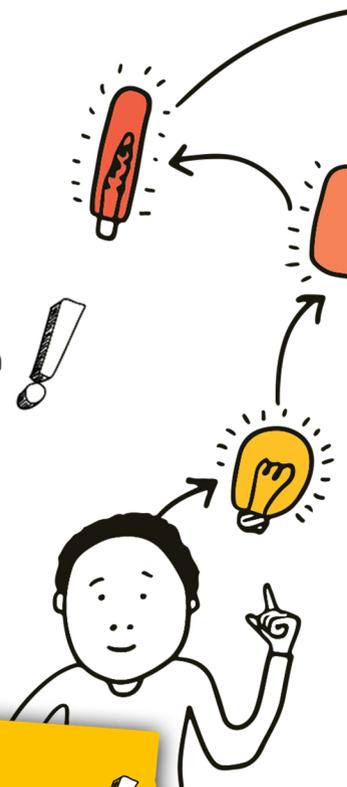


# MISD Energy: Feel the power!

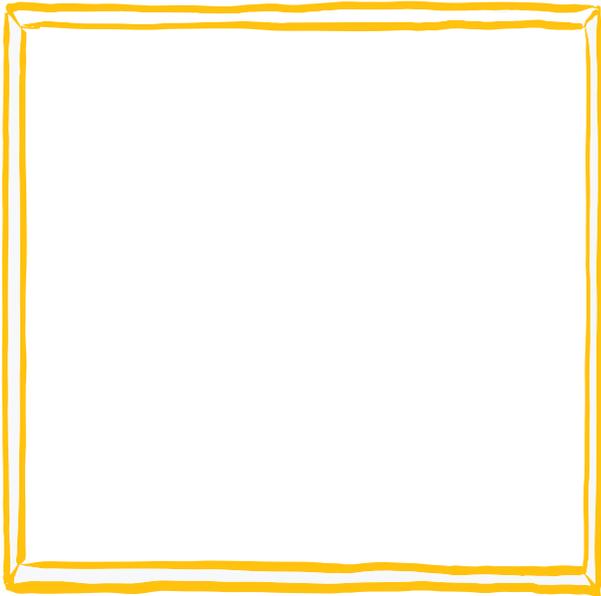


Take your idea further!

This belongs to \_\_\_\_\_



# I'm a Little Inventor!



*Draw a picture of yourself!*

My name is .....

I am ..... years old

I live in .....

My experience of inventing is

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

*Some facts I have found out about inventing:*

- 
- 
- 
- 
- 
- 

*What I like best about inventing:*

*If I could improve ONE thing now to make life in Michigan easier or more fun, it would be:*

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

# More about your idea

---

*What inspired your idea?*

*What problem are you trying to solve?*

*If you had to add something to it, what would it be?*

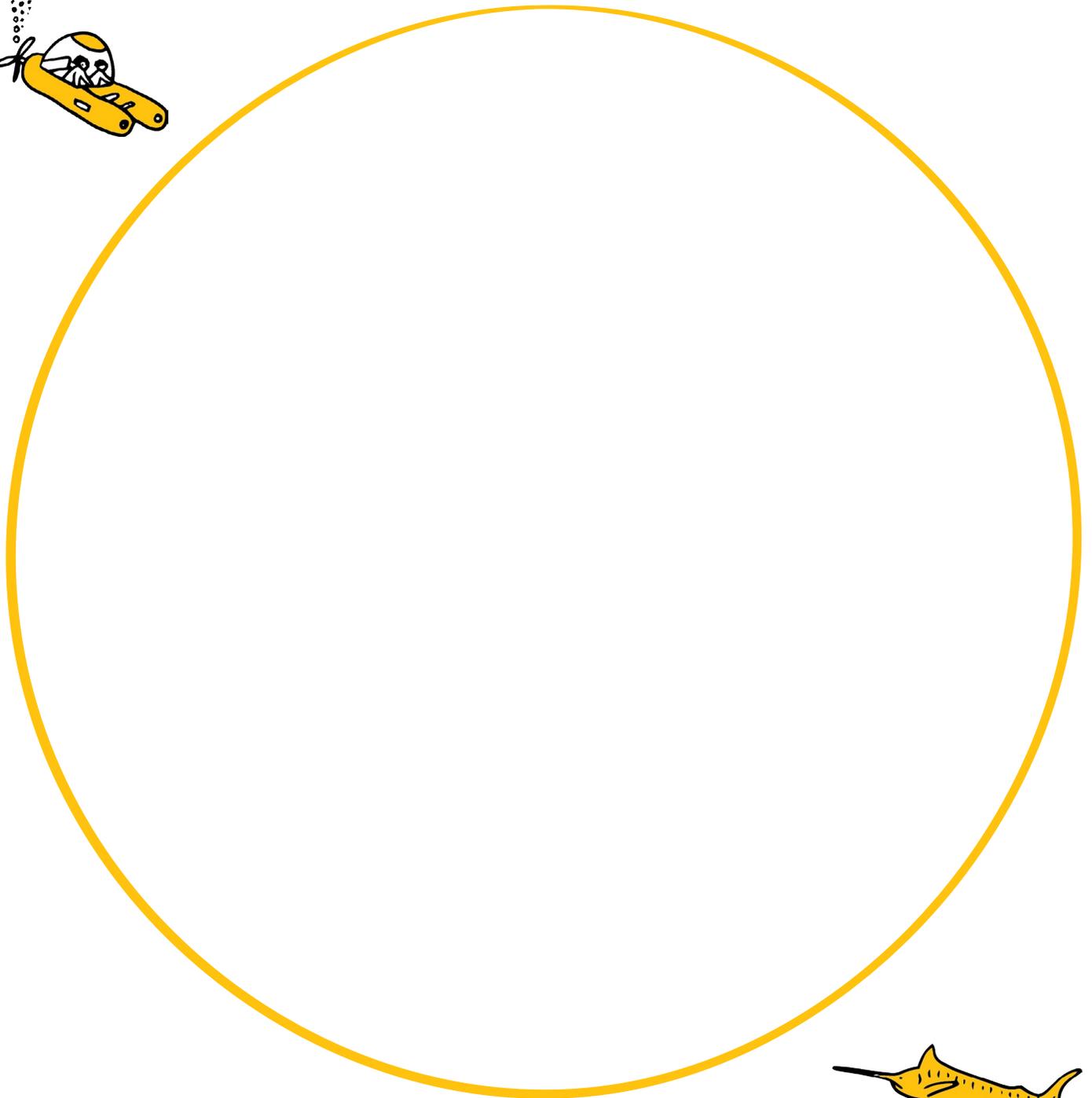
*What if you had to remove something? How would that change your idea?*

*What do you like best about your idea?*

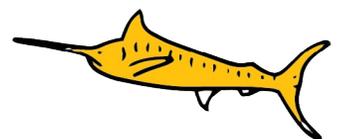


# Create a logo for your invention

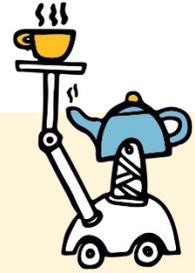
Make it colourful, bright and eye catching!



*Draw it here!*



# Invention ideas log



*Other inventions I want to draw:*

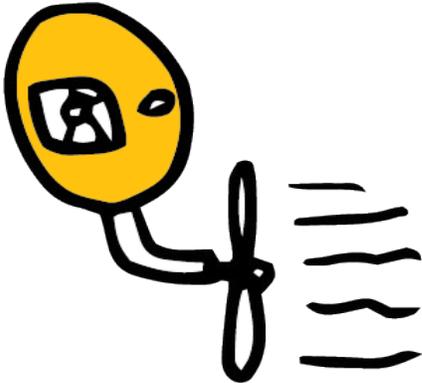
*Challenges I want to solve:*

*People I want to help:*

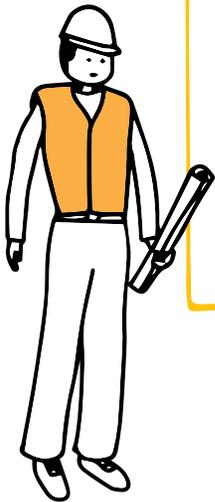


# From 2D to 3D!

Drawing is a fantastic way to capture your ideas when inventing, and it should always be the first step. Now we need to propel your ideas into the next dimension – from the paper into reality – from 2D to 3D!



The first step to a real invention is to make a model of it. This is called prototyping. It doesn't need to actually work, it's really to start seeing how your object could look as a real thing.



Designers, architects and artists all do it. They get messy with materials to feel what their idea is like in their hands before they embark on a project, and they spend quite a long time making models to make sure they get it right.

It's a lot of fun! So let's get making!

# What you need

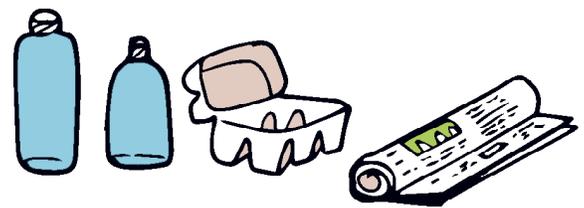
Making prototypes doesn't need special materials or skills.

You can find lots of things around the house that you could use (but make sure it's OK with a grown-up!). For example, cardboard is great. It's everywhere and you can cut it, roll it, squish it and fold it into pretty much anything!



Keep empty cereal boxes, egg cartons and toilet paper and you will have some ready-made shapes to play with. What a fun way to recycle!

You could use cardboard packaging, old shoe boxes, paper plates or paper cups of different textures and thickness.

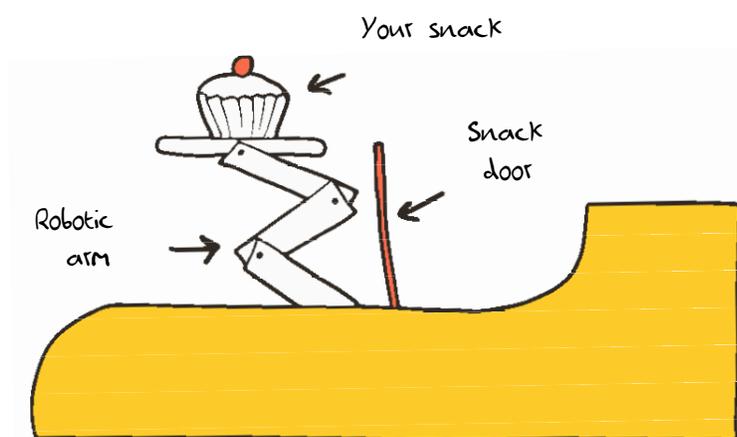


These are just some of the things you could use, but the list doesn't have to stop there. It's another chance for you to use your imagination!

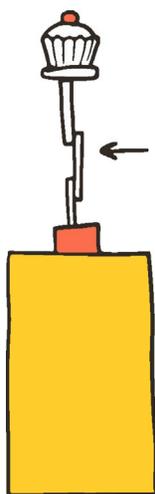
# Thinking in 3D...

Once you have your invention drawing, it's a good idea to think about how it will look from different sides. This will help you to start imagining what it will look like as a real object.

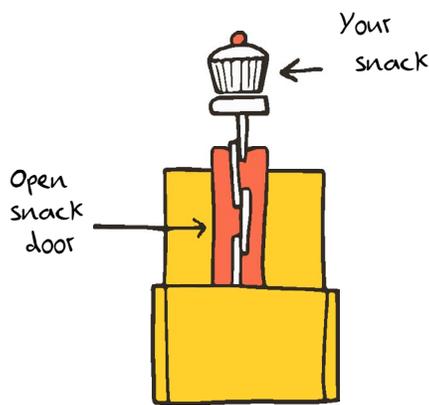
Chief Inventor Dominic invented **the snack shoe!**



Side view

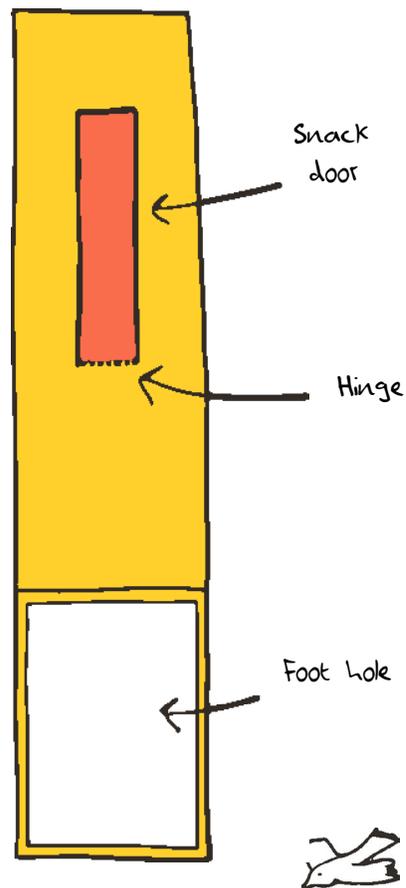


Back view



Front view

"Sometimes you get hungry but there are no shops around. This way I can always have a quick snack when I need it."

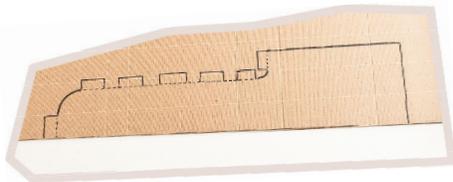


Bird's-eye view

# Prototyping the snack shoe!

Before he started, Dominic had to think about how big his invention was going to be. He wanted it to be a life-size version!

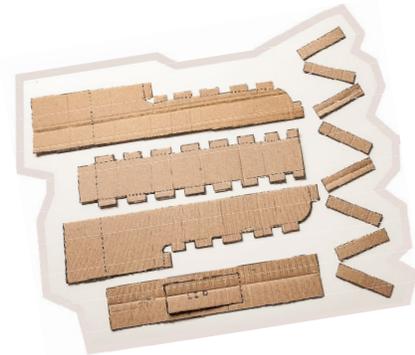
1. Draw the outline of the side of the shoe.



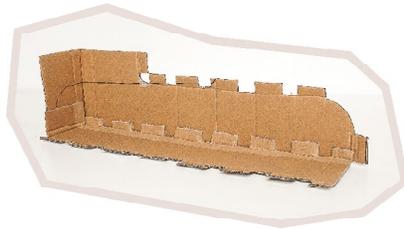
2. Cut it out!



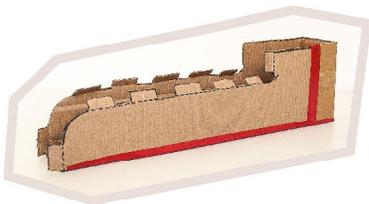
3. Use the first shape as a guide to draw and cut all the parts you need.



4. Glue the parts together.



5. Add tape to secure the parts, and for decoration!



6. Use scissors to make holes and tie all the arm pieces together with string.



7. Tape to the inside of the shoe.



You're done!

[misd.littleinventors.org](http://misd.littleinventors.org)

## TOP TIP:

You can see me making the snack shoe at [littleinventors.org](http://littleinventors.org)



# Plan your prototype



Before you make a model of your invention, it's a good idea to think about how it will look from different sides:

*Front view*

*Side view*

*Back view*

*Bird's eye view*

*Think about:*

- the materials you might use (think recyclables!)
- the size of your prototype
- the shapes and elements
- that make up your invention
- the way they connect together

**Now you're ready to get making!**

# Now get making!

By creating a 3D model of an invention idea we can start to make more decisions about its design.

We can see if it should be bigger or smaller, more angular etc. We can find out if our idea on paper works in reality, or if it needs to be altered to work better.

Think about:

- *the size of your prototype*
- *the shapes and elements that make up your invention*
- *the way they connect together*

Then it's really about **getting started and having fun!**

---

Some fun techniques you could try:

Layering



Slotting



Bending



Texturing



What have you learned about your invention?

Trying to make your idea into a 3D object can seem daunting, but it will also help you continue thinking about your idea.

You will figure out what works best and what works less well. And that might make you think about how you can improve on your original idea!



**Remember:** everything you do is helping you to understand your idea better, so you can take it even further – and who knows, maybe even make it into a real working prototype too!

TOP TIP:

Some people also like to start inventing just by playing with materials!

