

Particle model

Frayer models are a simple but effective way to develop learners' understanding of a new piece of vocabulary. You will see what your learners already know and identify any misconceptions they have. The key term is placed in the middle of four quadrants; ask learners to populate the quadrants in turn.

- **Explore:** link to science capital and find out what learners already understand about the term. Ask learners where they have heard the term before, or what it makes them think of.
 - How learners respond will directly link with their science capital. You can find out more about science capital at: rsc.li/40FAMLP
- **Break down:** look at composite parts of the word to understand its meaning more deeply. Lead your class through this quadrant by referencing the etymology provided in the notes section of the learner slides (and mirrored in the teacher/answer slides).
 - Where a term doesn't break into neat composite parts, this quadrant is instead called '**What do we know about ...**'. It lists some points to aid discussion and again etymology is included.
- **Explain:** introduce the definition. This section is in two parts. First, ask learners to define the term themselves and then ask them to copy the definition from the key terms list.
- **Consolidate:** get learners to apply their knowledge of the term by answering a question.

How to use Frayer models

Print out the Frayer model slides for the key terms you want to explore and hand them out. Ask learners to fold the along the black lines and concentrate on completing one quadrant at a time.

- The lines in quadrant three (**explain**) separate learners' attempted definitions from the ones provided in the key terms list, which they can copy onto the model after they've attempted the definition.
- In the scaffolded version, additional lines in quadrant two (**break down**) separate the teacher-led discussion from learners' own work.

Ask learners to unfold the paper when they have completed their model and reflect on how much they now know about the term.

Other ways to use

- Print the resource and use as a 'think, pair, share' style activity.
- Use mini whiteboards to enhance class discussion.

Tips for adapting Frayer models

- Highlight common prefixes, suffixes and translations. This can be helpful for learners.
- Link to similar words to help learners suggest possible meanings.
- In the **explain** quadrant, include diagrams, examples and non-examples.
- Add a stretch question to the **consolidate** quadrant to deepen understanding.

Scaffolding

These resources are supplied in an unscaffolded and scaffolded format. For some learners, the **explore** quadrant proves a particular challenge, so give them more time, support and explicit instruction to use these models. Don't worry if it doesn't work first time.

The scaffolded format provides learners with:

- Prompts for the **explore** quadrant.
- A dedicated box in the **break down** section for connecting the composite parts of words.
- Sentence starters in the **explain** section to support learners attempting their own definition.
- More support in the **consolidate** section.

Read more about Frayer models and their use: rsc.li/4jpOnhW and rsc.li/42paFJL