

Using the FAR approach

Education in Chemistry

September 2019

rsc.li/2VBOzG

Before choosing what model to use in the classroom, ask yourself these questions. You can also plan your approach to using the model with the FAR approach table below.

After your lesson, give your students the Understanding models question sheet to fill out. It will help you assess whether they grasp the model you're using.

Justify your choice of model

Ask yourself these questions to work out if you've chosen the right model for the concept you're teaching.

- Do you *need* a model to teach this concept? Why?
- Why have you chosen *this* particular model?
- Does your model reduce the [split-attention effect](#)?
- Why have you chosen to use this model *at this point in time* during the lesson?
- What previous understanding does the pupil need to have to access this model?
- What misconceptions could this model cause?
- What questions may the *pupils* have after this model has been used?
- What questions are *you* going to ask to probe understanding and to seek out misconceptions?

Afterwards, ask yourself:

- Would you use this model again?
- What problems did you have with it?
- How would you adapt it in future?

Planning to use the FAR approach

Focus (before lesson)	
Concept that will be taught during the lesson	<p>Is it a difficult, unfamiliar, or abstract concept or process?</p> <p><i>Gas exchange between the alveoli and the capillaries. Difficult as need to talk about concentration gradients of two different gases, they think it's familiar as 'it's just breathing', abstract as it changes their view of the lungs and they find it hard to visualise the millions of alveoli.</i></p>
Pupils	<p>What ideas do pupils already know about the concept or process that the model will be describing?</p> <p><i>Definition of diffusion and recall of aerobic respiration equation.</i></p>
Model	<p>Is the model itself something that pupils are familiar with?</p> <p><i>Visual model, so yes, they're familiar with diagrams. But not a 'split-diagram' to show the two gases being exchanged.</i></p>
Action (during lesson)	
Discuss	<p>Discuss the features of the science concept and the model</p> <p><i>Lots of questions about size, magnitude and SA:V. They grasped it was a diagram of what's 'happening inside us', but found it hard to visualise the concentration gradients.</i></p>
Likes	<p>Draw similarities between the concept and the model</p> <p><i>Shows clear gas exchange and the two-cell thick distance gases must diffuse through.</i></p>
Dislikes	<p>Discuss where the model is different from the concept.</p> <p><i>Didn't label any other gases other than oxygen and carbon dioxide. Didn't overload with role of haemoglobin and plasma.</i></p> <p><i>Diagram made it seem like the process was active rather than passive.</i></p> <p><i>There's LOTS of alveoli!</i></p>
Reflection (after lesson)	
Conclusions	<p>Was the model clear and useful, or confusing?</p> <p><i>Clear to some, confusing to others. Many were passively copying down the diagram rather than listening to the explanations during my model. Some asked if they had to draw the diagram as they'd rather write it in words.</i></p>
Improvements	<p>How could the model be improved for future use?</p> <p><i>Next time I would try drawing two separate alveoli and show just one gas diffusing in each one (but make sure not to reinforce a misconception!)</i></p>
Planning	<p>Do the class need to revisit the idea?</p> <p><i>Yes! After a gap when we try to retrieve, I will get them to try drawing / explaining from memory.</i></p>