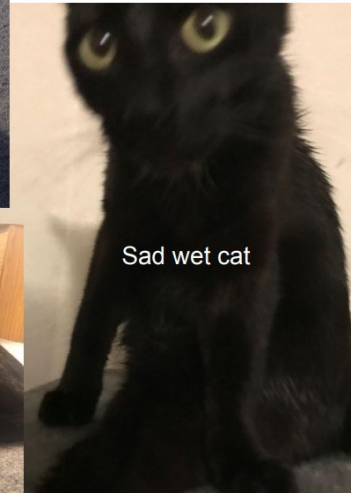
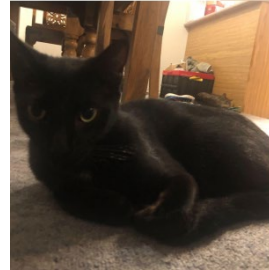


Brief

To design a coat suitable for a cat to wear in the rain. After owning a cat for most of my life I have discovered that they don't like getting wet in the rain but they love being outside, for this project I will make a raincoat for my cat made out of his favourite materials to ensure that it would be comfortable and suitable for him. This coat will have to keep him safe from cars outside with its bright colour, and keep him dry with water proof fabric and a hood as well as being comfortable.



Sad wet cat



Main material i have chosen to explore and experiment with for this project:



What Are Inflatable Pools Made Of? Floats, Toys, And Pools

Before getting an inflatable pool, you might want to consider what it's made out of before you pick one. We have some allergies in our family to latex, and were worried about harmful chemicals in the plastic affecting our youngest. After hours of research, I have an answer.


Inflatable pools and floats are typically made of polyvinyl chloride, a widely produced synthetic plastic polymer that has been made softer with the addition of plasticizers like phthalates. This form of polyvinyl chloride is commonly referred to as PVC or vinyl by inflatable pool manufacturers.


There are other materials being used, though they aren't very common. The added chemicals to make the PVC more flexible could be dangerous or cause allergies to some people. It's important to know what chemicals your inflatable pool are made out of before purchasing or using it.




This PVC pool toy had reached the end of its life as an inflatable duck after many years of fun and use. I deconstructed the duck, keeping all of the parts so they could be reused again. I plan to experiment with the yellow pieces for this project as the PVC is waterproof and will provide the right properties and attributes for this project.

Initial Experimentation

MATERIALS	EXPERIMENTATION	OUTCOME	DISCOVERY
Waterproof PVC Fleece thread	I combined these materials by stitching them together using parallel straight lines like you would on a quilt but straight across instead of diagonally.		I discovered that this was very difficult and it didnt go to plan. The sewing machine foot couldnt slide ontop of the yellow PVC because i needed to use a teflon or walking foot which we didnt have. The finished outcome became warped and bunched up which wouldnt be suitable for my design. I think i needed to sew the lines starting from the same end each time and maybe try it with the PVC underneath so the foot could slide on the fleece more easily. I'm also not happy that the colour of the dark fleece comes through the yellow PVC making it not so bright and vibrant anymore.

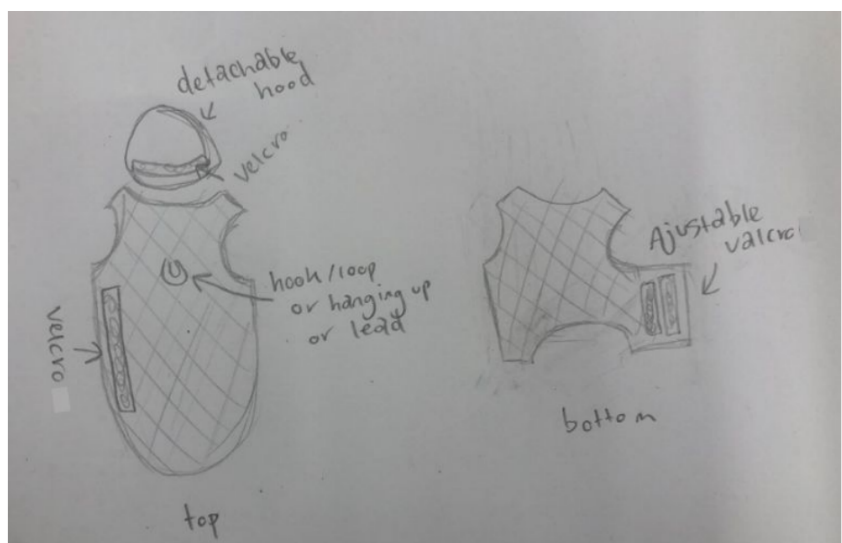
Further Experimentation			
MATERIALS	EXPERIMENTATION	OUTCOME	DISCOVERY
Waterproof fabric Fleece Thread	Sewing them together with a cross quilt like pattern to combine the materials and make a combined strong fabric that is warm and suitable for the purpose of a cat raincoat.		I discovered that this made the finished product a combined material that is very suitable for a rain coat, if you take away the aesthetics part of it in terms of the dull colour. The outcome is a waterproof exterior with a soft and warm fleece interior. Changing the stitching pattern and sewing the layers upside down gave a much better finish that is flat and well held together. This would be suitable for the design but im still not happy about the dull colour.

Final Experimentation			
MATERIALS	EXPERIMENTATION	OUTCOME	DISCOVERY
Waterproof fabric Fleece fabric Stabilizer Thread	Sewing them together to create a quilt like material using a cross method, with the stabilizer in the middle of the water proof fabric and the fleece fabric to make the yellow of the water proof material more vibrant.		I discovered that using a white stabilizer in the middle of the two fabrics separated the dark blue from the opaque yellow and made the yellow colour look so much more vibrant. I did still need to sew it upside down with the yellow PVC layer on the bottom but that didn't seem to affect the properties at all. The thickness of the layered fabrics provides a nice rigid but still flexible material to work with for the design. I happies with this outcome and don't feel any further experiments are required.

Improvements that I made as a result of feedback and experimentation:

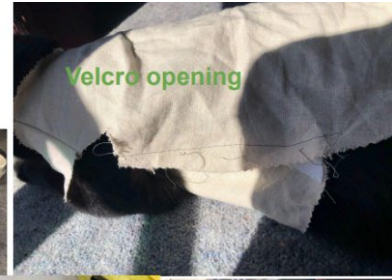
I agreed with the feedback i received there were some good ideas i hadn't considered so I have improved the design based on the feedback i received by changing the shape of the underbody piece to have a curve so it won't cut into the cats stomach. I have added a hook/loop to the centre back so a lead can be attached but it can also be used to hang up the coat when it's not being used. To make the coat fit a variety of cat sizes i included more velcro strips on the size so the fit can be adjusted. I also decided to make the hood detachable that way if a certain cat doesn't like their ears covered there is an option to remove it.

Feed back: "I can see in this design that my feedback has been taken onboard, I like the velcro use and how it makes the coat adjustable and i love the idea of a removable/detachable hood. I also really like the loop on the coat that will be used to hang the coat up on a hood and to attach a lead.



Making the pattern and mock-up of raincoat to check sizing

Feedback from end user: "I really like how the coat sits on the cat and covers majority of their body without look uncomfortable. The hood also looks very nice. I also like how the raincoat can fit on different types of cats"



Attributes and how i achieved them...

Brightly coloured	I achieved this by using white stabilizer in the middle of the two fabrics to create a more vibrant yellow colour.
Not to bulky	By drafting a custom pattern i was able to create the perfect jacket suitable for any cat also including the adjustable velcro means it can be fitted to all cats.
Covers cats full body/back	Since i created my own pattern i was able to customize it directly to the length of my cats average size.
Keeps cat dry	Because the material is PVC and used to be a pool floatie it was made for water, so I was sure that it would be a great material for a raincoat.
Is easy to take on and off with velcro fastenings	The velcro on the sides means it is quick and easy to take on and off without having to put the cats legs through the holes..
Does Not irritate cats fur	I chose the fleece fabric as the lining that will sit against the cats fur because it is warm and soft.
Has a velcro detachable hood	The hood can be taken on and off, it is attached with velcro because some cats don't like things over their ears.
Has a small loop on back for leash.	I included a small loop to the back for a leash attachment or to hang it up.
Is the correct size	Because I made the raincoat adjustable it will easily fit many different types of cats. I made the coat adjustable so as your cat grows it will still fit, aswells as fitting different types of cats.
Use waterproof fabric	I used PVC for the outer layer which i know is waterproof after doing research.
3 layers of fabric quilted together (PVC, stabiliser and fleece)	After experimenting with my fabrics and found this was the best method of combining materials to achieve the attributes i needed for this project.



Context: As an act of manaakitanga (gratitude, kindness) our Year 11 Food Technology classes have the opportunity to put on a morning tea for the construction workers that are currently working on the Stakeholder suggested that hot, finger food sized savoury pies could be served. The pies need to be finger-food size and easy to eat in one hand. Stakeholder (Project Manager) said there will be about 100 workers to cater for and we will allow 3 pies per person. That means each student will make four pies. 90% of the workers like meat pies and 10% are vegetarian. The pies will need to be tasty. The pies need to be well constructed to hold the filling inside. The filling should contain a sauce with the correct viscosity. The pies will be made in and served in They can be stored in the freezer or fridge until needed. We intend to hold the morning tea during Week 6 of term 3.

Components of a pie

Physical attributes

(the physical characteristics of a pie)

Flaky, crunchy, golden, cup like, soft on the inside, warm/hot, texture

In the bacon and egg pie it had a more soft top on the pie and with the mince one it had a crispy top and was flaky.

Functional attributes

(what a pie does and how its form helps it do its job)

Weight, temp, short/flaky pastry,

The samosa had a large number of layers on it and it was very crunchy.

Name: [Redacted]
Samosa

Physical Attributes - colour - green - crunchy - Parcel
 Warm/hot - vegetables - curis smell/taste
 lots of layers - fine parcel - fragile
 Pale - Parcel

Functional Attributes cooked 75°
 taste ~~60°~~
 Weigh 50g 12g

Appearance - yellow, green
 Texture - Crispy, hard
 Taste - Salty, tummy
 Aroma - curiy

Curry flavour on inside.
 Folded parcel
 Pastry ???
 Samosa wrap - heaps of layers, crunched in your mouth, feel all the layers.

Bacon and Egg

Physical Attributes - Soft - eggy - container - yellow/gold
 Warm/hot - taste of pepper

Functional Attributes cooked 75°
 taste ~~60°~~ 50°
 Weigh 50g

Appearance - yellow, colour
 Texture - Soft, crumbly, spongy
 Taste - Salty, bacon & egg - pepper
 Aroma - Pie, egg, bacon

Pass Bacon
 egg
 Pastry
 Crisp outer shell
 Soft/flaky inside

Mince pie savoury

Physical Attributes - flaky - cup like, meaty, Pastry
 warm/hot - very flaky and makes a crumbly mess

Functional Attributes - Tasting
 Short/flaky Pastry temp 65°
 Looked at 70°
 Weigh 50g

Appearance - flaky, crisp, moist, soft - golden
 Texture - crunchy - moist
 Taste - meaty - moist
 Aroma - Pie - mince

Very moist inside while the outer is crispy/flaky and evens it out perfectly.
 flaky
 Cup like
 Mince filled

Experimenting with materials
FATS



	no fat	oil	butter	margarine
ingredients:	water, flour	oil, flour, water	butter, flour, water	margarine, flour, water
appearance:	dry, white, bland	very greasy, was bubbling In the oven and left a grease mark on tray	golden, crispy and moist on inside	yellow
texture:	dry, crumbly	greasy	crunch and soft on inside	soft with a little crunch
flavor:	none at all very bland	very slippery/greasy	very yum and almost sweet like	a tiny bit sweet and tastes alright
Good for a pie? (fit for purpose)	no, way to dry/crunchy has no flavour	mid/low it would work but there are better options	perfect Butter can be expensive	good It will work but it is cheaper than butter so will probs be the best bet.

What would be the best to use?

The best pastry to use would be butter or margarine because it bought it flavor, was smooth and had a good puff factor to it. Margarine is a lot cheaper than butter, but you get what you pay for. So, in food tech class I think margarine would be the best bet and it is very easy to make.

Experimenting with ingredients
FLOURS

BUTTER:

When using butter as out fat what we did is we cut the butter into the flour and then we used our fingers to pinch it into small bread crumbly bits and

	self raising flour	whole meal flour	strong flour
ingredients	¼ cup flour 30 grams butter few teaspoons of water	¼ cup whole meal 30grams butter	¼ cup strong flour 30 grams butter
appearance	golden, more puffed up than the others, flaky	darker, more texture to it,	golden, same a normal flour but just a little more raised
texture	normal pastry feeling	a bit seedy, rough	normal pastry feeling
flavor	flaky golden	seedy, more texture	golden flaky
evaluation	When used it got risen in the oven more and had more flakiness to it	I wouldn't use this on a meat pie as the whole meal would not be a meat pie pastry	was just like normal flour we used but was just a bit stronger than normal flour and rose more.



What we did: We made the pastry from scratch and then rolled it out until it was fit for the pie tins and then we scooped blueberries into the pies and then used the pastry to make lids and then we used an egg wash to make it go its golden color.

What we learnt: the self raising flour rose more than the others because it has more ingredients to make it rise and puff up more. The whole meal one was more of a sweet pastry to use in pies and would not go well with the mince pie.

The best flour to use: The best flour to use would be the normal flour as it rises just enough and doesn't over rise. It is easy to make and has a good texture about it.

Work with your group to design an experiment showing **how time and different glazes** influence the Maillard reaction.

Limitations:

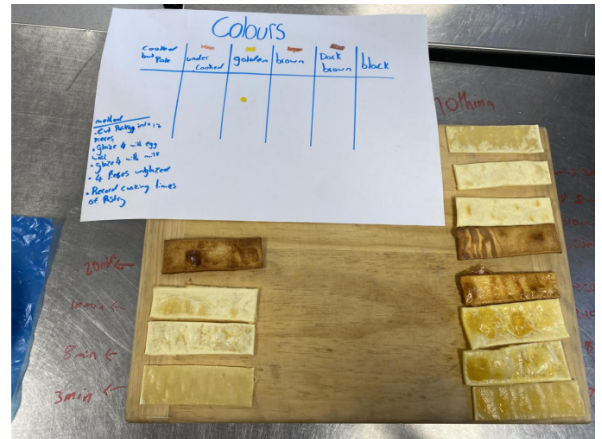
- Use 200c as a constant heat
- Use milk or egg wash to glaze your pastry/or don't glaze?
- You will be given 1 sheet of pastry per group.
- Cut your pastry into regular shapes

Practical

Create a 'colour-chart' of Maillard reactions by cooking the pastry for different lengths of time.
 What is an acceptable colour range which is appealing to stakeholders? Ask your classmates.
 Photograph your results.

Evaluate your experiment

What did you do? We cut the pastry into 12 pieces and then used different egg washes to coat them in and then we cooked them all for different amount of times.
 What did you learn? The longer you cooked the drier they go and when it is undercooked, they are quite flourier. And with different washes they go different colours and go golden.
 Why did this happen? When they are cooked for longer the moisture gets taken out of them and makes them dry and when they are coated in a wash they turn into a golden pastry and then go to the golden colour a pie should be.
 What will you do now with your pies? I will not overcook it and make sure I use a egg wash to give it that golden colour.
 Why will you do this? So it turn out the best possible way and it will not be a dry pie. I will cook the pie for about 10-15 mins so it gives it the best possible golden crispy ness and so it also isn't going to be undercooked and fall out the bottom.



Evaluation of the pie, how did it taste, structure (pastry), how was the mince filling viscosity?

The pie was a great success and help its shape well. The viscosity of the mince was great and help its shape when eaten. It had a good taste and had a great pop of flavor.

After experimenting with a variety of different pastry making techniques

I have learnt that **i could** use the food processor and it would be much more efficient than using my hands. For one it is much quicker and time efficient so I can get my pies in on time and not have to come back after class to pick it up.

However, **I should** use this **because** it makes a smooth dough and is super easy to do. If you don't overdo it you can see the butter streaks in it and then it will become a nice puff pastry.

<p>One experiment I undertook was using more beef stock to get that gravy like consistency. When I didn't use enough beef stock the mince filling went dry and crumbly.</p>	<p>The amount of beef stock made the consistency of the mince inside the pie. With not enough it was dry and crumbly. With enough it was like a gravy and had a lot more flavour.</p>	<p>I learnt that it is better to use more beef stock than not enough. We applied this method into my final pie designs and made the final product so much better in taste and looks.</p>
<p>Another experiment I undertook was mixing the butter and flour together into a ball/pastry after it had been broken down in the food processor. This made my pastry not over mixed, and I could really see the butter shards clearly. With an over mixed pastry, the pies didn't puff up like a pie should. It would be flat.</p>	<p>I explored the attributes of the pastry. I made an increase in flour and butter just so we could get enough pies made and I wasn't stretching the pastry to thin. We used different methods of mixing. The food processor and our hands. I found that the food processor did a lot better and was much more time efficient.</p>	<p>In my final pie I used the food processor to made the pastry, but we only combined the butter and flour to a breadcrumb texture and not into a moist ball of dough. I mixed it into a ball with our hands to make sure it was not over mixed. I found when I did this, I got a lot more puff in our pastry.</p>