

# Questions Schmestions

In search of knowledge



## First of all, a quick GCSE maths reminder!

1. Expand the brackets
2. Solve this equation:

$$(x - 2)(x + 4) = 0$$

$$x^2 - 8 - 2x + 4x = 0$$

$$x^2 + 2x - 8 = 0$$

$$x=2 \text{ or } x=-4$$

# How did that question make you feel?

On a post-it note, please write down one Wow word that describes your feelings towards unsolicited mathematical intrusions!

1. Confident?

2. Confused?

3. Annoyed?

4. Stressed?

5. Switched off?



# Why do we ask questions of our learners?



Please take a couple of minutes to discuss on your table some of the reasons we ask questions in lessons

That exercise probably felt fairly pointless to most of you. Yet we ask questions of students in our lessons all the time without really thinking about what and why we are asking or what outcome we want from it (other than, hopefully, a correct answer!)

# Reasons we might want to ask a question in a lesson

The reality.. What are our unplanned questions like in practice?

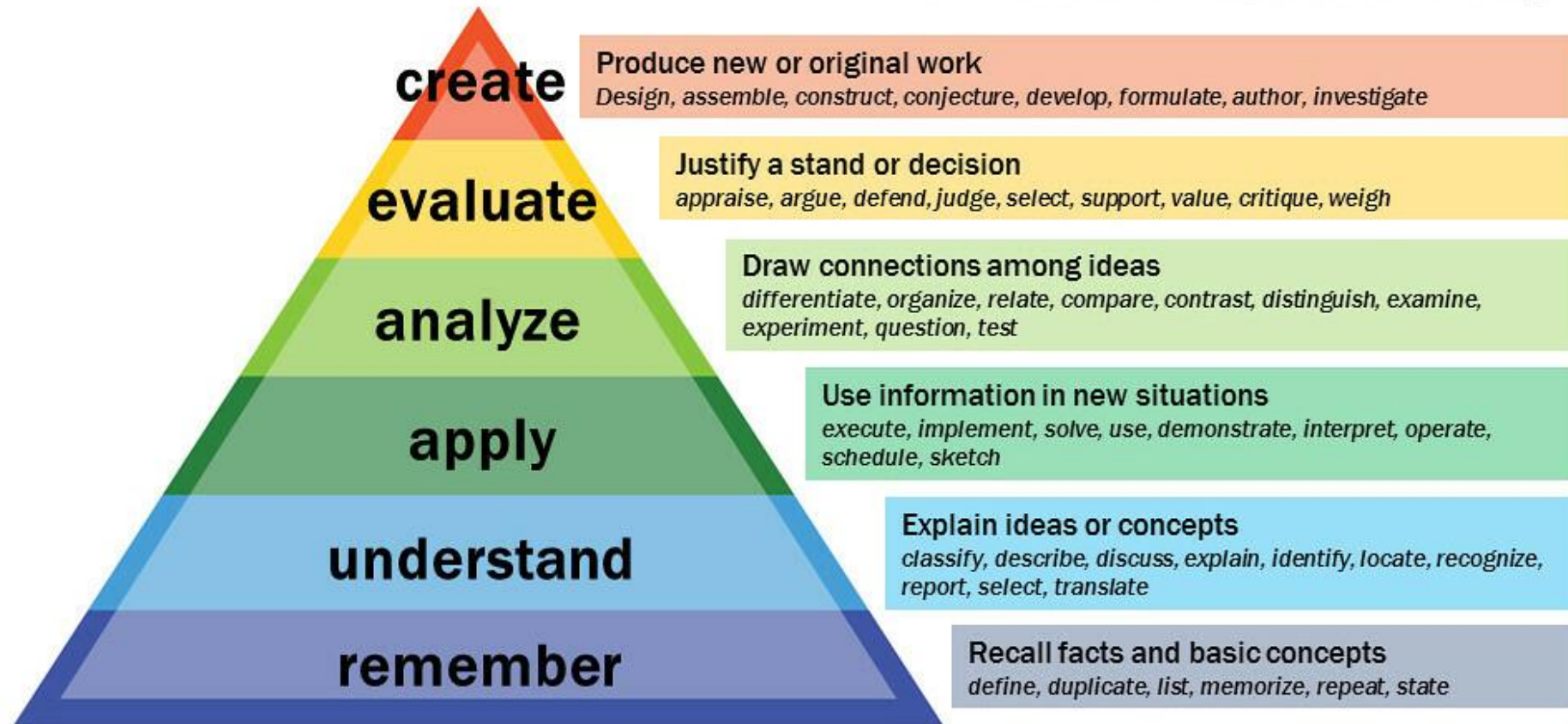
What do they achieve?

Is there a better way?

- To actively involve students in the lesson
- To increase motivation or interest
- To evaluate students' preparation
- To check on completion of work
- To develop critical thinking skills
- To review previous lessons
- To assess achievement or mastery of goals and objectives
- To stimulate independent learning

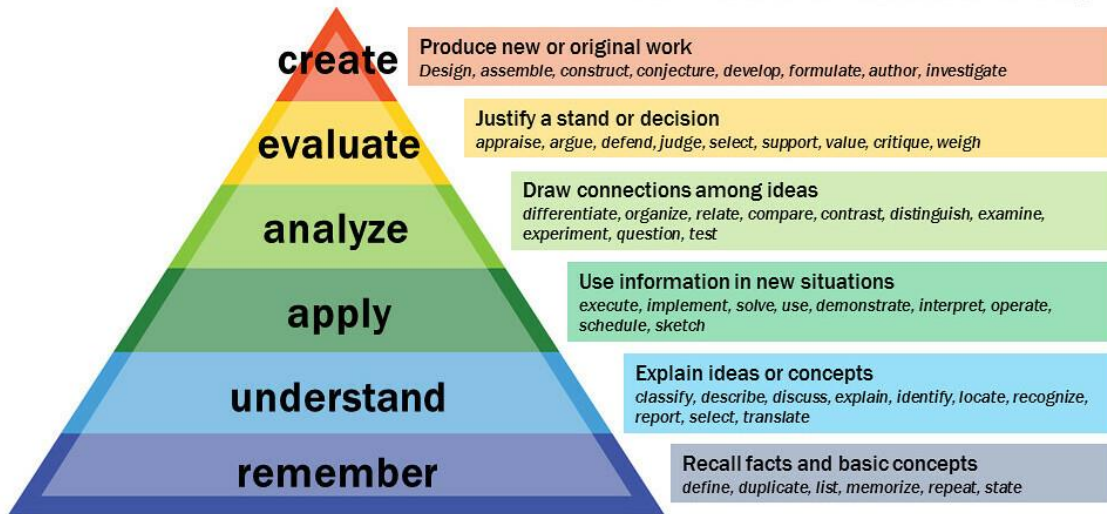


# Bloom's Taxonomy



# What question are we asking? Rallenwhatsit??

## Bloom's Taxonomy



Remember: What is the word we used last week for getting slower in music?

Understand: An alien has landed in your garden. He wants to know why the speed of music sometimes changes and what it's called. What do you tell him?

Apply: Can you play a different line of music and put in a rallentando?

Analysis: Did the rallentando sound right in that new line? Can you express why/why not?

Evaluate: Is it possible to do too much of a rallentando here? What would that sound like? How do we know we've got it right?

Create: Can you improvise a different phrase to end with that has an accelerando instead of a rallentando?



**How many questions should a teacher ask?  
At what point during the lesson?  
Who do you normally direct your questions to?**

Frequent questioning has been shown to be positively related to learning facts, but simply asking a greater number of questions does not facilitate the learning of more complex material. Just as with higher cognitive questions, it may be necessary to include explicit instruction to promote student learning of complicated concepts.



# The most common (and least effective) approach

**The 'volunteer' approach** – this is where the teacher asks a question of the whole class, some students put their hands up. One student is picked to answer the question and the answer is commented on by the teacher.

Why is this not an effective method?

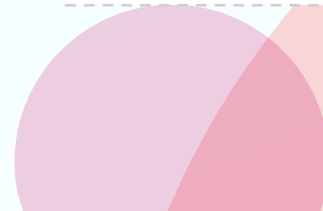
Many students keep their hands down and don't engage with your question for various reasons. Some will never engage.

You only learn what one student thinks, not how all the rest would have answered. You have no way of assessing the learning in the rest of the class.

Students don't discuss their thinking and correct or improve each others' answers.

The best students answer quickly, so there is little time for the others to think out their own answers.

For most students who didn't respond, it will be 'in one ear and out the other'. If a child didn't know the answer this week, chances are they won't next week either.



## Other methods: The cold call

– no hands up, anyone could be chosen to answer. Teachers select students based on their knowledge of the class. Inclusive, everyone is involved. Must always take place in a very supportive environment with carefully measured teacher responses.

### Pros

- Inclusive, everyone is involved and it demands greater attention
- No one has the option of opting out or not listening
- 'I don't know' is usually not acceptable

### Cons

- It takes time to embed and must be the default method of questioning in every lesson
- Susceptible to unconscious bias
- You need to know all names!! (but could use lollipop sticks)
- It's not useful for formative assessment in itself



## PPPB

– Pose, Pause, Pounce, Bounce. Similar to cold call; Pose a question, Pause to give thinking time, Pounce on a student to answer, Bounce the answer to another student to comment or expand on the previous answer.

### Pros

- As for Cold Call with the added factor of students peer assessing each other's answers

### Cons

- Same for cold call



## Think – pair - share

- 10/20 seconds to think of your answer, no talking
- 10/20 seconds to discuss your thoughts with the person next to you
- Any pair can get picked to share their answer with the class

### Pros

- Fully inclusive, everyone engages with the question
- Less socially demanding than cold call
- Children have time to form an answer at their own pace and expand on or improve each others answers

### Cons

- Can take a little bit longer than cold call or volunteer



# Whole Class Response

— For simple quickfire questions with yes/no true/false answers. Children stand / sit or some other indication of an answer for each question. For longer or more in-depth answers, use mini white boards

## Pros

- Fully inclusive, everyone engages with the question
- Less socially demanding than cold call
- Can be used with white boards for formative assessment

## Cons

- Only really works for simple closed questions





## Some ideas..

**Instead of:** Who can tell me what this part of the instrument is called?

**Try:** Last week I told you about 6 different parts of the instrument.

**Work with your partner to see how many you can remember and what they do. You have 1 minute, go!**

**Instead of:** Someone show me where you put your fingers for a C chord

**Try:** You are with a friend who has never even seen a ukulele before, how will you explain using only words and no instrument how to play a C chord?

**Instead of:** Is this music fast or slow?

**Try:** In your table groups answer this question. If this piece of music was an animal, what animal would it be and why?

**Instead of:** Where do we put our fingers to play an A on recorder?

**Try:** "OK, here's my A" #overblow a really awful note with fingers in the wrong place# "Oh that's terrible! On your white boards, write down everything you think I must be doing wrong"

## Final thoughts:

At its best, questioning can be the most powerful tool in our kit but at its worst it can be a complete waste of lesson time or counter productive in the wrong conditions

To get the most out of it, plan your questions in advance. What exact question will you ask? Who are you asking it to? What responses do you want to extract? How can you, the teacher, do less of the work?

With the person next to you, think about a set of questions you are likely to ask in the next 2 weeks. How will you improve those questions to facilitate deeper understanding and knowledge?

