

GCSE (9–1)

Teacher's guide

FOOD PREPARATION AND NUTRITION

J309

For first teaching in 2016

Teachers Guide for NEA Task 1 – Food Investigation

Version 1

Contents

Introduction	3
Key information	3
Teacher preparation	4
Tips for teachers	4
Suggested structure and breakdown of time	5
Structure and breakdown of the assessment	6
Getting started	7
Types of research	7
Marking	7
Use of 'best fit' approach to marking criteria	7
Administration	7
FAQ's	8
Resources	8



Teacher preparation

Teachers will need to make sure that the content of the specification has been delivered in order for students to be able to access Mark Band 3 of the assessment criteria.

It is desirable that teachers prepare KS3 students with scientific knowledge based around the science of food (working characteristics and functional properties of ingredients). Students should also be introduced to investigation skills/ techniques and scientific terminology, as this will support the assessment.

By the end of year 10 students should be familiar with and confident with how the food investigation tasks are conducted in preparation for year 11. Please refer to the Student Guide and student Walk Through.

Teachers should also familiarise themselves with the two tasks and marking criteria.

It would be advisable to review student's knowledge and experiences before they start the investigation.

It would also be appropriate for teachers to explore possible resources, sources of evidence, time allocations, programmes of work and deadlines for students.

Make sure your students understand about fair testing

A fair test is a controlled investigation carried out to answer a scientific question.

*It is important for an experiment to be a **fair test**. You conduct a fair test by making sure that you change one factor (variable) at a time while keeping all other conditions the same.*

A simple activity to get students thinking . . .

Which type of chocolate melts fastest?

What will we change?

What will we measure?

What will we keep the same?

What will we keep the same?

Tips for teachers

– before starting NEA Assessment

- Plan the Investigation lessons or days. (Students must have sufficient time to plan, investigate, record and analyse results)
- Consider foods needed for the Investigation (think carefully about cost)
- Consider equipment - (sample equipment list, see below)
- Consider controls for fair testing (examples of controls, please see below)
- Consider health and safety- refer to CLEAPSS website: <http://science.cleapss.org.uk/>
- Consider the type of room to use and the organisation of the room.
- Plan your approach, whether it is group or individual work.
- Plan resources for research
- Plan resources for sensory analysis
- Plan resources for recording findings

Desirable equipment

- **Digital scales**
- **Calibrated measuring cylinders**
- **Food temperature probes/ anti- bacterial wipes**
- **Digital camera**
- **Viscosity charts**
- **PH indicator papers**
- **Bain- marie (electric)**
- **Microwave**
- **Cutters/ templates**
- **Food processor, blenders, whisks**
- **Vocabulary and sensory word charts**
- **Nutritional analysis software**

Examples of controls to ensure a fair test

- **Weigh and measure ingredients accurately**
- **Use templates and cutters to ensure a consistent size**
- **Cook or heat at the same temperature or using the same method**
- **When testing, use random codes to avoid bias**
- **Serve samples for testing at the correct and the same temperature**
- **Make sure testers know how to fill in the charts**

Suggested structure and breakdown of time

(10 hours)

(Planning - a maximum of 3 - 4 investigations should be planned which show fair testing)

Analysis of task Analysis of task Research Time – 1 hour	Research Research findings Prediction Time – 2 hours	Planning Investigation 1 <ul style="list-style-type: none"> • Aim • Method • Findings • Conclusion Time – 1 hour	Planning Investigation 2 <ul style="list-style-type: none"> • Aim • Method • Findings • Conclusion Time – 1 hour
Planning Investigation 3 <ul style="list-style-type: none"> • Aim • Method • Findings • Conclusion Time – 1 hour	Planning Investigation 4 <ul style="list-style-type: none"> • Aim • Method • Findings • Conclusion Time – 1 hour	Analysis Time – 2 hours	Evaluation Time – 1 hour



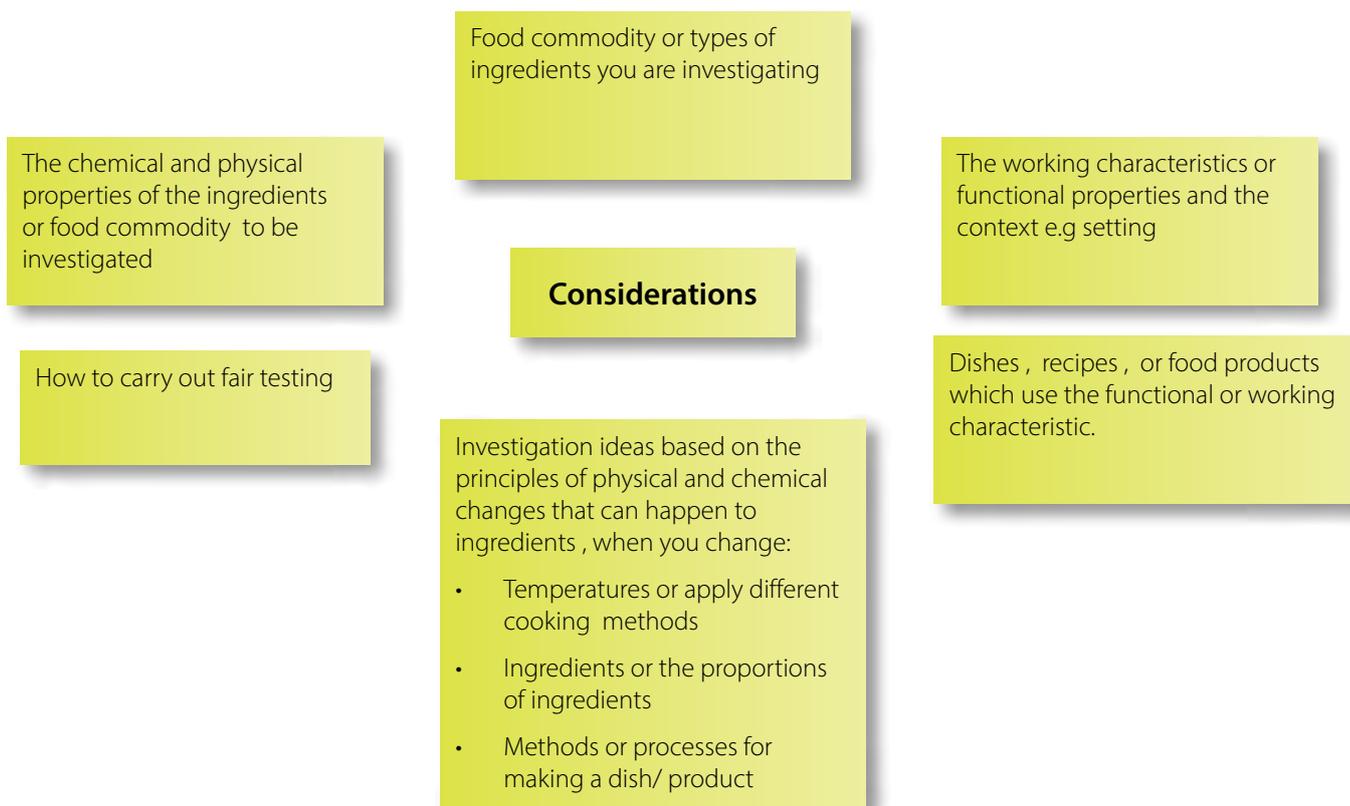
Structure and breakdown of the assessment

(pages, 22- 24 of the specification)

Marks	Level of achievement	Evidence
Plan 9	<ul style="list-style-type: none"> Excellent and thorough research and planning for their investigation to include comprehensive reasons for choice/aim and recommendations/predictions Good research and planning for their investigation to include some of the reasons for choice/aim and recommendations/predictions Basic research and planning for their investigation to include limited reasons for choice/aim and recommendations/predictions 	<p>Learners will show:</p> <ul style="list-style-type: none"> Aim for the investigation Choice of investigations with detailed explanations linking to the functional and chemical properties of ingredients.
Investigation 21	<ul style="list-style-type: none"> Excellent scientific investigation into all of the functional and chemical properties of a commodity/ ingredients for the task Follows the plan with accuracy Makes changes or adaptations as necessary Shows excellent recordings of observations and findings using a comprehensive range of different formats Good scientific investigation into some of the functional and chemical properties of a commodity/ingredients for the task Makes some changes or adaptations as necessary Follows the plan with some accuracy Shows good recordings of observations and findings using a good range of formats Basic investigation into a limited range of the functional and chemical properties of a commodity/ ingredients for the task Makes limited use of the plan Shows basic recordings of observations and findings using a limited range of formats 	<p>Learners will show:</p> <ul style="list-style-type: none"> Method used for each investigation Changes and adaptations made Logical sequence of working Completed records of observations and findings (this may include charts, graphs,, photos and written descriptions)
Analysis 9	<ul style="list-style-type: none"> Produce a comprehensive analysis with a wide range of opinions and viewpoints Produce a good analysis with a good range of viewpoints Produce a limited analysis with some inaccuracies, and limited viewpoint(s) 	<p>Learners will show:</p> <ul style="list-style-type: none"> Analysis and interpretation of findings using scientific terms
Evaluation 6	<ul style="list-style-type: none"> Excellent evaluation of observations and findings using a wide range of evidence to draw thorough conclusions related to task Good evaluation of overall observations and findings using a range of evidence to draw appropriate conclusions related to task Basic review of observations and findings with no clear conclusions and limited use of interpretation and evidence 	<p>Learners will show:</p> <ul style="list-style-type: none"> A review of findings and explanation of how these can be used when developing, modifying and creating new dishes.

Getting started . . .

The aim of the mind map will allow planning and research for the task. Here are the considerations:



Types of research

Consider research on:

- Food commodity – types, physical structure, chemical structure, nutrient analysis
- Working characteristics and functional properties
- Recipes, dishes, products
- Research methods : teacher demonstration, internet and book research, recipe books etc

Marking

- (Applying the marking criteria)

The starting point for marking the tasks is the marking criteria. The criteria identify levels of performance for the skills, knowledge and understanding that the candidate is required to demonstrate. See pages 23 and 24.

Use of 'best fit' approach to marking criteria

The assessment task(s) for each unit should be marked by teachers according to the given marking criteria using a 'best fit' approach. For each of the assessment criteria, teachers select the most appropriate descriptors provided in the marking grid that describes the evidence and quality of the work being marked.

Administration

- Marks to be uploaded onto the OCR Interchange by centre exams officer <https://interchange.ocr.org.uk/>
- Deadline for Task 1 and 2 (NEA) 15th May annually
- Email sent to centres requesting sample
- Sample size for moderation is 15 for both Task 1 and Task 2 (N.B - different candidates may be selected for Task 1 and for Task 2)
- Candidate portfolios with Unit Recording Sheet (MC1) attached with clear candidate name and number
- Centre Authentication Form for Task 1 to be kept at the centre www.ocr.org.uk/Images/104528-centre-authentication-form-ccs160.pdf
- Hard back folders and plastic wallets should not be used
- Sample can be either postal (code 02) or repository (code 01)

Discs and memory sticks are not recommended as a use for postal entries.

FAQ's

Questions related to NEA -Task 1

- When and where will the task titles be released?**
Task 1 – Food Investigation titles will be released on 1 September on the OCR Food Preparation and Nutrition page, under the assessment section.
- How many investigations are students required to carry out?**
The number of experiments and investigations is the candidates own decision, however OCR would suggest 3 or 4 as a maximum. There is no set number as this will be based on the student's prediction. The complexity of these investigations is not relevant for this task.
- Can students work in groups?**
Candidates are free to collaborate when carrying out research and preparatory work. Each candidate should write up their own written evidence/ report. It is acceptable for all members of the group to record the same data, but each candidate must use his/her own words to describe how the data was obtained and draw his/her own conclusions.
- Can a teacher provide feedback?**
A teacher can review candidates' work and provide oral and written advice at a general level and having provided advice at a general level, allow candidates to revise and re-draft work.
- What is the evidence required for Task 1 – Food Investigation?**
A report of 1500 – 2000 words, see page 22 of the specification. We recommend that candidates spend no more than 10 hours on this task. The report must include photographs or visual recordings that support the investigation.

Resources

Food a Fact of Life website: a section which looks at the functional properties of foods.

<http://www.foodafactoflife.org.uk/section.aspx?t=0&siteId=19§ionId=83>

Food a fact of life commodity sheets: fats and oils, meat, fish, milk and milk products, sugar, fruit and vegetables, cereals, eggs, meat analogues.

<http://www.foodafactoflife.org.uk/attachments/5542b858-c25e-4379779f2b52.pdf>

Nutrient analysis programme- Explore Food

<http://explorefood.foodafactoflife.org.uk/>

Love Food Science website

<https://www.ifst.org/lovefoodlovescience>

OCR website: Heston Blumenthals, Tips and Activities.

<http://www.ocr.org.uk/Images/331180-heston-blumenthal-s-useful-tips-and-activities.pdf>

Videos:

Good series by chef Paul Merrick, food commodities and science

Ever wondered about eggs:

<https://www.youtube.com/watch?v=M0SaFuhtU-4>

<https://www.youtube.com/watch?v=MHyh-bxu2bA>

<https://www.youtube.com/watch?v=-888-hmCHQo>

Ever wondered about seafood:

<https://www.youtube.com/watch?v=ZSZ1SZGsk4o>





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