Quantitative chemistry

Introduction

The accessible glossary contains images, examples, pronunciation guides and other information to help learners bridge the gap between the **quantitative chemistry** key terms and their definitions. Together with the key terms list, Frayer models, and unscrambling definitions resources, they form the key terms support pack for this topic.

Segments

The following segments are used expand the terms. Each slide is broken down into segments:

- **In other words:** a more learner-friendly definiton.
- **Sign it:** links to the Scottish Sensory Centre BSL chemistry glossary, hosted by the University of Edinburgh. This includes a BSL translation of many of the key terms. Some additional terms are included from the British sign language dictionary. Encountering the same information through different formats can be beneficial for all learners.
    - ✓ Read more about dual coding: rsc.li/4jMntkv.
    - ✓ Learn more about using British Sign Language in your teaching: rsc.li/4jr7FUD.
- **Say it:** guides learners on how to pronounce each key term.
- **Break it down:** breaks key terms down into composite word parts to reveal more about each term's meaning.
- **Similar words:** lists words that have the same or very similar meanings as the key term, where it could be appropriate for learners to use the words interchangeably (for example, the infinitive of the same verb).
- **Example:** an example of the word/the word in a context that learners are likely to be more familiar with.
- **Don't confuse with**: relevant common misconceptions for learners to be aware of.
- **Other contexts:** other contexts in which learners might come across the word, for example in physics or biology.

How to use the accessible glossary

This is a versatile resource. Here are some ideas for how to use it.

- Print as a booklet and give to colleagues who focus on EAL or SEN. Use with learners to work on vocabulary ahead of their chemistry lessons.

- Insert selected slides into other presentations, to highlight that you're introducing a new term to learners.
- Use for revision after a lesson which featured the key term.
- Print out a version with only the image and the 'in other words' definition and use this as the basis for an activity you create yourself.
- Task learners to break down the key term definitions further, using labelled diagrams.
- Create revision flashcards by printing several slides on one sheet of paper.

Edit the slides to modify the content to best suit your learners, e.g. delete the contents of segments and ask learners to populate them. This encourages learners to draw on their science capital and can facilitate learners sharing prior knowledge among peers before the content is covered in class.

The key terms are presented in alphabetical order, within subtopics. You can rearrange the slide deck in a way that best suits how you are using the glossary.

For learners who need more support

Use animation to scaffold the slide deck for learners who need more literacy support, so that each segment is introduced in turn.

Consider using the translate function in PowerPoint. Go to the review tab, select translate, input the desired language and highlight the relevant text from the text boxes on the slides.

Use the speak function available in PowerPoint to provide learners with access to audio versions of the key terms (see bit.ly/4jMcrvx).

Metacognition

Empower learners by using metacognitive prompts alongside this glossary. Here are some ideas.

- **Planning**: prompt learners to draw on their existing science capital by asking themselves, 'Have I seen or used these key terms before? Have I seen images like these before? If so, where? What do I already know about these key terms, that will help me understand what they mean?'
- **Monitoring**: prompt learners to ask themselves, 'How confident am I feeling with these terms? Which segments on the slides feel most helpful to me? Can I focus on these segments?'
- **Evaluation**: prompt learners to ask themselves, 'Which slide has helped me the most? In the future, how can I use glossaries like this to help me learn new words?'

Support and challenge

Try these activities with learners who need more support.

- **Fill in the gaps:** give learners a copy of the slide with the key term missing. Can they remember the word that matches the definition and picture?
- **Pictionary:** slowly reveal the picture associated with a key term, can learners guess the word?
- **Taboo:** hand out the key terms slides to learners who then work in pairs. Learner one must try to describe the key term to learner two without using certain words that you have highlighted on the slide.
- **Sound it out:** task learners to practice saying the key terms with a partner or as a class, using the pronunciation guide for support.

Try these activities with learners who need more challenge.

- **Fill in the gaps:** give learners a copy of the slide with just the key term present, can they complete the other information?
- **Exam practice:** ask learners to write their own three-mark exam question based around a key term and then create a mark scheme.
- **Frayer model:** ask learners to draw up their own Frayer model based on a key term.
- **Modelling:** ask learners to imagine what real images of the key terms would look like (rather than the diagrams provided). This question can lead to discussing models, scales, and what is/isn't visible with the eye etc.
    - ✓ Read more about using multiple models to communicate the same idea: rsc.li/4jMOq7D.

Other key terms support resources

This resource is part of the key terms support for the topic of **quantitative chemistry**. Find the following accompanying resources at rsc.li/3Gi9HHN:

- Key terms list – carefully selected vocabulary with definitions, that learners will come across when studying this topic at this stage
- Unscrambling definitions – where learners piece together key terms definitions and use their understanding of the terms to complete sentences
- Frayer models – a way for learners to organise their understanding of a new piece of vocabulary by working through four conceptual quadrants: explore, break down, explain, consolidate.