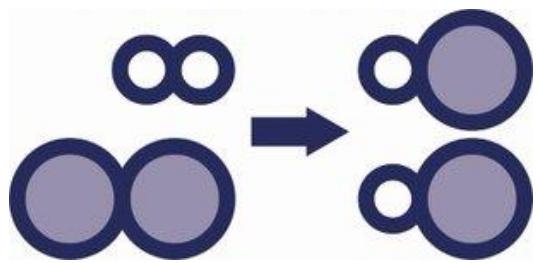


## Introduction to Quantitative Chemistry

How do I know the concentration of a solution?  
 What is the law of conservation of mass?  
 How do you calculate the relative formula mass?  
 How do you make a soluble salt?



Quantitative chemistry allows us to do calculations to find out about quantities of substances. This is a very important application of chemistry that is used in industry and research. Using the relative formula mass and concentration we can look closely at the amount of reactants and products in chemical reactions.

This is the **third** unit we are studying as part of the big idea: **Reactions Rearrange Matter**

In this unit, we will begin by recapping the law of conservation of mass because it means that the mass of products equals the mass of the reactants which is important to remember when doing chemical calculations.

Then we will learn about state symbols and practise using them in symbol equations. Whilst we focus on chemical formulae, we will learn how to calculate the relative formula mass and use this to calculate the mass of reactant or product.

You will have heard the term 'concentration' before and we will learn what the concentration of a substance actually means and then discover how to calculate concentration. Finally, we will carry out a practical with lots of different steps and get the chance to use different types of equipment. The practical is making soluble salts from acids and insoluble substances, such as metal oxides. The end result will be the formation of salt crystals!

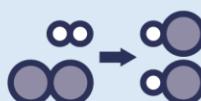
### TASKS:

What subject will this unit focus on?  BIOLOGY       CHEMISTRY       PHYSICS  
 (circle the correct subject)

There are lots of keywords underlined above. List these into the two columns:

Words I know	Words I haven't seen before

To answer before the unit:



1. What are you most excited to learn about in this topic?

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2. What do you already know about this topic?

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3. Why do you think it's important to learn how reactions rearrange matter?

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4. What knowledge from previous science lessons might help us?

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5. What questions do you have about this topic?

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**To answer at the end of the unit:**

1. Tick off any words in the 'words I haven't seen before' column that you are now confident with. Circle any you still need more practice to use.
2. What have you most enjoyed about this unit?

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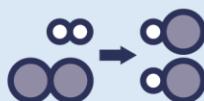
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3. What more would you like to learn about reactions as part of the big idea: 'Reactions Rearrange Matter'?

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**Teacher guidance:**

The purpose of this resource is to provide students with an overview at the beginning and end of each unit. It is designed to create a discussion about the unit prior to the sequence of lessons.

The unit scope should be read as a guided reading activity. Tier 3 vocabulary has been highlighted. It may need to be adapted further for LPAs or pupils with different reading ages.

There are a range of ways to use this resource.

1. Display on a slide for students to read as a class. Direct students to complete the activities in their book.
2. Print off for students to stick into their book at the beginning of the unit along with their knowledge organiser. Complete as a guided reading task together. Direct students to complete the activities.
3. Have students complete as part of a booklet.
4. Set as a homework prior to a unit.

If you have any feedback about how this resource could be used/improved, please contact the science mastery team: [sciencemastery@arkonline.org](mailto:sciencemastery@arkonline.org)

