****

**THE QUESTIONING PROJECT**

1. **BACKGROUND**

The Questioning Project has been developed by children’s educational charity the Learn2Think Foundation. Aimed at cultivating students critical thinking skills through the development of good questioning habits, it is a methodology that works within existing lesson formats rather than as a stand-alone bolt-on or an entirely new curriculum approach.

**Why questioning?**

Questioning can be seen as a measure of engagement and of depth of thinking. By pupils asking the questions they get to own their own ‘knowledge goals’. Ashwin Ram, whose background is in computer science, states: “The ability to ask questions is central to the process of learning, reasoning and understanding,” supporting Jill Anne Chouinard’s claim that, “The content of children’s questions parallel their conceptual advances.”

It is telling that levels of questioning fall off from the age of 5 and continue to diminish as children move through the school system. Is this because they’ve just stopped asking questions or because their motivations and engagement have plummeted?

Is it because we assume that asking questions is something children are born with, so we don’t need to teach it? Is it just a thing we do naturally? Does asking questions imply a degree of ‘not knowing’, which pupils are reluctant to admit to? Do teacher’s find the asking of questions disruptive?

At Learn2Think we believe that if teachers are given a framework for question generation at certain points of the lesson and pupils learn to use questions to further their own learning, questioning can be a powerful tool for increasing levels of engagement whilst teachers still lead the teaching process.

**‘Handing over’ elements of question generation to students is a mind-set change for the teacher, and yet it is a practical learnable skill for the student that will provide lifelong benefits.**

The Theory

We work with schools to share the theory behind the role of student -generated questioning in the learning process, so that practitioners and students can understand why it’s worth doing and how to implement the habit.

The Questioning Toolkit

We provide a set of tools for teachers to practice and apply the techniques. Starting with fun games and easy question-storms to get students familiar with asking questions, the toolkit then moves onto encouraging higher-order thinking with more complex question-stems and answer/question paths.

The aim is that students will learn to ask regular, confident and thoughtful questions, own their own knowledge goals and gaps, and become adept problem-solvers.

**INTEGRATING A QUESTIONING APPROACH**

**INTO YOUR CLASSROOM**

**Toolkit**

**PHASE 1**

**QUESTION-STORM - at the start of a new topic**

A reframing of the traditional brainstorm to get pupils coming up with questions rather than ideas. It will:

* Pique curiosity and stimulate engagement
* Link to prior knowledge but not require an ‘answer’
* Provide practise and eventual mastery of question generation
* Democratic – it’s not just the usual pupils asking questions and is a safe space for quieter pupils to offer a different perspective
* Set individual and class knowledge goals for a topic and establishing their ownership of the learning that is to follow
1. Introduce each new topic with a fun, provocative display (images, idea, quote, video) to pique curiosity using novelty, surprise and/or especially something they might disagree with e.g. Forest fires are good for plants. Children should not be given toys. Something that seems outrageous at first and will get them ‘fired up’
2. Use the 6 base question starter stems – Who? What? When? Where? Why? and How? Allocate one per table OR all question stems to each pupil

Explain that:

* 1. They have 2 mins to write down as many questions as they can in their exercise books or on Post Its – working towards a minimum 6, NB If they find it difficult at first, get them to write simple statements down, e.g. “But I like to play with toys”; then get them to turn those into questions: “Why do I like toys?” “When do I…” etc
	2. As in a brainstorm, it’s about volume and there are no ‘wrong’ questions. No answers are allowed
	3. They then reflect for 1 min and highlight their top 3 ‘best’ questions that they’d most like to find out about
	4. They then share their top 3 favourite questions with their table-mates, and then they agree as a group on the table’s joint top 3 questions
	5. Tables take turns to share their top 3 with the class and the teacher records the top picks in a class question book or on the white board
	6. These will sometimes duplicate and cluster together, in which case the pupils try and devise the best version of that question
	7. The class then chooses either the top question for each question starter (Who, What, When, Where, Why, How) OR the top 3 questions for the class. These are displayed for the remainder of the topic (for review later)

In English use this Question-Storm at the beginning of a new book e.g. looking at the cover of ‘The Boy in Dress’ could lead to them to generate questions such as ‘Why do some boys wear a dress?’, ‘How will he be treated?, Will he get bullied for it?’, ‘What does it feel like to be a boy wearing a dress?’

For maths, use this Question-Storm to stimulate curiosity about a new topic e.g. fractions to generate questions such as ‘When did we come up with idea of fractions?’, ‘How do I measure a part of an object?’, ‘What does half a cake weigh?’

Or for younger pupils, if doing the 3 times table, present them with 3 different stacks of 3 Lego blocks and get them to come up with questions e.g. How many are there and how do I know? What happens if I take 1 away? How can I make the tower bigger? Where did the blocks come from? (this might sound off topic but could lead to a creative discussion about where you see other things in groups of 3 or squared as 3x3x3)

*Teacher can award question of the day, topic, week to encourage in particular the pupils who are usually less vocal in class.*

**PIC’ N’ MIX - researching a topic**

* Generating higher order questions
* ‘Owning’ their research

This is designed to get pupils to generate their own research questions and goals and to then assess how effective the different questions were. It can also be used in English to gain greater insight into what they are reading and in developing characters, locations or plots in their writing.

1. Give groups of pupils a focus e.g. avalanches, a character in a story they are writing
2. Use the ‘Pic’n Mix’ columns of question stems below (which can create 36 different questions)
3. Pupils get 2 mins to generate 3 questions they’d like to research or use to develop their writing OR use to write their own maths problem related to the topic they are studying
4. They take one word from each column to create their questions:

Who is

What did

When can

Where will

Why would

How might

e.g. Who might survive an avalanche? How can an avalanche start? When is a person most in danger from an avalanche? OR Why did your character go to London? Where will she go next? What is her worst fear? OR How might I turn this fraction into a decimal? When would a fraction work better than a decimal?

1. Share questions with the group and agree on which questions they are going to choose
2. After they have completed their research or piece of writing, get pupils to reflect on which questions were the most useful? Highlight them in their books and discuss as a class

**JEOPARDY GAME - reviewing a topic**

* Practise turning answers into questions
* Consolidate learning in long-term memory
* Useful for interleaving and pre-test revision

This fun JEOPARDY game can be used at any time and is a fantastic way to assess and review learning and consolidate it using recall

1. Teacher to provide the first answer e.g. rainforests
2. Hands/thumbs up to provide the question that the teacher is answering, in this case something like, “What are the earth’s oldest living eco-systems?”
3. Whoever questions ‘correctly’ gets to give the next answer related somehow to the topic they have been learning

**OTHER IDEAS**

* Have question stem pots for pupils to randomly select from
* At the end of every class, teacher offers a speculative question of their own, then the pupils write down a question they have from that class
* Set question generation homework e.g. come up with questions about prime numbers e.g. how many are there? Why do they exist? When do we need to use them? How can I recognise one?
* For younger children put a question on a sticky note and send them home with it to discuss with the adults in their lives at home. Report back the next day

**DEVELOPMENT PHASE**

**QUESTION CATCH/BASKETBALL GAME – a mental warm-up for any-time**

* + Practise generating questions
	+ Collaboration
	+ Making connections
1. The teacher starts with a question that uses either the simple stems (who, what, when, where, why, how) or one of the following:

Do you think that….?

What are the similarities/differences…….?

How effective is……..?

What would happen if……….?

Why did……….?

Do you believe that….?

What if we found out that…?

1. They then send the question to a pupil. Rather than answering it they have to generate another related question e.g. teacher asks, ‘What would happen if humans lived in trees?’. Pupil builds with, ‘Why did they choose trees?’, followed by, ‘Do you believe that a tree could be comfortable?’, and so on
2. With this game they do not have to stay on topic. It’s fun to see how big and bizarre the questions can get

**MAKING CONNECTIONS - near the end of a topic**

* Make connections – identify patterns and linkages
* Analyse, synthesise and evaluate information
* Develop reasoning skills
* Create a learning trajectory

At the end of the topic get pupils create links across this, and perhaps other topics

1. Provide pupils with a choice of these more complex stems to generate their questions from:

What are the similarities between……….. and………..?

What are the differences between……….and………?

Do you think that….?

What if we found out that….?

Do you think……is good or bad?

How effective is…………..?

What would happen if………….?

Why did…………?

1. Get pupils to generate one question
	1. E.g. ‘What are the differences between rainforests and woodlands?’
	2. OR ‘What would happen if the denominators are different on my fractions?’
2. Then they need to come up with the answer
	1. E.g. ‘Rainforests need much higher rainfall to survive’
	2. OR ‘You can’t compare them easily or add them up’
3. Based on this answer, then generate a second linked question from the list above
	1. E.g. ‘What if we found out that global warming was going to negatively affect rainfall?’
	2. OR ‘Do you think that it’s easier to work in decimals than fractions?”
4. Do this a third time
	1. E.g. “What would happen if we lost the rainforests because of global warming?’ leading to an answer such as, ‘We’d lose a relative percentage of the world’s oxygen and biodiversity”
5. Pupils should record all of this in their Question Journals
6. Consider using the question building exercise above for the structure for a piece of writing

**CONTINUING THE LEARNING – at the end of a topic**

* Cool things to think about
* Generation of creative problem-solving questions
* Keep learning on-going, open-ended and relevant

Pupils to first review the questions in their Journals that they had at the beginning of the topic. Have they answered them all? Where did they get to? Discuss as a class

End the topic with the generation of creative questions to keep the thinking and learning going. This reinforces the idea that answers are not ‘the end’ and keeps pupils wanting more…..

1. The final question-storm is about cool things to think about
2. Link questions to actions and results
3. Use the stems:

What if we could….?

How could we…..?

Can you imagine how…..?

It is questions like this that have inspired audacious and powerful initiatives, such as Boyan Slat’s attempt to clear the Great Garbage Patch in the eastern Pacific which began with question, ‘why is floating ocean plastic so difficult to clean up?’. He went on to spend several months with Profs and industry experts compiling a list of 50 questions that needed to be answered to confirm feasibility (see this inspiring [Boyan Slat interview](http://time.com/5389782/boyan-slat-plastic-ocean-cleanup/))