

Assuming you wanted to,

- How would you seek to read students' minds?

improvingteaching.co.uk

What are they really thinking?

Getting close to mind-reading – how:

1) What is 'Assessment for Learning?'

2) What are hinge questions?

3) How can you use them?

improvingteaching.co.uk

Me

- Harry Fletcher-Wood
- History teacher, CPD leader
- AfL devotee (and hence blogger)
- Contact details at the end... improvingteaching.co.uk

What is Assessment for Learning?

- A simple, transformational (?) idea:

Using evidence of achievement to adapt what happens in lessons to meet students' needs

- Through: tasks to find out what they know, help each other, help themselves, give feedback to help them grow, share intentions

So – massive transformation in English schools?

- Implementation is complicated
 - ▣ Particularly when it involves getting teachers to change
 - ▣ And it's misused by the government
- Not our problem today...

Why?

(via Dylan Wiliam)

Intervention	Extra months of learning per year	Cost/year/classroom
Class-size reduction by 30% (i.e., from 30 to 20)	4	£20k
Increase teacher content knowledge from weak to strong.	2	?
Formative assessment/ Assessment for learning	8	£2k

improvingteaching.co.uk

There are loads of ways:

- But we will focus on just one: hinge questions.

improvingteaching.co.uk

Hinge questions – What?

- A multiple choice question.
- An immediate check of every student's understanding.
- Something which tells us: improvingteaching.co.uk
- 1) Have they understood?
- 2) If not, what has been misunderstood (and needs reteaching)?
- Teacher can then respond accordingly

Hinge questions – When?

A 'hinge-point' in a lesson:

- the end of an activity or an explanation
- the point when you move from one key concept to another

Ideally during the lesson before they write or discuss their wrong ideas.

Conceivably, at the end of a session (if you'll act on it next time!)

Hinge questions – Why?

- Provides immediate information
- Highlights misconceptions which might otherwise go unnoticed (don't get me started)
- Engages all students
- Develops teacher's knowledge
- Saves marking
- Is re-usable

improvingteaching.co.uk

Hinge questions – How?

Question carefully formulated in advance

'Distractors' around student misconceptions
(MCQ are hard!)

improvingteaching.co.uk

Quick to use – aim for:

1 minute for a student response

15 seconds to interpret responses

(See via mini-whiteboards, letter cards, fingers)

- Teacher responds accordingly
 - (proceeds, discusses, explains key point again, starts from scratch)

What evidence should we use to learn about life as a slave?

Which of these sentences best summarises the point of the first lesson:

When considering how much we trust evidence, we should think about...

- a) Getting evidence from the source
- b) Looking at the person who made the information
- c) Explaining how the features affect the evidence
- d) Analysing it
- e) Back up my evidence with more evidence
- f) Who they were, what they have experienced how they were linked to the situation
- g) The origin of the writer and what time they were in

improvingteaching.co.uk

How would you make your chosen answer better?



Which passage is the odd one out?

- I Alice is busy tonight. Working on her French essay.
- I We had History today. Learned about American politicians.
- I The smartest man in the state, perhaps in the country.
- I Durham offers many majors in engineering. Such as electrical, chemical, and industrial engineering.

www.improvingtraining.co.uk

Which passage is the odd one out?

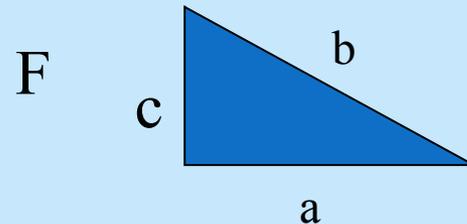
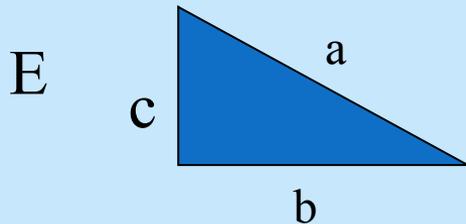
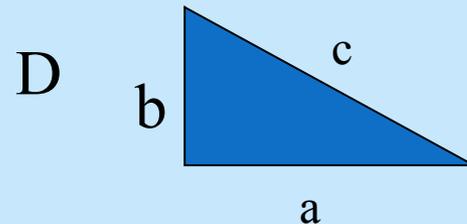
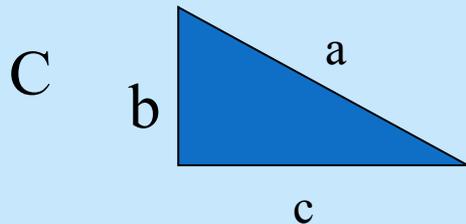
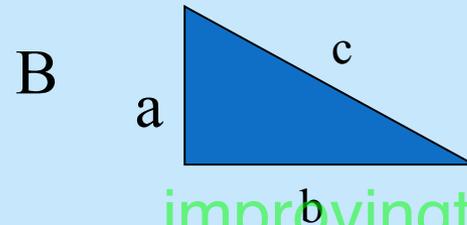
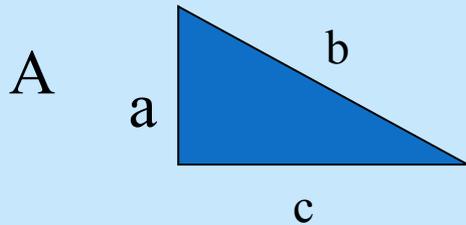
- I Alice is busy tonight. Working on her French essay.
- I We had History today. Learned about American politicians.
- I **The smartest man in the state, perhaps in the country.** No verb
- I Durham offers many majors in engineering. Such as electrical, chemical, and industrial engineering.

What do the rest have in common?

Questioning in maths:

Diagnosis (via Dylan William)

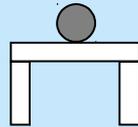
In which of these right-angled triangles is $a^2 + b^2 = c^2$?



improvingteaching.co.uk

Questioning in science: Diagnosis

(via Dylan William)



The ball sitting on the table is not moving. It is not moving because:

- A. no forces are pushing or pulling on the ball
- B. gravity is pulling down, but the table is in the way
- C. the table pushes up with the same force that gravity pulls down
- D. gravity is holding it onto the table
- E. there is a force inside the ball keeping it from rolling off the table

Hinge questions – How?

- Focus is around ‘misconceptions’ – answers which are close to the right answer – but wrong. So it’s meant to be tricky.
- Incredibly prevalent, completely ignored improvingteaching.co.uk

For example: $2.3 \times 10 = 2.30$

What causes flooding? Global warming

Martin Luther King ended slavery (in Britain)

World War I was Germany's fault because of Hitler

Well is not an adverb

A good hinge question has...

Examples – Why was Columbus so bold?

Interpretable responses, response discrimination:

“If students respond B they can only be thinking Y, not Z.”

Columbus risked death could mean the world was flat or sea voyages were dangerous in C15.

improvingteaching.co.uk

Rule discrimination:

“If students think Y, they will must choose B.”

Columbus could have fallen off the edge of the world

Exhaustive set usage:

“Whatever they’re thinking, there’s a response that fits.

Risk, novelty, uncharted, provisions, edge of world, etc...

Make us a hinge question...

Get together with others teaching your own subject

Pick a topic which you will be teaching

Pick an area students may struggle with. [improvingteaching.co.uk](https://www.improvingteaching.co.uk)

Choose a key question, right answers and common wrong answers.

Formulate responses...

(If you're doing really well, try them out on me/other groups).

What did you make?

Did it work?

What problems did you encounter?

How can you overcome them?

Will you use them? Why/why not?

improvingteaching.co.uk

The cheat's hinge

A statement is made (right or wrong, preferably wrong)

Who agrees? Thumbs up or thumbs down.

- That answer is well-evidenced
- Global warming is the sole cause of floods
- Gravity is a force

improvingteaching.co.uk

Thoughts on what happens next...

- 1) Student misconceptions live, grow & prosper
Student learning requires a redrawing of mental maps
- 2) Hinge questions are hard work
But they offer a powerful way to bring misconceptions out
- 3) It's not what you've got, it's what you do with it
The best hinge question is useless without action

Try it...

I have written a number of blogs about this:
improvingteaching.co.uk

If you have ideas or get stuck, get in touch:
[@HFletcherWood](https://twitter.com/HFletcherWood)
harry.fletcher-wood@teachfirst.org.uk