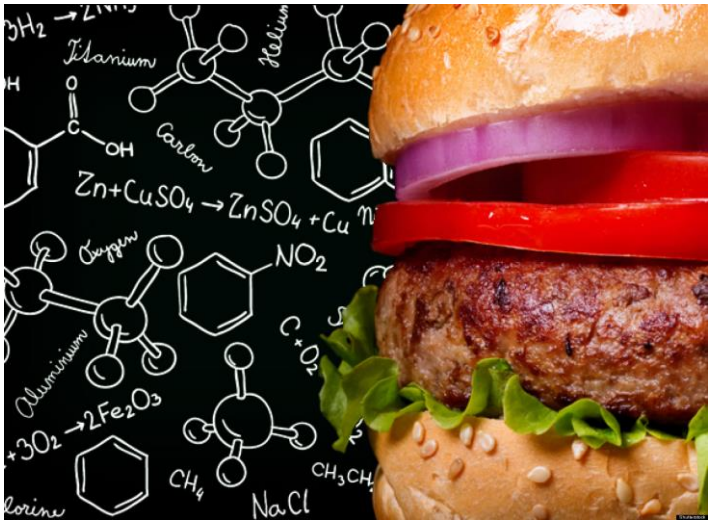
GCSE
FOOD PREPARATION & NUTRITION

STUDENT GUIDE



Name: ……

Class: ……

Target grade: ……..……

NON-EXAM ASSESSMENT (NEA1)
TASK 1 FOOD INVESTIGATION
STUDENT GUIDE

NEA Task 1 is worth 30 marks (*15% of your total GCSE mark*)

You will type up your research under ***controlled conditions*** as there is a time limit as to how many hours you are allowed to spend on each NEA task. For NEA1 it is 10 hours.
This means that ***every minute counts!*** You will get allocated computer lessons to type up each section of your report, which will then be handed in electronically and kept securely.

NEA 1 - The ***Food Investigation Task*** tests your knowledge, learning and understanding of the ***science*** of food preparation and cooking food. It could be an investigation of any one of the following:

- Ingredient choices
- Preparation techniques
- Cooking methods
- Cooking conditions

You will produce a ***computerised report*** between ***1,500 and 2,000 words*** (approximately 6-8 sides of A4) containing the following:

- Research, Investigations, Analysis & Evaluation.
- Annotated photos of the experiments & investigations
- Charts, graphs and diagrams.

EXPECTATIONS:

- Your work must be neatly presented.
- The language should be clear, using technical vocabulary which links to the task.
- You must check your spelling, punctuation and grammar carefully.
- Use the space on your page wisely as you will be marked on ***quality*** over quantity.
- The investigation lessons will be planned in advance, make sure you know what you are doing each of these lessons as this time is invaluable.
- During your timetabled computer lessons you will be writing up your investigations under ***controlled*** exam conditions.
- ***You will need to meet deadlines on time.***
- ***If you are absent you will need to attend the 'Food Clinic' sessions on a Tuesday after school in T9.***
- ***If deadlines are missed*** you will be required to attend compulsory catch up ('Food Clinic) sessions after school until deadline has been met.

Section	Criteria	Maximum Marks
A	**Research**	**6**
B	**Investigation**	**15**
C	**Analysis & Evaluation**	**9**
Total		**30**

DEADLINES:

You will need to check Firefly for your deadlines and upload your work when asked to do so.

To complete the task, you will need to:

Section A

- Choose a task from AQA
- Analyse the task
- Carry out research of the working characteristics, functions & chemical properties of the ingredients to investigate
- Write a summary of what you have found out from the research
- Write a hypothesis for your practical investigations

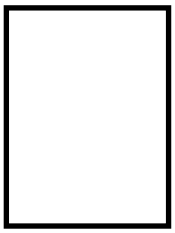
Section B

- Plan the practical investigations and experimental work based on your research findings
- Establish a clear aim for each investigation
- Use a range of testing methods to record and present the results of the testing
- Annotated Photographs
- Graphs
- Tables & charts
- Sensory testing methods

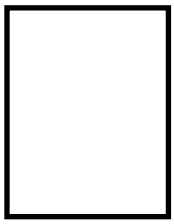
Section C

- Analyse and interpret and evaluate the results of the investigation
- Evaluate the Hypothesis
- Explain how the results can be used when preparing and cooking food.
- Bibliography

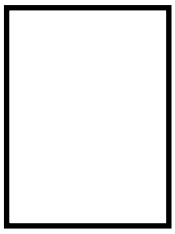
Suggested NEA1 Layout Guide
1500-2000 words (6-8 sides)
Investigate the functional and chemical properties of……..



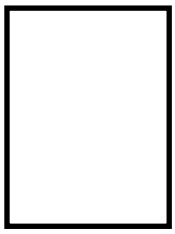
Front Cover
Your name and candidate number
Ripley St Thomas
Centre number: 46121
GCSE Food Preparation and Nutrition 2023
NEA 1 Food Investigation Task
"Include the title of your chosen task"



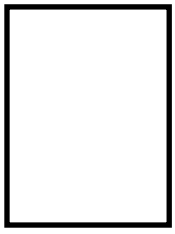
Page 1—Research
The title of the brief you have chosen.
Analysis of the task - explaining the background research
Research the working characteristics, functional and chemical properties of the ingredients



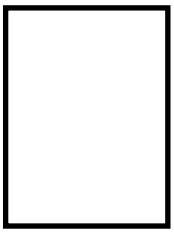
Page 2—Research
Analysis of the research
Conclusions of your research—how your findings are planning your investigations
Establish the hypothesis/predict an outcome as a result of the research findings. It should be a statement that could be proved or disproved.



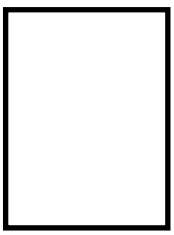
Page 3– Investigation
Investigation 1—aim and description
Photographs labelled/annotated
Data such as sensory testing, star profiles, viscosity
Table of results
Brief conclusion



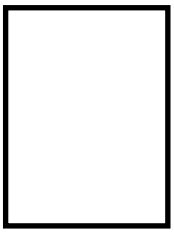
Page 4—Investigation
Investigation 2—aim and description
Photographs labelled/annotated
Data such as sensory testing, star profiles, viscosity
Table of results
Brief conclusion



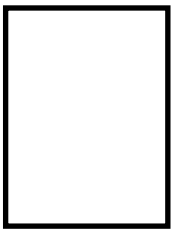
Page 5—Investigation
Investigation 3—aim and description
Photographs labelled/annotated
Data such as sensory testing, star profiles, viscosity
Table of results
Brief conclusion



Page 6—Analysis and evaluation
Analysed and interpreted the results of the investigative work.
Results are linked to the research and data explaining the working characteristics, functional and chemical properties of the ingredient



Page 7—Analysis and evaluation
Evaluated the hypothesis/prediction with justification
Explain how the results/findings can be applied in practical food preparation and cooking.



Page 8
Bibliography
A list of all the sources of information
Books, websites etc

Section A: Research

Analyse (breakdown) the task:

When you are presented with the food investigation task, you will need to start thinking about what you have been asked to do. A good way of doing this is by using a ***'Mind Map.'***
Focus on the key words within the task and start to ***plan*** your work. This will also keep you focussed and on track.

- What is the aim of the investigation?
- What do you need to find out?
- What do you know already about the subject?
- What background research will be required?
- Where will you find the information you need?

Research & Planning:

Secondary research can come from textbooks and websites. You don't need to carry out primary research for this task.

Research ***must be referenced***, e.g add the sources of information used by adding a bibliography at the end, or alternatively through footnotes.

Conclude the research to then be able to ***plan*** the practical investigation.

A hypothesis is an idea, prediction or explanation that you can test and prove/disprove.
This could be as simples as:
'starchy vegetables such as potatoes are the most suitable ingredients to thicken soups.'

Student Checklist: Section A	
	TICK
1. Have you completed an analysis of the task as an introduction?	
2. Have you listed or produced a rough mind map of the research you need to carry out before starting practical investigations?	
3. Have you planned your research so it is concise? (has a beginning, middle & end)	
4. Have you discussed the function & working / chemical properties of the ingredients?	
5. Have you included diagrams to demonstrate understanding to reduce word count?	
6. Have you written a summary of what you have found out from research?	
7. Have you written a hypothesis? (what you are intending to test?)	
8. ? Have you shown a plan and aim for your practical investigations?	
9. Does your research relate to the task? Is it relevant & focussed?	
10. Have you completed a bibliography? Sources of where you have obtained research?	

Section B: Practical Investigations

Investigation preparation:

The practical investigation work ***must relate*** to the ***hypothesis or prediction***. ***They need a clear aim:*** what are they trying to find out from each investigation?

- You will need to have a ***clear method*** for carrying out the investigation.
- Think carefully about the ***controls*** you will need to apply to make the tests fair. Listing the controls can be helpful.
- Consider how you conduct an experiment in a science lesson or the food investigation tasks you may have already carried out in year 10.
- ***Recording the findings in rough*** during the investigation is very important.
- A ***chart/table*** should be prepared before you start the investigation.
- ***Photos*** much be taken of each stage with your ***name & candidate number*** clearly visible.

Investigations:

Through practical experimentation investigate and evaluate how ingredients work and why. Each investigation should:

- **relate to the research**
- **have a clear aim**
- **be concluded.**

- The number of investigations will be determined by the time available and the complexity of the investigations. ***I suggest 3 investigations***.
- Practical skills are not assessed in this task; you are assessed on your knowledge of the ***science of cooking.***
- ***Results*** of each investigation should be used to inform the next stage of the investigation with reasoning. i.e. ***they should link*** together.

Student Checklist: Section B	
	TICK
1. Have you included a clear aim for each investigation and explained what you are going to investigate?	
2. Do you have a clear & concise layout for your investigation?	
3. Have you put controls in place and explained what they are? Did you use random codes to avoid bias?	
4. Have you included annotated photos with your name & candidate number clearly visible? When annotating describe appearance, texture etc.	
5. Have you included sensory testing methods e.g ranking & rating tests?	
6. Have you included star diagrams, charts & graphs (viscosity testing charts where relevant)?	
7. Have you analysed and explained the results linked to the hypothesis & research?	
8. Have you shown a conclusion after each investigation to explain what you have found out? (This should link to the aim.)	
9. Have you described what the next investigation will be and why?	

Section C: Analysis and evaluation

Analysis:

This means breaking down the results of the test and explaining them in more detail.

- You should conclude each investigation by explaining what you have found out and explain the results.
- Link the results to the research explaining the working characteristics, functional and chemical properties of the ingredients.

Working characteristics – how the ingredients work together and behave under controlled conditions, best combinations, best choices. This will link to the function.
Function – what the ingredients do. The properties of the ingredients on their own and when combined,
Chemical properties – the science behind the ingredients – the why?

- Answer the ***hypothesis/prediction*** with explanation/justification.
- Use specialist terms and clearly communicate findings. Use the key terms you have learnt during their study of the science of food.
- Include a ***bibliography*** to show where information has been sourced from.

Evaluation:

This is an ***overview*** of what went well and what didn't work so well.
Here you must ***justify*** your conclusions which just means 'explain.' If you add 'because' into your sentence, this is a good starting point.

The important part of the evaluation is how you can take the information and ***apply*** it to food preparation and cooking in the future.

Student Checklist: Section C	
	TICK
1. Have you analysed your results and given opinion whether investigation was successful or not?	
2. Have you used technical terms and vocabulary?	
3. Have you explained how the ingredients you used worked and why? It is good practice to evaluate each investigation.	
4. Have you looked at your Hypothesis/prediction? Have you discussed whether it came true or not?	
5. Have you talked about and explained how you could use this information in future preparation and cooking?	
6. Have you included a bibliography? This is an important reference of where you have taken your research from.	
7. Have you checked your word count? This can be seen on Word documents.	
8. Have you checked your Spelling, Punctuation and Grammar?	
9. Are you sure your investigations link to the task and are relevant?	
10. Is this report a reflection and example of your best work? (Don't forget this is 15% of your total GCSE mark)	

Technical Vocabulary Support (alphabetical order)

Also use PGs 292 – 304 of the blue AQA Food Preparation & Nutrition textbook

***Analysis* –** means breaking down the results of a test and explaining them in more detail. This requires some explanation and opinion about the findings.

***Bibliography* –** is a list of books or other sources such as websites you have used for research purposes. It will not be included in the word count. You should write it in the following way:
Books:
TULL, A. and LITTLEWOOD, G (2016) *Food Preparation and Nutrition, Illuminate Publishing.*
Websites:
British Nutrition Foundation: www.nutrition.org.uk

***Controls* –** A standard of comparison for checking or verifying the results of an experiment.

***Evaluation* –** is an overview of what went well and what went wrong and a justification of conclusions. Writing up what you have learnt.

***Hypothesis* –** is an idea, prediction or explanation that you can then test through investigation and experimentation. It is a statement that can be proved or disproved.

***Investigation* –** finding out information linked to a given task through research and experimentation.

***Justification* -** the action of showing something to be right or reasonable and explanations to back up your findings.

***Mind Map* –** This is a method of documenting ideas. Sometimes this method allows the brain to be more creative with information than simply writing a list. In a mind map there is usually a central part (e.g the task) and then Ideas can be categorised using branches or bubbles. PG 294/5 of your FPN textbook shows a good example.

***Prediction* –** This is simply a statement about what you think will happen.

***Research* –** Research can be both 'primary' or 'secondary.'

***Secondary Research* –** For NEA1 you will use secondary research. Gathering existing data which has been produced by someone else. This can be using the internet via websites with educational articles, videos and lectures such as TED talks. It is important that you don't just cut and paste information as this is known as 'plagiarism' and illegal.
You must write the information you find in your own words, or use "quotation marks" if you want to write something directly. The British Nutrition Foundation & NHS has a wealth of useful information.
You can also use books, magazines, leaflets, labelling, packaging, newspapers.

***Sensory analysis* –** is a way of measuring the sensory qualities of food, e.g sight, smell, taste, texture, touch, sound. If you are unsure look at PG 247 of your blue FPN textbook.

***Star profile* –** One method of recording sensory analysis results but this could also be done on a bar chart or table.

Technical descriptors which may help during NEA1:

You can find the definitions and more technical vocabulary in the back of your Food Preparation & Nutrition textbook, glossary section PG 452 - 462

Aeration
Aerobic
Al dente
Ambient
Anaerobic
Analyse
Bind
Caramelisation
Chemical Raising Agents
Coagulate
Coat
Creaming
Curdling
Denature
Dextrinisation
Emulsification
Emulsion
Enzymic browning
Epithelium
Evaluate
Extraction rate
Fermentation
Flavour
Folding
Gelatinisation
Glucose
Galactose
Gluten
Gliadin
Glutenin
Grading tests
Hedonic rating
Homogenisation
Immiscible
Infuse
Knead
Knock back
Plasticity
Poaching
Preference test
Proving
Raising agent
Ranking
Rating test
Reduction
Roll
Sensory analysis
Sensory profile test
Shortening
Simmering
Star profile
Steaming
Tainting
Taste buds
Tenderising
Triglyceride
Umami
Viscosity
Visible fat
Whisking
Whole grain
Wholemeal
Yeast

ASSESSMENT CRITERIA NEA 1

SECTION A: RESEARCH – 6 MARKS

Mark	Description
5–6	• Relevant, detailed and concise research into how ingredients work and the reasons why. • Detailed explanation shows a high level of understanding of how the research has been used to inform the practical investigation. • Planned and justified a detailed investigation, related to the research with a clear and focused hypothesis or prediction.
3–4	• Relevant research into how ingredients work and the reasons why. • Explanation of how the research is used to inform the investigation. • Planned an investigation which relates to the research, some justification given. A hypothesis or prediction has been stated.
1–2	• Limited research into how ingredients work and the reasons why. • Limited explanation of how the research may be used to inform the investigation. • Limited evidence of planning, with a basic approach to the investigation. A basic hypothesis or prediction has been stated.
0	Nothing worthy of credit.

SECTION B: INVESTIGATION – 15 MARKS

Mark	Description
11–15	• Practical investigations show detailed and high level knowledge and understanding of how ingredients work and why with a clear link to the hypothesis or prediction. • A wide range of testing has been carried out to formulate the results. • Practical investigations are recorded and meticulously explained using methods such as: graphs, tables, charts, sensory analysis methods, labelled diagrams, annotated photographic evidence.
6–10	• Practical investigations/experiments show very good knowledge and understanding of how ingredients work and why with a link to the hypothesis or prediction. • A range of testing has been carried out to formulate the results. • Practical investigations are recorded with very good explanation using methods such as: graphs, tables, charts, sensory analysis methods, labelled diagrams, annotated photographic evidence.
1–5	• Practical investigations/experiments show some knowledge and understanding of how ingredients work with some links to the hypothesis or prediction. • Some testing has been carried out to formulate the results. • Practical investigations are recorded with limited explanation.
0	Nothing worthy of credit.

SECTION C: ANALYSIS & EVALUATION – 9 MARKS

Mark	Description
7–9	• Detailed, accurate interpretation and analysis of the results with justfied conclusions for all aspects of the hypothesis/investigation. • The report demonstrates an in-depth and specialist understanding of how ingredients work and why. • Detailed explanation/reflection of how the results can be applied when preparing and cooking food. • The report is communicated in a structured and coherent manner with accurate use of technical language.
4–6	• Relevant interpretation and analysis of the results with conclusions of the hypothesis/investigation with some justification. • The report demonstrates good understanding of how ingredients work and why. • Explanation and review of how the results can be applied when preparing and cooking food. • The report is communicated with clarity and with use of technical language.
1–3	• Some analysis of the results from the hypothesis/investigation and an attempt at drawing conclusions. • The report demonstrates some understanding of how ingredients work and why. • Limited explanation of how the results can be applied when preparing and cooking food. • The report is communicated at a simplistic level with a limited use of technical vocabulary.
0	Nothing worthy of credit.

Helpful Tips

1
PLAN, PLAN, PLAN your work carefully!

2
Make use of space on the page! Write CONCISELY

3
Research must be FOCUSSED, RELEVANT & ANALYSED

4
DO NOT copy from books or websites. You could get disqualified!!

5
EXPLAIN & JUSTIFY your decisions at each stage.

6
LABEL & ANNOTATE photographs.

7
PROOF READ work for spelling & grammatical errors

8
Make sure you include a FRONT COVER with name & candidate no.

9
Use TECHNICAL vocabulary. The glossary in your textbook will help!

10
UTILISE your TIME. Computer write up lessons especially!!

11
Constantly CHECK the ASSESSMENT CRITERIA!!

12
DO NOT copy from books or websites. You could get disqualified!!

MEET <u>ALL</u> YOUR <u>DEADLINES</u> TO KEEP ON TRACK!!