

Food Preparation and Nutrition



Year 11

Knowledge Organiser

Chosen task- Gluten formation is essential when making different types of dough. Investigate the functional and chemical properties of a bread dough.

NEA 1- Food Investigation

Task analysis:

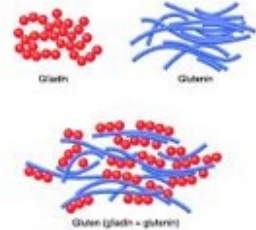
To be able to answer this investigation to the best of my ability I must research the functional and chemical properties of bread dough. Different types of flour contain different quantities of gluten and the quantity of gluten in the flour determines the strength of the bread dough and its ability to stretch as yeast ferments. I will consider my prior learning before I begin to research as we have done lots of work in class related to bread making.

Prior learning- working properties/functions of ingredients.

Ingredient	Function in bread
Flour	Flour is the main bulking ingredient in bread making. It contains gluten to allow the dough to stretch.
Yeast	Ferments to produce carbon dioxide gas making the bread dough rise. This carbon dioxide is supported in the gluten framework.
Salt	Salt brings out the flavour of the bread. Salt affects the texture and shape of bread. Salt strengthens the gluten
Warm water	Activates the yeast and starts the fermentation process. Hot water would kill the yeast and cold water would not activate fermentation.
Fats	Improves the keeping quality.

Research

Flour provides the structure in bread. Wheat flour contains proteins that interact with each other when mixed with water, forming gluten. When kneaded the gluten is stretched and elasticated. It is this elastic framework which stretches to contain the expanding gasses during rising. The protein content of flour affects the strength of a dough. The gluten coagulates when heated and therefore produces the structure. This will help me in my investigation as I will use different types of flour containing different amounts of gluten to see which flour has the best structure.



Different flour and their gluten contents

Different flours contain different gluten contents. The gluten content affects both the physical and chemical changes to the bread. Cake flour has the lowest protein content of all flours with just 8.5 percent. It absorbs less water than high-protein flours, making it less suitable for bread dough.

High-gluten flour, also called high-protein or strong flour, contains 12.5 percent protein. The proteins in flour, when mixed with water or other liquid, bind together and stretch, creating layers that trap gasses made by yeast and creating a chewy texture. High-gluten flour is also called bread flour.

The gluten content of bread dough can be strengthened by kneading, proving or altering the liquid content of the dough – all of these factors will be tested when I carry out my own investigation work. Ascorbic acid (vitamin C) can also be added to the dough to give extra strength to the gluten.

Hypothesis

Extra strong flour would be the best flour to use when making bread. This is because it has a high gluten content meaning that it will give a better structure. The gluten can be activated by kneading and adding liquid.

Using research findings to inform investigation planning.

Planned investigation	Justification for choice of investigation
Investigation 1- Investigating how different breads with different gluten content affects the bread structure.	In order to prove my hypothesis that strong flour produces the best bread dough I will make three batches of bread dough however I will use different types of flour. I will use strong flour, cake flour and all-purpose plain flour. I will use the same amount of water, yeast and butter to make it a fair test. Each batch of bread dough will have 50g of flour. To see which flour provides the best gluten formation I will wash the dough balls under cold water to wash away the starch, this will result in a ball of gluten. From this I can see which flour contains the most gluten.
Investigation 2- Investigating how different kneading times gives a better rise and structure.	Having proved which flour gives the best rise to the bread this investigation will investigate if kneading strengthens the gluten to give a better height of rise. I will have three batches of strong flour each 50g. I will knead each batch of dough for different times, the first batch for three minutes and the second batch I will knead for six minutes and the final batch for nine minutes. From my research I know that kneading strengthens the gluten. When evaluating the success of the flours I will look for which flour has given the best height of rise (cm) as this will show which has the best elasticity to stretch and hold the carbon dioxide gas.
Investigation 3- Investigating which amount of liquid helps to give the best bread structure.	In this investigation I am going to test whether different quantities of liquid effect the gluten

YEAR 11 FOOD KNOWLEDGE ORGANISER FOR NEA1 WORTH 15% OF YOUR FINAL GRADE

CONTENT	STUDENT TIPS	Assessment objective:	Maximum marks available:
SECTION A – RESEARCH Background information on ingredients related to the product you have been given for the BRIEF – find out how these ingredients work in the product and why? Establish a HYPOTHESIS or PREDICT an outcome based on your research findings. Write one or more AIMS FOR YOUR INVESTIGATIONS and related practical work.	It may be helpful to: Spend no more than 2 hours on background research so that you have plenty of time for practical experiments. Have an AIM for each investigation. HYPOTHESISE or PREDICT what will happen for each investigation.	A02	6
SECTION B – INVESTIGATING: Carry out the investigations that you have planned linked to your hypothesis/prediction. Each investigation should have a clear AIM . Results from one investigation should lead to the next. RECORD results using photographs, charts, and graphs EXPLAIN YOUR FINDINGS.	It may be helpful to: Record and explain your results clearly – Link them to your hypothesis or prediction and make sure you include your photographs.	A02	15
SECTION C – ANALYSIS & EVALUATION: ANALYSE and INTERPRET your results DESCRIBING HOW THESE RESULTS COULD BE USED IN OTHER PRACTICAL SESSIONS. Evaluate the hypothesis/prediction with justification. Explain how the ingredients worked and why? Include a BIBLIOGRAPHY.	It may be helpful to: Say if the hypothesis or prediction you made at the start came true? If not, why not? Keep a note of the books and websites you use for the bibliography.	A04	9
		TOTAL	30

Analysis and conclusion

In this conclusion I will give an overall analysis of all three experiments carried out. My hypothesis stated that strong flour would be the best flour for bread making as it has a high gluten content and will give the best structure to bread. My first investigation proved my hypothesis correct as the flour that left the most gluten when the starch was washed away was strong flour. This investigation also showed the percentage of gluten in the different flours and the strong flour had the highest percent of gluten. I know from my research that because strong flour has the highest gluten content it will give the best structure to bread because of its ability to hold the carbon dioxide.

When changing the time that the bread dough was kneaded for this effected the gluten formation, relating this to the scientific principles of prior learning and research that kneading strengthens gluten; I can conclude that when kneading the dough for longer the gluten is developed and expanded giving the dough a better structure as it has the ability to hold and support the carbon dioxide gas.

From the third investigation I can conclude that using a higher amount of liquid will result in a better bread dough as the warm water used in bread making activates the gluten in the flour, therefore using more water effected the gluten formation giving the bread a good structure.

In the future when planning and preparing foods I will apply the knowledge I have learnt from this investigation for example when making choux pastry I will choose strong flour as I now know that this will give a pastry dough with a high gluten content that will stretch and hold steam in the oven. Another example will be when making puff pastry I will select strong flour to support the laminations of fat as the create steam in the oven. I will choose soft flour when making cakes and biscuits where a lower gluten content is required.

Investigation 1:

Aim: To extract gluten from bread doughs made from different types of flours, to see which has the highest amount of gluten content.

Samples produced:

To calculate the gluten content I used the following formula:

$$\text{Weight of gluten ball} / 50g \times 100$$



YYY – 50g strong flour and 30ml of water.

In my first investigation I tested strong flour, I know from my research and knowledge that strong flour has the highest gluten content and would therefore provide the best structure for bread as the gluten allows the dough to stretch and hold carbon dioxide. This test showed that my prediction was correct as the gluten ball weighed the most.



YYX – 50g all-purpose flour and 30ml water

In the second part of this experiment I used all-purpose flour to test how much gluten it contained. The flour produced 1.1g of gluten, this is also what I expected as I know that all-purpose flour contains a lower amount of gluten compared to strong.



XXX – 50g strong flour and 30ml of water.

The last flour that I tested was cake flour. Cake flour, as predicted, produced the least amount of gluten. This meant that the structure of bread from cake flour would have no stretch as there is not enough gluten to allow it to be stretch. The cake flour contained 0.9g of gluten.

The controls I applied were:

I ensured that the dough balls each had specifically 50g of flour and 30ml of water each. Keeping these the same made sure that no dough ball had more flour, this could have affected the gluten content. I also made sure that each of the batch was kneaded for two minutes each before washing the starch away. I know from research that kneading strengthens gluten therefore I kept the time the gluten was kneaded for the same, so that it was fair. I made sure that I did each experiment separately so that the dough had the same time to dry out. I also cooked all my dough balls for the same amount of time in the same temperature.

Conclusion:

My results showed that the flour containing the most gluten was strong flour. The strong flour contained 26% of gluten however, the cake flour only produced 18%. The proteins in strong flour, when mixed with water or other liquid, bind together and stretch, creating layers that trap gasses made by yeast and creating a stretchy texture. This relates to my research because I found that strong flour has the highest gluten content and that cake flour produces the least gluten content. I can see from my results that cake flour didn't have a stretchy structure which therefore means it had the least gluten. It proved my hypothesis correct as I predicted that strong flour contained the most gluten. My next investigation I will do will be to knead each bread dough for different amount of times to see how kneading effects the structure. I know that kneading strengthens the gluten content.

Investigation 3:

Aim:

To determine whether more or less liquid has an effect on gluten formation in the dough.

Samples produced



XXX – 50g strong flour, yeast, 27ml water

In this first experiment I used 27ml of liquid (water) I predicted that this investigation would rise the least because I know that water activates the gluten therefore having less water would mean the gluten didn't stretch to its best ability.



YYX – 50g strong flour, yeast, 30ml water

Next I tested the dough using 30ml of water this means the gluten would have been activated more meaning the bread dough would have raised more as the gluten has been stretched more as it is holding the carbon dioxide that was produced by the yeast and water.



YYY – 50g strong flour, yeast, 33ml water

In the final experiment I used 33ml of water, I predicted that this would give a good rise and structure of bread as there is more warm water to activate the gluten and give the bread a better structure.

The controls I applied were:

I made sure that each time I used the exact same amount of yeast I did this by using a teaspoon of yeast for each dough this ensured that each bread dough had fair amount of carbon dioxide bubbles produced as yeast produces carbon dioxide. I also made sure that I kept the same amount of flour each time I did this by using a digital scale to measure the flour. The final thing that I kept the same was how long each bread dough was kneaded for as this could affect the gluten. Kneading strengthens and expands the gluten therefore I kneaded each dough for 3 minutes each.

Sensory analysis results

Sample	Appearance	Total	Texture	Total	Taste	Total	Aroma	Total	Final Total
XXX	2 2 3 2 9	1 2 2 3 6	2 2 2 2 8	3 3 3 3 12	35				
4	3 3 3 3 12	2 3 3 2 10	3 2 4 3 12	3 4 3 3 13	47				
YYY	5 4 5 5 19	4 4 4 4 16	4 5 5 5 19	3 4 5 3 15	69				



RESEARCH & ANALYSIS:

Task: Plan, prepare, cook and present a range of dishes which are based on the ITALIAN cuisine. Present 3 technical dishes and two final dishes.

Researching for task: For this task I will plan, prepare and cook three dishes that are based on a European cuisine. I will ensure that I use a variety of skills and also before I carry out these dishes I will make a detailed plan of what European country I will choose along with what three I will prepare.

Prepare: I will prepare three dishes ready for be eaten, all of my dishes will include a range of complex skills in the preparation process. My three Italian cuisine dishes will include de-boning a chicken and filleting a fish along with the making of doughs, pastry's, sauces and breads. I will carry out these skills throughout the trials and final dishes.



European countries I could choose from:

- Italy
- Spain
- Greece
- United Kingdom
- France
- Portugal
- Poland

Italy: My initial thoughts at this point are that I may focus my dish selection and cooking on Italy. I will focus my research on this country. I will find out about traditional eating patterns, traditional foods, food presentation styles and recipes.

Skills: I will use a wide range of techniques to cook my three dishes these will include deboning a chicken, filleting a fish and I will make my own pasta to follow the

Present: I will present my work to the best of my ability by offering the most pleasing of dishes. The visual result of the three dishes will be to a high standard as well as the texture and taste.

Analysis

Cook: I will cook three Italian dishes by cooking, and combining different ingredients to make a desired dish. To season my dish I will use a range of herbs and spices, and I will use different methods to cook my dishes, and use traditional cookery methods from the Italy. I will organise my dishes to manage the time correctly and will showcase my skills.

Plan: I will plan my three dishes by using a time plan. This will make sure that I am organising my time correctly, and making sure that I am cooking my foods at the right time whilst preparing other foods. My time plan will also include a column for hygiene rules which I will follow throughout the cooking.

Nutritional analysis: Whilst cooking my dishes during the three hours I will consider the nutrition side of my dishes. I will consider the amount of carbohydrates, proteins, salt, vegetables and fats are in my dishes. I will make my three dishes be nutritious.

Costing: When buying my ingredients I will consider the cost of each product and make my dish at a reasonable price. My dish will not be too expensive however it will be to the highest possible quality.



- Traditional foods**
- Meat:** beef, goat
 - Fish:** Sardines, tuna, anchovies, squid, sea bream, sword fish
 - Dairy foods:** butter, cheese (parmesan, mozzarella, ricotta)
 - Fruit and vegetables:** Olives, olive oil, tomatoes, lemons, oranges, Aubergines, peppers, Fava Beans
 - Cereals:** rice and maize (northern Italy), durum wheat (southern Italy) - used for making pasta
 - Cereal products:** pasta, pizza, breads, ricotta, pastries and cakes
 - Spices:** saffron
 - Herbs:** basil, oregano, coriander
 - Sauces:** tomato sauces for pasta and pizzas
 - Nuts:** almonds

- Traditional eating patterns**
- Italians have several courses
 - Families take their time to eat the meal together
 - The Italian slow movement encourages people to focus on their food and eat it slowly to appreciate the flavours and textures.

- Meal courses in Italian meals**
- **Antipasto:** Food to start the meal e.g. bruschetta
 - **Primo:** First course e.g. a hot dish such as pasta, risotto, gnocchi or soup
 - **Secondo:** second course e.g. meat or fish
 - **Contorno:** Salad or vegetables
 - **Dolci:** Fruits and cheese
 - **Bevande:** sweet course

- Traditional cooking methods**
- Stewing
 - Boiling
 - Baking
 - Roasting
 - Grilling
 - Griddling
 - Frying
 - Steaming
 - poaching

- Traditional cooking equipment**
- pizza oven
 - pasta maker
 - electric and gas cookers
 - modern barbecues

- Food presentation styles**
- Food presentation is simple with many dishes having only 4-8 ingredients:
 - Pasta with sauces
 - variety of salads
 - soups pizzas
 - Risotto
 - Shellfish with sauces or salads
 - Frozen fruit and cream desserts

**NEA2 RESEARCH & ANALYSIS SECTION—
WHAT A GOOD ONE LOOKS LIKE:**

Students should:

- analyse the task by explaining the research requirements
- carry out relevant research and analysis related to the: life stage, dietary group or culinary tradition
- identify a range of dishes eg by mind-mapping, or using annotated images
- select and justify a range of technical skills to be used in the making of different dishes.

Mark	Description
5-6	<ul style="list-style-type: none"> • Relevant, concise and accurate research that shows discrimination when selecting and acquiring information to answer the task. • Detailed understanding and analysis of the dietary group, life stage or culinary tradition. • Selected a varied range of relevant dishes closely reflecting the research and chosen task.

Italian chicken calzone
This dish will allow me to use my technical skills to de-bone my own chicken and I will use specific parts to put inside my calzone. I will also create my own pizza dough which I will then fold to create the traditional calzone. This dish will be nutritionally balanced as I will make my own tomato sauce to cover the pizza dough.



Pasta bake with smoked salmon, fontina & peas
In this dish I will make my own fresh pasta and cut it to the right shape. I will also fillet a salmon to include in this dish. I will make my own béchamel sauce. All of these three skills would help me to gain a high level.



Amalfi-style fish soup
This is a traditional Italian soup made with traditional Italian dishes. This dish would be a good way to show my technical skills as I would fillet my own fish and add this to my homemade soup. From my primary research I found that seafood is a preferred meat in Italian dishes. This dish is a tomato based soup which means it is nutritionally balanced.



Chicken breast in creamy sage and lime sauce
This is a classic Italian dish, this dish would allow me to debone a chicken which I would then use the breasts. I would also make my own creamy sauce.



Ravioli filled with salmon and ricotta
In this dish I will be able to use different techniques and skills. I will make my own pasta and shape it as ravioli I will fillet my own fish to fill my ravioli. I will ensure that I use high quality ingredients for a low cost. This dish will be nutritionally balanced which I found in my primary research that is a key factor to what affects people's food choices.



Pear and chocolate frangipane
This dish would help me to show a high level skill in shortcrust pastry making. For this dish I would have to make my own pastry for the tart and it would also allow me to show my cake making skills. In this dish I would make sure it would have the perfect tart consistency throughout and that the pastry also was short with the correct consistency too.



Mark	Description
15-18	<ul style="list-style-type: none"> • Competently executes a wide range of complex technical skills/processes (eg filleting fish or cutting vegetables with precision and accuracy eg julienne) to produce excellent quality dishes. • Selects and uses appropriate equipment confidently and accurately. • Extensive review of technical skills that leads to appropriate and justified final dishes.

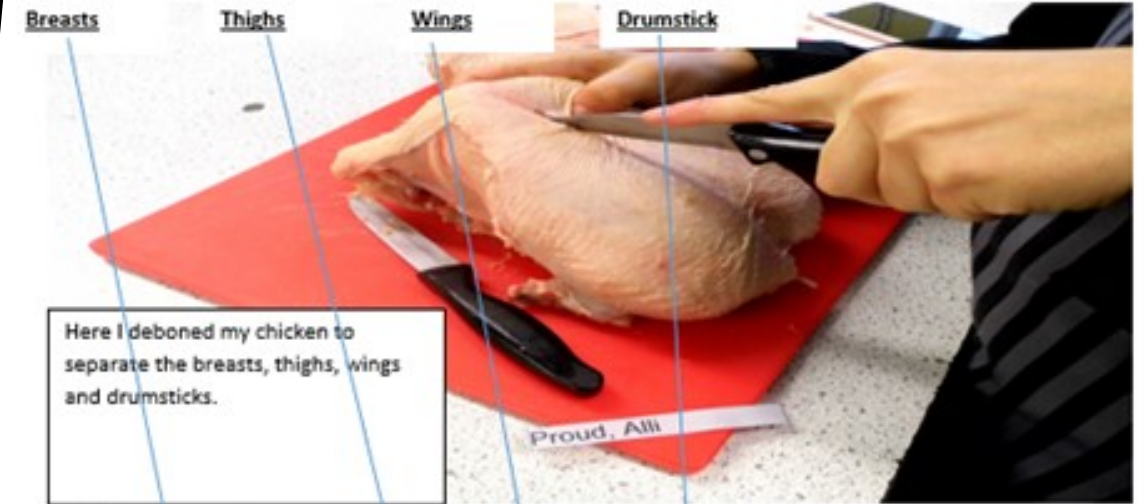
MAXIMIZE YOUR MARK

Demonstrating technical skill

Dish 1- Italian chicken and tagliatelli pasta

Reasons for choice: The reason I chose this dish was because it allowed me to show my skills of deboning a chicken and making my own fresh pasta as well as these complex skills I made my own sauce for the pasta. I could develop this dish by many ways. I could change the type of pasta and make ravioli pasta by hand and then stuff it with chicken. I would debone the chicken again and use it to fill the pasta.

Skills demonstration



Here I deboned my chicken to separate the breasts, thighs, wings and drumsticks.



THIS SHOWS YOU HOW TO WRITE UP A TECHNICAL DISH.

YOU ARE REQUIRED TO MAKE 3 OR 4 TECHNICAL DISHES.

Skills demonstrated

After deboning the chicken I began to prepare my fresh pasta. This was my second technical skill I used in this dish. I blended the ingredients together to form a dough. I then used the pasta machine to get my dough thin enough to make tagliatelle. When making my pasta I used strong flour as I wanted to create a thin pasta that was stretchy and did not break easily. Strong flour has a high gluten content and therefore the gluten was able to stretch to make it more elasticated. Once the dough was thin I used the shaping part of the pasta machine to cut the dough into tagliatelle.



The next skill I demonstrated was to make my own sauce to go on top of the chicken. I blended the ingredients together to form a paste this was added to the chicken whilst it was cooking. Once I had cooked the pasta both the pasta and chicken were presented together on a dish.



My taster thoroughly enjoyed this dish and score it high in my sensory attributes. This product was packed with technical skill as I deboned a whole chicken and filleted it successfully and I also made my own pasta and that turned out really well too. If was to develop this dish further I could use a variety of different meats and use a different shape of pasta.

The ingredients I used were: 1 whole chicken, 2 eggs, flour, garlic cloves, parsley, basil, chilli flakes, salt, pepper, red onion.


Sensory evaluation

Italian chicken and tagliatelli	Appearance	Total	Texture	Total	Taste	Total	Aroma	Total	Final Total
	5 4 5 5	19	5 5 5 5	20	5 5 5 4	19	4 4 5 5	18	76

Mark	Description
15-18	<ul style="list-style-type: none"> Competently executes a wide range of complex technical skills/processes (eg filleting fish or cutting vegetables with precision and accuracy eg julienne) to produce excellent quality dishes. Selects and uses appropriate equipment confidently and accurately. Extensive review of technical skills that leads to appropriate and justified final dishes.

Mark	Description
25-30	<ul style="list-style-type: none"> Competently executes a wide range of complex technical skills and processes to an excellent standard (such as filleting fish or cutting vegetables with precision and accuracy eg julienne) in the making of the three final dishes. Selects and uses appropriate equipment with precision and accuracy. The three final dishes show a high level of demand, complexity and challenge. Final three dishes include a wide range of finishing techniques such as garnishing and decoration eg piping. All dishes are accurately presented with attention to detail and finished to an excellent standard. Excellent evidence of time management. All three dishes produced very successfully within the three hour period. The student followed the time plan closely using the correct sequence with excellent linking and application of food safety principles.

Dish 3- pear and chocolate frangipane tart



In this dish I was able to show my pastry making skills. This tart had to specifically me a shortcrust pastry with the right consistency. I needed to create this short consistency by not excessively rolling out the pastry and not stretching the pastry as this will make the gluten develop.

	Taster 1	Taster 2	Taster 3	Taster 4	Taster 5	Total
Appearance	5	5	5	5	5	25
Texture	5	5	5	4	4	23
Aroma	4	3	4	4	5	20
Taste	4	5	5	5	5	24

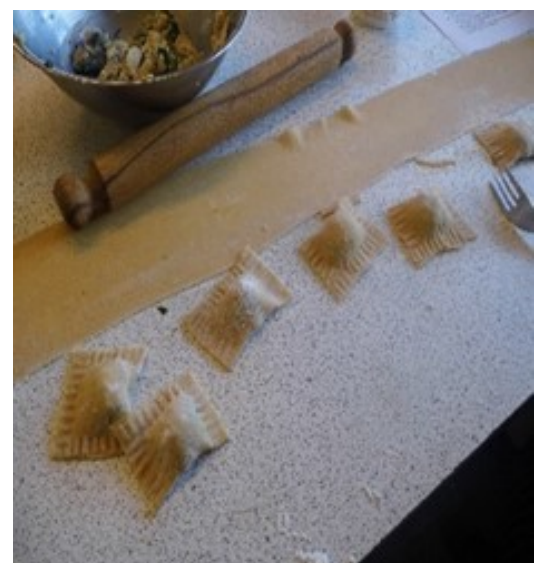
Section C: selecting the final dishes: justification

	Spinach and ricotta ravioli with a sage butter sauce	Chicken calzone	Pear and chocolate frangipane tart
Technical skills	Although I made fresh tagliatelle pasta in my technical dish, I am going to improve my dish further by developing the pasta into a stuffed pasta. I will also be making my own stuffing for the ravioli. My final skill in this dish will be making and thickening my own sauce.	In my technical dish I made a focaccia bread which has similar attributes to a pizza dough. Therefore I am using the skills I used making the focaccia bread to make my calzone pizza dough. I will also make my own tomato sauce to coat the pizza dough. Another skill I will show in this dish will be deboning a chicken. I will debone a chicken to fill the calzone, which I previously did in my technical dish.	In this dish I will be able to demonstrate short crust pastry (making and shaping) which I was able to also demonstrate in my technical skill of pine nut and ricotta tart. In this dish I will also blind bake my pastry to make sure it is cooked to perfection and gives a 'short' consistency. As well as my other skills I will demonstrate apple coring and slicing.
How the dish represents my European cuisine	Ravioli is a type of pasta that originates from Italy. As it was invented by sailors in northern Italy and is now made by all different Italian restaurants and is a popular dish in Italy. It is often filled with meats or cheese. Spinach and ricotta ravioli is a traditional dish made by Italians.	Calzones originates from Italy and is based on a traditional pizza. Pizzas originate in Naples. In Italy calzones are often stuffed with different meats, cheese and tomato, this is what I filled my calzone with to keep it traditional.	This tart uses a variety of different Italian ingredients. It also a popular Italian desert.
Ingredients	<ul style="list-style-type: none"> 300g strong flour 100g semolina 4 free range eggs 150g spinach 150g ricotta 150g fresh breadcrumbs 20g grated parmesan 1 free range egg, plus one yolk Good grating of nutmeg Salt and pepper 50ml vegetable stock 60g butter 10 sage leaves 	<ul style="list-style-type: none"> 225g of strong flour 90ml of milk (warm) 50ml water (warm) 1 tsp of yeast 25ml olive oil Salt 150g cherry tomatoes 200g buffalo mozzarella 200g Italian cold meats (salami, prosciutto) Chicken breasts 1 tsp capers 30g parmesan Cheddar cheese 	<ul style="list-style-type: none"> 250g plain flour 150g unsalted butter 1 tsp Golden caster sugar 1 egg 3 conference pears firm 2 tbsp. lemon juice about 150g plain chocolate 175g unsalted butter, softened 175g golden caster sugar 125g ground almonds 75g plain flour ½ tsp salt flakes ½ tsp baking powder 2 eggs medium free-range, beaten ¼ tsp vanilla extract 15g flaked almonds
Cooking methods	Boiling, reducing, conduction, sauce making, simmering, pasta making	Convection, conduction, frying, deboning chicken, dough making	Blind baking, blending, pastry making, fruit preparation
Nutrition	This dish produced a good source of macronutrients. The fresh pasta provided the dish with simple carbohydrates to give the body energy. This dish also provides the body with the macronutrient protein. Eggs (vitamin A) are rich in protein, this helps with growth and repair of the body. It also has a secondary source of energy and therefore gives the body energy. Iron is needed for the oxygen around the body.	This dish provided also was rich in all three macronutrients. Carbohydrates were provided by the pizza dough. I used wholemeal strong flour which provided fibre inside the carbohydrates. The fibre aids digestion in the body. The macronutrient protein is found in the meat, which helps growth and repair. Milk is a good source of protein, as well as being rich in calcium. The vitamin D helps to absorb the calcium in the body.	In this dish all of the three macronutrients are present. Carbohydrates are present in the flour in the shortcrust pastry to provide energy. Fibre is present in the flour too to aid digestion. The second macronutrient in the tart is protein, protein is found in the eggs, almonds. Both of these are good in terms of growth and repair. Saturated fats are found in the butter so supplies vital vitamins A, D, E and K but the butter is cholesterol levels.
Food provenance	The foods that I buy will be organic and nutritionally as good as possible. I will buy high quality ingredients however make sure that they are all at a reasonable price. I will buy ingredients that are as fresh as possible to ensure they are as nutritional as possible.	For this dish I will buy a free range chicken to ensure that the chicken was treated well and had a happy life. I will use organic flour and organic tomatoes. I will ensure that the egg I use to seal and glaze is free range also.	I will make sure that for this dish I will buy locally grown organic apples, so that they have not lost any nutrients and have not had a lot of food miles. I will also use free range eggs to make sure the chicken had been treated well. My flour will be organic, I will make sure that all these ingredients will not be too expensive.
Sensory properties			
Portion size	1	1	6

Section D- time plan

Time	Mise en place	Wash your hands, tie your hair up
9.00am		
9.05	Start by making the fresh pasta, add 200g of strong flour to a food processor with 2 eggs. Bind the two together until the mixture resembles fine breadcrumbs. Take out the mixture and place onto a flat surface. Begin to knead into a dough, once kneaded thoroughly wrap up the dough and leave to cool for up to 30 minutes.	*Wash hands after dealing with the pasta as dealing with other foods after this could cause cross contamination. <ul style="list-style-type: none"> Check eggs are in date as they are a high-risk ingredient. Knead on a clean surface.
9.15	Whilst the pasta is cooling begin to debone the chicken. Remove the different parts of the chicken in the following order: legs, thigh, wings, and breasts. Begin to make pizza dough add flour, salt and yeast to a bowl and knead into a dough leave to rise for 1 hour in the fridge. Take the pasta out of its cooling place.	*Use a red chopping board to separate raw meats from other foods to avoid cross contamination. <ul style="list-style-type: none"> Do not wash the chicken and it can spread bacteria. Ensure the chicken is in date.
9.45	Put all the chicken in the fridge whilst starting to make the pasta. Roll out the dough until flat and thin. Put the pasta through the pasta machine (cut if too wide) and slowly make the setting smaller each time the pasta goes through.	*Chicken is a high-risk food and therefore needs to be stored correctly in the fridge on the bottom shelf. <ul style="list-style-type: none"> Check the fridge temperature to ensure it is below 5 degrees cent.
9.55	Make the pastry, put the flour, butter and sugar in a food processor and blend until the mixture resembles fine breadcrumbs. Slowly add the egg and bind together until forming a dough ball. Roll out the pastry on a well-floured surface, lifting and turning after every few rolls. Line a 25cm flan tin with the pastry leave to chill for 30 minutes.	*Make sure the fridge is at the right temperature to chill the pasta (0-4 degrees Celsius). <ul style="list-style-type: none"> Do not over handle the pastry as the fat will melt and the texture will become hard. Lift the pastry at the edges before baking to allow for shrinkage.
10.05	For the pasta filling bring a pot of water to the boil and add the spinach, cook for 2 minutes, then remove from the pot and drain and finely chop. Mix the ricotta, breadcrumbs, parmesan, nutmeg and spinach together. Leave this in the fridge to become firm.	*Make sure the handle of the pan is not sticking out so that it is not knocked over. <ul style="list-style-type: none"> Make sure the water is boiling or else the pastas will stick together.
10.20	Take out the pastry and fill with baking beans and bake for 22 minutes then remove beans for a further 3 minutes. Take out the pizza dough and roll into a pizza shape, make the tomato sauce to add to the pizza dough by adding all ingredients together and blend in a food processor. Add all additional toppings to the pizza including Mozzarella cheese and the chicken breasts (previously deboned). Put all the toppings on one side of the pizza and then fold the side of the pizza constraining no toppings over the other side. Place in oven for 15 minutes.	*Wear oven gloves to avoid burning yourself. <ul style="list-style-type: none"> Check the oven is at the right temperature so that the pastry case does not burn and cover the edges with foil. Ensure the blender is sanitised to avoid cross contamination. Handle chicken carefully – do not cross contaminate. Time and temperature check at this point.
10.40	Remove from oven, peel apples and cut into quarters, put into a bowl. Pour lemon juice over the fruit and mix around. Cut up the chocolate into small pieces. Blend the butter, sugar until soft. Add flour, ground almonds, salt, baking powder eggs and vanilla and blend. Stir in the chocolate	Add enough lemon juice to prevent enzymic browning of the apple. <ul style="list-style-type: none"> Ensure the chocolate is cooled to prevent the mix curdling.
10.55	Take out the pizza.	Visual check – ready?
11.00	Spread the almond mixture over the pastry, and place the apple around the edges of the tart. Place in oven for 30 minutes place an equal amount of the mixture on the pasta and cut into ravioli shapes. Place into boiling water and cook for 3 minutes. Make the sage butter sauce by adding stock into a hot pan and add the butter and get it hot and foaming add sage leaves cook for 3 minutes	Arrange the apples neatly for excellent visual appeal. <ul style="list-style-type: none"> Time and temperature check to prevent burning. Reduce the stock enough to thicken slightly for the sage butter.
11.10	Add the butter sauce to the ravioli and serve.	Toss well to coat the ravioli and prevent the pieces sticking together.

Mark	Description
7-8	<ul style="list-style-type: none"> Accurate nutritional analysis data for the three final dishes which is fully explained with conclusion and recommendations. Accurate and excellent knowledge of nutrition is demonstrated. Detailed and appropriate sensory linking with detailed analysis and evaluation. Final dishes are costed with the results of the costing analysed and explained. Detailed, relevant and creative improvements suggested for the final dishes.



This dish scored very high in most of the sensory attributes and was enjoyed by all of the tasters. The appearance scored the highest out of all of the sensory attributes: I used the pears to enhance the presentation of this tart I also sprinkled almonds over the top as this gave the dish extra decoration. The texture of this dish also gave a high result, this was because the pastry was not rolled too much or stretched and therefore the pastry had a short consistency.

	Per 100g	Per portion (100g)	R%
Energy	1272 kJ	1267 kJ	16%
Energy	304 kcal	327 kcal	16%
Fat	12 g	13 g	16%
Saturated	3.9 g	3.7 g	16%
Carbohydrate	47 g	44 g	16%
Sugars	13 g	14 g	15%
Protein	9.1 g	9.7 g	22%
Fibre	3.4 g	3.7 g	15%
Salt	0.2 g	0.2 g	3%

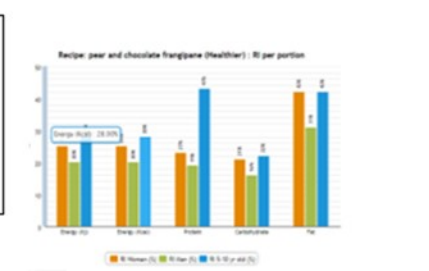
Nutritional analysis

All of the nutrients in this dish are presented with an amber colour next to them. This means that they are not bad or concerning. Only 16% of this dish is energy which means that not too much energy is provided. It is important that not too much energy is provided as energy is provided in many different ingredients within the dish and a build-up of energy with be stored as fat. 10% of this dish is saturated fat which could be substituted with something healthier. There is a high amount of protein provided by this dish which is good for the body in terms of growth and repair and also has a secondary source of energy. A lot of fibre is also provided by this dish which causes the digestive system to work healthily. I could replace the sugars with sweetener to make the percentage of sugar lower and therefore making it healthier. Furthermore, to make it even healthier I could reduce the amount of saturates in this dish to avoid risk of stroke or heart disease as adults are more prone to this.

Name	Amount used	Cost for 100g	Cost for recipe	Cost for portion
flour plain	250g	£0.06	£0.20	£0.03
pears, Conference	200g	£0.22	£0.44	£0.06
almonds, ground	100g	£1.10	£1.10	£0.14
flour plain	100g	£0.06	£0.06	£0.01
egg	100g	£0.50	£0.50	£0.07
caster sugar, golden	15g	£0.19	£0.03	£0.00
chocolate, plain	100g	£0.52	£0.79	£0.10
butter, unsalted	100g	£0.05	£0.07	£0.02
Totals			£4.20	£0.58

One portion of this dish costs 53p this means it is widely available for families with all different incomes. To make this dish it costs £4.20, however it could cost less depending on the brands of the ingredients that are used. If a retailer wanted to sell this product in supermarkets they could make a profit of 47p - £2.00.

A single portion of this dish provided 19-23% of the daily recommendation of protein. This means that the body is getting the protein needed for growth and repair however is not getting too much protein which could lead to weight gain. This dish also provided 20-25% of the recommended intake for energy. This means that energy is taken in but not too much, if too much was taken in this means that it would be stored as fat in the body.



CREATIVE IMPROVEMENTS:

- Vary the fruits included as the seasons change to incorporate seasonal fruits that cost less, then the overall cost of this dish would be kept lower and the freshness of seasonal fruits means higher nutritive value for the adult consumer market.
- Use a different pastry for the case to lower the fat for example filo sheets.
- Remove the nut component to make the dish suitable for allergen sufferers – fruit zest and juice would add to the lacking flavour and moistness should the almond component be removed.

This concludes my NEA 2. I am very proud of my achievements and I have met all of the success criteria for this work.

BIBLIOGRAPHY:

- Various websites (Food a fact of life. Change 4 life etc)
- School text books.
- Jenny Ridgewell Nutrition program.