
GCSE Biology required practical activity 5: Food tests

Student sheet

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

1. Testing for sugars

In this experiment you will test one or more foodstuffs for the presence of carbohydrates.

Learning outcomes
1
2
Teachers to add these with particular reference to working scientifically

Method

You are provided with the following:

- food to be tested
- a pestle and mortar
- a stirring rod
- filter funnel and filter paper
- 2 × beaker, 250 ml
- a conical flask
- 2 × test tube
- Benedict's solution
- iodine solution
- a Bunsen burner, tripod and gauze to heat water
- a heatproof mat
- a thermometer
- safety goggles.

2. Testing for lipids

In this experiment you will test one or more foodstuffs for the presence of lipids (fats).

Learning outcomes
1
2
Teachers to add these with particular reference to working scientifically

Method

You are provided with the following:

- food to be tested
- a pestle and mortar
- a stirring rod
- a filter funnel and filter paper
- 2 × beaker, 250 ml
- a test tube
- Sudan III stain solution.

Risk assessment:

- *Wear safety goggles.*
- *Sudan III contains ethanol, which is highly flammable. Keep the solution away from naked flames.*

You should read these instructions carefully before you start work.

1. Use a pestle and mortar to grind up a small sample of food.
2. Transfer the ground up food into a small beaker and add distilled water.
3. Stir in order to allow some of the food content to dissolve in the water.
4. Use a filter funnel and filter paper to obtain as clear a solution as possible.
5. Half fill a test tube with some of this solution.
6. Add 3 drops of Sudan III stain to the solution in the test tube. Shake gently to mix.
7. A red-stained oil layer will separate out and float on the water surface if fat is present.