

Practical Guide Biology Food Tests

This document contains:

- Links to YouTube clips showing the practical procedure
- Information from examination boards AQA, OCR, Edexcel
- Potential examination questions and answers

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- AQA

Required practical activity	Apparatus and techniques
Use qualitative reagents to test for a range of carbohydrates, lipids and proteins. To include: Benedict's test for sugars; iodine test for starch; Biuret reagent for protein.	AT 2, AT 8

- Edexcel

1.13B	<i>Investigate the use of chemical reagents to identify starch, reducing sugars, proteins and fats</i>	Carry out food tests shown below: <ol style="list-style-type: none"> 1. identify starch by using iodine solution 2. identify reducing sugars using Benedict's solution (and a water bath) 3. identify protein using the Biuret test (adding potassium hydroxide to a solution of the food, followed by copper sulfate) 4. identify fats and oils (lipids) using the emulsion test to show the formation of a precipitate
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- OCR

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Testing for biological molecules

Testing foods for the presence of biological molecules in a range of foods



Video 1

Video 2

A student was provided with 2 beakers, X and Y.

They contained either: Starch, protein, glucose or lipid.

The student tested both solutions with Benedict's reagent.

1. Describe how to carry out the Benedict's test.
2. Look at the results obtained from the Benedict's test.
Explain what these results tell you about beakers X and Y.

Beaker	Result
X	Blue
Y	Brick Red

3. Explain how the student would test the solutions to see if either contained starch.

1. Describe how to carry out the Benedict's test.

ANS:

- **Add Benedict's reagent to a sample of the solution**
- **Place in hot waterbath for about 5 minutes**
- **Note colour change**
- **Green, yellow, orange, brick red**
- **Increasing levels of glucose linked to colour change**

2. Look at the results obtained from the Benedict's test. Explain what these results tell you about beakers X and Y.

Beaker	Result
X	Blue
Y	Brick Red

ANS:

- Beaker X does not contain glucose
- Beaker Y contains large amounts of glucose

3. Explain how the student would test the solutions to see if either contained starch.

ANS:

- **Add iodine**
- **Blue/ black – starch is present**
- **Orange/ brown – no starch present**

Key questions:



- Why should all the food tests be done on each food sample?
- What effect could cross contamination have on the observed results?
- How can cross contamination of samples be avoided?
- What safety hazards will be encountered during the practical work?
- How can safety hazards be minimised or prevented?
- What is the best way to present results that are qualitative?
- How could qualitative food tests be modified to produce semi-quantitative or quantitative data?
- Why might the result for reducing sugars be negative in a food whose food label shows it contains sugar?
- What are the roles of each food group in the body?
- How do the results for each food test link to its potential role as part of a balanced diet?

A summary document is also available on Huddle which contains all the relevant information about this practical from the different examination boards. This document includes practical methods and other potential examination questions