

## Starter

Welcome to Cambridge Advanced National AAQ in Applied Science

Why have you chosen Applied Science?

Do you have any questions about the course?



Learning objectives:

- To gain an understanding of the requirements of your chosen subject in preparation for a September start

## Learning objectives

- ❑ To gain an understanding of the requirements of your chosen subject in preparation for a September 2026 start

## Key words:

Preparation  
Organisation  
Punctuality  
Commitment  
Success



Learning objectives:

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## Explanation

### Over 50% Non-Examined Assessment (NEA)

Unit number	Unit title	How is it assessed?	Mandatory or optional
F180	Fundamentals of science	External Assessment (Exam)	Mandatory
F181	Science in society	External Assessment (Exam)	Mandatory
F182	Investigating science	Non-Exam Assessment (NEA)	Mandatory
F183	Analytical techniques in chemistry	Non-Exam Assessment (NEA)	Optional
F184	Environmental studies	Non-Exam Assessment (NEA)	Optional
F185	Forensic biology	Non-Exam Assessment (NEA)	Optional
F186	Medical physics	Non-Exam Assessment (NEA)	Optional



Learning objectives:

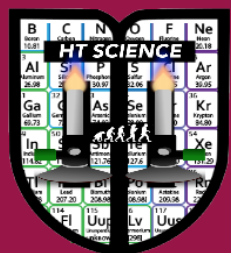
- To gain an understanding of the requirements of your chosen subject in preparation for a September start

# Explanation

## Scenario

You will undertake a scientific investigation to explore **one** of the following titles with your own research question:

1. How vitamin C concentration varies in foods.
2. How the temperature affects the rate of a reaction.
3. How the surface a ball is dropped onto affects the bounce of the ball.



Learning objectives:

# Explanation

## Core Expectations for **Every Lesson**

1. Attend lessons on time and in professional attire
2. Be prepared for each lesson by ensuring you bring the appropriate equipment
3. Ensure all work is organised in the appropriate section of your subject folder
4. All deadlines must be met to avoid a 6 week “Risk of Failure” program
5. Respect the classroom, Replace chairs, Rubbish in bins
6. Speak to **ALL** members of the HT community with respect
7. No mobile phones/ear pods to be used in lessons or around the school
8. Starters are to be completed in silence
9. Be proactive and not reactive
10. Expect to work harder than you ever have before



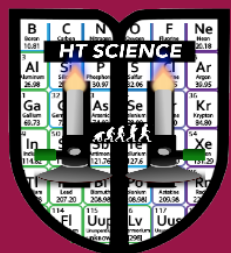
Learning objectives:

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# Explanation

In this session you will be working in pairs, carrying out a precise method of measuring and analysis that is used in chemistry. You will need to understand this method as part of the exam unit and also may be using it in your written assignment.

Learning objectives:



# Explanation



You may have looked at titrations to deduce the concentration of acids or bases.

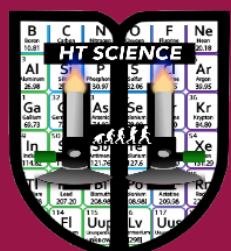
**Today you are going to use a titration to find out which sweet is the most sour.**



The sweets that have the sourest taste have higher levels of acids to trigger the sour areas of the taste buds



Learning objectives:



# Explanation

During the course you will carry out research to identify a question that you would like to investigate and then write a hypothesis and a prediction.

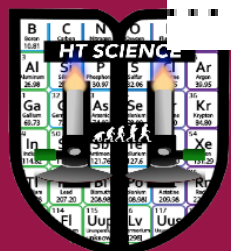
For today's session you are going to choose one of two questions.

Does the brand of sour sweet affect the acidity of the sweet?

Does the colour of the sweet affect the acidity?

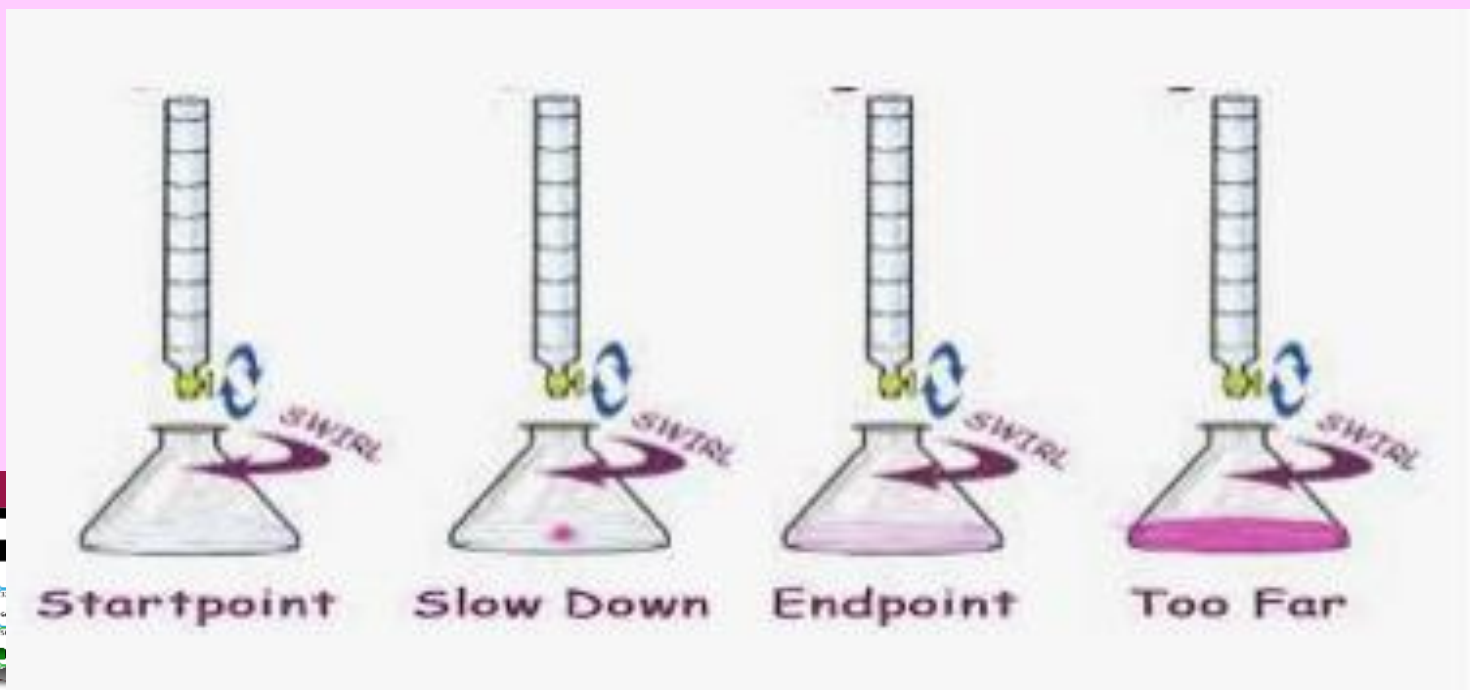
**My Question**.....

.....  
Learning objectives:



# Explanation

Titration is carried out to get precise results.  
How can you be precise with your equipment and technique.



# Explanation

You will work in groups of 2

Safety: Do not fill burette above your head.

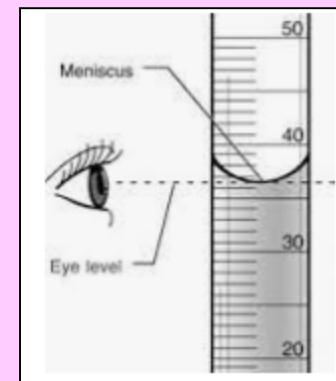
Read volumes at eye level

Clamp to hold burette

Burette with NaOH (alkali)

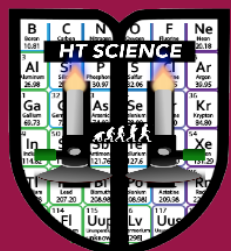
Tap is closed when horizontal

Flask with sweet solution



Learning objectives:

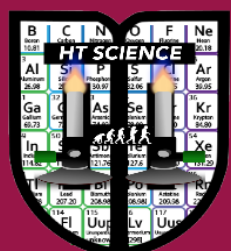
White tile to see colour change



### Method

- 1) Choose either one colour of sweet from each brand OR different colours from the same brand. Cut each one into approx. 1cm cubes and weigh out approximately 10g. Record the mass.
- 2) Add sweets to the Glass beaker
- 3) Measure 50cm<sup>3</sup> of distilled water and add to the glass beaker.
- 4) Stir and place the beaker in the water bath, for 5 minutes.  
WHILST YOU WAIT
- 5) Fill the burette to 0.00 with NaOH and record this as initial volume of NaOH
- 6) Remove the beaker from the water bath and use the needles to remove the sweets from the solution.
- 7) Transfer the solution to a conical flask.
- 8) Add 3-4 drops of phenolphthalein indicator into the flask.
- 9) **Slowly** add the NaOH from the burette into the flask until the indicator changes into a **permanent faint** pink color.
- 10) Record the final volume of the NaOH used in the titration in the data table below.

Learning objectives:



## Checking Progress

The sweet that needed the highest volume of NaOH to neutralise it is the one that is most acidic (sour)

### Data Table.

Brand / colour of sweet	Mass of sweet/g	Initial Volume of NaOH (burette)/cm <sup>3</sup>	Final Volume of NaOH/cm <sup>3</sup>	Volume of (NaOH) used/cm <sup>3</sup>	Rank sourness 1 highest

How reliable are your results?

