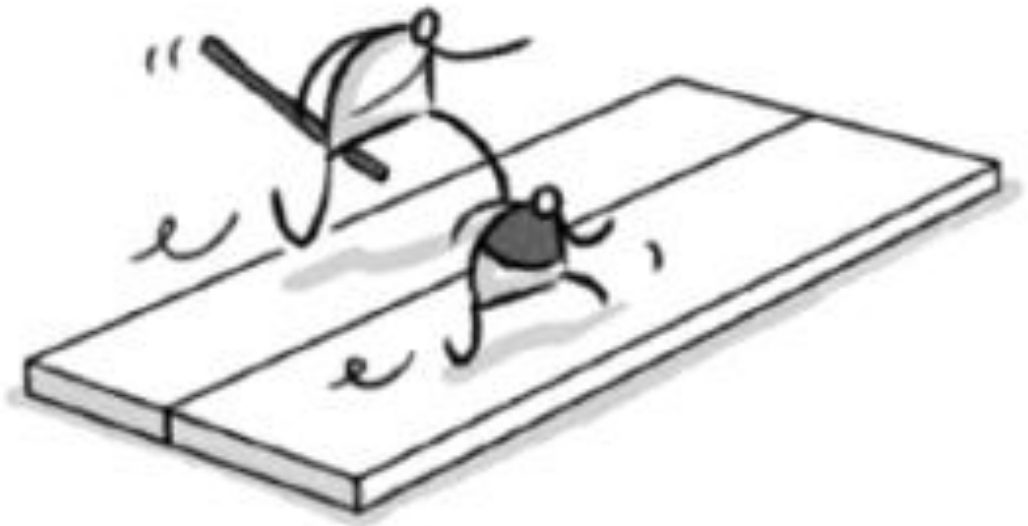


Modelling

CPD – Teaching & learning

Start with the end in mind

This session:

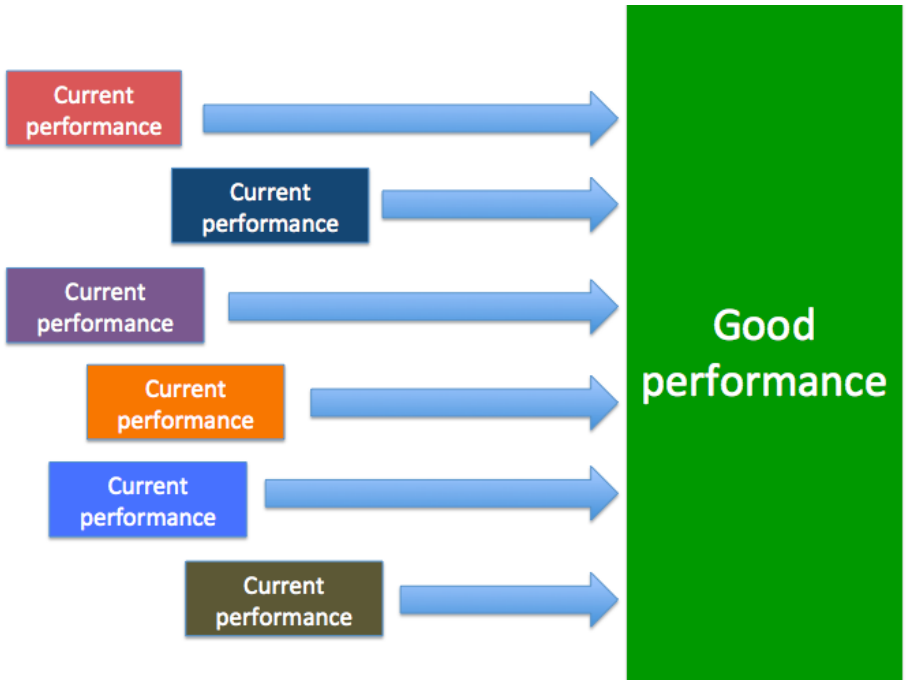
- What is modelling?
  - Great performance | Misconceptions | Processes
- Experience modelling across the curriculum.
- What does modelling mean for my subject?

Next CPD session:

- Explanation & Questioning.

What is modelling?

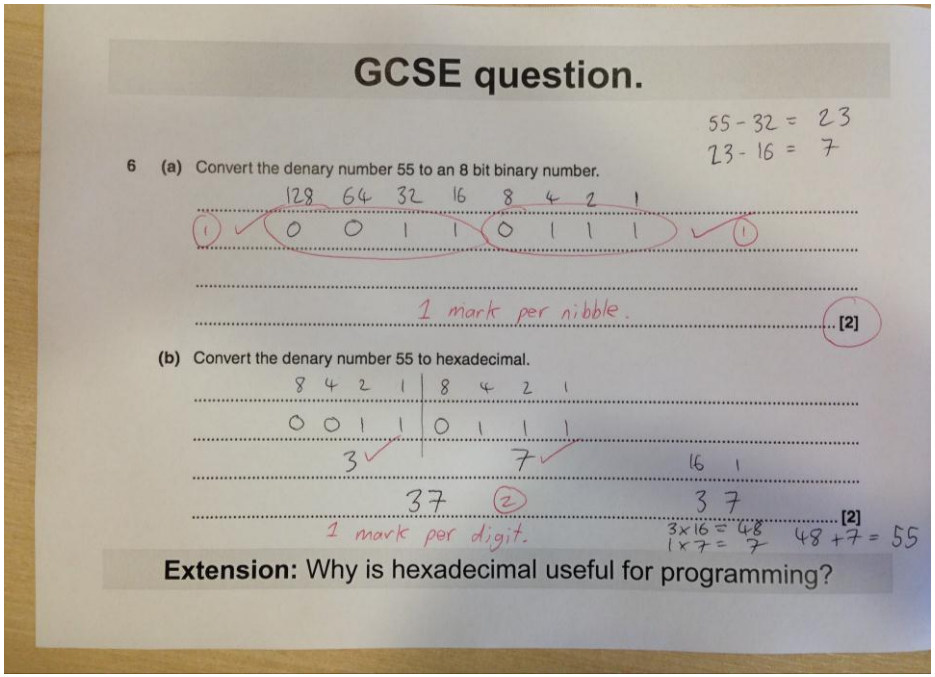
It's about the destination and deconstructing it.



What does **great performance** look like?

What are the **common misconceptions** of the skill / knowledge / process?

What about the **thought processes** (metacognition)?



GCSE question.

55 - 32 = 23
23 - 16 = 7

6 (a) Convert the denary number 55 to an 8 bit binary number.

128 64 32 16 8 4 2 1
0 0 1 1 0 1 1 1

1 mark per nibble [2]

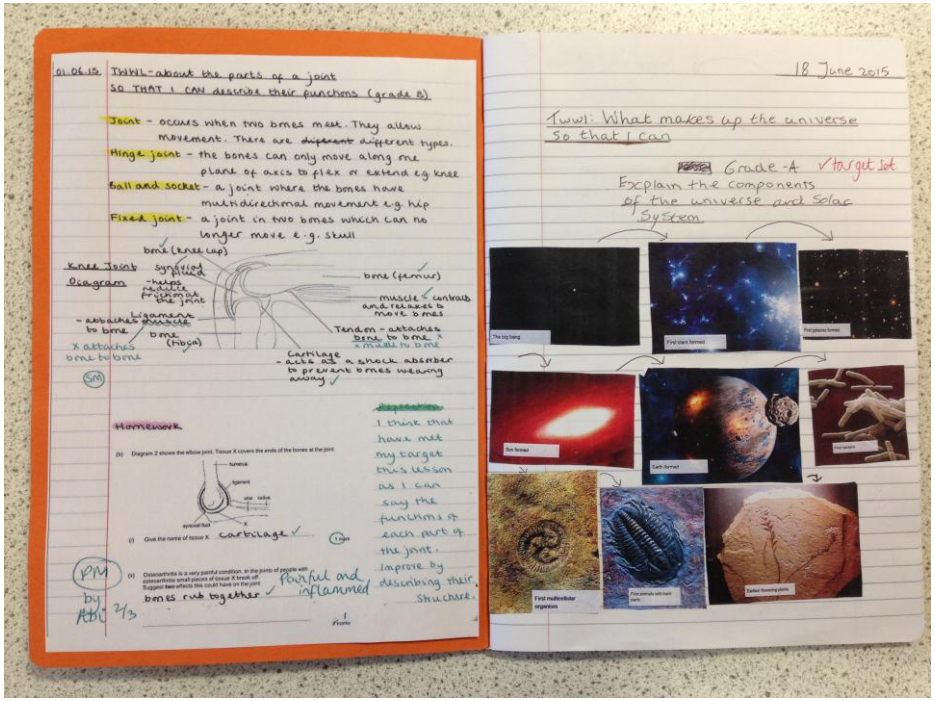
(b) Convert the denary number 55 to hexadecimal.

8 4 2 1 | 8 4 2 1
0 0 1 1 | 0 1 1 1
3 | 7
16 1
37 (2)
3 7 [2]

1 mark per digit.

3 x 16 = 48
1 x 7 = 7
48 + 7 = 55

Extension: Why is hexadecimal useful for programming?



01.06.15 TWWL - about the parts of a joint SO THAT I CAN describe their functions (grade B)

Joint - occurs when two bones meet. They allow movement. There are different types.
Hinge joint - the bones can only move along one plane of axes to flex or extend e.g knee
Ball and socket - a joint where the bones have multidirectional movement e.g. hip
Fixed joint - a joint in two bones which can no longer move e.g. skull

bone (knee cap)
Knee Joint Diagram
synovial fluid - helps muscle function and the joint
bone (femur)
muscle - contracts and relaxes to make bones move
Ligament - attaches bone to muscle
bone (tibia)
Tendon - attaches bone to bone
X attaches bone to bone
Cartilage - acts as a shock absorber to prevent bones wearing away

Homework.

(i) Give the name of tissue X Cartilage

(ii) Osteoarthritis is a very painful condition. In the joints of people with osteoarthritis small pieces of tissue X break off. Suggest two effects this could have on the joint. Painful and inflamed bones rub together

I think that have met my target this lesson as I can say the functions of each part of the joint. Improve by describing their structure.

18 June 2015

TWWL: What makes up the universe so that I can

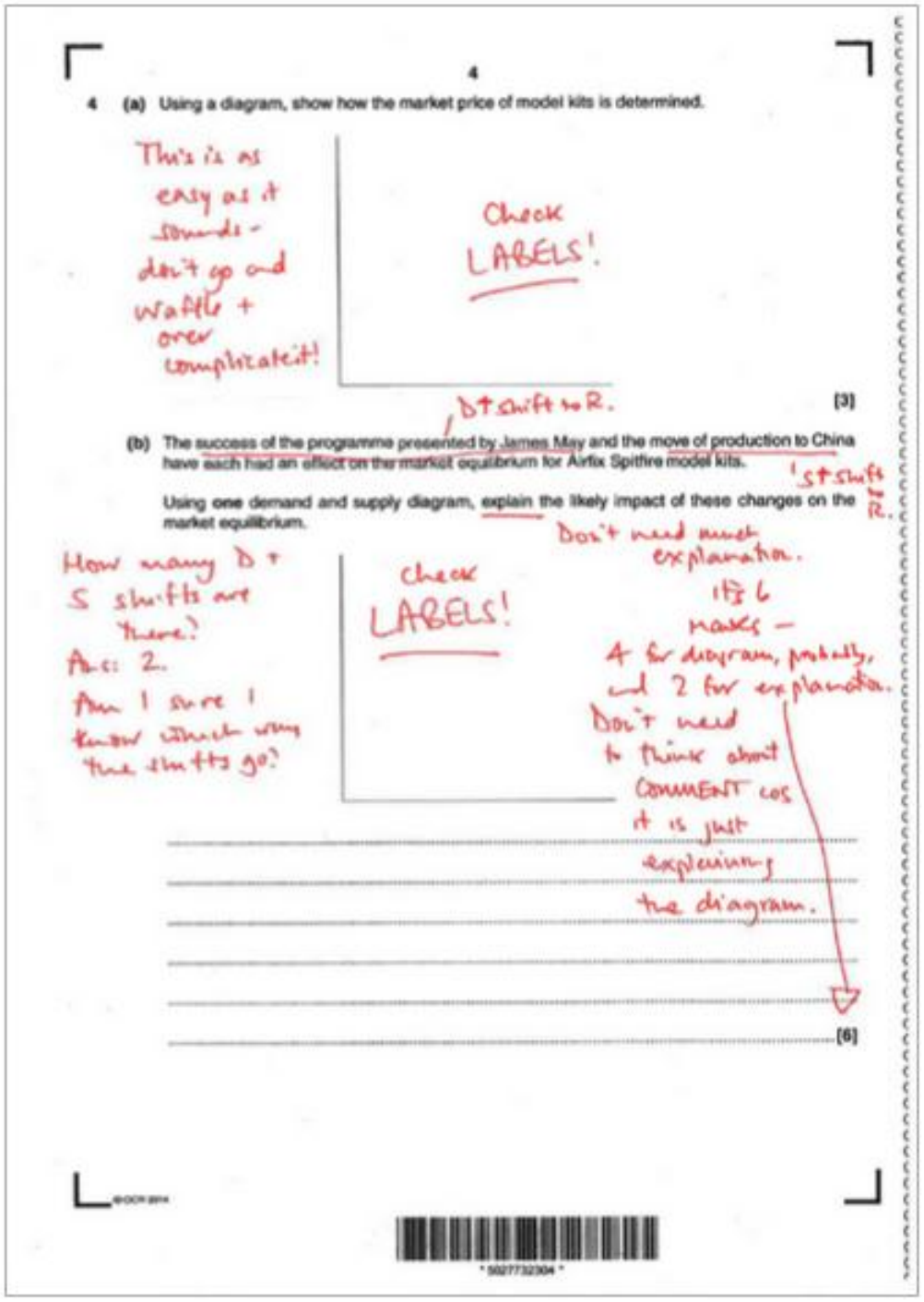
Grade A ✓target jot

Explain the components of the universe and solar system

Example.

Modelling using exemplar work.

Prepared or **Live**.



4

4 (a) Using a diagram, show how the market price of model kits is determined.

This is as easy as it sounds - don't go and waffle + over complicate it!

Check LABELS!

D↑ shift to R.

[3]

(b) The success of the programme presented by James May and the move of production to China have each had an effect on the market equilibrium for Airfix Spitfire model kits.

1st shift to R.

Using **one** demand and supply diagram, explain the likely impact of these changes on the market equilibrium.

Don't need much explanation. It's 6 marks - 4 for diagram, probably, and 2 for explanation. Don't need to think about COMMENT cos it is just explaining the diagram.

How many D + S shifts are there? Ans: 2. Am I sure I know which way the shifts go?

Check LABELS!

[6]

* 5027732304 *

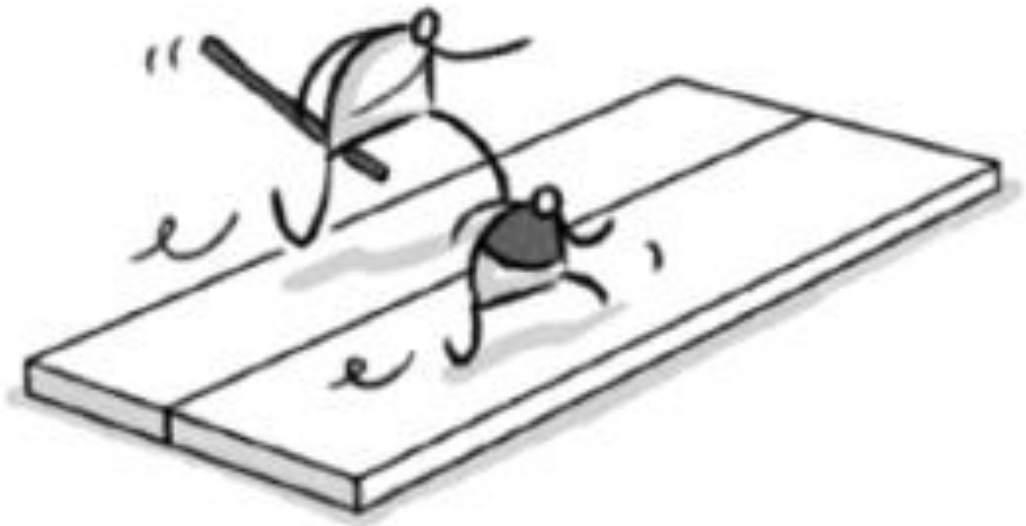
Example.

Modelling the thought process.

Why is **modelling** important?

Modelling is teaching.

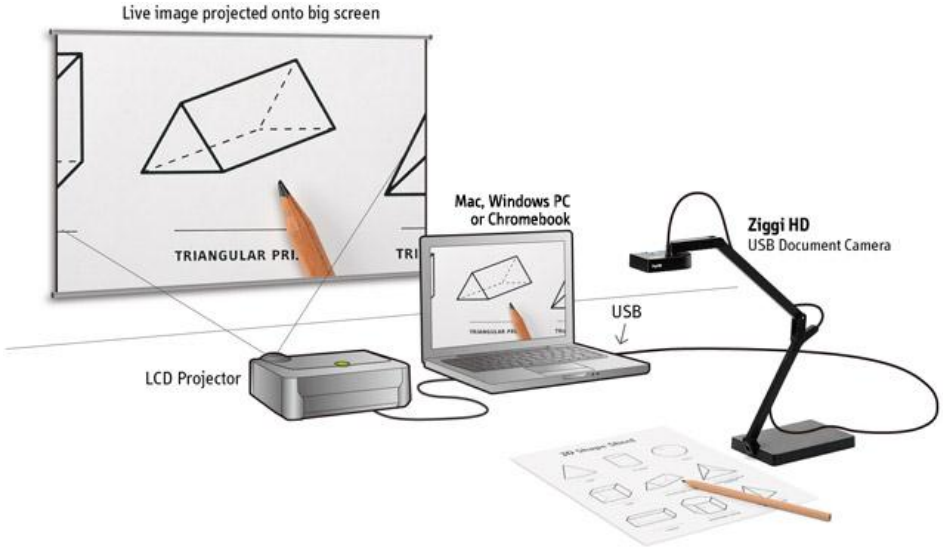
1. Sets a benchmark for excellence.
2. Makes abstract success criteria more concrete.
3. Dispels misconceptions.
4. Excavates thought processes (metacognition) from the experts.



Modelling Strategies

Modelling strategies

1. Live modelling.



Modelling strategies

2. Comparative modelling.

Model 1

The River Ganges flows from Uttarakhand in the Western Himalayas, through the Gangetic plain of North India and Bangladesh, until it empties into the Bay of Bengal. The third largest river in the world, the Ganges provides water and washing facilities for the millions of Indians who live along its banks. Not only is it a life source, but it is also considered sacred and worshipped as the goddess Ganga by India's Hindu population. In recent times, however, industrial waste and non-biodegradable religious offerings have led to the river becoming the seventh most polluted in the world.

Model 2

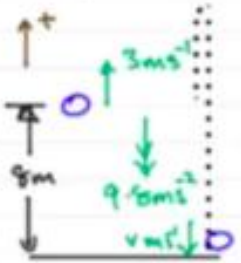
The River Ganges is in India and it is very polluted. It flows from India to Bangladesh and there are many religious offerings floating down the river. The mountains the river comes from are the Himalaya's where you will find Mount Everest. There is a lot of industrial waste in the river.

Modelling strategies

3. Exemplar student work.

A ball is thrown upwards from a balcony with a speed of 3 ms^{-1}, 8m above the ground. Find the time taken for the ball to hit the ground and the speed at which it hits the ground.

Take g= 9.8 ms^{-2}



$s = -8m$
$u = 3ms^{-1}$
$v = ?$
$a = -9.8ms^{-2}$
$t = ?$

using $s = ut + \frac{1}{2}at^2$

$-8 = 3t + \frac{1}{2}(-9.8)t^2$

$\therefore 4.9t^2 - 3t - 8 = 0$

$\therefore t = \frac{3 \pm \sqrt{(-3)^2 - 4(4.9)(-8)}}{2(4.9)}$

$= 1.620...$ or $-1.007...$ since $t > 0$

$= 1.62$ seconds (3sf)

using $v = u + at$

$= 3 + (-9.8)(1.620...)$

$= -12.876...$

$\therefore$ speed $= 12.9\ ms^{-1}$ (3sf)

using $v^2 = u^2 + 2as$

$= (3)^2 + 2(-9.8)(-8)$

$= 165.8$

$\therefore v = -12.876...$

$\therefore$ speed $= 12.9\ ms^{-1}$ (3sf)

Get into your teams

EXPRESSIVE ARTS

BUSINESS & TECHNOLOGY

COMPUTING

HUMANITIES

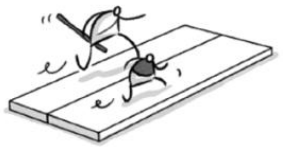
PE

SCIENCE

ENGLISH

MATHS

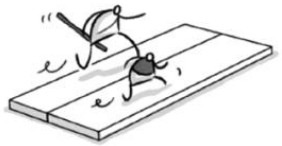
MFL



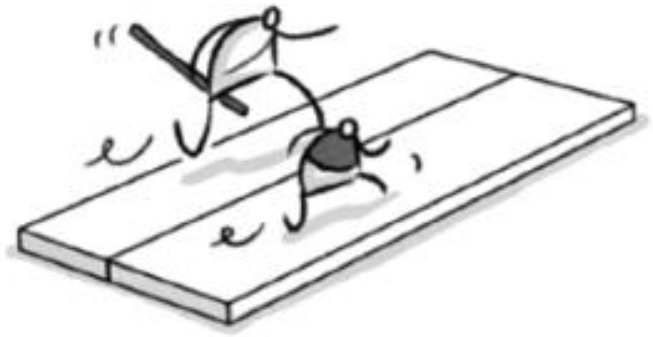
Experience modelling

1. **DBU (S13) – English – implicit thinking**
2. **AHA (FS2) – Science – Long answer questions**
3. **KMU (SA2) – Art – modelling work in a practical subject**
4. **LWI (S14) – English – super summary**
5. **MLE (Sports hall) – PE – practical skills in PE**

1. In teams decide who is going to which sessions.
2. You will need to take some notes and be prepared to report back to your team.
3. Return to Hive after.



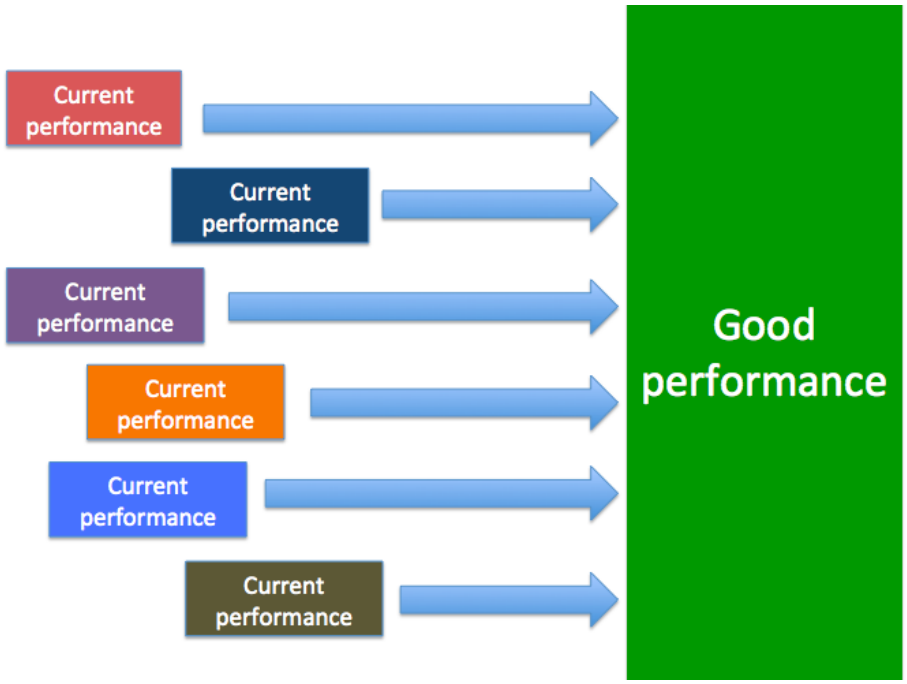
2. What does modelling look like in your subject?



1. In teams take it in turns to discuss what you've seen and experienced.
2. How will you embed modelling in your lessons and across your curriculum area?

Summary.

It’s about the destination and deconstructing it.



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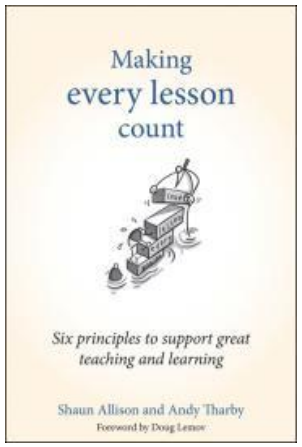
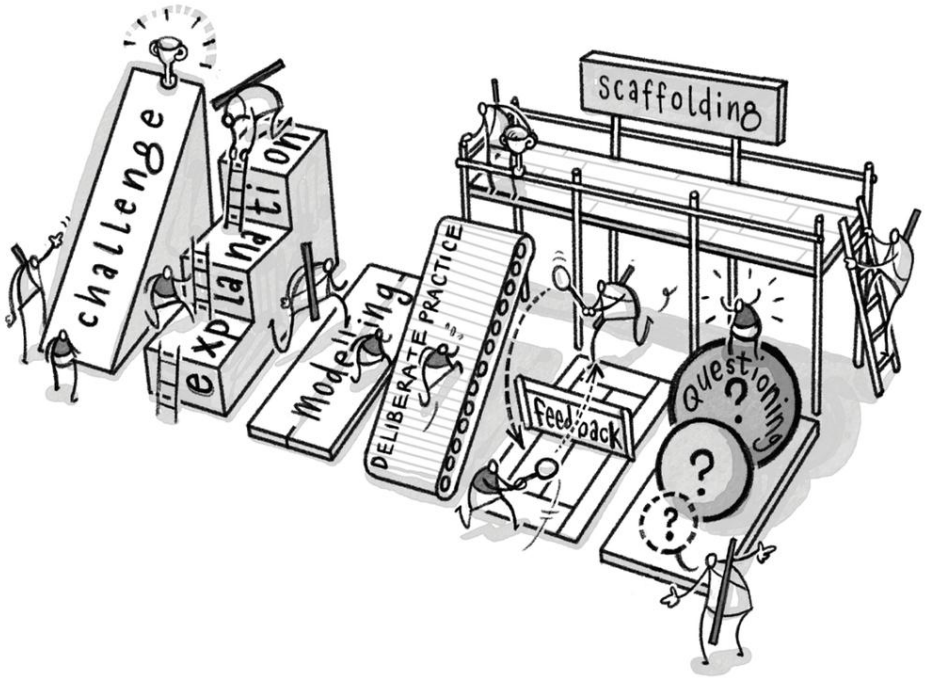
Further reading

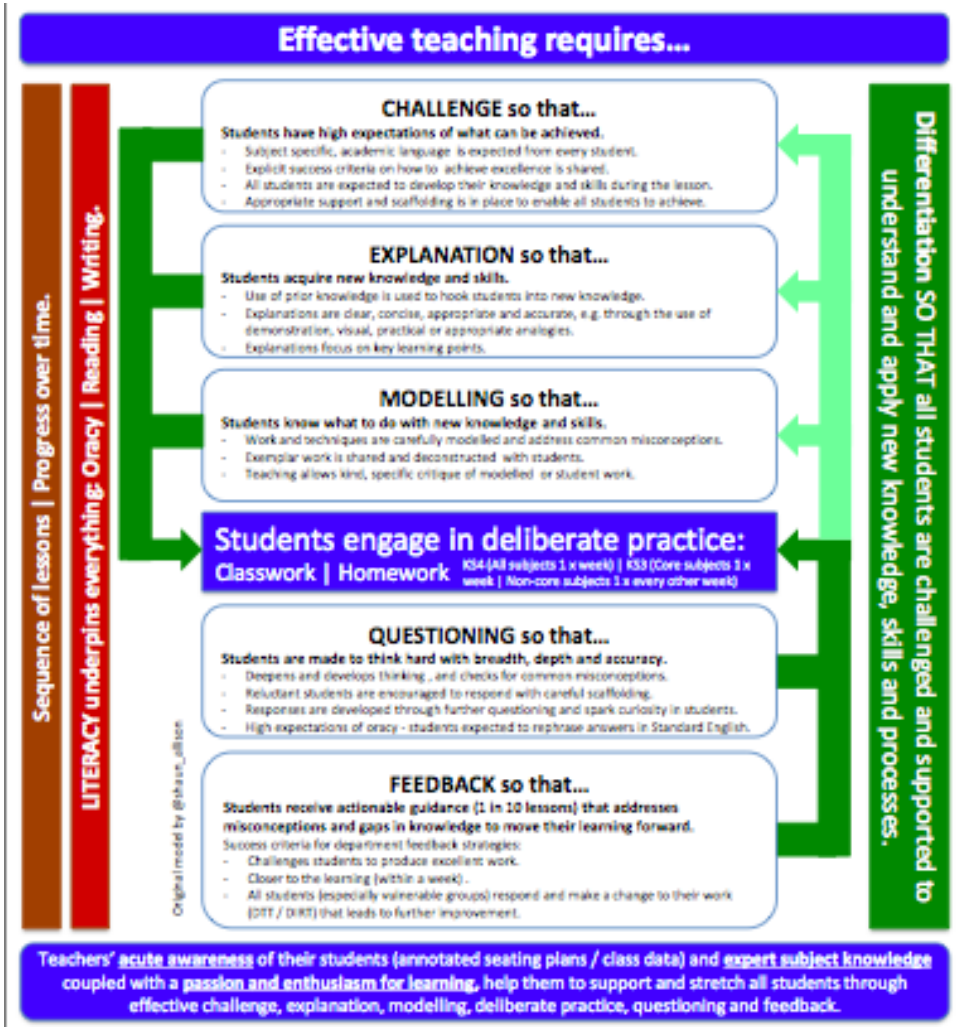
- http://johntomsett.com/2015/02/13/this-much-i-know-about-the-golden-thread-from-evidence-to-student-outcomes/
- https://classteaching.wordpress.com/2015/09/24/modelling-how-why-and-what-can-go-wrong/
- http://teachingandlearning.org.uk/2015/10/25/modelling-and-metacognition/?utm_content=bufferf5bfe&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer



BBA Edu book club.



CPD Terms 1 and 2 (6 sessions)



CPD Sessions

1. ~~Feedback~~
2. ~~Feedback policy~~
3. ~~Modelling~~
4. Explanation / Questioning

Teacher briefings

1. Challenge
2. Deliberate practice