[1] Making pastry for my lemon meringue pie

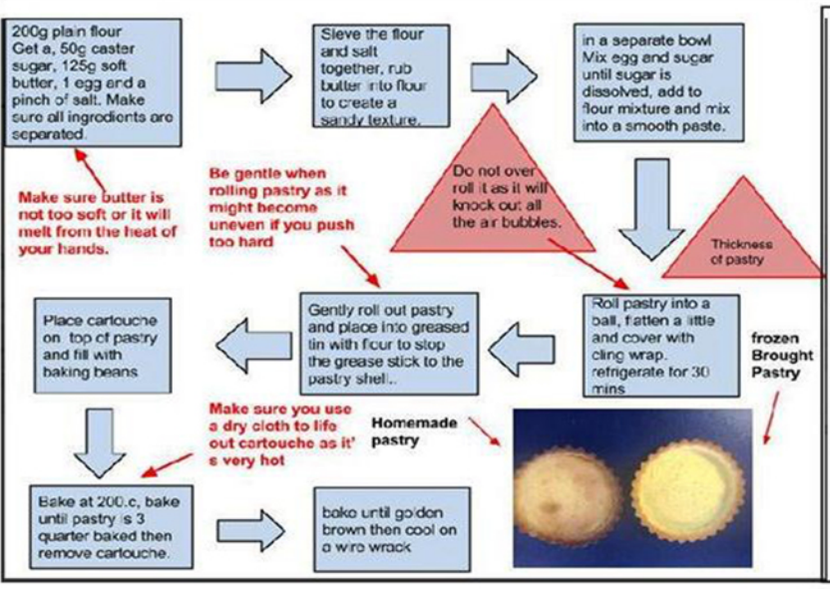
Rubbing the flour into the butter to create a course breadcrumb like texture.

Chopping up the butter into smaller pieces to make it easier to rub in

I have chosen to make short pastry:

- its not as fragile as flaky pastry and its easier to make
- it will not easily go soggy when the filling is added
- Rubbing in butter will make it nice and crispy and crumbly and give it some moisture
- I used my hands to rub in the butter—but the food processor might have been better because the blades are colder than my hands
- I will add sugar as this will make it sweet, which suits a dessert pie
- Adding egg makes the pastry richer, which suits my dessert pie
- Adding a small amount of iced water helps to bind the pastry together
- Sieving the flour adds extra air and makes the pastry lighter
- I'll make the pastry as quick as I can—too much handling will make it greasy, less handling will stop it shrinking
- Dusting the pastry with flour will prevent it from sticking
- Preheating the baking sheet will make the pastry crisper, which is what I want

[2] **Whisk an egg to the point where you can hold the bowl upside down** **Conclusion:** The **hand whisk** was probably most effective altogether. It was $34 cheaper than the **electric whisk** yet it gave a similar result, only it took a couple more minutes longer to whisk. The average time the **electric whisk** took to whisk was 1:30 minutes which is very time effective, the actual result of the egg white was very good as well. The average time the **hand whisk** took was 3:70 which is pretty good for time as well as the fact that it is way cheaper than the electric whisk. The **wooden spoon** was the worst in the way of time and result of the egg white. The egg white was very lumpy and curdled. The one group that managed to get close to a foam took 19 minutes to do it so it was a big waste of time for the result. The **spoon** was a terrible whisk because it has no holes for air to move through the egg whites so it took a very long time to incorporate air into it because air is what actually makes it foam. The fact that the **spoon** is wood as well also means that it will not conduct heat so the egg won't expand as fast. Although the **wooden spoon** was the second cheapest item, it was not worth it, even the **fork** proved to be a better whisk. The **fork** was the third fastest time to whisk which was an average of 5.20 minutes that is not that time effective and the result was also not really worth it as it was quite bubbly which means the air bubbles hadn't quite mixed with the egg white. Overall, the **electric whisks** result was the best along with the time but the **hand whisk**



I prepared a flow diagram so I knew the processing operations I would undertake and the testing I would do along the way. The arrows are there to show the direction the processes and tests need to flow in.

I have shown (in red text, because its important) how I need to test for the softness of the butter.

As well as identifying (again, in red text) it is important to be gentle when rolling the pastry, I should have identified the need to test by measuring the thickness of the pastry (also in a red triangle).

I should have more clearly shown some of the tests I needed to do (ie to make sure the texture is sandy, the sugar is dissolved, and the baking time gave the right colour). These tests could have also been in red triangles. This would have made it more obvious that I needed to do these tests.

[3]

[4] Processing in the classroom compared to processing in industry

I found out that commercial situations generally seemed to just use scaled up versions of a recipe I would use in the classroom. That is, they will think of the flour as being 100%, and they will have lesser percentages for the butter, eggs, sugar, water. They will also follow a similar process (eg making sure the flour granules are covered in a good fat - to stop the gluten effect, etc)

The tricky bit is how they process to make a large volume. This is because making good pastry requires some important techniques - keeping the pastry cold, not overmixing.

The big mixers that would be needed to process large quantities can give off a lot of heat, can make it easy to overmix the pastry, and it can be tricky to add the right amount of liquid to get it to all bind together.

Unless bakers have got a really good mixer, they will often bake in batches. This makes it easier to control the amount of liquid that is added.

This pie making machine makes things a lot different to what we would be in class. It can be programmed to cut any size and shape, it uses what is called a relaxed application of pastry—this means that there is not the shrinkage problem that we have to overcome in class. It can measure the exact amount of filling - its hard for us in class to get the right amount of filling to match the pie tim size we are using in our kitchen.

It seems that lots of bakers still prefer to do the processing by hand (very similar to how we work in the classroom). They will weigh the mixture to the quantity needed for each pie shell and refrigerate it. It can be in the fridge for up to 3 days and in the freezer for a month. This is good for us at school too - we can make the pastry one period, keep it in the fridge and do the next stage the next period.

In class, we roll out our pastry. In industry, bakers will do this too, or some have pressers and cutting machines. Some will roll the pastry into a log, chill it, cut off circles etc. Some use a template for cutting the pastry to the right size.

To keep the larger quantity of pastry as cold as possible, industry will sometimes chill the flour in the fridge (we don't need to do that for the quantity we make in class). They will also chop up the cold butter and put it back in the fridge or freezer before they mix it into the flour.

Industry will take the scrap and mix it into the next batch. They don't want to have too much scrap as the pastry might end up being overworked.

[5] The difference between health and safety regulations in the classroom and in industry

In class, just like in industry, we follow a HACCP. This stands for hazard analysis and critical control point. It is used to identify, evaluate and control hazards. The HACCP that we developed for making our lemon meringue pie is based on what would be done in industry, as we want our food to be safe and suitable for eating.

The things I identified as being high risk include eggs—they can carry salmonella. I documented that I would throw away cracked eggs, and keep them in the fridge away from other ingredients. In industry, to be extra safe, they might use pasteurised eggs.

In industry, because the pies are being made for selling, there would also need to be guidelines about labelling, packaging, storage that we in the classroom don't have to be concerned about. This is to protect the food from contamination while it is being stored (ie to point of sale) , to let the consumer know how to handle it and also what ingredients are in the pie.

In industry where commercial machines are being used (eg cutters), there would also need to be guidelines about the safe use of these. Our teacher makes sure we know how to safely use the equipment in our classroom.

Industry would also need to have guidelines about toilets, hand basins etc. At school, these facilities are managed under other school guidelines. But we do have hand basins in the foods room for washing our hands.

Industry also has to keep a strict control of the health of their workers. Because we are eating the food ourselves and not selling it, school is not always so strict about that.

At school, we also follow the guidelines that are in the 'Safety in Technology Education' book.