

# Modelling



## What is modelling?

For pupils to be successful, we need to show them what success looks like. If pupils are to access their creativity, they must master the skills that will form the building blocks of the creative process.

Modelling is a teaching strategy through which pupils are shown how to do or think about something. It might be how to manipulate an equation, throw a javelin, structure a paragraph, or even how to think analytically about a historical source.

Teachers might also model to pupils the habits of mind we want to cultivate – do you model creativity and inquisitiveness to your pupils? What matters is that the modelling is clear and effective in showing pupils how to succeed.



## Where can it go wrong?

Modelling can be ineffective when it is unclear, when pupil attention is not effectively managed, or when the steps to success are not clearly articulated. Note that there is a difference between providing a model and actively modelling; if you provide a model, it is important to explicitly draw attention to key features and how they can be replicated, doing so either for or with pupils.

To best support Teaching for Creativity, modelling should not be too prescriptive but should instead provide a scaffold that can be slowly withdrawn. The teacher should describe one path to success – not the path to success.



## How can it be done well?

Effective modelling should keep it tight. Think about how you can split up the process so that pupils are only using a handful of pieces of information at a time. Support pupils in practising the process one or two steps at a time. Try to show pupils not just the steps they need to follow but the reasoning behind each step, empowering them to move away from the model when they are ready. Draw particular attention to areas where you know pupils might make errors or have misconceptions, pre-empting these problems so that they do not practise an inferior approach.

Ensure that the classroom environment is free of distractions and use regular checks for understanding to make sure pupils can follow your model. More creative approaches to modelling might involve pupil-led modelling, or approaches that show only the desired outcome, asking pupils to use their understanding to develop their own process.

## Modelling the outcome

Flipped learning to pre-teach the modelled outcome.

### What you could do:

- Find videos and produce work sheets that are instructional visuals on the activity that the pupils will complete. This is then set as homework, prior to the lesson.
- Structure questioning for them to think harder, during the lesson, based on the material set.
- Use the material as a supportive tool, in lessons where pupils can refer to it, scaffold their responses, and generate group discussions around it.

### What pupils need to do:

- Pupils create a success criteria, based on the pre-learning model.
- Pupils are asked to try and reproduce the best model through their own work in the classroom.
- Once reproduced, pupils evaluate how each person compares to the success criteria and are give an achieved and next steps accordingly.

### When to try it:

- When providing pupils with advanced introduction of key terms and concepts before those terms or concepts are introduced in the general curriculum.
- This provides a framework on which a pupil can build new knowledge during subsequent learning experiences.

### What to avoid:

- Pupils not engaging with the pre-learning effectively.
- Pupils not comparing their work to the model given and therefore not making use of the success criteria when assessing each other's work.
- Teachers giving explicit instruction, rather than allowing pupils to be inquisitive.

### How do I know that it has worked?

- Pupils can clearly articulate a success criteria based on prior learning.
- Pupils can assess their own and others' work.
- Reduced instruction from the teacher.



## Outcomes through writing

Using models that are not fully completed to allow for pupils to explore in their own creative writing.

### What you could do:

- Teacher to create a model answer of a written piece of work. This model is not fully finished but the structure and rationale for the structure is made explicit. In this English example, the teacher adds the foundations of the writing for all the different paragraphs – some of these paragraphs are completely written to show best practice while others other have a few sentences. The pupils are asked to then build upon the model given.

### What pupils need to do:

- Pupils complete the rest of the model, based on the successful model given and the different structured paragraphs.

### When to try it:

- When pupils are aware of the style of writing. For this example, pupils were aware of the structure and language of a non-fiction article and therefore could use this model as revision.
- As homework to consolidate the learning of non-fiction writing.

### What to avoid:

- Pupils not including other skills needed from the success criteria.
- Pupils finding it difficult to create ideas fitting to the set brief.
- Not allowing flexibility or evolution of the structure to allow for legitimate or more sophisticated alternatives, once the core principles have been embedded and habituated.

### How do I know that it has worked?

- Pupils are able to create ideas fitting to the set brief.
- Pupils are able to use unfinished structures to create space for their own creative thinking.
- Pupils can use their unfinished structure as a springboard for their own independent writing.
- Pupils are able to move beyond the modelled structure to produce something superior.



## My turn, your turn

Using a visualiser to allow for exploration after pre-learning has taken place.

### What you could do:

- Create, or print, revision questions for pupils to complete. For this example, a GCSE past maths paper was used.
- Circulate the room, while the pupils are completing their independent and silent work and make note of any pupil who is using a different method to answer the question. Also, this is a good assessment for learning tool to analyse any pupils who are not accessing the learning.
- Once completed, the teacher asks for the pupils to verbally talk through their process method for a question. As the pupil is giving the feedback, the teacher is using a visualiser and noting down the way the pupil approaches a question, with each step, on the exam paper.
- The teacher then gets a new fresh sheet with the same question on. They then use the visualiser to talk through the process of how they would have approached the same question and why. While they are doing this, they are comparing the similarities and differences in the approach from the pupil's response.
- The teacher then uses the mark scheme to live mark the pupil's exam and their own – they are talking through the reasoning throughout. Afterwards, pupils are asked to use the mark scheme to mark their work.

### What pupils need to do:

- Pupils are given past questions to answer.
- A pupil will explain the process for how they answered each question.
- While the teacher is explaining their own process, the pupils are asked to write this process in red pen, on their own response.
- Pupils are then asked to mark their peer's process and answer.

### When to try it:

- Once all the pre-learning has occurred. This technique is best used as a revision tool for a certain topic; therefore, it could be used as the end of learning for that topic or as a revision tool.

## What to avoid:

- Pupils feeling unable to access the question given, because the knowledge has not been solidified.

## How do I know that it has worked?

- Pupils are actively engaging in preset questions.
- Pupils are adapting their work based on the teacher model.
- Pupils can effectively use the mark scheme correctly and adapt work accordingly. This will clearly show progress in their learning.



## Modelling the thought process

Modelling how to use information flexibly, rather than memorising information for an exam.

### Criteria

(f) 4.48 (g iron) **and** 8.52 (g chlorine)

1

(moles Fe =  $\frac{4.48}{56} \Rightarrow$ ) 0.08

*allow correct calculation using incorrectly calculated mass of iron*

1

(moles Cl =  $\frac{8.52}{35.5} \Rightarrow$ ) 0.24

*allow correct calculation using incorrectly calculated mass of chlorine*

*allow (moles Cl<sub>2</sub> =  $\frac{8.52}{71} \Rightarrow$ ) 0.12*

1

(Fe : Cl = 0.08 : 0.24  $\Rightarrow$ ) 1 : 3

*allow correct calculation using incorrectly calculated moles of iron and / or chlorine*

2 Fe + 3 Cl<sub>2</sub> → 2 FeCl<sub>3</sub>

*allow multiples / fractions*

*allow a correctly balanced equation including Fe and Cl<sub>2</sub> from an incorrect ratio of Fe : Cl*

*allow 1 mark for Fe **and** Cl<sub>2</sub> (reactants) **and** FeCl<sub>3</sub> (product)*

**or**

*allow 1 mark for Fe **and** Cl<sub>2</sub> (reactants) **and** a formula for iron chloride correctly derived from an incorrect ratio of Fe : Cl (product)*

2

- Whose working is easier to follow?

- Who has more clearly followed the steps in the mark scheme?

- Why? What is it about how the work is laid out that makes it easier to read?

## What you could do:

- Scaffold a lesson to focus on a skill rather than a specific example. The lesson needs to build different practices of the specific skill. For this business lesson example, the skill of how to identify, apply and analyse different factors is taught before asking pupils to applying this new skill to different contexts.

### What pupils need to do:

- The first task requires pupils to list everything that goes into making a product, putting them into four different groups and categorising these groups with a heading. Pupils are then asked to rank these groups in order of importance.
- Pupils are then modelled the different ways in which they can segregate the factors of production.
- This is then broken down into the ways that they should be categorising any factors through 1. Identification and categorisation, 2. Connecting ideas, arranging accordingly and ranking, 3. Pupils then explain their judgements.
- Pupils are asked to apply this new 3-step process to a variety of different contextual examples before then being asked to write an 8-mark response to this question.

### When to try it:

- When teaching pupils a new approach to a certain skill or question. This approach could be applied to a variety of different learning habits.

### What to avoid:

- Pupils not fully understanding the process, with misconceptions that have not been addressed. As a result, they will find it challenging to apply their learning to different contexts.
- This approach must be revisited frequently. Not doing so will mean it is less likely to move into long-term memory and pupils will not be able to access all the requirements.
- Pupils not being given time to apply this approach to different contexts.
- Not explicitly sharing the success criteria of this skill-based approach with pupils.
- Teachers not using this as an assessment for learning tool to address misconceptions.

### How do I know that it has worked?

- When pupils can answer all questions, to some extent.

