uppers

Designing shoe uppers is a world of possibilities. They can be any shape or colour. They could light up, they could have teeth!



What can your shoes do?

Could they be for wearing somewhere icy and cold, or on a planet made of lava will your shoes be designed to protect them? If worn in water, will your shoes help you float? Maybe they just help you have more fun!



How will your shoes go on and come off?

I hate tying laces don't you? Shoes can be **elastic**, **Velcro**, **magnetic**, **buckles** or you can just **slide** right in and out like a sandal.



Style - how would you like your shoes to look?

What kind of style are they? Think about stripes, spots and colours.



Insole

Why stop at inventing the outside of the shoe?
Let's re-invent the inside!

We feel with our fingers and hands but our feet are just as sensitive. Take off your shoes and have a look at your feet. Rub them against the floor. Is it hard or soft?
Can you take a walk with no shoes on? Lets go!

What is your favourite surface to walk on?

How can you invent a shoe to tickle the sense of touch in your foot?



What do you feel when your feet touch the floor?

The wood is

The grass is

The pebbles are

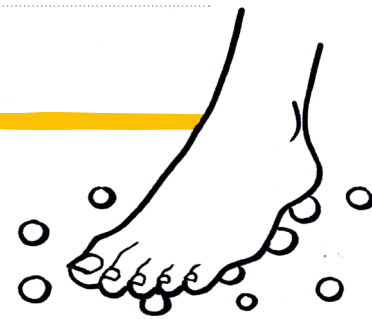
The sand is

The dry leaves are

The fluffy rug is

The are

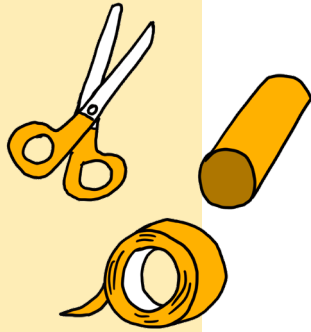
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Let's make your shoes!

You will need:

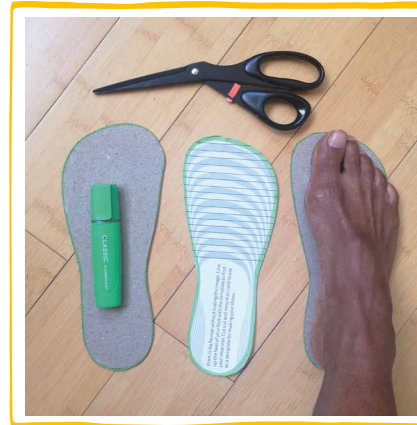
- Glue
- Pen
- Scissors
- Sellotape
- Cardboard
- Any other materials you like



Insole



1. Make a template the right size for your foot.



2. Use your template to cut your insole in cardboard.



3. Now get your invention sheet and make the insole of your shoe.

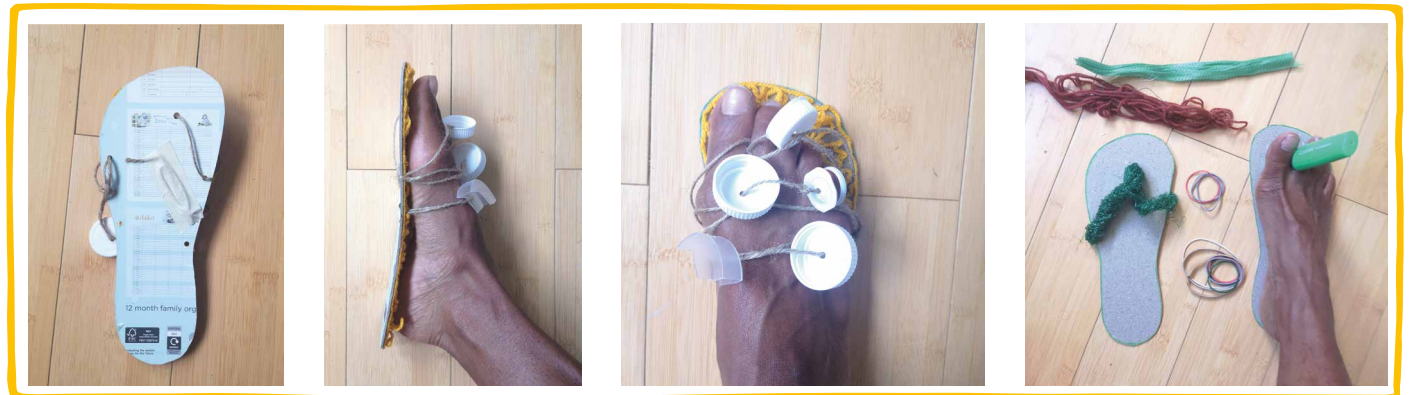
For example - wool for comfort, bubblewrap for FUN! or any other material

Upper

Now get creative with your Uppers. Using materials from your recycling, around the house. Use fabrics, cardboard boxes, old banana skins, elastic bands, string...what do you have?



TIP - If you want to make a thong for your shoe, use string or elastic.

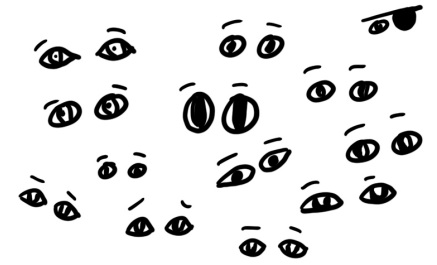


1. Mark a hole inbetween your big toe and second toe.

2. Punch a hole.

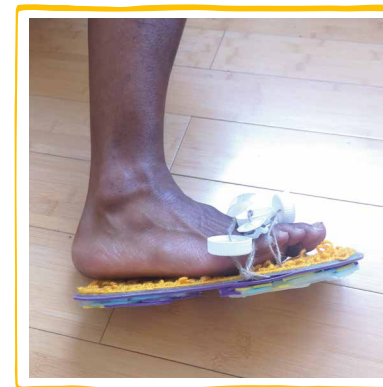
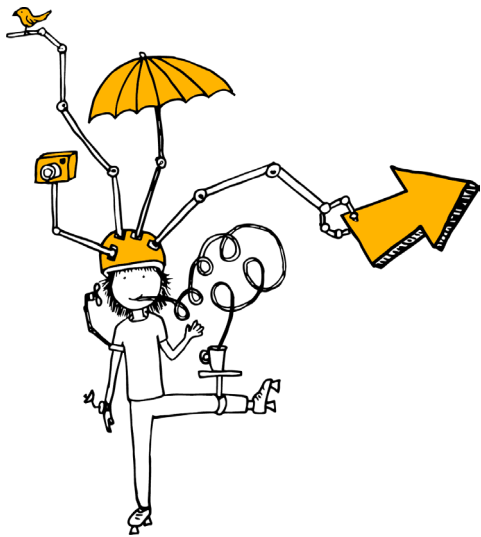
3. Thread string through the hole and sellotape or glue the ends on to underside of shoe

Let's make your shoes! cont.



Sole

Now make your sole. Make a new material with PVA glue (see activity 2) or use something else to make your sole.



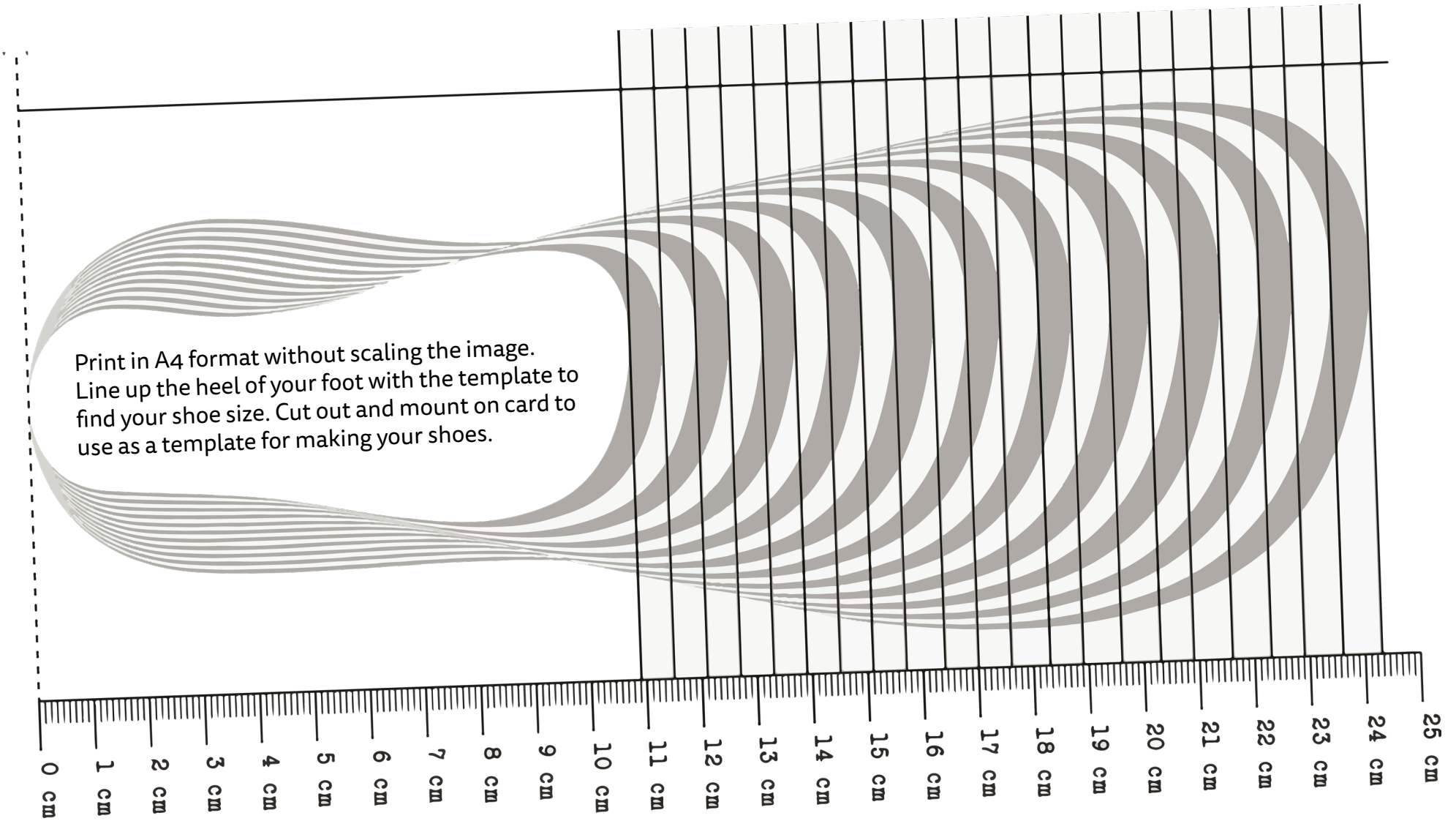
Final step!!

Glue your inner sole onto your outer sole you could also use thread, elastic or sellotape.



Shoe size chart

- 38 - 5
- 37 - 4 1/2
- 36 - 3 1/2
- 35 - 3
- 34 - 2
- 33 - 1
- 32 - 13 1/2
- 31 - 12 1/2
- 30 - 11 1/2
- 29 - 11
- 28 - 10
- 27 - 9 1/2
- 26 - 8 1/2
- 25 - 8
- 24 - 7
- 23 - 6
- 22 - 5 1/2
- 21 - 4 1/2
- 20 - 4
- 19 - 3
- 18 - 2
- 17 - 1



What can a shoe do?

Now we know shoes have many uses and can be made from any material...but could your shoe help you do something new?

What are your 4 favourite activities or toys?

- 1.
- 2.
- 3.
- 4.

What are your favourite smells?

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What is your favourite super power?

.....

What are your favourite fruits and vegetables?

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What is your favourite body part?

.....

What are your favourite animals?

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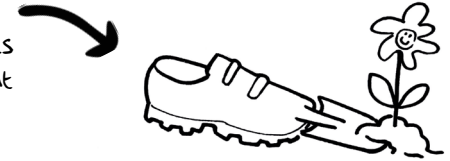
Where is your favourite place?

.....

Could your shoe be a home for your favorite animals?



Like to garden? Make shovel shoes to dig holes for planting seeds! What other tasks could your shoes help you with?



Let's get inventing! Sketch 4 shoes here that join ideas from your list of favourites with a shoe!

Invent a sensational super shoe

.....
.....

First name

Age

School

Town/city

Who is your shoe for, what kind of feet do they have? What will they be walking on while wearing their shoes?

Can it help you to travel further and faster? Does it calm you down or make you want to dance?

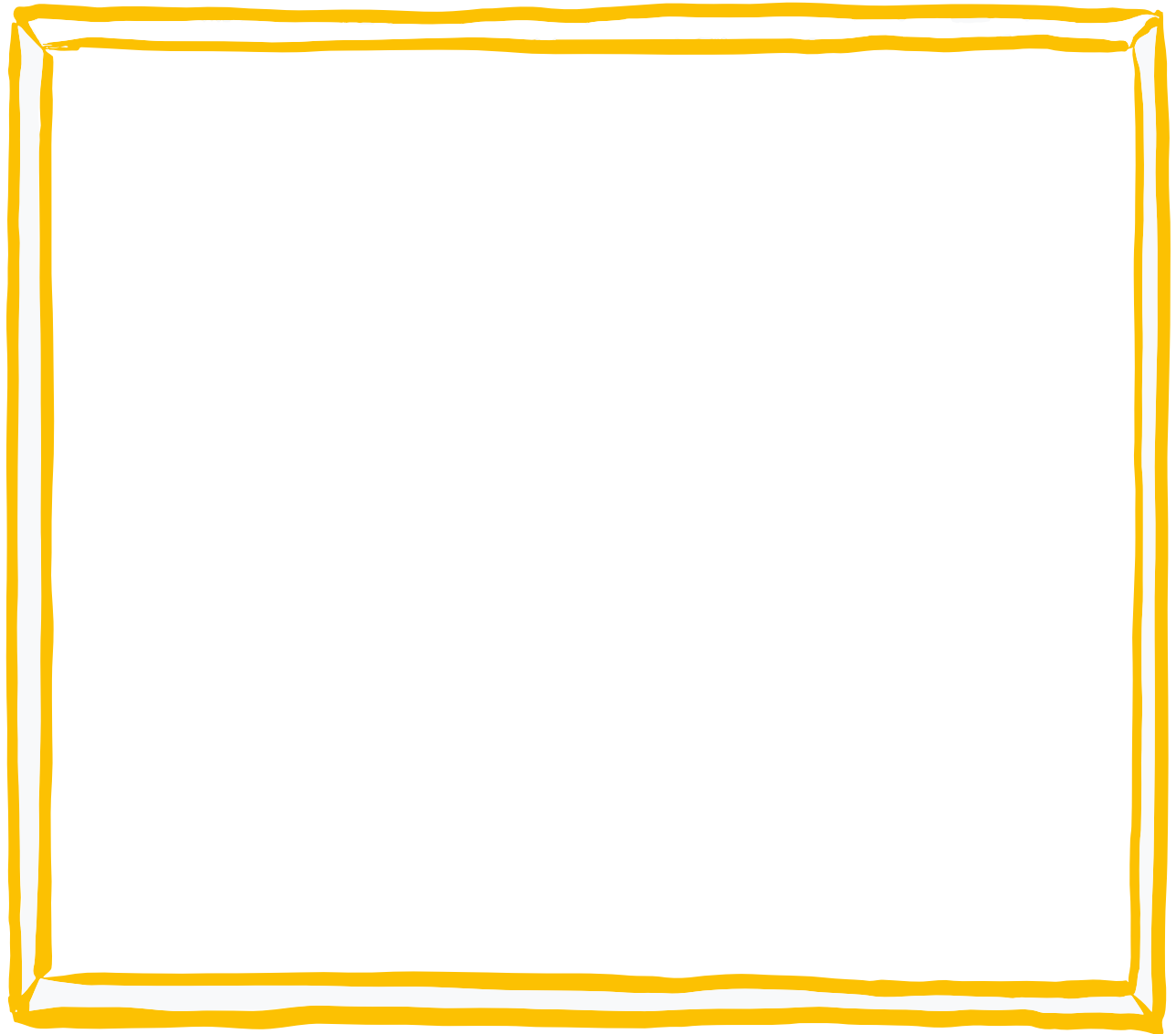
Tell us more!

(who your invention is for, what it does, how it works!)

.....
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.....
.....
.....

Draw your invention here! *Use a black pen, add colours and labels*

Name it!
↙



Upload your idea at littleinventors.org to get feedback and who knows, it could be chosen to be made real!