

2016 specification
first exams in 2018



Food Challenges

For GCSE WJEC Food Preparation
and Nutrition: Tricky Desserts

zigzageducation.co.uk

POD
8008

Publish your own work... Write to a brief...
Register at publishmenow.co.uk

Follow us on Twitter [@ZigZagFood](https://twitter.com/ZigZagFood)

Contents

Thank You for Choosing ZigZag Education.....	ii	Lemon Meringue Pie	47
Teacher Feedback Opportunity	iii	Teacher's Guidance	47
Terms and Conditions of Use.....	iv	Activity Answers	48
Teacher's Introduction	1	Student's Worksheet	49
Ice Cream	2	Chocolate Éclairs	54
Teacher's Guidance	2	Teacher's Guidance	54
Activity Answers	3	Activity Answers	55
Student's Worksheet	5	Student's Worksheet	56
Swiss Roll	9	Tiramisu	62
Teacher's Guidance	9	Teacher's Guidance	62
Activity Answers	10	Activity Answers	63
Student's Worksheet	11	Student's Worksheet	64
Panna Cotta	15	Crème Caramel	69
Teacher's Guidance	15	Teacher's Guidance	69
Activity Answers	16	Activity Answers	70
Student's Worksheet	17	Student's Worksheet	71
Crème Brûlée	21	Chocolate Soufflé	75
Teacher's Guidance	21	Teacher's Guidance	75
Activity Answers	22	Activity Answers	76
Student's Worksheet	24	Student's Worksheet	77
Baked Cheesecake	28	Lava Cake.....	83
Teacher's Guidance	28	Teacher's Guidance	83
Activity Answers	29	Activity Answers	84
Student's Worksheet	30	Student's Worksheet	85
Croissants.....	35	Napoleons	91
Teacher's Guidance	35	Teacher's Guidance	91
Activity Answers	36	Activity Answers	92
Student's Worksheet	37	Student's Worksheet	93
Macaroons	40	Baked Alaska	97
Teacher's Guidance	40	Teacher's Guidance	97
Activity Answers	41	Activity Answers	98
Student's Worksheet	42	Student's Worksheet	99

Teacher's Introduction

Food Challenges: Tricky Desserts is designed to support students in preparing the most challenging desserts found around the world. **Food Challenges: Tricky Desserts** was written for those who choose to study the new WJEC GCSE Food Preparation and Nutrition specification. We believe that completing the tasks included in this pack will help the students to develop their investigative skills and pass their non-exam assessments with ease as they are able to explore the challenges faced in the kitchen, such as *time pressures, temperatures, finishing, cooking methods and many more*.

What it covers

Food Challenges: Tricky Desserts covers 15 tricky desserts, carefully chosen to differentiate them in difficulty level, skills needed to complete the challenge and scientific principles they are based upon. By completing the challenges students will develop the skills required by the WJEC GCSE Food Preparation and Nutrition specification, gain confidence in cooking and prepare for their future career in the food industry. Each challenge is engaging and creative, supports further learning and allows critical evaluation of students' preparation and cooking skills. Each challenge is followed by a list of questions which help to fix and broaden the knowledge of the students.

How to use this resource

Each challenge consists of three parts:

1. **Teacher's guidance** – includes the aim of the lesson and student outcomes, resources required (including equipment and ingredients), approximate time each challenge will last, a difficulty level, and suggested answers and teaching tips. This can be used to support planning of your sessions.
2. **'The challenge overview'** – includes the ingredient list, the correct procedure and questions to think about – sometimes you might be asked not to give these to students straight away, as developing a procedure might be a part of the challenge.
3. **'Your task'** student worksheets help to structure the work during the lesson(s). Each task is built upon a main focus point, which helps students to recognise and understand the learning objectives of the lesson.

To make the challenge a little bit easier, we suggest you begin each lesson by providing a short introduction of the lesson objectives (what the lesson/topic is about).

You can also schedule this as a homework for students so that they can prepare theoretically for the lesson. Encourage students to research the newest information and professional advice according to the newest scientific data, health professional associations, culinary professionals, etc.

Further points on logistics

- Before completing any task, make sure you have all resources needed – either provided by the school or brought in by students.
- In the task description we suggest to split the students into pairs or into small groups – this is a guidance only and can be changed due to organisational or safety reasons. Always consider these when planning your lesson, as you might need more or less ingredients, tools and kitchen appliances, etc.
- On the ingredient list it is specified how many portions the recipe is for (when possible). Feel free to amend it if you don't need as much – and don't forget to amend the cooking time!

Further points on health and safety

- Before completing any challenge, make sure students are familiar with the school's health and safety rules.
- Make sure all groups have all the necessary equipment, access to running water and soap, ovens and power supply.
- Provide paper towels, clean kitchen cloths and kitchen gloves, or ask students to bring some from home.
- Make sure there is a working, certified fire extinguisher and/or fire blankets available, especially when handling hot oil.
- Remind students about safety issues when handling raw eggs or other high-risk products and when dealing with hot ovens / tins / blow torches / cookers.
- Make sure that students allergic to any food ingredients do not actively participate in activities which use them! Allergens are **bolded** on each ingredients list.
- Remind students about Good Hygiene Practice standards.

Free Updates!

Register your email address to receive any future free updates* made to this resource or other Food and Nutrition resources your school has purchased, and details of any promotions for your subject.

* resulting from minor specification changes, suggestions from teachers and peer reviews, or occasional errors reported by customers

Go to [zzed.uk/freeupdates](https://www.zzed.uk/freeupdates)

November 2017

Ice Cream

TEACHER'S GUIDANCE

WHAT'S COVERED IN THIS SESSION:

- ✓ protein denaturation and regulation
- ✓ safety and prevention of food poisoning when dealing with high-risk foods
- ✓ the use of food temperature probe
- ✓ changing the texture

LEARNING

Students should be able to:

- ☐ identify the main ingredients
- ☐ explain the function of each ingredient
- ☐ follow good practice procedures for quality and safety
- ☐ understand how to set up

SAFETY TIPS

- ! Make sure that students allergic to any food product do not act as a challenge (encourage them to measure times and write notes, if possible). In this session include **milk** and **eggs**.
- ! Remind students about the safety rules when handling high-risk foods and apply them to prevent cross-contamination of foods.

GUIDANCE FOR DELIVERY

- It might be necessary to make the ice creams overnight, so it would be better to do this session on a Friday or a few days before.
- The ice cream could be used as part of the Baked Alaska challenge instead of the macaroons.
- Since the recipe only uses the yolks of the eggs, consider using the egg whites for macaroons.

WHAT YOU WILL NEED:

Equipment:	Ingredients:
✓ saucepans with thick bottom ✓ large bowls ✓ whisks and/or hand mixers ✓ strainers ✓ containers or boxes suitable for freezing ✓ measuring jugs, kitchen scale ✓ food temperature probe ✓ cooker ✓ spoons, cups or plates to set up the taste panel ✓ water markers or stickers to label the boxes	✓ double cream ✓ whole milk ✓ vanilla pods (or vanilla extract) ✓ caster sugar ✓ egg yolks

INSPECTION COPY

COPYRIGHT
PROTECTED



ACTIVITY ANSWERS

1. The table below shows exemplary quality and safety checks which might be considered

Procedures	Quality checks	
Place milk, cream, vanilla pod and half of the sugar in a saucepan	- checking the fat content of milk and cream, selecting the type of sugar - checking that the milk is not curdled and smells fresh	•
Bring mixture to a simmer and remove from the hob	- ensure the sugar is dissolved - ensure the mixture is smooth (i.e. no lumps of vanilla seeds are present)	•
In a clean bowl, whisk the egg yolks with the other half of the sugar until pale and fluffy	- break the eggs into a separate bowl one by one to check their quality and freshness - ensure the mixture is properly creamed before proceeding	• • •
Once the eggs are whisked, slowly pour in one-third of the cream mixture and whisk	ensure the cream mixture is cool before adding it to the eggs	•
Pour the eggs into the saucepan and gently heat (do not boil!)	- check the temperature with a food thermometer - control the heat of the hob	•
Strain the mixture into two containers suitable for freezing. Remember to clearly label the boxes.	ensure the mixture is smooth (i.e. there are no lumps)	• •
Chill until cold, and freeze	- cover the boxes to prevent tainting - ensure the mixture is cool before putting it into the freezer (otherwise large crystals will form, affecting the texture of the ice cream)	•
After 30 minutes, take one of the containers out of the freezer and whisk again to add extra volume	use an electric mixer to incorporate larger amount of air into the mixture	• •
Freeze until the mixture sets completely	cover to prevent tainting	•

2. Students should notice that ice creams which were whisked twice are more fluffy and those which were whisked once are less fluffy.
3. i) Students can decide to use various scales, such as 1–5 or 1–9 scale. It is important to use the same scale so that the results are comparable.
- ii)
 - Students should ensure the proper temperature of the food samples – ice cream should be frozen (it is unacceptable to serve melted ice creams).
 - Also, students should label the food samples accordingly so that they can be compared between groups and between ice creams which were whisked again.

INSPECTION COPY

COPYRIGHT
PROTECTED



4. Calorific value of the ice cream can be lowered by:
 - using different kind of cream, e.g. a mixture of double cream and single cream
 - using skimmed or semi-skimmed milk instead of whole milk
 - using less sugar or substituting it, e.g. with stevia or xylitol

QUESTIONS TO THINK ABOUT ANSWERS

1.
 - Salmonella in eggs
2. Double cream is rich in fat, which is used to obtain the smooth, creamy texture due to the fat content.
3.
 - Freezing should take place at -18°C .
 - Colouring the ice cream will help to prevent tainting (taking the smell of other foods) and protect the ice cream from freezer burn and crystals of water forming on top.
4.
 - This recipe provides around 390kcal/100g.
 - The main sources of energy in the recipe are fats from double cream, milk and eggs (16g/100g).
 - There is also some energy from protein from milk and eggs (3.7g/100g). Calculate the energy from protein in the yolk weighs approx. 25g.
5.
 - There are two types of flavouring used in production of ice creams: natural and synthetic.
 - Natural flavourings include vanilla, cocoa, fruit and vegetable juices and extracts.
 - An example of a synthetic flavouring is ethylvanillin (which is identical to vanillin but is produced in a laboratory rather than from the plant), menthol (added to obtain mint flavour), banana flavour).
6. Boiling would cause the protein in eggs to denature, and this would turn the mixture into a solid mass.



**COPYRIGHT
PROTECTED**



Ice cream

THE CHALLENGE OVERVIEW

Making an ice cream seems easy but is it really? Think about what can go wrong! The eggs can curdle, the eggs can set too early, the cream can crystallise... and the use of raw eggs is a little bit tricky, isn't it?



Will you...



Your challenge is to make this tricky dessert. Your task is to make it in 10 minutes. Remember to follow the safety rules when dealing with raw eggs to avoid food poisoning.

INGREDIENTS

Makes 10 servings (90g each)

Ice cream:

- ☐ 500ml double cream
- ☐ 150ml whole milk
- ☐ 1 vanilla pod
- ☐ 125g caster sugar
- ☐ 5 egg yolks

You can choose other flavours, such as chocolate, orange, melted chocolate, fruit, etc.



PROCEDURE

1	Place milk, cream vanilla pod in a saucepan
2	Bring the mixture to a simmer
3	In a clean bowl, whisk the egg yolks and half of sugar until pale and fluffy
4	Once the eggs are whisked, stir in a third of the cream mixture and whisk again
5	Pour the eggs into the saucepan (do not boil!)
6	Strain the mixture into two clean bowls and freeze
7	Chill until cold, and freeze
8	After 30 minutes, take one of the bowls out of the freezer and whisk again
9	Freeze until the mixture sets (2 hours)

QUESTIONS TO THINK ABOUT

Discuss these questions with a partner or write notes in your books.

- What kind of bacteria is commonly found in raw egg? (Area 4: food spoilage)
- What is the role of double cream in making ice cream? (Area 4: the effect of cooking on food)
- What temperature should we freeze ice cream at? Why is it important to cool the mixture before freezing? (Area 4: Food spoilage)
- How many calories are in 100g of ice cream? What ingredients (macronutrients) are in ice cream? Use a calculator to calculate this! (Area 3: Calculate energy)
- What colouring/flavouring agents can you use when making ice cream? (Area 5: Food safety)
- Why shouldn't you boil the mixture once eggs are added to it? (Area 4: The effect of cooking on food)



COPYRIGHT
PROTECTED



INSPECTION COPY

Ice cream – Safety abo

YOUR TASK

Get into teams of three and work together to compete against others in the class to make the safest ice cream. What do you have to pay attention to? What should you avoid? What is the highest risk, and why? Complete the table to make sure you considered about every ingredient, delicious, but also safe to eat! The first row of the table has been filled in already to help you get started.

- When preparing your ice cream, fill in the table below to identify checks necessary to obtain the desired quality.

Procedures	Quality checks
Place milk, cream, vanilla pod and half of the sugar in a saucepan	e.g. check the fat content of milk and cream, the type of sugar, checking that the milk is not expired and smells fresh
Bring the mixture to a simmer and move to the hob	
In a clean bowl, whisk the eggs with the other half of the sugar until fluffy	
Once the eggs are whisked, slowly pour in one-third of the cream mixture and whisk	
Pour the eggs into the saucepan and gently heat (do not boil!)	
Strain the mixture into two containers suitable for freezing. Remember to clearly label the boxes.	
Chill until cold, and freeze	
After 30 minutes, take one of the containers out of the freezer and whisk again to add extra volume	
Freeze until the mixture is completely frozen	

During the lesson you will need to set up a tasting panel for all the ice cream made in class.

INSPECTION COPY

COPYRIGHT
PROTECTED



2. **Begin by comparing your own ice creams** – the one which was whisked again against the one which wasn't. Describe any differences in the table below.

Whisked again (box 1)	Not whisked again (box 2)
	

3. **Now it's time to compare the ice creams made in class.** Use the table below to compare your ice cream against those made by two other groups.

- i) What scale will you use to assess the samples?

.....

- ii) Are there any special conditions which need to be met when setting up the samples?

.....

.....

.....

.....

	My Ice creams		Group 1:	
	My ice cream 1	My ice cream 2	Ice cream 1	Ice cream 2
Colour				
Appearance				
Sweetness				
Texture				
Other				
 Total				

**COPYRIGHT
PROTECTED**



4. Whose ice cream scored the most?

.....

5. How was this achieved? Compare the tables on quality and safety checks to production process!

.....

.....

.....

.....

.....

.....

.....

.....

6. In *Questions to think about – Question 4* you were asked to calculate the calories. What could you do to lower it?

.....

.....

.....

.....

.....

.....

Take the time to evaluate this challenge, noting down anything you learnt from change next time.

.....

.....

.....

.....

.....

.....

**COPYRIGHT
PROTECTED**



Swiss Roll

TEACHER'S GUIDANCE

WHAT'S COVERED IN THIS SESSION:

- ✓ using mechanical mixing methods
- ✓ adjusting cooking time and temperature

LEARNING OUTCOMES

Students should be able to:

- ☐ identify various raising agents and their uses
- ☐ describe the working characteristics and chemical properties of sugar in confectionery
- ☐ explore the use of various types of cake
- ☐ explain why certain outcomes may occur and how to prevent the failure in the future
- ☐ correctly use the star profiling method for decoration of food products

SAFETY TIPS

- ! Make sure that students allergic to any food product do not act as a challenge (encourage them to measure times and write notes).
- ! Remind students about the safety rules when handling high-risk foods and how they apply them to prevent cross-contamination of foods.
- ! Ensure that students follow safety rules when handling hot food.

GUIDANCE FOR DELIVERY

- **Do NOT** hand the challenge overview page to the students as working out the challenge. You can give it to them after the lesson.
- Consider handing the overview page earlier to lower-ability students to help them.

WHAT YOU WILL NEED:

Equipment:	Ingredients:
✓ oven ✓ large bowls ✓ kitchen scale ✓ rectangular large metal baking tins ✓ baking paper ✓ clean kitchen cloths ✓ knives ✓ spoons	✓ different types of icing (vanilla, chocolate, lemon, etc.) ✓ icing sugar ✓ demerara, or coarse sugar ✓ different types of cake (e.g. chocolate, vanilla, etc.) ✓ purpose, plain flour ✓ eggs ✓ strawberry jam (optional)

INSPECTION COPY

COPYRIGHT
PROTECTED



ACTIVITY ANSWERS

- Depending on ingredients used, the final effect will differ.
 - For example, certain types of sugar will not cream as nicely as others, causing the cake to be too soft.
 - Similarly, certain types of flour will produce a tougher cake than others.
- See the challenge overview page for the correct procedure.
- Whisking egg yolks and whites separately is not the best idea when making a cake to rise too much (and this would make it difficult to roll (consider the sponge cake)).
 - If the cake happens to rise too much (is too thick), try to cut it in half to obtain two Swiss rolls).
 - Next time when baking a sponge, consider what you will use it for – and adjust (e.g. add baking powder when making a Victoria sponge, but don't add any when making a Swiss roll).
 - This, again, could cause the cake to rise too much, making it impossible to roll.
 - If your cake rose too much, consider cutting it in half to obtain two flat sponges.
 - This could cause the cake to stick to the tin, making it impossible (or at least difficult) to remove.
 - Next time grease and line the baking tin evenly before pouring the batter in.
 - If the cake stuck to the bottom, try to remove it with a spatula.
 - During cooling, water evaporates from the cake, making it dry and less manageable, and, therefore, rolls more easily, while maintaining its structure (the cake is still moist).
 - If your sponge cooled down anyway, you can make it moist again by either spreading double cream mixed with sugar (not whipped!) on it and leaving it for 1–2 hours. The sponge will absorb the moisture from the jam/cream and it will be easier to roll.
 - You can also consider sprinkling your sponge with a mixture of tea with sugar and leaving it for 2–3 hours to absorb the moisture.
 - This would produce a very thick roll, which would be difficult to roll. It is more possible to roll the filling out of the cake.
 - Start to roll from the longer edge.
 - If you happened to roll the cake from the shorter edge, leave it overnight to absorb moisture from the jam/cream, and will be easier to slice.
- This causes the filling to leak out of the cake.
 - If you see the jam leaking out, stop rolling – spread the cake, spread the jam, this time, less tight; cover the surface of the cake with cream or chocolate instead of jam.
- To make the star profile more useful, consider using the same profile to assess all Swiss rolls. Use different coloured pens you could easily identify differences between them.

QUESTIONS TO THINK ABOUT ANSWERS

- Mechanical raising methods, such as whisking, beating, folding and sieving. The recipe also uses biological raising agents (although other recipes call for baking powder or other raising agents).
- The sugar is a bulking agent (increases texture), improves aeration and provides sweet flavour.
- Baking powder or cream of tartar would cause the cake to rise, and in Swiss roll we want a flat sponge, which would make rolling very difficult (and sometimes impossible).

INSPECTION COPY

COPYRIGHT
PROTECTED



Swiss roll

THE CHALLENGE OVERVIEW

The process of making a sponge is simple, but requires a couple of tricks to make it fluffy and soft. It can sink, it can peak and crack, it can be dry with holes inside... Rolling it up into a Swiss roll doesn't make it any easier!



Your challenge is to make this tricky dessert. Can you make it soft and fluffy under the pressure?

INGREDIENTS

Makes 6 servings

Sponge cake:

- ☐ 125g caster sugar
- ☐ 125g plain flour
- ☐ 3 large eggs
- ☐ 200g strawberry jam
- ☐ 2 tbsp of caster or icing sugar to sprinkle on top



PROCEDURE

1	Preheat the oven to 200°C
2	Whisk the eggs with sugar until fluffy
3	Fold in the flour, adding a spoonful at a time
4	Grease a large, flat baking tin and line it with baking paper. Pour the sponge onto the tin and spread it over
6	Bake for 10–12 minutes
7	Place a damp, clean cloth on the surface of the cake
8	Spread a piece of baking paper over the top and sprinkle with caster or icing sugar
9	Place the baked cake upside down on the sprinkled baking paper, and gently peel the baking paper from the bottom
10	Trim the edges of the sponge to remove any dried bits
11	Stir the jam vigorously and spread it over the sponge
12	Using the damp cloth underneath, roll the cake into a roulade

QUESTIONS TO THINK ABOUT

Discuss these questions with your group or write notes in your books..

- What raising agent is used in the above recipe for sponge cake? (skill 16)
- What is the role of sugar in the recipe? (Area 4: The effect of cooking on food)
- Why can't we use baking powder or self-raising flour when making a Swiss roll?



INSPECTION COPY

COPYRIGHT
PROTECTED



Swiss roll – Caution! Hot

YOUR TASK

Work in groups of four to make the best Swiss roll and prevent it from falling apart! Focus on the ingredients and their quality to decide what do you need to make a good sponge, suitable for rolling? The strategy to keep it so nice and intact!



- From the list below, choose what ingredients you will use to make your sponge. Choose one type of sugar and one type of flour only.

125g of:

- ☐ Icing sugar
- ☐ White crystal sugar
- ☐ Caster sugar
- ☐ Demerara sugar
- ☐ Other:

125g of:

- ☐ Self-raising flour
- ☐ Strong flour
- ☐ All-purpose flour
- ☐ Plain flour
- ☐ Other:

- The next stage is to develop the procedure for making the sponge. What do you do later? Do you use whole eggs or just the white/yolk? Find some tips in the table you chose!

Step 1	Preheat the oven at 200°C	☐	Preheat the oven at 200°C
Step 2	Whisk the yolks with sugar until pale and fluffy, and whisk the whites into a meringue.	☐	Whisk the whole eggs until pale and fluffy.
Step 3	Add the flour spoonful by spoonful.	☐	Sift in the flour.
Step 4	Grease a large, flat baking tin and line with baking paper.	☐	Grease a large, flat baking tin.
Step 5	Add the meringue to the batter and pour into the tin.	☐	Pour the sponge into the tin.
Step 6	Bake for 10–12 minutes.	☐	Bake for 30 minutes.
Step 7	Place a damp cloth on the working surface.	☐	Place a dry cloth on the working surface.
Step 8	Spread a piece of baking paper on the cloth and sprinkle with icing sugar.	☐	Spread aluminium foil on the cloth.
Step 9	Place the baked cake upside down on the sugar-sprinkled baking paper, and gently remove the baking paper from the bottom.	☐	Place the baked cake on the aluminium foil, and gently remove the aluminium foil from the bottom.
Step 10	Roll the edges of the sponge with a potato masher.	☐	Trim the edges of the sponge.
Step 11	Spread the jam on the hot sponge.	☐	Cool the sponge on a wire rack.
Step 12	Using the damp cloth underneath, roll up the hot sponge from the longer end inside.	☐	Using the aluminium foil underneath, roll up the cooled sponge from the longer end inside.

INSPECTION COPY

COPYRIGHT
PROTECTED



Do not panic! At the end of the lesson your teacher will hand you the challenge ingredients and procedures, so you can compare them and spot possible mistakes.

Once you have made your Swiss roll, you can continue to this exercise.

3. There are a couple of common mistakes made when making Swiss rolls. Try to identify the considered mistakes, how to prevent them – or how to remedy the situation!

Low temperature of the oven...

... is a mistake because it lengthens the time of baking and makes the cake dry.

Next time, preheat the oven correctly. If the sponge is too dry or cracked, use a cream or jam filling.

- i) Whisking egg yolks and whites separately...

.....

.....

.....

- ii) Sifting the flour in with a sieve...

.....

.....

.....

- iii) Not greasing the baking tin...

.....

.....

.....

- iv) Waiting until the sponge cools down before rolling...

.....

.....

.....

- v) Rolling from the shorter edge...

.....

.....

.....

- vi) Rolling too tight...

.....

.....

.....

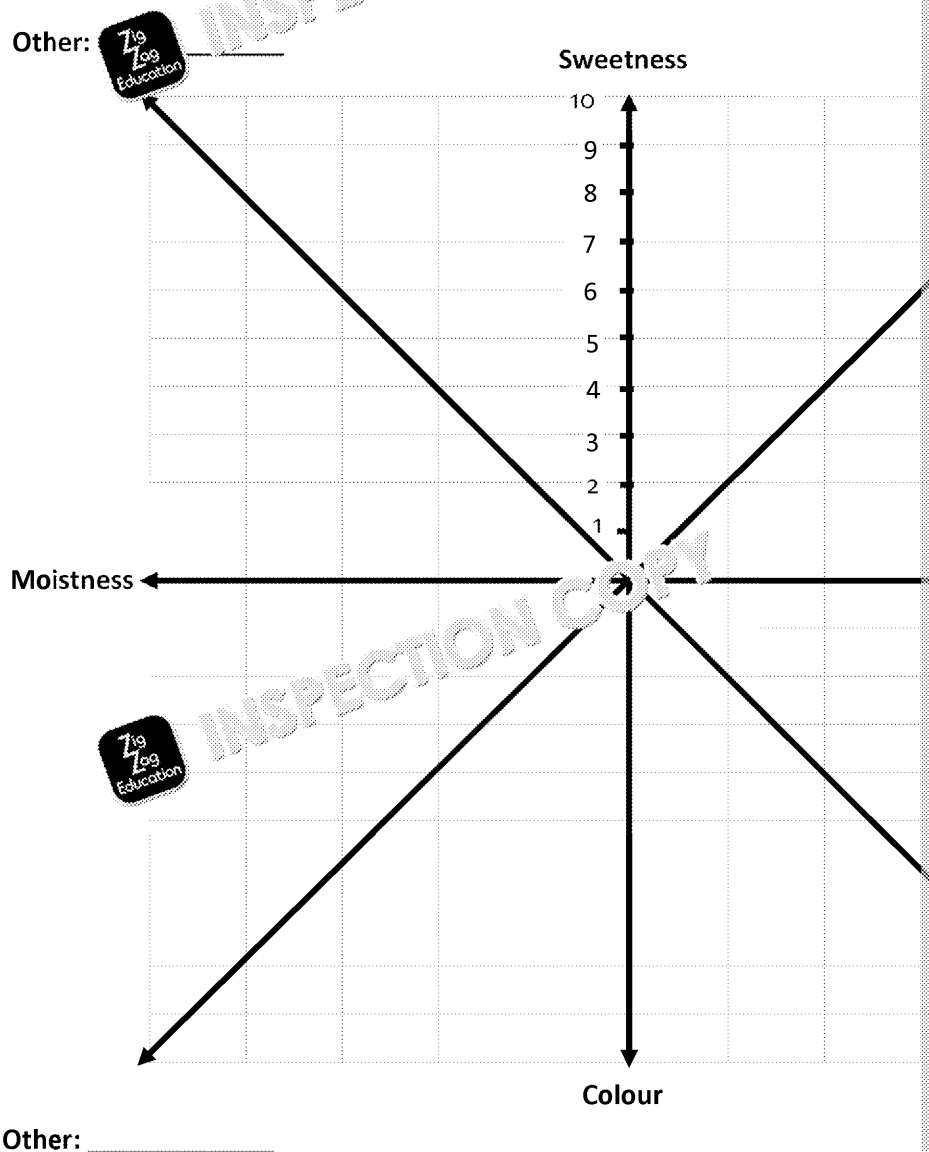
INSPECTION COPY

**COPYRIGHT
PROTECTED**



4. Once your Swiss roll is ready, assess it using the star profile diagram below. Assess each feature indicated on the scale from 1 (weak) to 10 (strong) and mark with a different coloured pen for each Swiss roll made in class, e.g. green for Swiss roll 1, orange for Swiss roll 2, blue for Swiss roll 3). You can also add your own features to describe the cake.

Once all features are assessed, connect the dots referring to the same cake to create a star profile. Repeat for other cakes made in class to easily spot differences between Swiss rolls.



**COPYRIGHT
PROTECTED**



Take the time to evaluate this challenge, noting down anything you learnt from the process and how you will change next time.



Panna Cotta

TEACHER'S GUIDANCE

WHAT'S COVERED IN THIS SESSION:

- ✓ setting a mixture with gelatine
- ✓ substituting ingredients for a vegan diet
- ✓ upside-down desserts
- ✓ how fat affects the texture
- ✓ the use of food temperature probe

LEARNING

Students should be able to:

- ☐ name various upside-down
- ☐ identify gelling agents used in upside-down desserts
- ☐ describe the function of fat in the texture and mouthfeel of food products

SAFETY TIPS

- ! Make sure that students allergic to any food ingredient do not do the challenge (encourage them to measure times and write notes on the challenge card). Ingredients used in this session include **milk** and **nuts**.
- ! Remind students about the safety rules when handling high-risk foods and how they apply them to prevent cross-contamination of foods.

GUIDANCE FOR DELIVERY:

- Do NOT hand the challenge card out to students as working out the problem is part of the lesson. You can give it to them at the end of the lesson.
- You may consider preparing the challenge on the first lesson during the day, completing the challenge on the last lesson the same day instead of on a different day.
- When preparing this lesson, consider one hour to prepare and bake the pudding and the dish and the tasting panel. Make sure these are on consecutive days.

WHAT YOU WILL NEED:

Equipment:	
✓ cooker ✓ fridge with a freezer (to speed up setting process) ✓ saucepans ✓ whisks or spoons ✓ kitchen scales ✓ measuring jugs ✓ cling film ✓ cooking oil (optional) ✓ brushes ✓ knives ✓ chopping boards ✓ small containers, e.g. glasses, ramekins, bowls to speed up the setting process – provide many different kinds for students to choose from ✓ food temperature probe ✓ timer (students can use timers in their smartphones)	✓ double cream ✓ single cream ✓ whole milk ✓ plant milk (e.g. almond, cashew milk) ✓ caster sugar ✓ vanilla pods (or vanilla extract) ✓ gelatine (crystals or powder) ✓ agar flakes

INSPECTION COPY

COPYRIGHT
PROTECTED



ACTIVITY ANSWERS

- Students should be able to use kitchen scales (both electronic and mechanical), measuring cylinders (millilitres and ounces) and measuring spoons. Students who are more confident can use other measuring tools such as glasses, teaspoons and tablespoons (e.g. two standard glasses measure 500ml, two standard teaspoons measure 50g of sugar, etc.).
- It is best to preheat the milk first, dissolve the gelatine at a low heat, and only then add the cream so that the cream will curdle.
 - Carefully cooking milk with cream on a low heat should allow good results. However, burning them when cooking on a higher heat.
- This depends on the type of gelatine used:
 - Powdered or crystal gelatine can usually be added straight to the mixture.
 - Gelatine leaves usually need to be pre-soaked.
- The gelatine may sometimes be difficult to dissolve.
 - One might consider various methods to speed up the process. For example:
 - continue stirring energetically
 - gently (!) heat the mixture and stir again
 - strain the mixture through a fine sieve or a coffee filter to remove the gelatine clumps. The texture later, as there won't be enough gelatine to bind all the liquid in the mixture.
- The choice of dishes is important as it may speed up setting of the mixture. It is best to use shallow dishes, rather than large and deep.
- Dishes for panna cotta usually don't require greasing or lining. However, some students might use cling film to facilitate removal.
- This depends on the method used previously. If the mixture is too thick, consistency of the food, and placing it under hot water / placing it over steam may be helpful as it dissolves the outer part of the mixture. An uneven surface may be especially difficult to handle.
- Students should notice that panna cotta made with double cream has a more creamy texture than panna cotta made with single cream.

QUESTIONS TO THINK ABOUT ANSWERS

- Examples linked to current season, depending when this challenge is taken place:
 - For spring:** rhubarb, bananas, kiwi, passion fruit, blood oranges
 - For summer:** apricots, blueberries, strawberries, raspberries, cherries, gooseberries, watermelon, currants
 - For autumn:** apples, elderberries, damsons, quinces, figs, grapes, pears, plums
 - For winter:** apples, pears, clementines, oranges, cranberries, pomegranates, persimmons, satsumas, dried fruit
- Panna cotta is not suitable for lactose-intolerant people (because it contains milk, which naturally occurring in milk).
 - To make it suitable for lactose-intolerant people, the milk has to be substituted with lactose-free cow milk, or a plant milk like coconut or almond.
- Whole milk:
 - is a source of calcium, necessary for the proper growth and development of the bones
 - provides vitamin A, necessary for the eyesight, and good condition of the skin
 - provides vitamin D, which improves calcium absorption and strengthens bones
 - is a source of vitamin B12, which processes folic acid and prevents pernicious anaemia
 - has neutral pH, so helps to prevent tooth decay by increasing pH in the mouth
 - high in omega 3 fatty acids, that are linked with many health benefits, such as heart health
 - provides cholesterol, necessary to build cell membranes, especially in the nervous system

INSPECTION COPY

COPYRIGHT
PROTECTED



Panna cotta

THE CHALLENGE OVERVIEW

Panna cotta is an upside-down dessert made of milk or cream. But if you don't make it right, it won't set and you won't get it out of the dish.



Will
st



Your challenge is to make this tricky dessert. You will need to choose quantities so that your panna cotta has a perfect texture.

INGREDIENTS

Each recipe makes about eight small portions



Vanilla panna cotta:

- ☐ Double cream
- ☐ Single cream
- ☐ Whole milk
- ☐ Plant milk (e.g. coconut, almond, cashew)
- ☐ Caster sugar
- ☐ Vanilla
- ☐ Gelatin
- ☐ Agar flakes

PROCEDURE

1	Scrape off vanilla seeds from the pod
2	Place vanilla seeds, milk, cream and sugar in a saucepan
3	Heat gently until the sugar is dissolved
4	Remove from the heat and add the gelatin
5	Stir until the gelatin is fully dissolved
6	Pour into small dishes – glasses or ramekins
7	Refrigerate for about an hour for the panna cotta to set

QUESTIONS TO THINK ABOUT

Discuss these questions with a partner or write notes in your books.

- Panna cotta is a very simple dessert, so to improve its flavour it is often served with fruit. Which fruits are characteristic for the current season? (Area 6: Factors affecting food choice)
- Is panna cotta suitable for lactose-intolerant people? If not, how can it be modified to be suitable for people on lactose-free or other balanced diets?
- What are the nutritional health benefits of drinking whole milk? (Area 1: Food composition)



**COPYRIGHT
PROTECTED**



Panna cotta – How to nail the

YOUR TASK

Divide into four groups. Each group will make a panna cotta using the recipe below. The task is to obtain the perfect texture and get the dessert out of the mould. At the end of the lesson you will be asked to set up a tasting panel for the groups to see how the basic ingredients changes its texture/mouthfeel.

- Group 1** – use 400ml double cream and 100ml whole milk, 50g of sugar
Group 2 – use 400ml single cream and 100ml whole milk, 50g of sugar
Group 3 – use 500ml whole milk, 50g of sugar and 10g of gelatine
Group 4 – use 500ml plant milk, 50g of sugar and 8g of agar flakes

1. The perfect texture of panna cotta is achieved due to the perfect proportions

Draw (or attach a picture of) the tools which you will use to measure your ingredients.

2. The sequence of steps to combine the ingredients and heat them up.

i) Do you preheat the milk first and add cream later, or cook everything together?

.....

.....

ii) What went well?

.....

.....

iii) What went badly?

.....

.....

3. Measure the temperature of the mixture with a food temperature probe:

.....

INSPECTION COPY

COPYRIGHT
PROTECTED



4. Then it's time for the gelatine to make its magic! Do you...

- ☐ add it straight to the saucepan?
- ☐ soak it first in cold water?
- ☐ Other:

5. How long did you stir the mixture for?

.....

6. i) Did all the gelatine crystals ever dissolve?

ii) If  there anything you can do to help?

.....

.....

7. Now you need to pour the mixture into dishes.

What dish do you choose? A glass, a bowl, a ramekin, or something else? Do they are important for measuring the setting time!

8. Did you grease your dish with anything before pouring the mixture in?

- ☐ Yes 
- ☐ No

If yes, what did you use?

.....

9. i) Put your panna cotta into a fridge and check every 10 minutes to see if it

ii) How long did it take for your panna cotta to set completely?

.....

Time to get it out of that pot!

10. How to get the dessert out of the dish? Run a knife along the edges, submerge. Maybe you know a different method? Describe now you did it and what the result was. Piece, whole and intact? Could it break apart and stick to the dish? Or maybe

.....

.....

.....

.....

**COPYRIGHT
PROTECTED**



11. Now it's time to set up a tasting panel for all the desserts prepared in the class.

Remember to be professional and objective. This time you are going to use the scale below to rank the samples depending on their **creaminess**.

1 – not creamy at all

2 – a little creamy

3 – quite creamy

4 – very creamy

Add the marks given by each person to find out which panna cotta turned out to be the creamiest.

Person	Group 1	Group 2	Group 3
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total			

12. Now that you know which panna cotta is the creamiest, you can answer the question of this lesson: how does the choice of ingredients affect the texture of panna cotta?

.....

.....

.....

.....

**COPYRIGHT
PROTECTED**



Take the time to evaluate this challenge, noting down anything you learnt from the challenge next time.



Crème Brûlée

TEACHER'S GUIDANCE

WHAT'S COVERED IN THIS SESSION:

- ✓ altering the texture
- ✓ safety and prevention of food poisoning when dealing with high-risk food products
- ✓ using the oven and blowtorch

LEARNING

Students should be able to:

- ☐ understand the function of cooking
- ☐ describe how moisture affects cooking
- ☐ understand the importance of achieving desired results

SAFETY TIPS

- ! Make sure that students allergic to any food ingredient do not do a challenge (encourage them to measure times and write notes, if possible). Ingredients used in this session include **eggs** and **milk**.
- ! Remind students about the safety rules when handling high-risk foods and they apply them to prevent cross-contamination of foods.
- ! Ensure that students follow safety rules when handling hot foods.

GUIDANCE FOR DELIVERY:

- Do NOT hand the challenge overview page to the students as working out the challenge. You can give it to them after the lesson.
- You may consider beginning the challenge on the first lesson during the day, a couple of hours and continuing on the last lesson the same day or on the next consecutive days.
- Since the recipe only uses the yolks of the eggs, consider using the egg whites for lemon meringue pie, baked Alaska or macaroons.

WHAT YOU WILL NEED:

Equipment:	Ingredients:
✓ oven ✓ large bowls ✓ whisks, hand mixers or food processors ✓ kitchen scale ✓ measuring jugs ✓ ramekins in different sizes to suit the number of students to choose ✓ blowtorch	✓ egg yolks ✓ caster sugar ✓ vanilla pods (or vanilla extract) ✓ double cream ✓ whole milk ✓ brown soft sugar

INSPECTION COPY

COPYRIGHT
PROTECTED



ACTIVITY ANSWERS

- Although recipes vary, the temperature for making crème brûlée should be rather low. This is to ensure that the protein from eggs denatures gently, which helps to obtain a smooth texture. A higher temperature would set the protein entirely, giving a tough, rubbery texture.
- In this case, only egg yolks are used to ensure creaminess in the dessert.
- The milk and cream used should be at room temperature – they shouldn't be too cold (from the fridge) or too hot (as this could cook the eggs).
- In this case, the mixture can be filled up to the brim. The cooking temperature is low and the mixture will certainly not rise (unlike in soufflé, for example).
- The classic recipe used when preparing this challenge calls for one hour of baking. However, this can be reduced by increasing the temperature, and by using smaller ramekins. Using a water bath is also recommended in some recipes, as it allows even cooking and helps to maintain a smooth surface (not set on top).
- Coconut sugar should not be used as it would not caramelize.
 - Icing sugar is also not recommended, as it would produce a coat rather than a caramelized surface.
 - It is best to use caster sugar, crystal sugar, brown sugar or demerara.
- Usually recipes call for a blowtorch; however, it may be acceptable to place the ramekins under a grill. Baking is not recommended as it would affect the final texture of the dessert.

QUESTIONS TO THINK ABOUT ANSWERS

- Chemical processes step by step:

Procedures	Chemical Processes
Pour the egg yolks into a large bowl, leaving the whites for a meringue or another recipe	-
Add sugar and whisk until pale and fluffy	Denaturation of proteins, emulsification of fat
Extract seeds from vanilla pod and add to the eggs	Infusion
Slowly pour in milk (should be room temperature)	-
Whisk in the double cream (also at room temperature)	Creaming of the fat
Pour the mixture into flat ramekins	-
Bake for an hour (or 15 minutes longer if necessary)	Denaturation and coagulation of proteins, caramelisation of sugar
Remove the ramekins from the oven and leave overnight to cool	Setting (coagulation) of proteins
Sprinkle each ramekin with soft brown sugar	-
Caramelize the surface with a blowtorch	Caramelisation of sugar

*although this is not required by the specification, it has been included as an important step

- Double cream is rich in fat, which makes the dessert creamy.
 - Single cream would make the mixture too watery,
 - crème fraîche would make it sour.
 - Double cream cannot be replaced, unless by whipping cream.
- The dish is high in saturated fat, so isn't appropriate for people on low-calorie diets or those with conditions such as obesity, hypertension, type 2 diabetes, coronary heart disease.
 - Since it contains milk, it is not suitable for people with lactose intolerance or milk allergies.
 - The presence of eggs makes it unsuitable for lacto vegetarians, vegans and people with egg allergies.

**COPYRIGHT
PROTECTED**



4. Eggs are a source of high-biological-value proteins, vitamins A, D, E and K, essential haem iron, zinc, selenium and lecithin. For this reason, they provide numerous health benefits.
- Protein – supports growth and development of all cells and tissues, helps to build muscle
 - Vitamin A – supports proper vision, and healthy skin and mucous membranes
 - Vitamin D – improves calcium absorption, helps to build strong bones and teeth
 - Vitamin E – antioxidant, helps to prevent ageing, supports functioning of the reproductive system
 - Vitamin K – supports blood health, helps blood clot, also plays a role in vitamin metabolism
 - Essential fatty acids (e.g. omega 3) – help to build healthy cell membranes, especially in the brain, prevent heart disease
 - Cholesterol – helps to build healthy cell membranes, especially in the brain and nervous system
 - Vitamin B12 – helps to build red blood cells, prevents anaemia
 - Haem iron – helps to build red blood cells, transports oxygen in the body, prevents iron deficiency
 - Zinc – helps to build proteins in the body, supports functioning of the reproductive system
 - Selenium – antioxidant, supports proper functioning of the thyroid gland; some studies suggest it may help to prevent cancer
 - Lecithin – enables transmission of signals between cells and nerves, improves fat metabolism, helps to lower cholesterol levels



INSPECTION COPY



INSPECTION COPY

**COPYRIGHT
PROTECTED**



Crème brûlée

THE CHALLENGE OVERVIEW

Crème brûlée is a classic French dessert which is a challenge... or actually a couple of challenges... for the most experienced chefs! There are many common mistakes which can turn this dessert into a catastrophe. From the use of the correct equipment, through the type of sugar, to the actual baking – there is a lot that can go wrong!



Your challenge is to make this tricky dessert. Try to obtain the perfect result, avoiding the common mistakes on the way! Are you ready to make your own?

INGREDIENTS

Makes 6 servings

Crème brûlée:

- ☐ 5 egg yolks
- ☐ 100g caster sugar
- ☐ 1 vanilla pod
- ☐ 250ml double cream
- ☐ 250ml whole milk
- ☐ 1 teaspoon brown sugar



PROCEDURE

1	Preheat the oven to 160°C
2	Pour the egg yolks into a bowl and whisk the whites for a meringue
3	Add sugar and whisk until combined
4	Extract the seeds from the vanilla pod and add to the eggs
5	Slowly pour in milk (stirring constantly to keep temperature)
6	Whisk in the double cream (stirring constantly to keep temperature)
7	Pour the mixture into 6 ramekins
8	Bake for an hour (or 45 minutes if necessary)
9	Remove the ramekins from the oven and leave overnight to cool
10	Sprinkle each ramekin with brown sugar
11	Caramelise the surface with a blowtorch

QUESTIONS TO THINK ABOUT

Discuss these questions with a partner or write notes in your books.

- What chemical processes take place during the making of crème brûlée, step by step?
- Explain why double cream is used in this recipe. Can it be replaced with single cream?
- Who may this dessert be unsuitable for? (Area 3: Diet and good health)
- What are the health benefits of eating eggs? (Area 1: Food commodities)



INSPECTION COPY

COPYRIGHT
PROTECTED



Crème brûlée – Challenge after ch

YOUR TASK

When making a dessert which uses only a few very basic ingredients, pay attention to detail. Work in pairs and face the challenge of making a pudding. Your task is to develop the best procedure for obtaining a pudding. Take pictures on the way and record the effects of your choices.

In the kitchen it is very often that you have to make choices and amendments on the go. Let's see whether you choose the right path... and don't forget to justify your choice!

1. **Preheating the oven.** What temperature do you set it to, and why?

Temperature chosen: _____

Justification:

2. **Whisking the eggs with sugar.** Do you use whole eggs, yolks or whites only?

Justification:

3. **Adding milk and cream.** Do you add them cold or preheat them? Which one?

Justification:

4. **Filling the ramekins.**

Draw the ramekin you are going to use. Don't forget to label its dimensions! Will you leave some room or will you fill it to the full?

INSPECTION COPY

COPYRIGHT
PROTECTED



5. **Baking.** How long will you bake it for? Will you use a water bath? If so, how from water leaking in?

.....

.....

.....

.....

6. Once the dessert is baked, it is time to cool and chill it. Leave it in the fridge next evening or the next day.



Yesterday you prepared your crème brûlée pudding. It is time to finish it and eat it.

7. **Sprinkle the top with sugar** and... hold on. What kind of sugar do you need?

Sugar to use:

Justification:

.....

8. **OK, sugar is chosen, time to caramelize it.** How do you do it? Do you bake it?

Chosen method to caramelize:

Justification:

.....

9. Prepare a rating system for all the desserts your classmates made, assessing where 1 means 'poor' and 5 means 'excellent'. Then add the marks to see who



	My crème brûlée	Crème brûlée 2	Crème brûlée 3	Crème brûlée 4
Appearance				
Colour				
Texture				
Sweetness				
Overall palatability				
Other				
Other				
Total				



- i) Whose dessert scored the most?

.....

**COPYRIGHT
PROTECTED**



- ii) Compare the cooking process of the best crème brûlée to yours (unless all potential differences below.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



Take the time to evaluate this challenge, noting down anything you learnt from change next time.



INSPECTION COPY

COPYRIGHT
PROTECTED



Baked Cheesecake

TEACHER'S GUIDANCE

WHAT'S COVERED IN THIS SESSION:

- ✓ altering the texture by changing ingredients
- ✓ mechanical raising methods

LEARNING OUTCOMES

Students should be able to:

- ☐ identify raising agents and methods in cheesecakes
- ☐ explain the function of fat in stabilisation of a food
- ☐ describe the differences between various types of cream cheese, cottage cheese), both their characteristics and production methods
- ☐ use a range of sensory testing methods to evaluate a food product

SAFETY TIPS

- ! Make sure that students allergic to any food ingredient do not challenge (encourage them to measure times and write notes, ingredients used in this session include **milk, wheat, oats, eggs** and **sulfur dioxide**)
- ! Remind students about the safety rules when handling high-risk foods, they apply them to prevent cross-contamination of foods.
- ! Ensure that students follow safety rules when handling hot foods

GUIDANCE FOR TEACHERS:

- Drain the curd off the cream/whey using a strainer lined with gauze. The mass of cheese (without the liquid). It's best to blend the cheese in a food processor to get the texture of the cheesecake – you can do this prior to the lesson to save time.
- Also, prepare the ingredients early so that they are all at room temperature before the cheesecake.
- The preparation of the cheesecake will take around two hours. Allow to cool in the fridge for another one-hour session to complete the taste panel (e.g. in the afternoon or the following day).

WHAT YOU WILL NEED:

Equipment:	Ingredients:
✓ food processor ✓ kitchen scale ✓ measuring jug ✓ saucepans ✓ spoons ✓ round metal strainer ✓ strainer ✓ gauze to strain the cheese ✓ whisks or hand mixers ✓ oven	✓ butter ✓ digestive biscuits ✓ caster sugar ✓ eggs ✓ potato starch ✓ vanilla pods (or vanilla extract) ✓ raisins (optional) ✓ various types of cream cheese, standard cream cheese, standard cottage cheese, or other) *subject to availability

INSPECTION COPY

COPYRIGHT
PROTECTED



ACTIVITY ANSWERS

1. Students should notice differences in the nutritional value of different types of cheese in terms of protein and calcium content.

Students should conclude that cottage cheese can make a good ingredient to include in recipes due to its high energy value and high calcium content. Students may notice that it might not be suitable for those who are allergic to milk or suffering from lactose intolerance.

8. Students may notice that objective and subjective assessments may differ – this is as personal preferences affect our choices.

QUESTIONS TO THINK ABOUT ANSWERS

1. The egg whites are very rich in protein, which – during whisking – uncoils and traps air. The egg white is a suitable raising agent in many recipes – including cheesecake. Whisking gives the cake texture to the cake.

2. Potato starch is a thickening agent and helps to set the cheesecake after baking.

3. **The advantages of locally produced foods:**

- No need for transportation
- Lower carbon footprint / gas emission
- Lower price
- Fresher
- Supports local agriculture and farmers
- Supports local communities

The disadvantages of locally produced foods:

- Low variety
- May be more expensive
- May be contaminated with chemicals, pesticides, antibiotics (local does not equate to organic)
- Use of seasonally available products only seasonally (low availability)

4. **Production of cottage cheese:**

- Pasteurisation (and/or microfiltration) of milk
- Cooling to 30°C
- Adding starter bacteria cultures
- Adding rennet
- Cutting curd and draining off whey
- Pressing the remaining whey out and chilling
- Eventually adding flavouring (e.g. salt, chopped herbs)

INSPECTION COPY

COPYRIGHT
PROTECTED



Baked cheesecake

THE CHALLENGE OVERVIEW

Cheesecake is a classic dessert in many cuisines, but in many of them it is made without cooking. This challenge focuses on its main ingredient – cheese – and how it affects the cheesecake's texture.



Small

Your challenge is to make a baked cheesecake using different kinds

INGREDIENTS

Makes 10 servings

Base:

- ☐ 85g butter
- ☐ 140g digestive biscuits or oatcakes

Cheesecake:

- ☐ 500g cottage cheese (drained) or cream cheese
- ☐ 100g butter
- ☐ 125g sugar
- ☐ 2 large eggs
- ☐ 1 tbsp potato starch
- ☐ 1 vanilla pod
- ☐ ½ cup raisins (optional)



PROCEDURE

For the base (optional):

- 1 Crush the biscuits in a food processor
- 2 Melt the butter over low heat
- 3 Stir until the mass resembles
- 4 Place the base in a round baking tin and press against the bottom. Make sure it is even.

For the cheesecake:

- 5 Preheat the oven to 160°C
- 6 Drain and blend the cottage cheese in a food processor until smooth (skip if using cream cheese)
- 7 Cream soft butter with sugar
- 8 Pour in egg yolks and vanilla and beat until smooth. Remove the vanilla pod and beat until smooth.
- 9 Slowly add in the cheese and beat until smooth.
- 10 Add raisins and stir
- 11 In a separate bowl, whisk the egg whites and white sugar until stiff peaks form.
- 12 Slowly add the egg whites to the mass and beat carefully.
- 13 Pour the mass onto the base and spread evenly. If you're not using the base, grease the tin first.
- 14 Bake for around 45 minutes.

QUESTIONS TO THINK ABOUT

Discuss these questions with a partner or write notes in your books.

1. Explain the function of the egg whites are whisked and added separately from the rest of the mass. (Area 4: The effect of cooking on food)
2. What is the function of the potato starch in the recipe? (Area 4: The effect of cooking on food)
3. Cottage cheese is usually produced locally – what are the advantages and disadvantages of locally sourced food products? (Area 5: Food provenance)
4. Describe the production process of cottage cheese. (Area 5: Food manufacturing)

INSPECTION COPY

COPYRIGHT
PROTECTED



Baked cheesecake – Face the ingredients

YOUR TASK

When making a cheesecake, everything is important! From the selection, preparation of and timing when baking each step requires precise effect. This time you will focus on the quality of cheese used – even for all groups.

Divide into five groups. Each group will use a different kind of cheese and you will need to conduct a tasting panel for all the cheesecakes at lunch!

Group 1 – use low-fat cream cheese

Group 2 – use standard cream cheese

Group 3 – use low-fat cottage cheese

Group 4 – use standard cottage cheese

Group 5 – use high-protein cottage cheese

Your teacher may prepare the cheese for you. If not, make sure you use a strainer and blend it for three minutes in a food processor.

1. Before you begin the bake off (or when you're waiting for the cheesecake to bake) you need to check the nutritional value of the kind of cheese you're using.
 - i) You can use an online database or a food table to check it. Then calculate the percentage of the recommended daily allowance for your gender and age group is provided with the table. You can check the recommended daily allowance on www.nutrition.org.uk website.
 - ii) You can also colour-code the table with the traffic light system to see if the food is healthy on a daily basis. The instruction for colour coding can be found on www.nutrition.org.uk website.

	Per 100g	
Energy (kcal)		
Fat (g)		
Saturates (g)		
Carbohydrates (g)		
Sugars (g)		
Protein (g)		
Fibre (g)		
Calcium (mg)		

INSPECTION COPY

COPYRIGHT
PROTECTED



2. Prepare your cheesecake using the procedure on the Overview page.

Here are a couple of additional tips which you might find useful when making to tick the box next to each tip you used!

- ☐ Make sure all the ingredients have the same temperature – this will prevent cracking.
- ☐ During baking, put a tin with water into the oven – high moisture will prevent cracking.
- ☐ If the surface is too dark, but you think the cheesecake is still raw inside, continue baking.
- ☐ To check if the cheesecake is ready to remove, use a skewer – it will always come out clean – if the cheesecake sticks to the skewer, it is still raw.

3. Once your cheesecake is done, attach a picture of (or draw) it here:

Make sure you label all the dimensions and point out possible cracks on the surface.

4. After the cheesecakes are baked (and cooled), set up a tasting panel for all the groups.

Complete the table below to see how the choice of the basic ingredient – cream cheese, cottage cheese or ricotta – affects the taste of the cheesecake. You can also compare other features and add additional groups. 1 means 'really poor' and 9 means 'excellent'.

Remember to remain professional and assess the cheesecakes objectively!

	Group 1	Group 2	Group 3
	Low-fat cream cheese	Standard cream cheese	Low-fat cottage cheese
Moisture			
Creaminess			
Crumbliness			
Overall texture			
Colour			
Other			
Other			
Other			
Total marks:			

**COPYRIGHT
PROTECTED**



5. Overall, which cheesecake scored the most, and why? Was it because it was the most delicious? Or maybe it was the only one without a cracked top?

.....

.....

.....

6. i) Which cheese produced the creamiest texture?

.....

- ii) Which cheese produced the least creamy texture?

.....

- iii) How many marks did your cheesecake score?

.....

- iv) What went wrong?

.....

.....

- v) What went well?

.....

.....

7. Prepare a preference test to see which cheesecake is liked the most.

Simply ask 10 of your classmates to rank the cheesecakes on the scale from 'least liked' to 'most liked' (1 to 10). Then add up all the marks and see which cheesecake scored the most.

We filled in the first row to give you an example. As you can see, Mark liked the high-protein cottage cheese the most, and the least – the standard cottage cheese. This was because the cheesecakes are ordered from the least to the most liked one, and the marks are added up.

	Group 1	Group 2	Group 3	
Student's name	Low-fat cream cheese	Standard cream cheese	Low-fat cottage cheese	Standard cottage cheese
e.g. Mark	2	4	3	
Total marks				

**COPYRIGHT
PROTECTED**



You assessed the cheesecakes using two different types of sensory testing: a ranking test to determine the relative strength of the sensory properties of cheesecakes, and a rating test to see which

8. Is the cheesecake indicated as best in the first panel the same as indicated as panel? If not, can you think why it is so?

INSPECTION COPY

Zig Zag Education

Take the time to evaluate this challenge, noting down anything you learnt from change next time.



INSPECTION COPY

INSPECTION COPY

**COPYRIGHT
PROTECTED**



Croissants

TEACHER'S GUIDANCE

WHAT'S COVERED IN THIS SESSION:

- ✓ making a dough
- ✓ yeast
- ✓ rolling
- ✓ folding
- ✓ timing
- ✓ keeping the temperature low to obtain the desired texture
- ✓ using the food temperature probe

LEARNING

Students should be able to

- ☐ identify various types of puff pastry
- ☐ describe the difference between rough puff pastry and laminated puff pastry
- ☐ explain the role of fat in croissants and other pastries
- ☐ use a rolling pin in a correct manner

SAFETY TIPS

- ! Make sure that students allergic to any food ingredient do not challenge (encourage them to measure times and write notes)
- ! Remind students about the safety rules when handling high-risk foods. They apply them to prevent cross-contamination of foods.
- ! Ensure that students follow safety rules when handling hot foods.

GUIDANCE ON DELIVERY:

- Preparation of croissants is fairly complex, as it requires some work on three days when planning your lessons. We suggest planning at least 20 minutes on day 1, two hours on day 2, and two hours on day 3.

WHAT YOU WILL NEED:

Equipment:	Ingredients:
✓ fridge or freezer ✓ cling film ✓ markers to label the samples ✓ oven ✓ baking paper ✓ flat baking tins ✓ rolling pins – plastic, wood or silicone, filled with water, marble or a few for students to choose from ✓ kitchen scale ✓ measuring jug ✓ food temperature probe ✓ rulers or measuring tape	✓ strong flour ✓ salt ✓ sugar ✓ fast-action yeast ✓ butter ✓ eggs ✓ cold water

INSPECTION COPY

COPYRIGHT
PROTECTED



ACTIVITY ANSWERS

1. It is important to roll the dough quite quickly to prevent the butter from melting. Students should ensure that their hands are cold, e.g. by washing them in cold water.
2. It might be a good idea to use a silicone rolling pin, which can be filled with ice and will prevent the butter in the dough from melting and could allow more time for rolling for less-confident students.
3.
 - i) The working surface should be floured, either with plain wheat flour, or with the flour specified in the original recipe (in this case, strong wheat flour).
 - ii) The dough should be rolled (ideally) every 2–3 strokes. However, this will depend on the skill of the student.
 - iii) The dough can be kept quite thick until the final folding, when it needs to be cut into strips. However, rolling it thinly means there can be more layers, which will then create a flakier texture.
 - iv) During rolling, the centre of the dough can be kept thicker than the edges. This will ensure that when placed on top of it, the layer of pastry under the butter and on top of it will be evenly distributed (as created by the pieces of pastry folded over butter). If no more butter is added, the texture will be uneven.
 - v) The dough should be rolled from the centre outwards.
 - vi) Ideally, the dough should be rolled into a rectangular shape, as this will allow it to be cut into strips of the same number of layers throughout.
4. Students should notice rising yeast activity (the higher the temperature, the faster the yeast rises, so the croissants will be).
5. Croissants which were glazed should have a shiny, golden finish. The unglazed croissants should be a dull, golden colour (not shiny).

QUESTIONS TO THINK ABOUT ANSWERS

1.
 - Strong flour contains more gluten and, therefore, is better when making bread.
 - Plain flour is low in gluten and is better used in production of pastry, shortcrust etc.
2. Growth conditions for yeast include: warmth, moisture (presence of water), food (primarily sugar). If any of these are missing, yeast will not grow.
3. Folding helps to improve the texture of the pastry in two ways:
 - By trapping air between layers
 - By trapping butter between layers, which will melt during cooking and produce a flakier texture, as well as raising agent between the layers of pastry
4.
 - Mechanical (folding)
 - Biological (yeast)
 - Physical (steam)

INSPECTION COPY

COPYRIGHT
PROTECTED



Croissants

INSPECTION COPY

THE CHALLENGE OVERVIEW

Mmmmm... There is nothing better than a fresh, buttery croissant with crunchy crust and soft, flakey interior! But can you make them? Making croissants is very labour-intensive and time-consuming, and it will take you a couple of days before you will be able to sink your teeth in one...



Your challenge is to make this tricky dessert. Pay special attention to prevent the butter in the croissants from melting! Will your croissants

INGREDIENTS

Makes 12 croissants

Croissants:

- ☐ 500g strong flour
- ☐ 1½ tbsp salt
- ☐ 50g sugar
- ☐ 2 sachets of fast-action yeast
- ☐ 300g butter
- ☐ 1 egg
- ☐ 300ml water



PROCEDURE

Day 1

- 1 Place flour, salt, sugar, yeast and
- 2 Mix and then knead for around 10 minutes until smooth
- 3 Form a ball, cover with cling film

- 4 Put the butter between two sheets of parchment and roll into a flat rectangle
- 5 Roll the dough into a rectangle larger than the butter
- 6 Place the butter on top of the dough
- 7 Fold the dough around the butter

Day 3 (double session)

- 8 Roll the dough and fold again (repeat steps 4-7) and chill
- 9 Roll the dough flat and cut it into triangles with a sharp knife
- 10 Roll the triangles to form croissants
- 11 Place the croissants in a lined baking tray and let them rise for 30 minutes
- 12 Preheat the oven to 200°C
- 13 Glaze the top of the croissants with egg wash
- 14 Bake for 15 minutes or until golden

QUESTIONS TO THINK ABOUT

Discuss the questions with a partner or write notes in your books.

1. What is the difference between strong and plain flour? (Area 1: Food commodities)
2. Identify the growth conditions for yeast. (Area 4: Food spoilage)
3. Why does the pastry have to be folded so many times? (skill 16)
4. What three different raising methods are used when making croissants? (skill 16)

COPYRIGHT
PROTECTED



Croissants – Battle against heat

YOUR TASK

When making a puff pastry such as this, texture is key. You need to roll the pastry quickly and effectively, so the butter doesn't melt and stick to you – the more times you fold it, the more flakes your croissants will have to compete against the heat and the temperature! Keep a food thermometer to measure the temperature of the dough after each rolling and folding to check how long it took you. You will also need a measuring tape to compare the size and weight of your croissants.

- At each stage of making the dough, make sure you check the core temperature at completion. Use the table below to record your data.

	Time taken	
Day 1 – making the dough (steps 1–3)		
Day 2 – folding the dough with butter (steps 4–7)		
Day 3 – rolling 1		
Day 3 – rolling 2		
Day 3 – rolling 3		

- Your teacher will provide you with various kinds of rolling pin.

Which rolling pin are you going to use, and why? Make the decision before you start and use the same rolling pin each time.

Rolling pin used:

Why?

.....

.....

- What is the best technique for rolling the dough? Each cook has their own...

Let's begin by preparing the working surface.

i) Do you flour it or not? ☐ Flour ☐ Don't flour

If yes, what kind of flour do you use for this?

INSPECTION COPY

COPYRIGHT
PROTECTED



- ii) Do you rotate the dough? ☐ Yes ☐ No

If yes, how often do you do it?

- iii) How thick do you make the dough before folding it again?

.....

- iv) Is the dough even?

☐ Yes ☐ No the centre is thicker ☐ No

- v) What direction do you roll the dough?

☐ From the centre outwards ☐ From the edge inwards

- vi) What shape do you roll the dough into?

☐ Rectangle ☐ Square ☐ Circle ☐

4. Once you have cut out (step 9 from the procedures) and rolled the croissants compare their size and weight. You can use a measuring tape or a ruler to check the size and a kitchen scale for the weight.

	Size (dimensions)	
Before leavening (before step 11)		
After leavening (right after step 11)		

5. At step 13 you are asked to glaze the croissants with egg wash. Once you have finished, take a picture of or describe any difference in appearance between glazed and non-glazed croissants.

6. Compare your croissants with ones made by your classmates. Are there any differences? Compare your worksheets to discover differences between your croissants and theirs.

**COPYRIGHT
PROTECTED**



Take the time to evaluate this challenge, noting down anything you learnt from it and how you can change next time.

Macaroons

TEACHER'S GUIDANCE

WHAT'S COVERED IN THIS SESSION:

- ✓ making a meringue
- ✓ setting of protein
- ✓ baking without flour – flour substitute in cooking
- ✓ the full range of sugar in cooking
- ✓ use of a food processor

LEARNING OBJECTIVES:

- Students should be able to:
- ☐ use various types of sugar
 - ☐ make and use a meringue
 - ☐ use a piping bag

SAFETY TIPS

- ! Make sure that students allergic to any food ingredient do not challenge (encourage them to measure times and write notes). Ingredients used in this session include **nuts** and **eggs**.
- ! Remind students about the safety rules when handling high-risk foods; they apply them to prevent cross-contamination of foods.
- ! Ensure that students follow safety rules when handling hot foods.

GUIDANCE FOR DELIVERY:

- Prior to the lesson ensure all ingredients are room temperature.
- If possible, use fresh egg whites – e.g. leftovers from making crème brûlée. This is because during 'ageing' water evaporates from the egg whites; between proteins are intact; this makes the proteins more elastic and easier to whip.
- Please pay attention to the icing sugar – use pure icing sugar, not a mixture of icing sugar and cornstarch. This would potentially affect the final texture of the macaroons, making them too soft.
- Since the recipe only uses the egg whites, consider using the egg yolks to carry out another challenge, e.g. ice cream or crème brûlée.

WHAT YOU WILL NEED:

Equipment:	
✓ Baking paper ✓ Large flat metal baking tins ✓ Pencils ✓ Piping bags with various sizes and kinds of nozzles for students to choose from ✓ Large bowls ✓ Oven ✓ Food processor ✓ Hand whisk or whisks ✓ Kitchen scale – classic and electronic for students to choose from ✓ Timers – students can use the timers in their smartphones!	✓ almond meal ✓ pure icing sugar ✓ egg whites ✓ cream of tartar ✓ caster sugar ✓ pink food colour (optional) ✓ fresh raspberries (or other fruit) ✓ raspberry preserve

INSPECTION COPY

COPYRIGHT
PROTECTED



ACTIVITY ANSWERS

- As indicated by the challenge overview page, this can be done by drawing small circles dividing it into equally sized squares.
- When making macaroons, precision is key. Otherwise the mixture can become too thick and the product might differ in texture (e.g. be too crumbly or too wet, lose shape during baking).
- It might be best to use a pulsation setting to ground the almonds. This way almonds are not paste or butter.
- Although it takes more time, it might be best to use a traditional wire whisk, as it allows egg whites to be whipped constantly. Using a hand mixer or a food processor can cause the mixture to become watery (break-up of chemical bonds in the protein, which are no longer able to hold the mixture together).
- Icing sugar should be added a spoonful at a time, one after another, to ensure that it is fully incorporated into the mixture. Using a sieve might seem a good idea, but it could introduce too much air into the mixture.
- This may depend on the quality and quantity of the food colourant. Usually only very small amounts should be added. Adding too much of a food colourant can change the texture of the product. Some food colourants contain, for example, citric acid, which may denature the protein in eggs.
- The almonds should be gently folded in with a spatula. The texture of the mixture should be fluffy.
- The size of the tip will determine the size of the baked macaroons – the larger the tip, the larger the cookies. The kind of tip doesn't matter as much as the mixture will 'melt' in baking.
- The temperature will vary depending on the type of oven used. It should be lowered if the macaroons are larger (otherwise they will burn on the outside and be raw inside).
- Students should observe that at the beginning nothing really happens, but after around 10 minutes the macaroons begin to rise and form a small 'foot'.

QUESTIONS TO THINK ABOUT ANSWERS

- Sugar is used for many reasons:
 - As a sweetener / flavouring agent
 - As a bulking agent
 - To improve texture (by enabling creaming and aeration)
 - To improve colour (by caramelisation, dextrinisation and Maillard reaction)
 - To preserve the food and prevent food spoilage (e.g. in jams)
 - To extend the shelf life of food
 - To speed up fermentation, e.g. in bread or yeast buns
- Flour can be substituted by using almond flour (ground almonds), soy flour, ground chickpeas, etc.
 - This may be necessary, e.g. when developing recipes for gluten-intolerant people or to change the texture, flavour or nutritional value of the final product.
- Natural colourants used in the food industry include:
 - Vegetable extracts, e.g. beetroot, carrot, spinach, onion husks
 - Herbal extracts, e.g. mint, ginger, turmeric
 - Spice extracts, e.g. paprika, saffron
 - Flower extracts, e.g. pansy, marigold
 - Insects, e.g. cochineal
 - Animals, e.g. octopus ink
 - Caramel
- Cream of tartar is a kind of acid and speeds up denaturation of protein in the egg whites.

INSPECTION COPY

COPYRIGHT
PROTECTED



Macaroons

THE CHALLENGE OVERVIEW

Macaroons are delicate, small, round, colourful and delicious... but the batter is very tricky and can go wrong easily, creating an unappetising, melted and gooey puddle. Precision is key.

Macaroons



Your challenge is to make this tricky dessert. An ideal macaroon will be light and fluffy on the outside and gooey on the inside! Are you up for this challenge?

INGREDIENTS

Makes 30 macaroons



Macaroons:

- ☐ 100g almond flakes
- ☐ 180g pure icing sugar
- ☐ 3 egg whites (app. 100g)
- ☐ ¼ tsp cream of tartar
- ☐ 35g caster sugar
- ☐ Pink food colourant

Filling:

- ☐ 100g fresh raspberries
- ☐ 100g raspberry jam



PROCEDURE

For the macaroons:

1	Line large baking tin with baking paper and spread them evenly all over. Squeeze your macaroon batter.
2	Put the almonds and caster sugar in a food processor and pulse until very fine using the 'pulse' button.
3	In a large bowl, whisk the egg whites until they are stiff.
4	Add cream of tartar and whisk for a further 2 minutes.
5	Slowly add the icing sugar and beat until it is smooth.
6	Add food colourant and whisk for a further 2 minutes.
7	Gradually fold in the almond/sugar mixture.
8	Fill a piping bag with the mass and pipe onto the prepared baking paper.
9	Let stand for 30 minutes.
10	In the meantime, preheat the oven to 150°C.
11	Bake the macaroons for 10–12 minutes until they are separate from the paper.
12	Remove the macaroons from the oven and place on a wire rack.

For the filling:

13	Place the raspberries and jam in a bowl and mix until smooth.
14	Use the mixture to glue two macaroons together.

QUESTIONS TO THINK ABOUT

Discuss these questions with a partner or write in your notebook.

- What is the function of sugar in the macaroon recipe? (Area 4: The effect of cooking on food)
- Some recipes do not use flour.
 - What can you substitute flour with? (Area 6: Factors affecting food choice)
 - What might be necessary to substitute flour in recipes? (Area 6: Factors affecting food choice)
- List some natural colouring agents that are used in the food industry. (Area 5: Food safety and hygiene)
- What is the function of cream of tartar in the macaroons recipe? (Area 4: The effect of cooking on food)

INSPECTION COPY

COPYRIGHT
PROTECTED



Macaroons – Smooth crimi

INSPECTION COPY

YOUR TASK

Macaroons are tiny meringue-like cookies made of only three ingredients: egg whites, sugar, and almond flour. A perfect macaroon will have a crunchy surface and a smooth interior. When making this dessert, there are many tricks of the trade to success! We will guide you through the process so that you can make the perfect macaroon.



1. **Begin by preparing your baking tin.** You want every macaroon to be the same size. What size are your macaroons going to be?
2. **Now carefully measure the ingredients.** Do you use a classic kitchen scale or an electric one? How precise is that scale?
3. It's time to grind the almonds with sugar.
 - i) How long are you going to grind them for?
 - ii) What is the consistency of the mixture after... (write n/a if you're doing n/a)
 - ☐ 1 minute of grinding
 - ☐ 2 minutes of grinding
 - ☐ 3 minutes of grinding
 - ☐ 4 minutes of grinding
 - ☐ 5 minutes of grinding
4. Next step – whisking the egg whites.
 - i) What do you do it with?
 - ☐ Whisk
 - ☐ Hand mixer
 - ☐ Food processor
 - ii) How long do you whisk the egg whites for?
5. How do you add the icing sugar into the mixture?
 - ☐ By the spoonful
 - ☐ All at once
 - ☐ With a sieve
 - ☐ Other



COPYRIGHT
PROTECTED



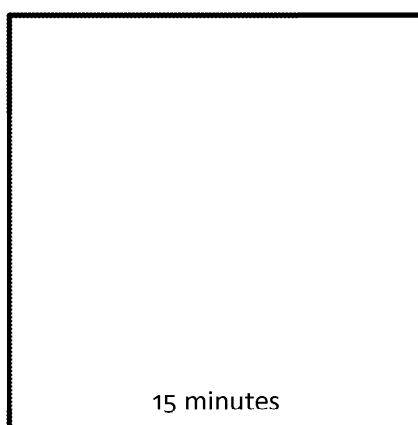
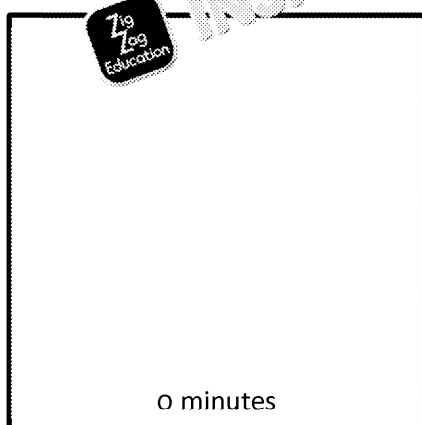
Adding the food colourant.

6. i) How much do you use?
- ii) Did the texture of the mixture change after adding the colourant?
7. **Now you need to add the almonds with sugar to the mixture.** How do you whisk vigorously and quickly, e.g. with the whisk previously used for whisking, just for

Time for piping

8. i) What size of tip do you use with your piping bag?
- ii) What kind of tip do you use? Draw it below.

9. **Once you have piped the mixture onto the baking tray, it needs to stand for 15 minutes.** Draw pictures at the beginning, after 15 minutes and after 30 minutes to see how the macaroons change with time. Use the pictures below (or save them somewhere safe for revising for your exams!).



Finally, you can bake your macaroons.

10. Did you set the oven to the temperature indicated in the procedures or did you

**COPYRIGHT
PROTECTED**



11. How long did you bake the macaroons for?

12. **Get your timer ready! Take a photograph of your macaroons in the oven at 3, 4, 7 and 10 minutes, respectively).** Remember not to open the oven for the exercise)! Write n/a if you baked your macaroons for a shorter time.

 After 1 minute	After 2 minutes
After 3 minutes	After 7 minutes

13. Once the macaroons have cooled slightly, assess them on a scale from 1 to 5. 1 stands for 'no', 3 stands for 'yes, fair' and 5 stands for 'yes, perfect'. Remember to be professional and objective when assessing.

Feature/characteristic
The macaroons are equal in size
The macaroons have the same shape
The macaroons separate easily from the baking paper
The macaroons have a crunchy crust
The macaroons have a gooey centre
The macaroons do not break apart when lifted from the tin
The macaroons are not hollow
The macaroons are smooth in texture (no bits or whole almond can be felt)
The colour is bright and intensive
The shells do not separate from the foot of the macaroon when you stick them together with jam
Total score

**COPYRIGHT
PROTECTED**



14. Compare your result with others and try to detect what they did differently to was better.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



Take the time to evaluate this challenge, noting down anything you learnt from change next time.



**COPYRIGHT
PROTECTED**



Lemon Meringue Pie

TEACHER'S GUIDANCE

WHAT'S COVERED IN THIS SESSION:

- ✓ making sauces
- ✓ starch thickening agent
- ✓ setting agents
- ✓ use of words in cooking

LEARNING

Students should be able to:

- ☐ use various thickening agents in the preparation of sauces and fillings
- ☐ understand interactions between ingredients

SAFETY TIPS

- ! Make sure that students allergic to any food ingredient do not do a challenge (encourage them to measure times and write notes). Ingredients used in this session include **wheat, milk** and **eggs**.
- ! Remind students about the safety rules when handling high-risk foods and they apply them to prevent cross-contamination of foods.
- ! Ensure that students follow safety rules when handling hot food.

GUIDANCE FOR DELIVERY:

- To save time, prepare the meringue prior to the lesson or buy a ready-to-use meringue.
- **Do NOT** give the students the challenge overview page – their task is to work out the recipe for the pie. You can cover the ingredient list and copy that (one per group) over the overview page for the lesson so that they can compare their recipe with the model recipe.
- Assessment should take place in the next lesson (ideally afternoon of the same day).

WHAT YOU WILL NEED:

Equipment:	Ingredients:
✓ oven ✓ round baking tins ✓ whisks, hand mixers and food processors for students to choose from ✓ large bowls (three for each group) ✓ baking paper ✓ saucepans ✓ grater/zester and hand juicer ✓ kitchen scale ✓ measuring jug ✓ rolling pin ✓ baking stones or other equipment for blind baking (e.g. dried peas)	✓ corn starch ✓ caster sugar ✓ lemons ✓ eggs (raw) ✓ cold water ✓ plain flour* ✓ butter* ✓ icing sugar* *instead you can choose to use butter and flour

INSPECTION COPY

COPYRIGHT
PROTECTED



ACTIVITY ANSWERS

1. A basic recipe for a shortcrust pastry includes plain flour and butter, sometimes with an egg (cooked), cold water and salt/sugar.
2. Blind baking means that the pastry is baked without a filling. Instead, to prevent it from becoming soggy, it is baked with a heavy weight, such as baking beans or other heavy equipment; for example, a meringue-lined baking tin of similar size to the pie dish, with pulses (e.g. lentils).
3. This is because the other ingredients in lemon curd and meringue – do not require long cooking times (almost completely) baked before the whole cake is assembled.
4. The cooking procedure is shown on the challenge overview page.
6. Students may consider adding some starch (either plain flour, corn starch or potato starch) to the filling, or to simmer it to evaporate extra water, if too liquid.
8.
 - i) The process is denaturation.
 - ii) Denaturation caused by mechanical action (whisking) is partially reversible. Denaturation caused by heat or acid is not reversible.
 - iii) The egg whites will whisk faster if you add a tiny pinch of kitchen salt.
10. Given the ingredients, the reactions could include:
 - caramelisation (of the sugar in meringue)*
 - dextrinisation of the starch in the shortcrust
 - Maillard reaction between protein and sugar in the meringue**

*although not required by the specification, this is an important and frequently used process

**although not required by the specification, this is an important process used when cooking
13. Some descriptive words could be zesty, crunchy, crispy, fruity, gentle, soft, moist, golden.

QUESTIONS TO THINK ABOUT ANSWERS

1. Corn starch is a thickening agent. It is used to increase viscosity (thickness, texture) of the filling.
2. Because it is low in gluten, so the pastry will stay crunchy. Other types of flour, e.g. wholemeal, would make the pastry too soft.
3. A portion of lemon meringue pie provides roughly:
 - 398kcal
 - 13.1g of fat
 - 68.8g carbohydrates (inc. 47g sugars)
 - 5.7g of protein
 - 0.9g fibre
4. Top producer countries include India, Mexico, Argentina, China and Brazil.
The transportation of food affects the environment in many ways:
 - By emitting greenhouse gases (e.g. carbon dioxide) when burning fuel (e.g. gas), it contributes to global warming and climate change
 - By emitting heavy metals (e.g. lead, cadmium) it contributes to environmental pollution
 - By emitting particulate matter (e.g. soot, hydrocarbons, nitrogen compounds) it contributes to air pollution
 - By emitting noise it makes many places unsuitable for animals (including people) to live in, leading to migration and/or extinction of species, and degradation of habitats
 - By the building of roads and bridges it contributes to deforestation and lowering of biodiversity

INSPECTION COPY

COPYRIGHT
PROTECTED



Lemon Meringue pie

INSPECTION COPY

THE CHALLENGE OVERVIEW

Lemon meringue pie is an American classic. If properly made, this dessert can turn into a pool rather than a pie. So, come on! Mixing lemon juice and starch? Do they really work together, should it?! Also the meringue can be underbaked, making the slicing a real challenge (and a health hazard, too!).

American



Your challenge is to make this tricky dessert. Can you adjust the text so it doesn't fall apart when sliced? Or will yours collapse into a pool?

INGREDIENTS

Makes 8 servings

Lemon curd:

- ☐ 35g corn starch
- ☐ 125g caster sugar
- ☐ 3 lemons (zest + juice)
- ☐ 3 egg yolks
- ☐ 225ml cold water

Meringue:

- ☐ 4 egg whites
- ☐ 220g caster sugar

Shortcrust: (Use a ready one or make your own)

- ☐ 175g plain flour
- ☐ 100g cold butter
- ☐ 1 tbsp icing sugar
- ☐ 1 egg yolk (raw)



PROCEDURE

- 1 Mix the ingredients of the curd in a food processor until smooth (or a ready one)
- 2 Preheat the oven to 190°C
- 3 Roll the pastry until 0.5cm thick and line a round baking tin
- 4 Bake for 10 minutes; remove from the tin

For the curd:

- 5 Mix lemon juice and zest with water to a thick paste
- 6 Boil the water in a saucepan
- 7 Add the starch mixture to the water and simmer until thick, remove from the heat
- 8 In a large bowl, mix the egg yolks with sugar
- 9 Slowly add the eggs into the curd, stirring constantly
- 10 Simmer the curd for a couple of minutes (until thick) and then pour over the meringue

For the meringue:

- 11 In a large bowl, whisk the egg whites until stiff
- 12 Slowly add in the sugar
- 13 Pour the meringue onto the curd
- 14 Bake for 30 minutes or until golden

QUESTIONS TO THINK ABOUT

Discuss these questions with a partner and write notes in your books.

1. What is the function of corn starch in the recipe? (Area 4: The effect of cooking on food)
2. Why is plain flour used for a shortcrust pastry? (Area 4: The effect of cooking on food)
3. Calculate the calories and the amount of macronutrients in a portion of the pie. (The white cornstarch weight is 25g, and the lemon juice weighs approx. 90g.) Use any formulae you like to calculate this (Area 3: Calculate energy)
4. Lemon is a citrus fruit imported to the United Kingdom from other countries. Check the world's largest lemon producers and then list the environmental effects of food production.

COPYRIGHT
PROTECTED



Lemon meringue pie – A pie, not a

INSPECTION COPY

YOUR TASK

Logically thinking, lemon juice and starch should not work together. Lemon juice hydrolyses* chemical bonds in the starch chains, breaking the granules apart. Due to this starch granules cannot swell and they lose their thickening properties!

Your task is to correctly adjust the amount of juice and starch (and order) so that your lemon curd is thick enough not to turn into a porridge, but thick enough to have a nice mouthfeel. Divide into groups and try to eat your methods – whose pie will appear best?

**hydrolyse: to break down a chemical substance in a reaction with water.*

Making a lemon meringue pie begins by making a shortcrust pastry.

1. **Try to remember the ingredients and proportions of a shortcrust pastry, and**
It is also possible that your teacher will provide you with a ready-made shortcrust pastry. Read the label carefully and list the basic ingredients and food additives used in the pastry, and their flavour or colour.

.....
.....

2. **The procedures call for blind baking the crust.**

- i) What is blind baking?

.....
.....

- ii) What equipment can you use for blind baking?

.....
.....

3. **Why is it important to blind bake the crust before adding other ingredients?**

.....
.....

4. **The most important task today is to prepare lemon curd.**

It is a key ingredient in a lemon meringue pie, as if it is too runny it will leak out and make the pie soggy, while too thick will provide an unpleasant, tough filling. We will provide you with a list of ingredients, but you will have to work out proportions.

**COPYRIGHT
PROTECTED**



Remember to measure all the ingredients carefully and note in what order you

Ingredients: how much? ☐ Corn starch ☐ Caster sugar ☐ Lemon zest ☐ Lemon juice ☐ Egg yolk ☐ Water	The procedure: <table border="1"> <tr> <th colspan="2">PROCEDURE</th> </tr> <tr> <td>1.</td> <td></td> </tr> <tr> <td>2.</td> <td></td> </tr> <tr> <td>3.</td> <td></td> </tr> <tr> <td>4.</td> <td></td> </tr> <tr> <td>5.</td> <td></td> </tr> <tr> <td>6.</td> <td></td> </tr> </table>	PROCEDURE		1.		2.		3.		4.		5.		6.	
PROCEDURE															
1.															
2.															
3.															
4.															
5.															
6.															
Equipment															

5. i) What went well? Did you manage to make it perfect the first time?

.....

.....

.....

ii) What went wrong? Or did you have to throw it away and start again?

.....

.....

.....

6. There is a possibility that the curd did not come out well – is there a way to

.....

.....

7. Once the curd has the proper taste and texture, you can pour it onto the sheet to cool.

At the end of the lesson your teacher will compare yours and the correct ingredient list with yours and try to spot possible mistakes or differences.

.....

.....

.....

**COPYRIGHT
PROTECTED**



8. It's time to make the meringue. You will need to whisk four egg whites with a meringue.
- What is the chemical process that takes place when whisking the egg whites?
 - Is this process irreversible?
 - Can you do anything to speed up the process?
 - What utensil did you use to whisk your egg whites?
 - How long did it take you to obtain the required texture?
9. Once the meringue is ready, scoop it out on the curd, creating peaks, or even a skewer to obtain the chosen pattern on the pie.
10. Bake the pie for around 30 minutes, or until golden brown.
Can you name the reaction(s) which makes the crust and the meringue brown?
11. Take the pie out of the oven and let cool before completing the next task (cutting).
12. **The pie is cool and ready to eat... or is it?** Remove the ring from the tin and take a picture of your pie before and after cutting.
Or simply describe the look of your pie, paying extra attention to the texture.

Before:	After:
	

**COPYRIGHT
PROTECTED**



13. How would you describe your pie? Use as many descriptive words as possible! professional! 'Good' or 'bad' doesn't make it!



Take the time to evaluate your challenge, noting down anything you learnt from change next time.

INSPECTION COPY

COPYRIGHT
PROTECTED



Chocolate Éclairs

TEACHER'S GUIDANCE

WHAT'S COVERED IN THIS SESSION:

- ✓ making choux pastry
- ✓ creating a decoration
- ✓ making glazes
- ✓ coating and decoration techniques
- ✓ setting up a taste panel
- ✓ choosing tasting methods

LEARNING

Students should be able to:

- ☐ understand how various textures and consistency of a paste
- ☐ use a broad variety of skills
- ☐ use creativity and skills to create flavoured desserts
- ☐ use a variety of sensory techniques

SAFETY TIPS

- ! Make sure that students allergic to any food ingredient do not challenge (encourage them to measure times and write notes). Ingredients used in this session include **wheat, milk** and **eggs**. Chocolate may contain other allergens, depending on the producer. Read the label.
- ! Remind students about the safety rules when handling high-risk foods and they apply them to prevent cross-contamination of foods.
- ! Ensure that students follow safety rules when handling hot foods.

GUIDANCE FOR DEBATE

- Since the students are encouraged here to develop new flavours and recipes, it is recommended that they prepare a worksheet prior to the lesson so that they can plan what they are going to use from home.
- When planning this session, consider one hour to prepare the éclairs and one hour to complete the tasting panel. We think it's best to organise a double session.

WHAT YOU WILL NEED:

Equipment:	Ingredients:
✓ oven ✓ food processors, hand mixers, whisks, wooden spoons ✓ large bowls ✓ piping bags ✓ baking tins ✓ baking paper ✓ saucepans ✓ sieve ✓ marking pen ✓ kitchen scale ✓ measuring jug	✓ water ✓ milk ✓ butter ✓ plain flour ✓ strong flour ✓ eggs ✓ caster sugar ✓ vanilla pods (or vanilla extract) ✓ dark chocolate ✓ double cream <i>This session requires students to use various tastes and textures of ingredients from home.</i>

INSPECTION COPY

COPYRIGHT
PROTECTED



ACTIVITY ANSWERS

The combining and tasting!

Students can choose to carry out various sensory tests to assess the éclairs, e.g. preference

The scales used can also vary, although it's important that all students use the same scale

QUESTIONS TO THINK ABOUT ANSWERS

1. Some potential positives could include (although the negatives far outweigh the positives)
 - Providing vitamins A and D from milk, cream and butter
 - Providing magnesium from chocolate
 - Providing vitamin B group and fibre with flour
 - Providing calcium with milk and flour
 - Providing haem iron with eggs, and non-haem iron with flour
 - Providing omega-3 fatty acids with eggs
2. Other popular French desserts could include:
 - Crème brûlée
 - Puff pastry
 - Tarte tatin
 - Crepes
 - Croissants
 - Madeleines
 - Chocolate soufflé
3. Other dishes which call for choux pastry could include:
 - savoury choux buns with mushroom and chicken sauce
 - cream puffs (sweet, small round choux buns with whipped cream and icing)
 - mini choux buns served instead of croutons with cream soups
 - profiteroles (sweet, small, round choux buns filled with cream and covered in chocolate)
 - Pain de sucre (sweet choux buns filled with praline cream)
 - gougères (savoury choux buns to which grated cheese is added)
 - beignets (deep-fried choux buns – not baked)
 - churros (deep-fried choux ‘fingers’)
 - pommes dauphine (savoury choux buns made by adding potato mash to the choux)

INSPECTION COPY

COPYRIGHT
PROTECTED



Chocolate éclairs

INSPECTION COPY

THE CHALLENGE OVERVIEW

Chocolate éclairs are a perfect combination of choux pastry, crème pâtissière and chocolate ganache. Air of those strange-sounding names can be found in the French language. Today you will work in a team to make them all... by hand! Beware – it is not as easy to make! The choux can go soggy, the crème can be too runny, and the sauce can make the whole dessert unbearably sweet.

The ch

Your challenge is to make this tricky dessert. Your task is to make each component to assemble perfect éclairs at the end of the challenge.

INGREDIENTS

(number of servings depends on the size of éclairs made)

Choux pastry:

- ☐ Water
- ☐ Milk
- ☐ Butter
- ☐ Plain and/or strong flour
- ☐ Eggs

Crème pâtissière:

- ☐ Sugar
- ☐ Flour
- ☐ Eggs
- ☐ Vanilla pods
- ☐ Milk

Chocolate ganache:

- ☐ Dark chocolate
- ☐ Double cream

PROCEDURES

The model procedures for each component are given on the student's worksheet.

Even if you follow the model procedures, you may get different results!

QUESTIONS TO THINK ABOUT

Discuss these questions with a partner or write notes in your books.

1. Éclairs, like other sweets, shouldn't be eaten too often due to their high calories. List some positive health benefits of eating éclairs.
2. Éclairs are a classic and characteristic of French cuisine. List other popular French dishes. (Area 5: Where food comes from)
3. List three other dishes that could use choux pastry. (Area 5: Where food comes from)

COPYRIGHT
PROTECTED



Chocolate éclairs – Don't break a

YOUR TASK

Divide into three groups – each group will have a different task. **Group 1** will make the choux pastry, **group 2** will make the cream filling, and **group 3** will make the chocolate glaze. There is a basic recipe for choux pastry and chocolate éclairs provided, but in each group you will have different methods, recipes or ingredients.

At the end of the lesson, the components will be assembled together to make chocolate éclairs. We will provide you with a basic recipe for chocolate éclairs, but don't be afraid to be a bit more! Maybe you will come up with a better combination?

Group 1 – the bakers

The basic recipe for choux pastry is given below. Divide into 2–3 subgroups and discuss: Will you add extra ingredients (e.g. another kind of flour, salt, milk, sugar) or change the mixer instead of a wooden spoon)? Or vary the size of the puffs?

Remember to note down all differences, as you will need to compare the outcomes to complete this task.

Your recipe for delicious choux:

PROCEDURE	
1.	Pour the water into a saucepan and add the butter until the butter is melted
2.	Tip the flour in and beat vigorously with a wooden spoon until the mixture comes out easily off the walls
3.	Take off the heat and whisk in the eggs
4.	Pipe the mixture out onto a lined baking sheet
5.	Bake at 200°C until golden and firm to the touch *the time will depend on the size of your puffs

Ingredients (basic):

- ☐ 60g strong plain flour
- ☐ 150ml water
- ☐ 50g butter
- ☐ 2 eggs

Ingredients:

- ☐
- ☐
- ☐
- ☐
- ☐
- ☐

Other important info

PROCEDURE	
1.	
2.	
3.	
4.	
5.	

INSPECTION COPY

COPYRIGHT
PROTECTED



Group 2 – the confectioners

Your task is to prepare various kinds of filling for the éclairs. Below you can find **pâtissière**. What other fillings can you make? Will you use different ingredients (flour), or vary the texture, colour or flavour (e.g. add cocoa or lemon zest)? How and tasty? Maybe you can think of a savoury filling? **Divide into 2–3 subgroups**

Remember to note down all differences, as you will need to compare the outcomes to complete this task.

 Ingredient list (Basic): ☐ 125g caster sugar ☐ 50g plain flour ☐ 1 egg yolk ☐ 1 whole egg ☐ 500ml milk ☐ 1 vanilla pod	PROCEDURE	
	1	Remove the seeds from the vanilla pod
	2	In a large bowl, combine together the
	3	sugar, and whisk until pale and creamy
	4	Sift the flour into the eggs and mix vigorously
	5	Once the milk is boiling, pour it gently into the mixture and combine (quickly!)
Transfer the mixture into the saucepan and cook for five minutes, stirring constantly		

Your recipe for a yummy filling:

Ingredients: ☐ ☐ ☐ ☐ ☐ ☐ ☐ 	PROCEDURE	
	1	
	2	
	3	
	4	
	5	
Other important info 	6	

**COPYRIGHT
PROTECTED**



Group 3 – the decorators

Your task is to prepare a delicious sauce to spread, sprinkle or pour over the éclairs. Write down the **procedure for a basic chocolate ganache**. Don't be afraid to experiment a little bit with the texture, viscosity, colour or flavour of the topping? Maybe you will make a savoury decoration method? Let your imagination be your guide! **Divide into 2–3 subgroups**

Remember to note down all differences, as you will need to compare the outcomes to complete this task.

Ingredients: ☐ 100g dark cocoa chocolate ☐ 100ml double cream	PROCEDURE	
	1	Pour the cream into a saucepan and bring to a boil
	2	Crush the chocolate into a bowl
	3	Once the cream is boiling, pour it over the chocolate and whisk until smooth

Your recipe for the best coating:

Ingredients: ☐ ☐ ☐ ☐ ☐ ☐ ☐	PROCEDURE	
	1	
	2	
	3	
	4	
	5	
	6	
	7	

**COPYRIGHT
PROTECTED**



The combining and tasting!

Now it's time for all of you to cooperate. Assemble the different components and label each one. Then prepare a tasting panel and work out which component it is up to you to choose what kind of a tasting method you're going to use, to judge the samples and how to set up the tasting panel.

Use the table below to describe the éclairs you managed to make in class. We have

		Filling
	3 inch x 1 inch puffs, 2 inch high, hollow	Banana cream with cinnamon
Sample 1		
Sample 2		
Sample 3		
Sample 4		
Sample 5		
Sample 6		
Sample 7		
Sample 8		
Sample 9		
Sample 10		
Sample 11		
Sample 12		
Sample 13		
Sample 14		

**COPYRIGHT
PROTECTED**



THE TASTING PANEL

Method:

Scale



INSPECTION COPY



INSPECTION COPY

Take the time to evaluate this challenge, noting down anything you learnt from it next time.



INSPECTION COPY

INSPECTION COPY

COPYRIGHT
PROTECTED



Tiramisu

TEACHER'S GUIDANCE

WHAT'S COVERED IN THIS SESSION:

- ✓ creaming
- ✓ remedying kitchen fail
- ✓ baking and assembling the dish and food
- ✓ processing the ingredients
- ✓ making a layered dish

LEARNING

Students should be able to:

- ☐ modify recipes to obtain the desired result
- ☐ use their skills and knowledge to create a new dish
- ☐ assess how temperature affects the consistency/texture of a dish
- ☐ identify common mistakes and remedy the situation in each case

SAFETY TIPS

- ! Make sure that students allergic to any food ingredient do not actively challenge (encourage them to measure times and write notes, if possible). This session include **wheat**, **milk** and **eggs**.
- ! Remind students about the safety rules when handling high-risk foods and how to prevent cross-contamination of foods.
- ! Ensure that students follow safety rules when handling hot foods and drinks.

GUIDANCE FOR DELIVERY:

- Do NOT give the challenge overview page to students to sign away. Instead, let them get ingredients from the pantry first, and only then hand them the overview card. This way so that they can obtain a good idea of what to do even if they don't have the ingredients specified. For example, they might get strong flour instead of plain flour, or chose raspberry aroma instead of vanilla.
- Prior to the challenge, you can ask students to bring some of the ingredients from home to use in their recipe.
- Chilling the desserts overnight improves the texture and helps the biscuits soak up the cream – you can choose to cut the dessert earlier so that students can see how the texture changes.
- Plan at least one hour to cook and one hour to complete the tasting panel. Make sure to have a break (or at least on the first and last lesson the same day).
- Since the recipe calls for egg yolks only, consider using the egg whites to carry out another challenge.

WHAT YOU WILL NEED:

Equipment:	Ingredients:
✓ ovens ✓ fridge ✓ food processors, hand mixers, whisks ✓ cling film ✓ baking paper ✓ large baking tins ✓ tins or dishes to assemble the dessert ✓ large bowls ✓ kitchen scale ✓ measuring spoons ✓ piping bag ✓ sieves ✓ a timer to time students' 'shopping time' ✓ shopping baskets or large carton boxes or trays	Must-have ingredients: ✓ eggs ✓ caster sugar ✓ vanilla extract ✓ salt ✓ plain flour ✓ mascarpone cheese ✓ coffee ✓ cocoa powder Additional ingredients: ✓ various food colours ✓ fresh or frozen fruit ✓ different types of flour ✓ different types of sugar ✓ other types of cheese (e.g. cheddar, ricotta)

INSPECTION COPY

COPYRIGHT
PROTECTED



ACTIVITY ANSWERS

- To speed up the process, you may also choose to use ready-to-use Savoiardi biscuits. Students may wish to experiment with different types of flour and sugar to obtain various textures.
- Short biscuits should, generally, bake faster, although this depends on oven settings.
- Students may choose to use different types of cream or jam, or even try to make their own – whichever they choose – it has the correct consistency (not too thick and not too thin) to give the biscuits the correct texture of the biscuits later on.
- Some descriptive words could include thick, smooth, sweet, creamy, bland, sweet, etc.
 - Some cooks suggest to refrigerate / lightly freeze a curdled cheese and then whisk it.
 - Others suggest to heat it up until melted and then let cool and whisk lightly.
 - The efficacy of the method will depend on the ingredients used, their quality, etc.
- Again, the method used will affect the texture/consistency of the final dish. If the cream is thick enough to only sprinkle the biscuits lightly with coffee, while if the cream is very heavy, you can roll or dip them in coffee first.

QUESTIONS TO THINK ABOUT ANSWERS

- Egg whites can be used for the following (examples):
 - A meringue, e.g. for Pavlova dessert
 - Macaroons
 - Egg white omelette
 - To glaze bread, bagels or bread rolls
 - To make frosting
 - To replace gelatine in mousses
 - To make egg white foam
 - Any other suitable example

- Some Italian cheeses include:

- Mozzarella
- Ricotta
- Parmesan
- Gorgonzola
- Grana Padano
- Pecorino
- Taleggio

Some British cheeses include:

- Cheddar
- Red Leicester
- Double Gloucester
- Stilton
- Dorset blue
- Caerphilly
- Swaledale
- Cornish blue
- Durham blue
- Laugharne
- Cotswold
- Sage derby
- Wensleydale

- That's because caster sugar has smaller crystals, which improve the texture, and make it easier to mix.

INSPECTION COPY

COPYRIGHT
PROTECTED



Tiramisu

THE CHALLENGE OVERVIEW

Tiramisu is an Italian dessert made of layers of biscuits and cream, sprinkled with cocoa or chocolate shavings. And, although it may seem easy, it is one of the trickiest desserts out there! The biscuits can get soggy, the cream can curdle... and the whole thing can come out more as a pudding than a cake!



Tiramisu



Your challenge is to make this tricky dessert by choosing the correct ingredients and methods to obtain the best quality tiramisu in class.

INGREDIENTS

Makes 8 servings

Ladyfingers:

- ☐ 4 eggs
- ☐ 125g caster sugar
- ☐ 1 tsp vanilla extract
- ☐ 1/8 tsp salt
- ☐ 115g plain flour

Cream:

- ☐ 500g mascarpone cheese
- ☐ 150g caster sugar
- ☐ 6 egg yolks
- ☐ 500ml strong coffee
- ☐ Powdered cocoa



PROCEDURE

For the ladyfingers:

- | | |
|---|---|
| 1 | Preheat the oven to 190°C |
| 2 | Beat the egg yolks with vanilla extract and sugar |
| 3 | In a separate bowl, whisk the egg whites, gradually adding salt and sugar |
| 4 | Combine the whisked egg whites with the yolk mixture |
| 5 | Sift in the flour and gently fold in |
| 6 | Pipe out on a baking tin and bake for 10 minutes |

For the cream:

- | | |
|---|--|
| 7 | In a large bowl, whisk the egg yolks until pale and fluffy |
| 8 | Slowly add the cheese and sugar |

To assemble the cakes:

- | | |
|----|--|
| 9 | Dip the ladyfingers in coffee and place in a dish |
| 10 | Spread half of the cream over the ladyfingers |
| 11 | Arrange another layer of ladyfingers |
| 12 | Sprinkle the top with a thin layer of powdered cocoa or chocolate shavings |

QUESTIONS TO THINK ABOUT

Discuss these questions with a partner or write notes in your books.

- The recipe calls for egg yolks only. To prevent food waste, list at least five dishes you could use the egg whites for. (Area 5: Food provenance)
- Mascarpone is a classic Italian cheese. List five other cheeses that originate in Italy and five that originate in Britain. (Area 5: Food manufacturing)
- Why do recipes for baking usually call for caster sugar, and not for regular white sugar? (Area 4: The effect of cooking on food)

INSPECTION COPY

COPYRIGHT
PROTECTED



Tiramisu – The balancing act

YOUR TASK

As simple as it can seem, tiramisu can be very whimsical. This classic has two layers of biscuit and cream topped with cocoa powder. The problem with assembling the ingredients as they can easily come out soggy and how rather than a cake. Your task is to choose the ingredients and method to make the cake... a cake. Remember – balance is key!

Divide into three groups – in each group you can divide again so the biscuit and the other subgroup makes the cream.

- Let's start by doing the shopping.** Grab a tray or a basket and run to the pantries. Remember, you only have five minutes... and can't go back!

We prepared a little shopping list for you, but feel free to amend it or add additional items.

THE SHOPPING LIST:

- ☐ 10 eggs

Sugar – choose from:

- ☐ caster
☐ icing
☐ brown
☐ white
☐ other.....

Flour – choose from:

- ☐ plain
☐ all purpose
☐ self-raising
☐ other.....

Powders – choose from:

- ☐ milk
☐ 50%
☐ 70%
☐ other.....

Cheese – choose from:

- ☐ 500g mascarpone cheese **OR**
☐ mascarpone cheese and double cream **OR**
☐ other type of cheese

Black coffee – choose from:

- ☐ ground
☐ instant
☐ decaf
☐ other flavouring

Other ingredients:

e.g. vanilla extract, fresh or frozen fruit, salt

- Once you're back to your worktop, prepare for step 1 of the procedures – making the ladyfingers.**

Ladyfingers, also known as Savoiardi biscuits, are sponge like, firm, sweet, long and have a crunchy crust.

- Your teacher will provide you with a procedure for making them. Do you follow it?
- If not, how did you solve the problem? Did you try to amend the texture of the ladyfingers for your classmates? Or maybe you chose not to make the ladyfingers?

Use the space on the following page to describe and justify all your choices for the basic recipe.

INSPECTION COPY

COPYRIGHT
PROTECTED





3. i) **Once the pastry is done, you need to pipe it out.** Line a baking tin with pastry. Do you go for long stripes or rather short ladyfingers which might be easier to eat later on?

- ii) Did that affect baking time? Was it shorter or longer than for others?

Set the ladyfingers aside to let cool – it's time to make the cream!

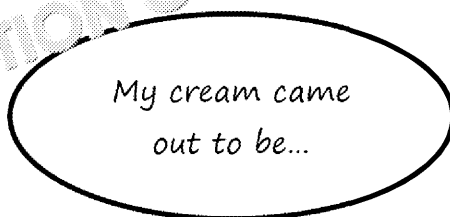
4. Once again, ask yourself if you have all the ingredients. If not, what are you going to borrow from somebody else? Or maybe you will make a different kind of cream. Describe and justify all changes made to the basic recipe provided, as this may affect the final product.



**COPYRIGHT
PROTECTED**



5. i) Complete the spider diagram below to describe the consistency of your cream. Is it thick, creamy, runny? Or maybe it curdled? Use as many descriptive words as you can.



- ii) If the cream didn't come out well, is there a way to save it, or would you start again? If you're trying to remedy the situation, describe what you're doing.

.....

.....

.....

.....

6. The biscuits and cream should be ready by now. It's time to assemble the (or not so perfect) tiramisu.

Originally, the biscuits should be covered with coffee. How do you do this?

- ☐ Soak them in a bowl of coffee
- ☐ Dip them for a short time in coffee
- ☐ Roll them lightly in coffee
- ☐ Arrange them in the dish and sprinkle or pour the coffee on top
- ☐ Other method:

7. Spread half of your cream on top, arrange another layer of biscuits and cream.

8. What do you choose to coat the cake with? Cocoa powder, instant coffee, sugar, chocolate shavings, something else?

.....

.....

Once the cake is done, cover it with cling film and refrigerate overnight. You will be ready for the next lesson.

**COPYRIGHT
PROTECTED**



9. During the last lesson you prepared tiramisu dessert. It is time to take it out of the oven and see how your cooking choices worked out well... or not so well.

Set up a taste panel. Use a 1 to 5 scale, where 1 stands for 'no/poor' and 5 stands for 'excellent'. Use the marks to see whose cake scored the most.

	My tiramisu	Tiramisu 2
Overall texture is good – the cake doesn't fall apart when cut		
The moistness of cake is good – not too dry and not too wet		
The cream is creamy and set, not runny, curdled or tough		
The biscuits are still a bit crunchy, not soaked or mushed, but not hard either		
Total:		

10. Whose cake scored the most? Compare preparation and cooking stages to decide which one made this cake better than the others.

.....

.....

.....

.....

.....

.....

.....

Take the time to evaluate this challenge, noting down anything you learnt from this challenge to change next time.

.....

.....

.....

.....

.....

.....

.....

**COPYRIGHT
PROTECTED**



Crème Caramel

TEACHER'S GUIDANCE

WHAT'S COVERED IN THIS SESSION:

- ✓ caramelisation
- ✓ setting textures
- ✓ use of oven

LEARNING

Students should be able to:

- ☐ assess how the size of a dish affects the setting time for a dessert
- ☐ use skills and knowledge to

SAFETY TIPS

- ! Make sure that students allergic to any food ingredient do not challenge (encourage them to measure times and write notes, ingredients used in this session include **milk** and **eggs**).
- ! Remind students about the safety rules when handling high-risk foods, they apply them to prevent cross-contamination of foods.
- ! Ensure that students follow safety rules when handling hot foods.

GUIDANCE FOR DELIVERY:

- Explain to students what a bain-marie is and what it is used for in cooking.
 - A bain-marie (also known as a double boiler bath) is a method in which a large pot of water is placed on the stove, while another saucepan is placed upon it. The method is used to cook ingredients, such as chocolate, which could easily burn if cooked directly over heat.
- Watch carefully while students prepare caramel, as the high heat may pose a risk of scalding.
- When planning this session, reserve one hour to cook and one hour to set up if they are on consecutive days.
- Give students access to the samples between lessons – they will need to check the progress between.

WHAT YOU WILL NEED:

Equipment:	Ingredients:
✓ saucepans or deep frying pans ✓ cooker ✓ oven ✓ deep baking dishes ✓ fridge ✓ small ramekins – one for each student ✓ whisk ✓ butter ✓ cooking oil (optional) ✓ brush (optional)	✓ eggs ✓ vanilla extract ✓ caster sugar ✓ whipping cream ✓ water

INSPECTION COPY

COPYRIGHT
PROTECTED



ACTIVITY ANSWERS

1. It is worth considering greasing the sides of the ramekins with butter. This should help with the caramel sticking to the sides, while the caramel will protect it from sticking to the bottom.
2.
 - i) The ingredients needed to make caramel include sugar, and a small amount of water (e.g. 60g of sugar and 20ml of water, or 75g of sugar and 25ml of water).
 - ii) It is best not to stir caramel during cooking, as it lowers the temperature and can cause the caramel to seize.
 - iii) It might be best to use medium heat, as it helps to control the process. Low heat takes a long time, and high heat can cause the sugar to burn very quickly.
3. Students should observe that the caramel cools and sets very quickly, forming a hard crust on the sides of the ramekins.
4.
 - i) This helps to remove air bubbles from the flan, making its texture very creamy.
 - ii) It uses whole eggs, while crème brûlée uses egg yolks only. Also, the baking time is longer (it's shorter for crème caramel). The recipe for crème brûlée calls for the use of a blowtorch, so the brûlée is optional.
 - iii) There are various types of custard, which differ in texture and consistency (although the basic recipe is unchanged). These could include:
 - crème anglaise (light pouring custard sauce)
 - crème pâtissière (spreading cream used in cakes and desserts)
 - set custards, such as semifreddo
5.
 - i) The flan should be lightly set on the surface, but may still be liquid in the centre.
 - ii) No changes should be observable yet.
 - iii) The flan may already start to set – but the caramel at the bottom is still very thin.
 - iv) The caramel might be hard enough to remove it comfortably from the sides of the ramekins.
 - v) The caramel should be softened, creating an attractive pouring sauce.

QUESTIONS TO THINK ABOUT ANSWERS

1. Dextrinisation of starch – examples include: toasting bread, browning of crust when baking bread; Maillard reaction (not strictly required by the specification) – examples include: browning of coffee and cocoa beans, roasting cereals in beer production (the reaction takes place in the malted barley); caramelisation will take place in all foods which contain the two, given that the temperature is high enough.

2. Examples:

Granulated white sugar – white, purified (refined) sugar with large crystals
best for sweetening beverages and sprinkling on top of cereals

Caster sugar – white, purified (refined) sugar with small crystals
best for baking and creaming

Icing sugar – white, purified (refined) sugar, powdery (very fine); often mixed with starch
best for delicate desserts which require a smooth texture and to create icing

Brown sugar – fine crystals with added molasses
best for baking sauces and glazes

Muscovado – dark brown, fine crystals, sticky and moist
best in fudge, coffee and heavy desserts such as gingerbread

Demerara – raw refined sugar, with large crystals
best to sprinkle on top of cereals

INSPECTION COPY

COPYRIGHT
PROTECTED



Crème caramel

THE CHALLENGE OVERVIEW

Crème caramel is a classic Spanish upside down dessert made of set custard with caramel sauce. The challenging part of this dessert relates to the caramel. How to make it properly? How to get it out of the dish and prevent it from turning rock hard? How to give it the perfect colour?



Crème
caramel



Your challenge is to make this tricky dessert. Can you prepare the caramel top and golden caramel colour, and manage to get it out of the dish?

INGREDIENTS

Makes 6 small servings

Crème caramel:

- ☐ 2 eggs
- ☐ ¼ tsp vanilla extract
- ☐ 15g caster sugar
- ☐ 300ml whipping cream

Caramel:

- ☐ 75g caster sugar
- ☐ 25ml water



PROCEDURE

For the caramel:

- 1 Prepare six small ramekins
- 2 Pour the sugar into a frying pan, heat gently and stir until dissolved
- 3 Increase the heat and boil for 5 minutes
- 4 Immediately pour into ramekins, spreading evenly on the bottom

For the custard:

- 5 Preheat the oven to 150°C
- 6 Whisk slightly the eggs with the vanilla in a large bowl
- 7 Heat the cream gently and pour into the egg mixture
- 8 Whisk the mixture until smooth, then strain through a fine sieve to remove lumps
- 9 Pour onto the caramel in the ramekins
- 10 Place the ramekins in a deep tin, pour warm water into the tin, making it halfway up the sides
- 11 Bake for 20 minutes, remove from the oven and refrigerate overnight
- 12 Remove the pudding upside down

QUESTIONS TO THINK ABOUT

Discuss the questions with a partner or write notes in your books.

1. Caramelisation is a chemical reaction which produces a dark brown colour. List other chemical reactions produce a dark brown colouring. (Area 4: The effect of cooking on food)
2. List and describe at least five different types of sugar and suggest what they are used for. (Area 4: The effect of cooking on food)

(Area 4: The effect of cooking on food)

INSPECTION COPY

COPYRIGHT
PROTECTED



Crème caramel – To wait or not to wait? That

YOUR TASK

Your task is to make a crème caramel dessert.

The first step is to prepare the caramel. As it only contains two ingredients, work out yourself what they are and how much to use! As it requires very little, do not hesitate to ask your teacher for help.

The second step is to prepare the custard, and bake and chill the dessert. Remember one more thing – make sure that your caramel comes out of the ramekins easily when done – you will need to put it upside down!

Work in pairs and see who made the best crème caramel!

1. So, here it goes... Begin by preparing the ramekins.

- i) How big are your ramekins?
- ii) Are you going to grease them?

☐ yes, whole
☐ yes, bottom only
☐ yes, sides

Remember to note whether it made the whole process easier... or not.

2. Time to prepare the key component – caramel.

- i) You already know only two ingredients are needed to make it... what are they?

Ingredient 1:
amount:

Ingredient 2:
amount:
- ii) When making the caramel, do you stir it?

☐ yes, constantly
☐ yes, from time to time
☐ no
- iii) How do you cook it?

☐ on a low heat
☐ on medium heat
☐ on high heat

- iv) How long did it take you to make it golden brown (not burnt)? Time:

3. Once the caramel is ready, carefully pour it into your ramekins. Swirl them to coat the surface. Let cool. What do you observe?

INSPECTION COPY

**COPYRIGHT
PROTECTED**



You're halfway there! It's time to make the custard.

4. Follow the procedure to obtain the custard. Once done, pour into the ramekins around 20 minutes. In the meantime, try to answer the following questions

i) Why does the recipe call for straining the mixture through a sieve?

.....

.....

ii) How does the recipe for the caramel differ from that for crème brûlée?

.....

.....

.....

iii) What other kinds of custard do you know?

.....

.....

5. **Remove the baked crème caramel from the oven. You have six ramekins, so you**

The time plays a very important role in setting this dessert. Remove the pudding at what happened...

i) straight after baking (1st ramekin)

.....

.....

ii) 30 minutes later (2nd ramekin)

.....

.....

iii) 1 hour later (3rd ramekin)

.....

.....

iv) after 6 hours (4th ramekin)

.....

.....

v) after 24 hours (5th ramekin)

.....

.....

**COPYRIGHT
PROTECTED**



6. Use the 6th sample to prepare a simple tasting panel. Compare your crème caramels made in class (you don't have to try them all, we know they are sweet) means 'not at all' and 5 means 'yes, perfect'.

	My crème caramel	Crème caramel 2	Crème caramel 3
The pudding is completely set			
The caramel dissolved completely			
The pudding is creamy, not tough			
The pudding is not too sweet			
The pudding is not curdled			
The caramel created a puddle of sauce on the plate			
Total marks:			

7. Whose crème caramel turned out to be the best?

How did their production process differ from others? Did they use different tools?

.....

.....

.....

.....

.....

.....

**COPYRIGHT
PROTECTED**



Take the time to evaluate this challenge, noting down anything you learnt from change next time.



Chocolate Soufflé

TEACHER'S GUIDANCE

WHAT'S COVERED IN THIS SESSION?

- ✓ protein denaturation
- ✓ use of equipment
- ✓ use of the oven
- ✓ mechanical raising methods
- ✓ steam raising agent
- ✓ safety principles when dealing with high-risk foods

LEARNING OBJECTIVES

Students should be able to:

- ☐ identify major allergens and explain how they are raised
- ☐ correctly use steam (e.g. in a bain marie, oven) to cook

SAFETY TIPS

- ! Make sure that students allergic to any food ingredient do not challenge (encourage them to measure times and write notes, but do not eat). Ingredients used in this session include **milk** and **eggs**. Chocolate may also contain allergens, such as **peanuts** and **nuts**. Read the label carefully.
- ! Remind students about the safety rules when handling high-risk foods and they apply them to prevent cross-contamination of foods.
- ! Ensure that students follow safety rules when handling hot foods.

GUIDANCE FOR DELIVERY:

- Prior to the lesson, remove the ingredients from the fridge so that they are at room temperature.
- Pay special attention to safety when dealing with hot ovens and ramekins.

WHAT YOU WILL NEED:

Equipment:	Ingredients:
✓ 4cm high ramekins – at least four per group ✓ brushes ✓ cloths ✓ large bowls ✓ saucepans ✓ whisks, hand mixers or food processors ✓ ovens and cookers ✓ kitchen scale ✓ ruler or measuring tape ✓ broad knife ✓ spatulas ✓ timer – students can use their own or their smartphones	✓ dark chocolate (or milk chocolate) ✓ icing sugar ✓ eggs ✓ butter ✓ caster sugar ✓ cream of tartar <i>Other kinds of chocolate are acceptable, but not useful, especially if you have more than two groups.</i>

INSPECTION COPY

COPYRIGHT
PROTECTED



ACTIVITY ANSWERS

- Carefully following procedure 1 should ensure satisfying results.
 - Greasing the ramekins will prevent the soufflé from sticking and will help it rise.
 - Preheating the oven will ensure that the soufflé is baked for the correct amount of time at the correct temperature.
 - Using a double boiler (bain-marie) will prevent the chocolate from frothing/burning.
 - Beating the egg yolks with sugar will ensure a rich, creamy and airy texture.
 - Overbeating the egg whites can cause them to collapse and leak water (this is why the soufflé might turn out a bit watery). That's why it's important to only whisk it until it's stiff.
 - Gently folding the egg whites into the mixture supports the light, airy texture. Stirring them in would deflate the mixture.
 - It's important that there are no air pockets or spaces left, as the air would expand and cause the soufflé to rise unevenly.
 - The surface must be levelled for the same reason.
 - Cleaning the edge will prevent the soufflé from sticking to it, and will enable you to remove it easily.
 - It's best to place the soufflé at the bottom of the oven, where the temperature is more consistent. Placing it on top may cause the top to crack and the centre to set too quickly.
- The soufflés made using procedure 1 should be well-risen, with an even, level top. The soufflé should not be stuck to the ramekin's edge.
- The soufflés made using procedure 1 should have a moist, light centre.
- Procedure 1.
- Mistakes are outlined above, see Q1.
- This is because during baking the air inside the soufflé expands, causing it to rise. Once it's cooked, the air 'shrinks' back, causing the mixture to collapse (more or less, depending on how much air was incorporated).

QUESTIONS TO THINK ABOUT ANSWERS

- Steam (physical).
- Best before – unlike all other fresh foods.
- Some of the food safety principles in this case include:
 - Checking the date mark on the eggs
 - Checking if the eggs are stamped with the Red Lion logo to ensure the hens were free-range
 - Checking that the eggs are not broken or cracked
 - Washing the eggs in hot soapy water
 - Washing hands before and after handling the eggs
 - Cleaning all spillage immediately with hot soapy water
- Examples may include:
 - soufflé
 - crème brûlée
 - meringue
 - bread pudding
 - zabaglione
 - ice cream
 - custard
 - eggnog
 - lemon curd
 - omelette
 - egg custard tarts

INSPECTION COPY

COPYRIGHT
PROTECTED



Chocolate soufflé

THE CHALLENGE OVERVIEW

Soufflé is a very light and airy dish made primarily of eggs, invented in the eighteenth century in France. Chocolate soufflé is considered one of the trickiest of desserts, which doesn't forgive any mistakes and requires a lot of attention and patience. Wrong temperature, insufficient time of whisking, too much chocolate and boom! You end up with a sunken soufflé!

Help



Your challenge is to make this tricky dessert. Can you prepare the highest top of the class? Get your ruler ready, get set, go!

INGREDIENTS

Each batch makes 3–4 small servings

Chocolate soufflé:

- ☐ dark chocolate
- ☐ icing sugar
- ☐ eggs
- ☐ butter
- ☐ caster sugar
- ☐ cream of tartar



PROCEDURE

The procedures are given on the worksheet. Each group will follow the procedure to spot the mistakes that they negatively affect the soufflé.

QUESTIONS TO THINK ABOUT

Discuss these questions with a partner or write notes in your books.

1. What is the main raising agent in a soufflé? (Skill 16)
2. What kind of a date mark is used on eggs? (Area 4: Food spoilage)
3. What are the food safety principles which have to be applied when dealing with eggs? (Area 5: Food provenance, Area 6: Development)
4. List five other desserts which are based on eggs. (Area 5: Food provenance, Area 6: Development)

INSPECTION COPY

COPYRIGHT
PROTECTED



Chocolate soufflé – Don't get

YOUR TASK

Your task is to make a chocolate soufflé. This dessert is perceived as being very tricky but the myth has a lot of truth to it!

You will be divided into two groups, each one following a different procedure. At the end, you will see why certain actions have to be taken to ensure the soufflé is fluffy and rises evenly. You will observe each stage as this will help you to spot the mistakes sooner.

In this science experiment you will check how a dark chocolate soufflé acts during baking using two different kinds of chocolate, e.g. white or milk!

Make sure you're following the procedures below carefully!

1. In the fields provided, tick which procedure you are following.

Write down your observations as you go, e.g. how long did it take you to whisk the egg whites, when it started to rise, etc.

Procedure 1 ☐	Procedure 2 ☐	
Take a tall ramekin (about 4cm high), grease evenly with butter and sprinkle with caster sugar	Take a tall ramekin (about 4cm high) Do not grease or line	
Preheat the oven to 180°C	Preheat the oven to 140°C	

INSPECTION COPY

COPYRIGHT
PROTECTED



INSPECTION COPY

Procedure 1 ☐	Procedure 2 ☐	Observations
Break 100g of chocolate into pieces, place in a bowl or a small saucepan together with 25g of butter and melt over a double boiler	Break 100g of chocolate into pieces, place in a bowl or a small saucepan together with 25g of butter and melt on a hob	
Beat two egg yolks with 50g of icing sugar until pale and fluffy	Lightly whisk two egg yolks with 50g of icing sugar	
Pour the melted chocolate and butter into the egg yolks and whisk	Pour the melted chocolate and butter into the egg yolks and whisk	
Whisk three egg whites with a pinch of cream of tartar until soft peaks form	Whisk three egg whites until stiff peaks form	
Fold the egg whites gently into the chocolate mixture	Whisk the egg whites vigorously into the chocolate mixture	
Pour the mixture into the ramekins until full, making sure there are no air pockets or spaces	Pour the mixture into the ramekins until full	
Level the surface of the mixture with a flat knife or spatula	Do not level the surface of the mixture, leave a small peak on each side	

COPYRIGHT
PROTECTED



Procedure 1 ☐	Procedure 2 ☐	Observations
Clean the edge of the ramekin with a cloth or your finger		
Bake for 10 minutes on the bottom shelf of the oven (not fan-assisted)	Bake for five minutes on the bottom shelf of the oven (not fan-assisted)	
	Place the ramekins on the top shelf of the oven and bake for another five minutes	
Remove from the oven and compare the results	Remove from the oven and compare the results	

INSPECTION COPY

COPYRIGHT
PROTECTED



- Once the soufflés are baked, measure them with a ruler to check how high they are. Attach a picture of both soufflés and label them with their height and the procedure they were made.



INSPECTION COPY

- Now take the soufflés out of their dishes and cut them in half to compare the two. Draw a picture or describe it below.



INSPECTION COPY

- Which procedure was the correct one?

- List all the mistakes committed when using the incorrect procedure. Explain them.

Mistake 1:

.....

Mistake 2:

.....

Mistake 3:

.....

Mistake 4:

.....

**COPYRIGHT
PROTECTED**



Mistake 5:.....

Mistake 6:.....

Mistake 7:.....

Mistake 8:.....

Mistake 9:.....

Mistake 10:.....

6. **Bonus**  or  Try to explain why ALL soufflés sink (more or less) after they have cooled down

.....

Take the time to evaluate this challenge, noting down anything you learnt from this challenge and how you can change next time.



**COPYRIGHT
PROTECTED**



Lava Cake

TEACHER'S GUIDANCE

WHAT'S COVERED IN THIS SESSION:

- ✓ setting a mixture
- ✓ adjusting cooking time
- ✓ handling high-risk food products
- ✓ time management when cooking – preparation for the NEA

LEARNING

Students should be able to:

- ☐ adjust the cooking temperature to obtain desired results

SAFETY TIPS

- ! Make sure that students allergic to any food ingredient do not challenge (encourage them to measure times and write notes, ingredients used in this session include **milk**, **wheat** and **eggs**. Chocolate may contain other allergens, such as **peanuts** and **nuts**. Read the label carefully).
- ! Remind students about the safety rules when handling high-risk food – they apply them to prevent cross-contamination of foods.
- ! Ensure that students follow safety rules when handling hot food.

GUIDANCE FOR DELIVERERS

- For groups using the microwave – the ramekins should be baked one after another as it might be difficult to fit them all at once into the microwave oven; however, adjust the timing to obtain the desired result when cooking

WHAT YOU WILL NEED:

Equipment:	Ingredients:
✓ oven ✓ cooker ✓ saucepans ✓ large bowls ✓ ramekins in three different sizes ✓ microwave ✓ brush ✓ fine sieve ✓ whisks, hand mixers and food processor ✓ kitchen scale ✓ timers – students can use the timers in their smartphones ✓ knives	✓ dark chocolate or cocoa powder ✓ unsalted butter ✓ eggs ✓ caster sugar ✓ plain flour ✓ vanilla extract <i>Optionally: fresh seasonal fruit</i>

INSPECTION COPY

COPYRIGHT
PROTECTED



ACTIVITY ANSWERS

Group 1

Since the ramekins used are very small, the cooking time should be accordingly shorter – so that time the dessert will be fully baked/set – and couldn't be called a lava cake any more (delicious chocolate cupcake!).

Group 2

The time of cooking should be around 8–9 minutes.

Group 3

The time of cooking should be around 10–11 minutes.

Remember that the cakes removed from the oven are very hot and continue to cook their way through them from the inside even if they look still raw.

Group 4

The time of cooking will depend on the power of the microwave. Usually 2–3 minutes are

Conclusions

- The smaller the dish, the shorter the cooking time. Also, as the ramekin gets hot, it continues to cook the cake after it has been removed from the oven, so it may be necessary to take the cake out before it is fully cooked.
- Fruit coulis is a type of smooth, strained fruit sauce.
 - To prepare a coulis one might need a blender, and a fine sieve/strainer to remove (seeds of strawberries and raspberries) and pieces of skin.
 - Benefits of adding a fruit coulis:
 - The fruit coulis improves the flavour of the cake.
 - adds colour and improves appearance, making the dessert more appetising.
 - and improves the nutritional value by providing vitamins and minerals (dissolved in the sauce).

QUESTIONS TO THINK ABOUT ANSWERS

- Although lava cake is technically an under-baked cake, it can be considered safe as long as the middle reaches at least 75°C. However, we suggest not to try to eat the uncooked batter (those which were baked for too short of a time) due to a small risk of food poisoning. Check the temperature inside the under-baked cakes and assess whether they consider the risk acceptable.
- The main steps in production of flour include:
 - Harvesting the grains and transporting them to the mill
 - Purification, e.g. rinsing out and sieving out dirt, stones, sticks and other
 - Washing in warm water and drying to soften the grains
 - Tempering – to adjust the moistness of the grains
 - Grinding
 - Separating into farina, semolina and so called 'middlings'
 - Processing, e.g. bleaching, fortifying, adding leavening agents, packing into bags
- Examples:

	Dry cocoa solids	Content
White chocolate	-	At least 20%
Milk chocolate	At least 25%	-
Plain chocolate	At least 35%	At least 50%
Dark chocolate	From 50% up	-

- Butter (from milk), eggs, gluten (from flour), wheat (from flour) are allergens which must be labelled.

**COPYRIGHT
PROTECTED**



Lava Cake

INSPECTION COPY

THE CHALLENGE OVERVIEW

This dessert should welcome you with a warm chocolate flowing out of it when cut... But making the lava cake isn't that easy! From the size of the dish, to the temperature and the cooking time – everything must be just right for your dessert to be a fail!



Will



Your challenge is to make this tricky dessert. Can you adjust the cooking time to create a cake with a liquid centre?

INGREDIENTS

Makes 4 large servings

Lava cake:

- ☐ 135g dark chocolate
- ☐ 65g unsalted butter
- ☐ 2 eggs
- ☐ 45g caster sugar
- ☐ 25g plain flour
- ☐ 1 tsp vanilla extract

You could also prepare a fruit coulis to serve with this dessert.

Note: Allergens have not been bolded in this ingredients list, due to Q4 below. See answers for allergens.



PROCEDURE

- 1 Preheat the oven to 200°C
- 2 Grease ramekins with butter
- 3 Break up the chocolate and butter in a double boiler
- 4 Beat the eggs with sugar until pale and fluffy
- 5 Add the chocolate and butter to the eggs and whisk until smooth
- 6 Sift the flour into the mixture
- 7 Pour the batter into the ramekins until full
- 8 Bake on the middle shelf for 10-12 minutes
- 9 Remove the cakes gently and place them upside down on a plate

QUESTIONS TO THINK ABOUT

Discuss these questions with a partner or write notes in your books.

1. Can lava cake be considered high-risk food? (Area 4: Food spoilage)
2. A lot of dessert recipes call for the use of flour. Outline how flour is made.
3. Chocolate is available in many varieties. Investigate the labels of various types of chocolate (white, dark) to see how much cocoa butter and cocoa solids is used to make it. (Area 6: Factors affecting food choice)
4. List allergens present in lava cake. Are they mandatory or non-mandatory on a food label? (Area 4: Food spoilage)



COPYRIGHT
PROTECTED



Lava cake – Show me a good time

YOUR TASK

Divide into four groups. Each group will experiment with a different recipe and cooking method. Your task is to adjust them so that you obtain a liquid centre and soft sponge around. You can prepare one large batter to make sure all ingredients do not affect the texture. Follow completely or vary to your experiment!

Make sure you compare your outcomes with those of your classmates done, and answer the question: how do you adjust the cooking time to the dish used?

Group 1

- Your group will use 100ml ramekins. Prepare at least six of them to make six at each stage.** Remove one ramekin from the oven after 2, 4, 6, 8, 10 and 12 minutes or two until cooled and take out of the ramekin. Cut in half to see what is inside.
- Fill in the table below to describe the texture after different baking times.

Baking time	Texture
2 minutes	
4 minutes	
6 minutes	
8 minutes	
10 minutes	
12 minutes	

- What is the perfect time to bake a lava cake in 100ml ramekins?

INSPECTION COPY

COPYRIGHT
PROTECTED



Group 2

1. **Your group will use 150ml ramekins. Prepare at least six of them to make s at each stage.** Remove one ramekin from the oven after 4, 6, 8, 10, 12 and 14 minutes or two until cooled and take out of the ramekin. Cut in half to see what texture is inside.
2. Fill in the table below to describe the texture after different baking times.

Baking time	Texture
4 minutes 	
6 minutes	
8 minutes	
10 minutes	
12 minutes	
14 minutes 	

3. What is the perfect time to bake a lava cake in 150ml ramekins?.....

INSPECTION COPY

COPYRIGHT
PROTECTED



Group 3

1. **Your group will use 200ml ramekins. Prepare at least six of them to make s at each stage.** Remove one ramekin from the oven after 6, 8, 10, 12, 14 and 16 minutes or two until cooled and take out of the ramekin. Cut in half to see what the texture is like.
2. Fill in the table below to describe the texture after different baking times.

Baking time	Texture
6 minutes 	
8 minutes	
10 minutes	
12 minutes	
14 minutes	
16 minutes 	

3. What is the perfect time to bake a lava cake in 200ml ramekins?.....

INSPECTION COPY

COPYRIGHT
PROTECTED



Group 4

- Your group will use 150ml ramekins but will bake the dessert in a microwave.** Prepare at least six ramekins to make sure you can check the texture at each from the microwave after 1, 2, 3, 4, 5 and 6 minutes, wait a minute or until cool before touching the ramekin. Cut in half to see what's inside! Make sure the microwave is set on defrost.
- Fill in the table below to describe the texture at different microwaving times.

Microwaving time	Texture
 1 minute	
2 minutes	
3 minutes	
4 minutes	
 5 minutes	
6 minutes	

- What is the power of the microwave?.....
 - Is a microwave a good way of making a lava cake?.....
 - If so, what is the perfect time to make a lava cake in 150ml ramekins in a microwave?.....

**COPYRIGHT
PROTECTED**



Conclusions

1. How should you adjust the cooking time accordingly to the size of the dish used?

.....

2. In the overview we mention that you can present a unit could serve with

- i) What is a fruit coulis?

719
719
Education

- ii) What equipment/tools do you need to prepare it? Draw or list them below.

RECEIVED COPY

- iii) We ¹⁹ see the benefits of adding a fruit coulis to a chocolate dessert such

.....

.....

.....

.....

.....

Take the time to evaluate this challenge, noting down anything you learnt from change next time.

ext time.

 INSPECTION COPY

INSPECTION COPY

**COPYRIGHT
PROTECTED**



Napoleons

TEACHER'S GUIDANCE

WHAT'S COVERED IN THIS SESSION

- ✓ blind baking
- ✓ use of the oven
- ✓ adjusting text
- ✓ making pastry
- ✓ raising methods – preventing rising by the use of weights, piercing the pastry with a fork, or weighing the pastry down with another baking tin (to brown the top)

LEARNING OBJECTIVES

Students should be able to:

- ☐ use skills and techniques to achieve desired results (raising)
- ☐ prepare a simple pastry

SAFETY TIPS

- ! Make sure that students allergic to any food ingredient do not challenge (encourage them to measure times and write notes, ingredients used in this session include **milk** and **wheat**).
- ! Remind students about the safety rules when handling high-risk foods, they apply them to prevent cross-contamination of foods.
- ! Ensure that students follow safety rules when handling hot foods.

GUIDANCE FOR DELIVERY

- Consider using ready-to-use puff pastry to save time.
- When running this session, reserve two hours to prepare the puff pastry and assemble the cake.

WHAT YOU WILL NEED:

Equipment:	Ingredients:
✓ flat metal baking tins ✓ ovens ✓ baking paper, cling film, aluminium foil for students to choose from ✓ baking weights, dried beans, lentils, rice, penny coins or other potential weights for students to choose from ✓ ready-to-use puff pastry (if used) ✓ whisks, hand mixers or food processors ✓ spatulas ✓ large bowls ✓ rolling pin ✓ zester	✓ butter ✓ plain flour ✓ water ✓ salt ✓ whipping cream ✓ icing sugar ✓ vanilla pod (or vanilla extract) ✓ orange zest ✓ cocoa powder

INSPECTION COPY

COPYRIGHT
PROTECTED



ACTIVITY ANSWERS

2.
 - Flaky pastry rises thanks to butter, which melts and produces steam.
 - During baking the steam expands and causes the layers of pastry above it to rise.
 - Flaky pastry uses mechanical raising methods (folding, rubbing-in) and steam.
3.
 - This can be done, for example, by covering the raw crust with baking paper and a tin on top.
 - They will allow it to rise very gently and evenly, without making it soggy.
 - Some cooks also place an inverted tin on top of the pastry to prevent it from rising too much. The tin will heat up and the pastry from the top.
 - Remember that using too many baking beans / weights can prevent the pastry from rising properly.
6.
 - i) This depends on the quality of the cream prepared, and on the quality of the knife or a spatula to spread the cream, and use only light touches to spread it all over.
 - ii) The cake may fall over if the pastry is uneven or if the cream is unevenly spread or if the cream is too wet/runny.
 - iii) Students should identify methods different to those used during this session, which are more accurate/efficient when making this kind of a layered dessert.

QUESTIONS TO THINK ABOUT ANSWERS

1. Shortening
2. Usually the fat content of cream is as follows:
 - single cream usually has 18% fat (**not** suitable for whipping)
 - whipping cream 36% (suitable for whipping)
 - double cream 48% (suitable for whipping)
 - soured cream from 12% to 18% fat (not suitable for whipping)
 - crème fraîche 25% fat (suitable for whipping)Low-fat cream is not suitable for whipping, unless a stabiliser is added to them.
3. The dessert originated in Naples (Italy) where it is called *millefoglie* (from French *mille*

INSPECTION COPY

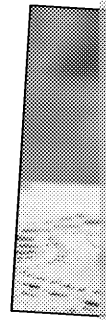
COPYRIGHT
PROTECTED



Napoleons

THE CHALLENGE OVERVIEW

A Napoleon is a type of cake traditionally consisting of three layers of puff pastry and two layers of cream, topped with icing sugar. In most desserts it's all about making them rise. This dessert has a different challenge – we want to prevent it from rising! With this, the whole construction would be really difficult to handle). Perfectly flat sheets of flaky pastry are key for making good napoleons.



How to make Napoleon



Your challenge is to make this tricky dessert. You will discover how to prevent it from rising, and to keep the whole dessert flat as possible.

INGREDIENTS

Makes 8 servings

Flaky pastry:

- ☐ 75g butter
- ☐ 110g plain flour
- ☐ 3 tbsp cold water
- ☐ Pinch of salt

Cream:

- ☐ 300 ml whipping cream
- ☐ 2 tbsp icing sugar
- ☐ 1 vanilla pod
- ☐ Orange zest

Icing:

- ☐ 100g icing sugar
- ☐ Warm water
- ☐ 1 tsp cocoa powder



PROCEDURE

For the flaky pastry:

- 1 Sift the flour and salt into a large bowl
- 2 Grate the cold butter into the bowl and coat all butter with flour
- 3 Add cold water on the mixture and mix with a spoon
- 4 Finish kneading the pastry with your hands, wrap in cling film and refrigerate for 30 minutes
- 5 Take out of the fridge, roll flat into rectangular sheets
- 6 Blind bake until golden

For the cream:

- 7 Whip the cream until fluffy and add icing sugar
- 8 At the end add sugar, vanilla pod and some orange zest

For the icing:

- 9 Mix the icing sugar with water (to make a double cream)
- 10 Divide between two bowls and add cocoa powder to one, stir until smooth
- 11 Coat the cake with white icing and then the cocoa icing

QUESTIONS TO THINK ABOUT

Discuss these questions with a partner or write notes in your books.

1. What is the chemical process used to make a pastry crumbly?
2. Some recipes call for double cream, some for whipping or single cream. What is the difference? Which of them are suitable for whipping? (Area 1: Food commodities)
3. What is the other name for Napoleons and where does this dessert come from?

INSPECTION COPY

COPYRIGHT
PROTECTED



Napoleons – Don't get mad, get

INSPECTION COPY

YOUR TASK

A traditional Napoleon cake is made of many layers of puff pastry, with cream between, coated with icing and decorated with star-like patterns. It is similar to a mille-feuille, but the cream is substituted with almond paste (gipane – like almond – based meringue) and the top is made of flaky pastry, not a ready-to-use one.

Your task is to prevent the cake from rising so that the layers of the cream and easy to assemble with the cream. Divide into four groups to see who is the most efficient!

1. Begin by indicating what pastry you are going to use.
 - ☐ Hand-made (you can make it in class or prepare it at home and bring it in)
 - ☐ Bought-in (ready-to-use pastry)

Indicate what raising agents and methods are used in a puff pastry:

.....

.....

2. Ok, so you want to make your pastry as flat as possible – but still light and flaky.
 - i) Use this opportunity to experiment with various methods of doing it. Do you want to make the pastry so that it has more layers and rises less? Or maybe you want to control the temperature? Describe now how you are going to prevent your pastry from rising.



- ii) Sometimes chefs use special techniques for blind baking, such as using weights. What weights do you use to weigh down your puff pastry (and yet allow the layers to form)?

.....

.....

- iii) How much of that substance/item are you going to use? Weigh it using a scale.

.....

.....

- iv) Are you going to cover your pastry for the blind baking? If yes, what do you use to cover it?

.....

.....

- iv) How long did it take you to bake your pastry?

.....

.....

As a test, you can bake one sheet of pastry without any weights to see how it acts as a control sample during the taste test.

COPYRIGHT
PROTECTED



4. Once your pastry is baked, compare it with those made by your classmates.

	Group 1	Group 2	Group 3
For blind baking, what weights were used... (e.g. 500g of baking weights)			
The height of the baked pastry is... (e.g. 5mm)			
The pastry is... (e.g. moist, soggy, sticky, crumbly, even, uneven, bumpy, golden brown, pale, burnt)			

INSPECTION COPY

COPYRIGHT
PROTECTED



INSPECTION COPY

5. Let the pastry cool down before assembling it with the cream and coating with icing.
6. Once the pastry is cooled, place it on a tray or board and assemble in order:
 - pastry – icing.
 - i) How did you find the experience? Was it easy to spread the cream on the

INSPECTION COPY

- ii) Is the pastry stable, e.g. does it fall over to one side after assembling with

.....

.....

.....

.....

- ii) Can you think of other methods of preventing the cake from rising that

INSPECTION COPY

Take the time to evaluate this challenge, noting down anything you learnt from change next time.

719
Zog
Education

INSPECTION COPY

719
Zog
Education

**COPYRIGHT
PROTECTED**



Baked Alaska

TEACHER'S GUIDANCE

WHAT'S COVERED IN THIS SESSION:

- ✓ protein denaturation when making a meringue
- ✓ creaming and aeration when making a sponge cake
- ✓ dealing with high-risk food products (eggs, ice cream)
- ✓ timing to prepare for the NEA exams

LEARNING OBJECTIVES:

Students should be able to:

- ☐ control the temperature to achieve the desired results
- ☐ plan and prepare the dish

SAFETY TIPS

- ! Make sure that students allergic to any food ingredient do not challenge (encourage them to measure times and write notes, if possible). Ingredients used in this session include **milk** and **wheat** and **eggs**.
- ! Remind students about the safety rules when handling high-risk foods and that they apply them to prevent cross-contamination of foods.
- ! Ensure that students follow safety rules when handling hot foods.

GUIDANCE FOR DELIVERY:

- We advise you to complete the Ice Cream challenge prior to this one, so that students are familiar with cream.

WHAT YOU WILL NEED:

Equipment:	Ingredients:
✓ large bowls to prepare chocolate sponge base ✓ large bowls to prepare meringues – allow glass, plastic and metal bowls for students to choose from ✓ whisks, mixers or food processors ✓ round metal baking tins ✓ blowtorch (in case someone feels adventurous) ✓ fine sieves ✓ kitchen scale ✓ oven ✓ timer (ideally one for each group of students can use the timers in their mobile phones)	✓ eggs ✓ caster sugar ✓ vanilla pod (or vanilla extract) ✓ butter ✓ self-raising flour ✓ cocoa powder ✓ ice creams (bought or made in advance)

INSPECTION COPY

COPYRIGHT
PROTECTED



ACTIVITY ANSWERS

1. Turning the temperature up might result in the surface of the cake cooking before the cake starts rising, the top will crack.
3. Usually sieving the flour once is enough. Not sieving it at all can cause lumps to form.
5. It is best to let the cake cool in the tin – the process will be more gentle, and the cake will be easier to remove.
6. It is best to use a glass or metal bowl. Plastic bowls are often difficult to clean and the whisking the egg whites will be affected.
7. Adding too much sugar can accelerate denaturation of protein, causing the eggs to whisk so quickly that they become too stiff.
8. It might be best to add sugar a spoonful at a time, but this depends whether you're using a hand whisk or an electric whisk.
9. The cake must be assembled pretty quickly to prevent the ice cream from melting and the cake from becoming soggy.
10. Although the recipe includes baking the cake, some may choose to blowtorch it to cook the top.

QUESTIONS TO THINK ABOUT ANSWERS

1.
 - Baking to make the cake
 - Boiling and simmering to make the ice cream
 - Baking to bake the assembled cake
2.
 - The eggs are rich in protein
 - When eggs are whisked, the protein in them unfolds and stretches out (denaturation)
 - During whisking, the air bubbles are trapped between the fibres of protein
 - These processes cause the eggs to become fluffy, and light in colour
3. The dish is not appropriate to:
 - Vegans who do not eat eggs/milk
 - Lacto-vegetarians who do not eat eggs
 - Ovo-vegetarians who do not eat milk.
 - Individuals who are allergic to egg protein or milk
 - Lactose-intolerant people
 - Individuals who are allergic to wheat
 - Gluten-intolerant people (coeliacs)
4.
 - Enriched cage production is the most cost-efficient method of egg production. Hens are kept in small cages at all times. These eggs are labelled with number 3.
 - In barn production, hens are allowed to roam freely inside the barn. They are often fed artificial/enhanced/fortified feed to improve the quality of the eggs. These eggs are labelled with number 2.
 - Free range eggs guarantee that the hens are kept in humane conditions (animal welfare). They have access to natural sunlight and are allowed to roam outside the barn during the day. These eggs are labelled with number 1.
 - In organic production, the hens must be kept in free range production have to be fed organic feed, and must not be given any artificial substances (e.g. GM feed or antibiotics). These eggs are labelled with number 0.

INSPECTION COPY

COPYRIGHT
PROTECTED



Baked Alaska

THE CHALLENGE OVERVIEW

Chocolate cake base topped with ice cream, then covered in meringue and baked. But won't the ice cream melt, I hear you call? And how does the meringue not burn? Well, the challenge is over to you!



Not a

Your challenge is to make this tricky dessert. Timing will be key challenge?

INGREDIENTS

Makes 12 servings

Ice cream (bought or made from scratch – see separate challenge)

Meringue:

- ☐ 3 free range egg whites
- ☐ 175g caster sugar
- ☐ 1 vanilla pod

Chocolate cake:

- ☐ 125g butter
- ☐ 125g caster sugar
- ☐ 2 medium free range eggs
- ☐ 115g self-raising flour
- ☐ 10g cocoa powder



PROCEDURE

For the sponge:

- 1 Preheat the oven to 180°C
- 2 In a food processor, cream until pale and fluffy
- 3 Beat the eggs in
- 4 Sift the flour and cocoa
- 5 Stir the mixture into a great
- 6 Bake for 30 minutes until a comes out clean
- 7 Cool down on a wire rack

For the meringue:

- 8 In a clean bowl, whisk the egg
- 9 Whisk in the sugar and vanilla from the vanilla pod

Assemble the cake:

- 10 Preheat the oven to 200°C
- 11 Place scoops of ice cream on pyramid shape, leaving a 1.5
- 12 Spoon the whisked egg white making sure there are no gaps
- 13 Use a spoon or a skewer to patterns on the meringue
- 14 Bake Baked Alaska for 10 minutes brown all over

QUESTIONS TO THINK ABOUT

Discuss these questions with a partner or write notes in your books.

1. What methods are being used when preparing the different parts of of cooking?
2. Explain the scientific principles being applied to the eggs when whisking them
3. Who may this dish be unsuitable for? (Area 6: Factors affecting food choice, Area 3: Plan balanced)
4. Describe the different types of egg production. (Area 1: Food commodities)

INSPECTION COPY

COPYRIGHT
PROTECTED



Baked Alaska – Time is of the essence

YOUR TASK

Time is of the essence in this one... You should get into teams of three to compete against others in the class to make the best baked Alaska. However, you will need to make choices on the way. Be sure to think you could end up in a bit of a bother. Do you sacrifice quality to be long it takes you to make and your teacher will mark you for quality.



- 1. Preheating the oven!** Adjusting the temperature can speed up the process, or the temperature the same as in the procedures or turn it up by 5–10 degrees.

Your Choice: The same temperature ☐ Turn it up ☐
Justify your choice.

.....

.....

Make sure you record the outcome of this later when the cake is done.

.....

.....

- 2.** It's time to make the sponge. Cream the butter with sugar, and then beat the mixture.
- 3. Sieving your flour...** It's important for aeration and the more times it's sieved the better. How many times will you sieve your flour?

Your Choice: Not at all (straight out of the pack) ☐ Once ☐

How has your choice made your folding of the mixture easier/harder? Would you change your choice?

.....

.....

- 4.** Pour the cake into a round baking tin and bake.
- 5. Cake is cooked... get it out of there.** Do you wait for it to cool in the tin or remove it straight away?

Your Choice: Got it straight out of the tin ☐ Left it in the tin ☐

Is it in one piece? Evaluate your choice. Would you change your decision now?

- 6. On to the meringue.** What bowl? (Choose between glass, metal and plastic)

Your Choice: Glass ☐ Metal ☐

How does your choice impact on the quality of your meringue?

.....

.....

INSPECTION COPY

**COPYRIGHT
PROTECTED**



7. Some say to add a pinch of salt when whisking your eggs as it may shorten the texture of meringue. It's not mandatory, but will you try this?

Your Choice: Pinch of salt added ☐ Pinch of salt not added ☐

What effect does this have? Can you name the process it speeds up?

.....

.....

8. **Add your sugar.** Be a bit tricky? Decide how you will add your sugar: pour or spoon? Another choice?

Your Choice: ☐

Would you change this decision next time?

.....

9. **Time to assemble!** This is it, time to put all the components together. Do you assemble neatly or do you get it together quickly?

Your Choice: Quickly ☐ Take my time (neatly) ☐

Right or wrong choice? Evaluate your decision.

.....

.....

10. **Bake that Alaska!** Bake in the oven or microwave? And for how long? A nice surprise will your ice cream come out of the oven?

Evaluate your time for baking...

.....

.....

.....

Your time for completion:

Your score for your dessert:

Take the time to evaluate this challenge, noting down anything you learnt from this challenge to change next time.



**COPYRIGHT
PROTECTED**

