

Fizzy drinks

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Learning objectives

By the end of this session, you will be able to:

- Compare the sugar content and pH of a range of fizzy drinks.
- Discuss the health implications of sugar and acidity.

Acknowledgements

This resource was originally developed by the University of Reading to support outreach work delivered as part of the Chemistry for All project.

To find out more about the project, and get more resources to help widen participation, visit our Outreach resources hub: rsc.li/3CJX7M3.

Activity 2: pH of soft drinks

In this activity you will find out how acidic soft drinks can be.

Equipment

- Universal indicator
- Variety of known soft drinks
- 50 ml beakers
- 5 ml syringes

Safety and hazards

Wear safety glasses.

To do

1. Transfer 5 ml of the soft drink being tested from the labelled beaker to a 50 ml beaker using the 5 ml syringe provided. Make sure that you use the correctly labelled syringe for each drink tested.
2. Add two drops of universal indicator (keep this consistent for all the drinks).
3. Repeat for all the soft drinks.
4. Interpret any colour change for each of the drinks and complete the results table.

Drink	Colour	Estimated pH value
Coca-Cola®		
Coca-Cola® zero sugar/diet Coke®		
Lucozade®		
Lucozade® zero		
Oasis®		
Oasis® zero		

To answer

(a) Which drinks were the most acidic?

(b) How can drinking too much of the acidic soft drinks cause dental problems?

Demonstration: sugar in soft drinks

Watch the demonstration and use your observations to answer questions (a) and (b).

To answer

- (a) How would you compare the quantity of sugar in the 'normal' and 'zero' or 'sugar free' versions of the drink?

- (b) Which would you choose to drink and why?

Career link

Senior science manager

Watch Paul's video job profile on **slide 10** of the PowerPoint, also available from rsc.li/3lpJleT. He is a senior science manager and works for British Sugar and manages the scientific services, developing and implementing process improvements.

Activity 3: sugar or no sugar?

In this activity you will investigate the sugar content of different soft drinks.

Equipment

- Stock beakers containing different soft drinks
- Glucose test strips
- 50 ml beakers
- 5 ml syringes

To do

1. Transfer 5 ml of each drink to a 50 ml beaker using the syringe. Label the beaker with the name of the drink.
2. Dip a test strip into each drink for 1 second. Remove the strip and then leave for 30 seconds for colour to develop. Observe any colour change.
3. Record observations in the table.

Drink	Observed result with test strip	Sugar or no sugar?	Name of drink
A			
B			
C			
D			
E			
F			
Water			

To answer

(a) Identify the sugar and zero versions of each of the drinks you tested using the list provided on the PowerPoint slide. Write the names of the drinks in the last column of the results table.

(b) Which drink contained the most sugar?
