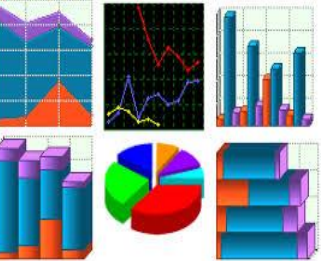

















NEA 1 FOOD SCIENCE



Raising agents are used to produce a risen, light airy texture in baked products. Investigate the working characteristics, the functional and chemical properties of a range of chemical raising agents used to make scones.

This assessment must be supported by investigational work

Lesson	date	Day/week	What to do
Lesson 1 and 2	17/09 double	Tues 1	Write up work so far Begin research into keywords
Lesson 3	18/09	Wed 1	Investigate the science – start bibliography
Lesson 4	23/09	Mon 2	Hand in research – summarise - write a hypothesis (if not done)
Lesson 5	27/09	Fri 2	Plan experiments (and follow on if required)
Lesson 7	1/10 double	Tues 1	Plan data capture (what to measure, how to measure and how to record it)
Lesson 8	2/10	Wed 1	Plan data presentation (photos/graphs and charts)
Lesson 10	7/10	Mon 2	Organise experiments on trays
Carry out Experiments – collect data and taste trials			
Lesson 11	11/10	Fri 2	Make graphs and charts – present information
Lesson 12	15/10	Tues 1	Observe, analyse and explain
Lesson 13	16/10	Wed 1	Comment on data and justify results
Lesson 14	21/10	Mon 2	Review hypothesis and suggest further work
Lesson 15	25/10	Fri 2	Print out day - Hand in
Half term – Break up Fri 25th			

NEA 1 THE SCIENCE EXPERIMENT					
Explain your decisions and thinking.			Use scientific and technical language.		
SECTION A-RESEARCH AND PLAN					
	Analyse the task	Research the task key words	Investigate the science	Make a prediction	Plan the experiments
SECTION B-EXPERIMENT, TEST AND RECORD					
	Organise the experiments	Carry out the experiments	Test and record objective data	Test and record subjective data	Present information
SECTION C-ANALYSE AND EVALUATE					
	Observe, analyse and explain	Comment on the data and justify the results	Relate results to the research and science	Review hypothesis Refer back to task	Suggest improvements Justify conclusions

Tuesday 8th – Group 1
Wed 9th - Group 2

**You will be doing
your scone
based
experiments on
.....**

1.	Williams, Katie	Group 1	Tu 8 Oct
2.	Henderson, Katie	Group 1	Tu 8 Oct
3.	Furneaux, Katie	Group 1	Tu 8 Oct
4.	Fox, Amelia	Group 1	Tu 8 Oct
5.	Bye, Natalie	Group 1	Tu 8 Oct
6.	Thomas, Chloe	Group 1	Tu 8 Oct
7.	Lopresti, Sofia	Group 1	Tu 8 Oct
8.	Jenkins, Levi	Group 1	Tu 8 Oct
9.	Pearce, Ruby	Group 1	Tu 8 Oct
10.	Pomphrey, Jodie	Group 1	Tu 8 Oct
11.	Hicks, Louise	Group 2	Wed 9 Oct
12.	Harvey, Emma	Group 2	Wed 9 Oct
13.	Ktoris, Eleni-Rose	Group 2	Wed 9 Oct
14.	Katy Milnes	Group 2	Wed 9 Oct
15.	Stone, Naomi	Group 2	Wed 9 Oct
16.	Grimmer, Katelyn	Group 2	Wed 9 Oct
17.	White, Hazel	Group 2	Wed 9 Oct
18.	Beese, Kloe	Group 2	Wed 9 Oct
19.	Bohin, Luis	Group 2	Wed 9 Oct
20.	Higgins Bessant, Craig	Group 2	Wed 9 Oct



NEA 1 THE SCIENCE EXPERIMENT

Explain your decisions and thinking.

Use scientific and technical language.

SECTION A-RESEARCH AND PLAN					
	Analyse the task	Research the task key words	Investigate the science	Make a prediction	Plan the experiments
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	Organise the experiments	Carry out the experiments	Test and record objective data	Test and record subjective data	Present information
SECTION C- ANALYSE AND EVALUATE					
	Observe, analyse and explain	Comment on the data and justify the results	Relate results to the research and science	Review hypothesis Refer back to task	Suggest improvements Justify conclusions

SECTION A - RESEARCH AND PLANNING

A1 – ANALYSE THE TASK



1. Write out the task in full.
2. Highlight the key words.
3. Explain what each key word means.
4. Write a paragraph briefly explaining the context and what you have to do.
5. Write down any questions you think of and your first thoughts.
6. What do you need to find out about each key word?

SECTION A - RESEARCH AND PLANNING

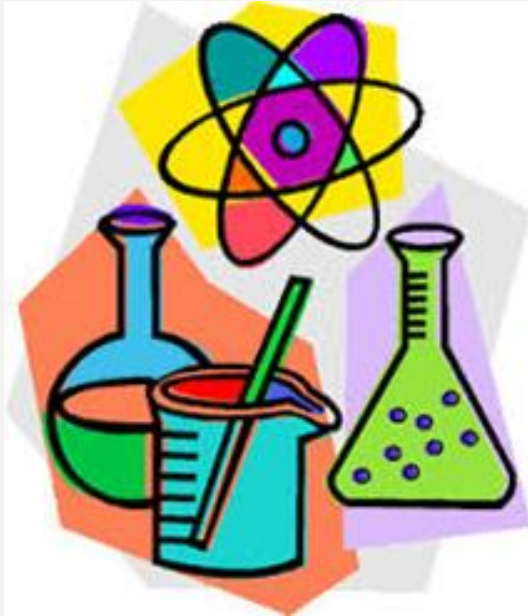
A2 – RESEARCH THE TASK



1. Start by looking in your text book. Use the index page to look up key words.
2. Make a note of everything you find out that is relevant.
3. Make a research plan using more than one source of information.
4. Carry out your research plan.
5. Start your bibliography page.

SECTION A - RESEARCH AND PLANNING

A3 – INVESTIGATE THE SCIENCE



Tip – concentrate on finding out about the ingredient(s) you have been asked to investigate.

1. Research the scientific principles involved in your task.
2. What happens on a chemical level when you mix / bake the ingredients?
3. Keep asking questions to find out WHY things happen.
4. Now summarise all your research in a few sentences.

SECTION A - RESEARCH AND PLANNING

A4 – MAKE A PREDICTION



1. Write a prediction saying what you expect to happen when you carry out your experiment.
2. What will you need to test and measure?
3. Your prediction should be brief, measurable and answer the task you have been set.

SECTION A - RESEARCH AND PLANNING

A5 – PLAN THE EXPERIMENTS

Action Plan

Action	Measure success?	Who's Responsible?	By when?
Promotion of science fairs, Awareness workshops About Standards and Rules to build a national Fair	Students participating at local fairs.	MOE + ANAYZAK	June 2008
Assigning Coordinators in Districts	One coordinator per district	MOE	July 2008
Identify potential group of teachers as key promoters within schools and Workshop for them as local facilitators and judges.	Reach the maximum number of teachers from all the districts of the country	MOE	July 2008
Implement a science research course for the high schools students	Training participants students on the science research skills	MOE + ANAYZAK	October 2008

You will have approx 2 hours for your testing!

1. Suggest ideas for experiments. Say why they are suitable.
2. Which variables will you be changing (independent variables)?
3. Which variables will you be measuring (dependant variables)?
4. Which variables will you be keeping the same (control variables)?

SECTION A - RESEARCH AND PLANNING

A5 – PLAN THE EXPERIMENTS

Action Plan

Action	Measure success?	Who's Responsible?	By when?
Promotion of science fairs, Awareness workshops About Standards and Rules to build a national Fair	Students participating at local fairs.	MOE + ANAYZAK	June 2009
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Identify potential group of teachers as key promoters within schools and Workshop for them as local facilitators and judges.	Reach the maximum number of teachers from all the districts of the country	MOE	July 2009
Implement a science research course for the high schools students	Training participants students on the science research skills	MOE + ANAYZAK	October 2009

You will have approx 2 hours for your testing!

1. Write a plan for carrying out your experiments. Use scientific language.
2. How will it be a fair test? Have you included a control?
3. Be clear about what you are hoping to find out. What data will you be collecting?
4. Find a standard recipe and consider the quantities you need to make.
5. Make up a tray to use on the day of your exam.

SECTION B – EXPERIMENT, TEST AND RECORD

B1 – PREPARING THE EXPERIMENT



1. Set up your experiments.
2. Label your samples.
3. Photograph everything, consistently.
4. Check your plan and hypothesis.
5. Have sheets prepared to record data systematically.

SECTION B - EXPERIMENT, TEST AND RECORD

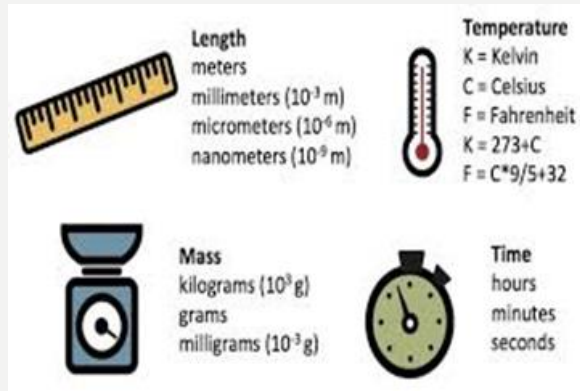
B2 – CARRYING OUT THE EXPERIMENT



1. Carry out your experiments.
2. Make notes while you are working.
3. Photograph each stage, writing down what each picture is showing.
4. Keep samples in the same order.
5. Photograph the finished samples.

SECTION B - EXPERIMENT, TEST AND RECORD

B3 – COLLECTING OBJECTIVE DATA



1. Collect accurate data using measuring devices.
2. Photograph and photocopy your samples as you will need this evidence.
3. Annotate and label pictures.

SECTION B - EXPERIMENT, TEST AND RECORD

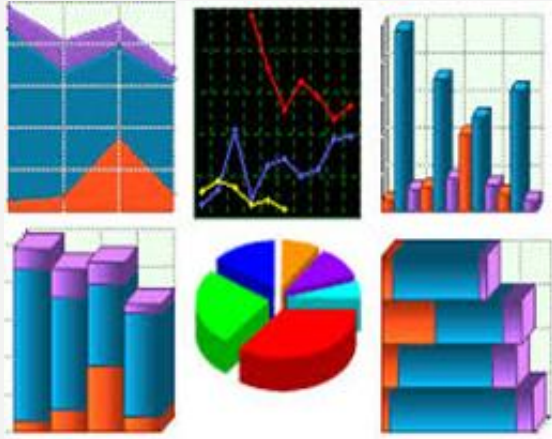
B4 – COLLECTING SUBJECTIVE DATA



1. Carry out sensory testing.
2. Collect a range of opinions about each sample.
3. Collect accurate information and feedback from each person.
4. Cross reference this with your objective data.

SECTION B - EXPERIMENT, TEST AND RECORD

B5 – PRESENT THE INFORMATION



1. Decide how you will present each piece of data.
2. Present your data using a range of charts, graphs, diagrams, photos and text.
3. Explain what each graph is showing.

SECTION C - ANALYSING AND EVALUATING


C1 – OBSERVING THE SAMPLES




1. Write down your observations and what happened.
2. Note the differences between each of your samples.
3. Collect as much data as you can from each sample.
4. Decide how you will rate each sample to get meaningful results.

SECTION C - ANALYSING AND EVALUATING

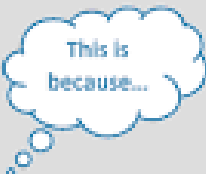
C2 – OBSERVE, ANALYSE AND EXPLAIN




POINT
Write the main idea you want to talk about



EVIDENCE
Prove your point using facts/figures/examples



EXPLAIN
Tell me why you make this point



LINK
Use a connective to link back to the point

1. **Explain** what you notice using ‘because’. Give reasons why.
2. Use ‘for example’ to **show your knowledge**.
3. Use a connective (or 2 or 3!) in your sentences to **make links**.

SECTION C - ANALYSING AND EVALUATING

C3 – COMMENT ON DATA / JUSTIFY THE RESULTS

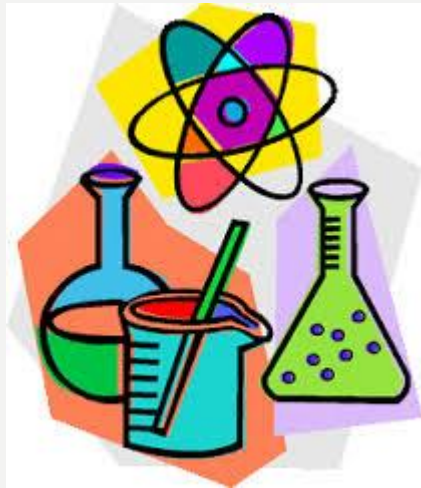


1. Mention how the ingredients and cooking methods are responsible for differences in your samples.
2. Be methodical and use scientific terms.
3. Use examples from your graphs and photos to justify your thoughts.



SECTION C - ANALYSING AND EVALUATING

C4 – RELATE RESULTS TO RESEARCH AND SCIENCE



1. Read back through your work from the start.
2. Use the science investigation to explain **why** changes occur.
3. Use your research to inform the conclusions you make.

SECTION C - ANALYSING AND EVALUATING

C5 – REVIEW HYPOTHESIS



1. Have you proved or disproved your hypothesis?
2. Explain your reasons, showing an in depth understanding of the task.
3. Again, use section A and B to inform your reasoning. Keep referring back to the task.

SECTION C - ANALYSING AND EVALUATING

C6 – SUGGEST IMPROVEMENTS JUSTIFY CONCLUSIONS



1. What further experiments could you do?
2. What other tests could you carry out?
3. How reliable is your scientific evidence? What improvements could you make to your process?
4. Finish with a clear, solid sentence which answers the task / context.

FAQ

- Experiment / test / investigate – confusion in use of words.
- How many experiments? One and a ‘follow on’ if time.
- How many variables? At least 4 – 6. Higher ability students plan and justify their own. More important to extract the data and present this in different ways.
- Control
- Fair test
- Variables – dependant variables, independent variables,
- The hypothesis should be brief, measurable and answer the task.
- Have you followed the scientific process?
- PEEL Point, evidence, example, link.
- 8 sides
- 1500 to 2000 words is a guide
- 10 hours
- Include a bibliography
- Set up your pages as directed.

SCIENCE TERMS

aeration
leavening
alkali
acid
ph.
litmus paper
reaction
carbon dioxide
functional
fermentation
bicarbonate of soda
citric acid
buttermilk
tartaric acid
Mouthfeel
taste

Control
Fair test
Contamination
Accuracy
Standard recipe
Labelling
Range
Parameters
Immiscible
colloid

Objective
Subjective
Replicate
Sample
Consistency
Reliable
Anomaly
Correlation
Error
Infer

- Variable. Its anything that can change the outcome in an **experiment**
- Controlled variables. It is a factor or variable that you keep the same.
- Independent variable.A factor or variable that you purposefully. ...
- Hypothesis. ...
- Quantitative observation. ...
- Observation. ...
- Qualitative Observation. ...
- Analysis.

SET UP YOUR PAGES LIKE THIS -

The image shows a document header with four columns of text. A dashed line separates the header from the main body. Below the header, four blue callout boxes point to the text in each column. A larger blue box at the bottom provides font and size instructions.

Header

Joe Bloggs 3456

Nailsea School 50635

Eduqas FPN

NEA1 Section B

Your name and candidate number

Centre name and number

Exam board and course

NEA1 and section letter

Calibri or Arial for text
Point size 11 or 12 for text.
14 for titles.

VITAL QUESTIONS TO ANSWER IN YOUR RESEARCH!!

