
30+ Quick and Easy Starters and Plenaries



A resource developed to support high schools in response to the national strategy for science.

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30 Odd Quick Starters and Plenaries



- This resource contains over 30 starters and/or plenary activities for use in the classroom;
- Each activity is designed so that it requires little (or no) preparation;
- Most of the activities are designed to support 'Literacy across the Curriculum';
- These activities can be modified for any subject although only science examples have been given;
- Starters and plenaries should be used to support and strengthen lesson objectives and learning outcomes and;
- This resource can be used in conjunction with the QCA SOW and has been developed with that in mind.
- Good luck!

30 ODD QUICK STARTERS AND PLenaries



BingOXO

This starter/plenary helps to develop literacy skills and is quick and fun. You may have keywords on the board, on the wall or just write up twelve important words from the lesson.

- Ask the students to draw a 'noughts and crosses' grid in rough;
- Ask the students to write one word, from the board, into each space. Make sure that they mix them up. Use more than 9 words!!
- For younger students use pictures on a pre-designed laminated card.
- Tell the students that you are going to give a definition or clue for each word. If they have that word then they cross it off.
- The first person to get a line of three (including diagonals) wins. They should shout 'line!'. You can extend the game by going for 'house!'.

E.g.

seeds	root	stem
flower	plant	tree
seedling	weed	branch

branch flower root stem seeds
seedling plant leaf weed tree

Q. Forests and woods have lots of these big plants in them. etc

WordWhack! (Wordsplatt!)

This activity can encourage students to make judgements about words/statements.



- Put up two or more words or statements on the board.
- Choose two students to stand by them.
- Explain that you are going to read out a question and one of the words on the board is the answer, They have to whack the board with their hand next to (if in board pen) or on (if on card/paper+blutack!) the answer that is correct. The class votes on who is first.

- The loser returns to their seat and the winner gets to pick a worthy opponent.
- You can carry on the game as long as you feel necessary.

E.g

Q. A shopping trolley at the supermarket

push



pull

Countdown

Just like the TV programme with Carol Vorderman.

- Put up a jumble of 10 letters (make sure to have some vowels) on the board.
- Give the students three minutes to come up with the longest word that they can find in the jumble.
- Alternatively, you could put up a long scientific word (e.g. photosynthesis) and get them to come up with as many science words as they can.
- You could get them to work in groups.
- This could also be used as the countdown conundrum. Pick a word from the lesson and jumble it up on the board.
- If you are feeling creative you could make up cards with consonants and vowels on and do it the real way!

E.g on a topic on Light and Dark put up the following letters:

s	r	d	u	o	a	e	t	k	m	n	o
---	---	---	---	---	---	---	---	---	---	---	---

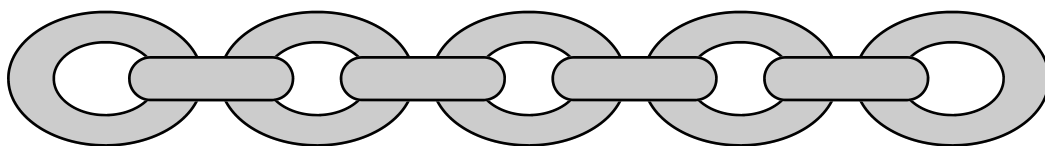
Associations

This activity can help to review and enrich students through imaginative association.



- Start by suggesting a word from the lesson, 'metal', for example.
- Ask a student to suggest one word that this suggests to them. It might be 'shiny'.
- The next student then suggests an association with the word 'shiny' and so on around the class. You could write them on the board and label the links.
- You can set a target for the number of non science words that can come out. If a student comes out with an ambiguous word the class votes (thumbs up, thumbs down).
- Maybe give a reward to students who associate a key word from the lesson or are clever in the choice of words.

Chain Story



This activity is very useful for encouraging students to apply science knowledge and understanding to a model, be creative and use imagination and also to help them to complete whole sentences.

- Explain to students that you are going to start of a story about science.
- They must add the next sentence of the story.
- The story then moves around the room.

This is a very good exercise because you may be able to spot misconceptions in students knowledge and understanding.

E.g. Teacher says: 'I am a tooth in a person's mouth'

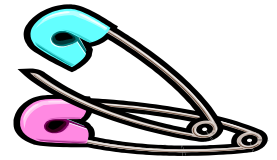
Student 1 says: 'I chop up food'

Student 2 says: 'I am sharp '

etc.



Connectives



This activity is designed to encourage students to make extended statements using connectives (linking words). You can use any science statement as a starting point. This is also a useful activity in developing skills in 'Sc1' particularly in interpreting.

- Create a connectives OHT or poster. Here are some words to include:

And because but however
such as therefore which to
when if then

- Put up an incomplete statement on the board followed by dots and encourage the students to complete the sentence/statement.
- Encourage them to try to use more than one connective.

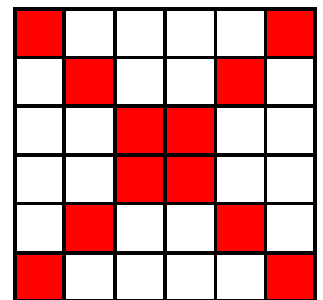
E.g.

Statement: "Eating too many sweets is bad for you...."

Student: "because it can make you fat and unhealthy!"

CrossWords/Acrostics1/Scrabble

This is an alternative activity to brainstorming!



- If used as a starter then the teacher should think of a word.
- Photocopy a 20 by 20 grid onto an OHT and project it onto the whiteboard
- Or, if used as a plenary, ask a student to write a key word from the lesson on the board. Tell them to write it horizontally in the middle of the board and to write it clearly and spaced out.
- Ask other students to think of other words from the lesson that share one letter with the one on the board.
- Students can then add word vertically to the first word.
- They can then add words in alternation, horizontally and vertically.

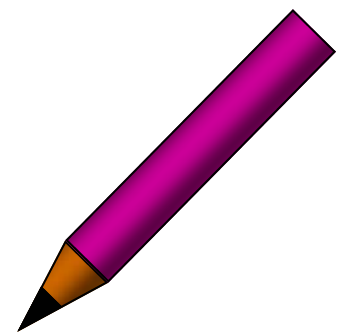
- This can also be used as a guessing game. If a student comes up with a word then they can give the class clues!
- You could also use as an acrostic poem exercise! Or as a Mnemonic aid!
- It helps to develop team work!

E.g.

Teacher writes 'circuit' in the middle of the board

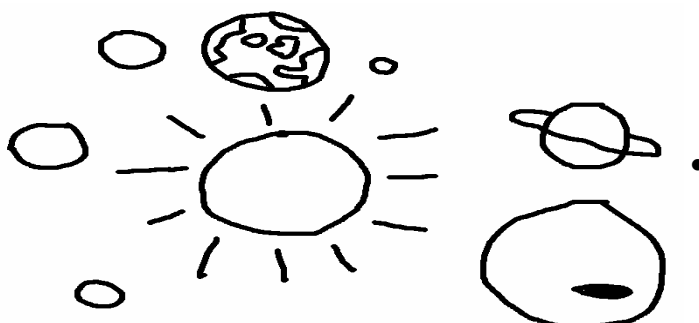
Student puts up hand and comes out to the front. They point to the 'u' and then gives a clue, 'gives out light'. Another student then puts up hand and says 'bulb'. The first student says 'correct' and the second student writes 'bulb' vertically. The game continues and it could end up like this:

	s					b			
	w			b		a			
c	i	r	c	u	i	t			
	t			l		t			
	c			b	r	e	a	k	
	h					r			
						y			



Pictionary

- Whisper to one student, or write down on a slip of paper, a word or phrase that the class has recently covered.
- The student has two minutes to draw a representation of this on the board.
- They cannot use letters, numbers or symbols (including circuit symbols!).
- The person who guesses it has a go next.
- If the nobody guesses it then it is a point to the teacher.
- You could get them to guess in teams!



= solar system!

Expand those Headlines!

This is a useful activity to help students think about building grammatical sentences and for being creative.



- Write up an abbreviated headline. For example, "HUNGRY CATERPILLAR NEEDS FOOD" or "BREAK IN WIRE STOPS LIGHT" or "TWO MAGNETS WONT STICK TOGETHER".
- The students have to write the headline out in a full sentence form.
- Take feedback on different answers.
- Groups can then use science knowledge and understanding to expand the headline further.
- You can set the maximum number of sentences.
- More able students may want to keep to a one sentence limit!
- Students/teacher vote on the most informative sentence(s).

Expanding texts

This activity is quick and will encourage students to develop sentence construction skills by adding words or phrases.



- Write a simple noun, verb or word pair related to the topic on the board.
- Encourage students to add one, two or three words to it.
- Say that the focus is on science.
- The class go on adding words making a longer and longer text.
- Students can only add at the end or beginning of what is already written.
- You could select a student to be the punctuation 'king or queen'. They can suggest where changes need to be made.
- Does it make sense?

E.g.

fair test

experiments must be a fair test

experiments must be a fair test by controlling variables

All science experiments must be a fair test by controlling variables

Etc.

Fact or Fiction (Call my Bluff)



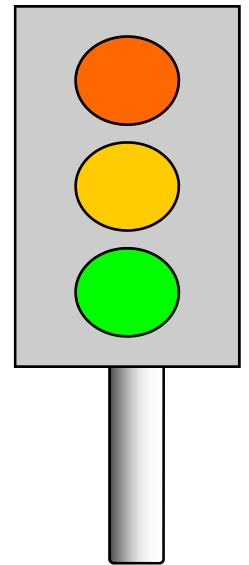
This activity will encourage students to think about misconceptions, other explanations, contradictions and phrasing in science. It also helps to give students ownership over their learning experience.

- Ask all of your students to write a statement that is either true or false based on the topic you are doing.
- You may need to give an example, e.g. Weight is measured in kilograms.
- Select a student to read out their statement. The rest of the class can then vote if they think that it is true or false (thumbs up/down, traffic lights green/red - see below).
- Continue with other students.
- You have the ultimate say in whether it is true or false.
- You could get them into teams, benches, boys against girls etc. Keep a record of the scores.

Traffic lights

This is the most widely used starter or plenary. It requires a little effort to make but is well worth it. You will need:

- (Laminated) red, orange and green card cut into equal size squares or rectangles.
- Punch a hole in the top left hand corner of each.
- Use a treasury tag to produce a fan wallet.



You can make a class set or get students to make their own. Some schools have coloured pages put in their planners. Other schools get the students to stick coloured paper on the inside front and back covers of their exercise books.

- Use in true or false quizzes.
- Use to test understanding (understand=green, don't know=red, unsure=orange)
- Use for agree or disagree in debates.
- Use for answer a,b or c in a multiple choice.

Handy Plenary

This can be used as formative assessment. It is quick and easy and the questions can be modified for different situations. Use at end of lessons, topics or year. Why not get them to draw around their hand and write answers on their fingers and thumb.



- You use your hand to represent different ideas. You must explain the thinking behind the activity to students.
- Thumb = good thing (thumbs up)
- Index = point to someone and what answer they gave to a question
- Middle = bad thing (think about it!)
- Ring finger = thing I like or love (ring=relationship)
- Little = one thing I remember (r shaped)

E.g. Formative questions

What was one thing that you were good at in the lesson?

What good answers did we get off people?

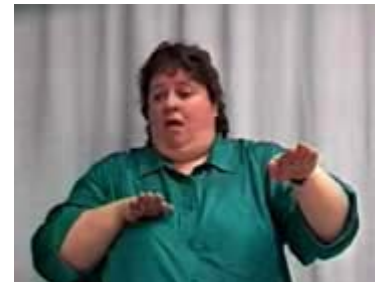
What one thing did you not do well/like in this lesson?

What did you enjoy doing the most?

What is one science fact/idea/model that you remember?

Question Game

- Write a key concept/word/idea on the board.
- Spider diagram the following question words around it:



What? Why? When? Where? How? Who (if appropriate)?

- Encourage students to have a go at one of the questions.
- This can be done with a picture on an OHT as a focus for a discussion.
- This is also useful as a starter for Sc1 investigations.

I have also used British Sign Language questions to help students to think of questions. This is good for citizenship. It is also good for Kinesthetic Learners!

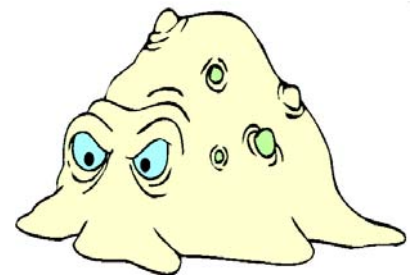
Alien (only for the brave teacher!)



- Exactly the same as the question game but you role play being an alien.
- Students must try to use different ways of explaining the key word/idea/model.
- This will encourage them to develop other ways of explaining concepts.
- They are trying to be teachers.
- Try to use the What, Why, When, Where, How, Who statements.
- Play dumb. This really winds students up.
- Maybe try to get them to come up with explanations in groups or pairs.

Questions about a statement

- Take a sentence which is a statement of fact - true, false, absurd, it does not really matter.
- Give them a list of question prefixes (e.g Why? How?)
- The students try to see how many questions they can ask about it.
- For example:



Medicines are very dangerous

Possible questions;

What is a medicine?

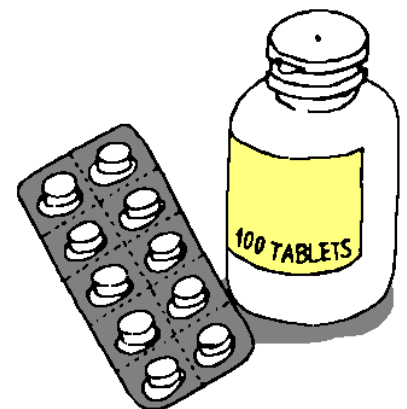
What medicines are dangerous?

How do medicines work?

Why do we need medicines?

What should we do with medicines when we have finished with them?

Etc.




- As an extension/homework you could get students to answer one of the questions!
- You could record questions on a tape player or video (with parents OK!)
- These could be a starting point for answering questions or a pointer to what you could do in the next lesson!

Dodgy Answer Cartoons (based on concept cartoons)

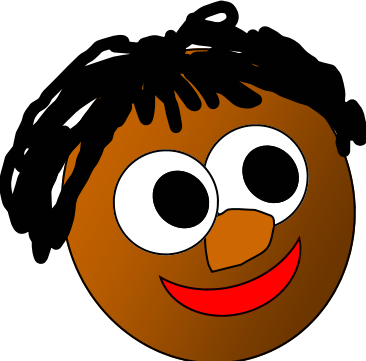
These are a fantastic way of starting or finishing lessons. They provide a starting point for open discussions about scientific ideas.

You can buy books of concept cartoon or you can make up your own. Stick figures are great and you don't have to be Leonardo Da Vinci to create them. Look for cartoons in magazines and books.

Here is an example based on the gases around us!



There's nothing in the air. It's just empty. That's why you can see right through it!

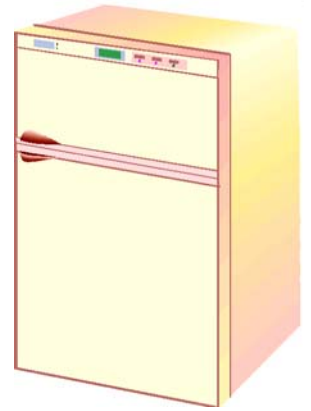


What is the wind then? I can feel something bumping into me.

- You have a lot of experience of students getting mixed up, muddled up, getting the wrong end of the stick, using popular misconceptions. Use these as a basis for finding out what % of the class has these misconceptions.
- This is very useful in exam revision. Give them the wrong answers and ask them to say why students might have this idea.

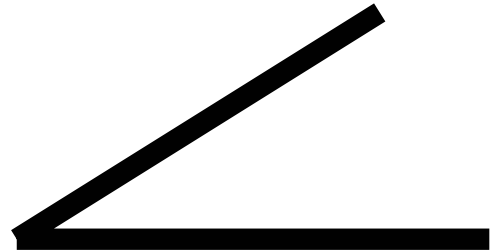
Selling Freezers to Eskimoes

- This is a fun activity for students.
- It works particularly well in groups with one person responsible for trying to sell to the rest of the class.
- Give students something to sell, e.g. a sunflower seed, a battery, a magnet, a thermometer, a Newton meter, The Sun, a flower.
- To make it more real you could give them the objects or pictures of the objects.
- Encourage students to think about using persuasive language.
- Encourage students to argue why someone might need it.



Unusual view

- Draw/find familiar science objects from an unusual point of view.
- Encourage students to come up with different ideas.
- Only tell them what it is after at least four ideas.
- This is great for things like cells, laboratory equipment, states of matter, electrical circuits etc.



(ps it's a birthday card lying down!)

Word/Concept steps

This activity is very useful when looking/ revising concepts that can be graded

objectively, parts of a plant, healthy vs unhealthy foods, hot vs cold things, light vs dark things, things in the solar system etc.

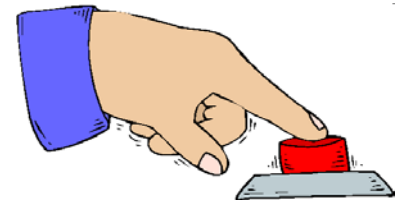
- Draw a set of steps on the board.
- Place a word on a step. Set what the step means (e.g. higher =further away from the Earth)
- Invite students to place objects on the steps.
- This can be extended by getting students to write sentences about each word. Each sentence should include a statement linking it to other words and why it is positioned.



E.g. Healthy vs unhealthy foods (Done as pictures for younger students)



What the *\$%@ are they talking about?!



- Write a sentence on the board in inverted commas; this should be a piece of conversation that has been overheard.
- The students have to guess what the person was talking about and anything else that they can work out from the situation.
- Who is the speaker? What is relationship? What are they talking about? Who are they talking to? What is the topic of conversation? What might they have already said? What might they say next?

E.g. In the context of a lesson on magnets:

"But I think that it's the same poles that attract"

For a lesson on Changing State:

"Cooling it to 0°C will make it turn into a solid"

For a lesson on plants:

"They need water and warmth to start growing"

- You could also make OHT of student Sc1 interpretations and get them to work out what went before and after.

Words beginning with.....



This is an excellent activity for developing students use of scientific language.

- Choose a word from the lesson that has a common root (prefix or suffix), eg. Photo, anti, ology, graph, it is, bio, phys, chem, electro, thermo, meter, micro (look in a dictionary for others!).
- Get students to think of as many other words as they can that have the suffix or prefix in them. Use a dictionary?
- Snowball from 1 to 2 to 4 and then take feedback.
- Explain what the roots mean e.g. photo means light.
- Explain that knowing some roots helps to work out other scientific words.
- Try bringing some history into science:

Chemistry comes from Al-Kemi

Gases comes from Chaoses

Cinema comes from Kinematograph!

Pasteurisation comes from Louis Pasteur

Atom comes from atomos meaning indivisible



20 Questions

- Write key words/ideas/concepts/models on post it notes.
- Ask for a volunteer, stick the post it note on their forehead so that the whole class can see it and they can't.
- The person has to ask questions to guess what it is. The answers can only be yes or no from the class!

Jeopardy



- Write an answer to a question on the board.
- Students guess what the question might have been.

E.g. Answer = Newtons(N)

Question = What is the unit of force? or what do we measure forces in?.

a	b
1	1
2	2

Categories

- This is an excellent activity for getting students to listen to words and make decisions about how they would group them. This also tests comprehension.
- Have a list of words/objects/pictures.
- Get the students to draw two/three columns with headings, for example - solid, liquid and gas.
- Read out the words and get the students to write the word in the correct column. E.g. air, water, iron, butter, wax, steam etc.
- Try to stick to small words or you could write them on the board, OHT or on flashcards (with pictures).

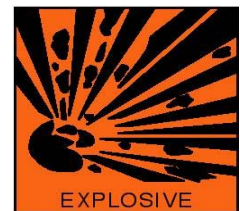
E.g.

Gives out light	Reflects light

Word List:

Sun	Earth
Moon	Bulb
Candle	Mirror
Television	Match
Star	Tin foil
Water	Torch

How many things can you think of.....?

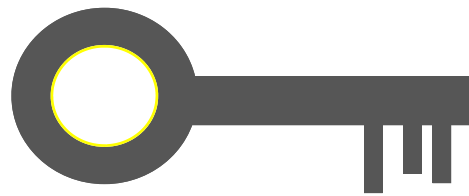


- In small groups get the students to list down as many things that they can think of that goes with the topic that you are covering.
- After 3 or 4 minutes pool together the ideas on the board.
- This works better than brainstorming because more students get a chance to have an input (hopefully!)
- This always works well at the beginning of a topic.

E.g.

-that make light.
-that a magnet will stick to.
-that a plant might need to grow.
-that make loud sounds.
-that we do to protect our teeth.
-that animals need to live.
-that keep us warm in the winter.
-that can melt.
-that need electricity to make them work.

Key Word Poetry



- This is a great starter or plenary for developing literacy skills.
- You may already have keywords written on board. You may have them on the walls.
- A nice idea is to put 8-10 keywords on a piece of A4 paper.
- Get students into groups (or just use your table groups).
- The students have to come up with words that describe/match/ highlight the keywords.
- Afterwards one of the students can read out the completed poem!
- You can get them to come up with a witty title.
- You could put different keyword lists on different tables.

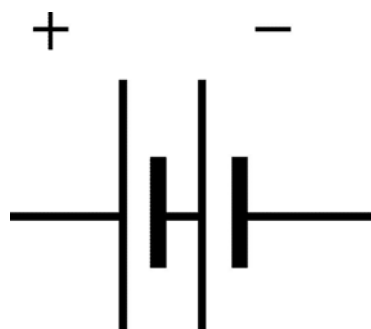
E.g.

keyword list

students

Battery
Bulb
Switch
Danger
Electricity
Wires
Buzzer

Gives electrons a push
Makes a bright light
On and Off
Don't get a shock
Makes things work
Carry electricity
Makes a loud noise



Make a sentence from these words!

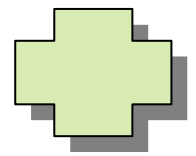


- This is a great literacy activity;
- It is also useful to find out what students already know about a subject;
- Give the students a list of words;
- Give the students a key word;
- They have to write a sentence (on their own) that contains the keyword and at least three other words on the list;
- Then they get into pairs and build a bigger sentence;
- The class then vote on the quality of the sentences;
- Make a set of starters for each topic using the keywords given in the QCA SOW—this has already been done. Use a table in a Word document and then just type in the words;
- Laminate them/OHT/Powerpoint them and it's a resource to keep.

E.g. Keyword = Change

solid	liquid	gas
freezing	boiling	heat
melting	ice	water

- Ice changes into water when it is melting
- Solids can change into liquids when you add heat
- When water changes into ice then it is freezing etc.



Acrostics for Learning

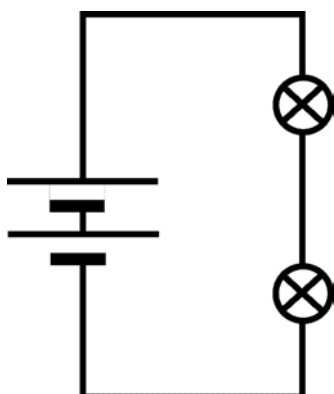
- Use a keyword or two from the lesson and put it down the left hand side of the whiteboard.
- Ask the students to come up with words or sentences that run out from each letter.
- Get students to vote on which are the best lines.
- This is great for literacy as difficult words can be spelt using funny rhymes!

E.g. Keyword is FAIR TEST:

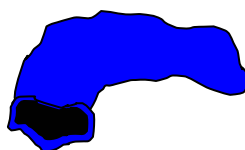
F	actors are variables that
A	lways needing controlling
I	nput and output, we're
R	ecording the changes.
T	rying to keep
E	verything the
S	ame may not make it
T	otally fair!

Or you could do it with words that are difficult to spell:

E.g. VEIN and CIRCUIT



V	ery
E	easy
I	blood
N	



C	himps
I	n
R	unny
C	ustard
U	se
I	ced
T	ea



Charades

- Write out key phrases, words, ideas, facts or objects on pieces of paper.
- You could split the class into teams. It is best to have four or five in each team.
- Ask a student, from the first team, to come out and volunteer to act out the word on the card for their team.
- They have 1 minute to act it out.
- If the team doesn't get it in the minute then the next team gets a chance. If they get it they score a point and then have a chance to act out a different word.

20 questions version 2!



- Ask students to think of something from the lesson.
- One student volunteers to sit at the front in the hot seat
- The class then put their hands up and ask the person questions. The hot seated person can only answer yes or no (you could do hot, warm, cold!)
- The object is to guess the thing in the least number of questions! The maximum number of questions is 20.

E.g Hot seated person thinks of a flower



Hot seater	It's part of a living thing
Person 1	Is it part of an animal?
Hot seater	No, very cold
Person 2	Is it part of a plant?
Hot seater	Yes, warmer
Person 3	Is it a root?
Hot seater	No, cold
Person 4	Is it a flower?
Hot seater	Boiling!!!

Poetry in Motion



- This is a great literacy starter or plenary.
- It involves writing a poem with a structure.
- With practice, students can come up with some fantastic examples.
- The structure of the poem models the structure of a good scientific answer.
- The students use keywords, knowledge, facts and ideas from the lesson.
- You could give the students the first word.
- The poem's structure is:

Line 1	1 word	A keyword from the lesson
Line 2	2 words	This describes the first word
Line 3	3 words	This explains the first word
Line 4	4 words	This contains science knowledge
Line 5	1 word	This is a related word/idea

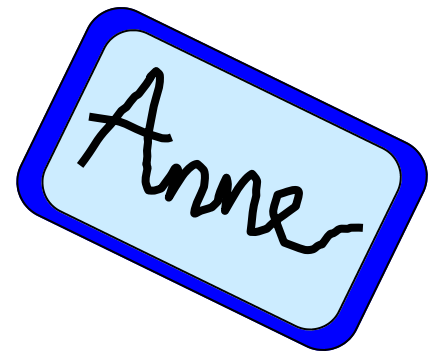
E.g. The keyword for the lesson is **MAGNET** or **LIGHT**

Poems produced were:

magnet
attracts things
makes them stick
there is a force
repel

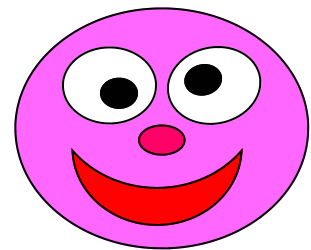
light
straight lines
comes from sun
colours of the rainbow
dark

You are the weakest link!



- Ask for five volunteers to answer questions on the lesson. These students sit at front.
- Give out mini-whiteboards to the rest of the class.
- Read out questions to the students at the front.
- You could get the students to write questions and answers during the lesson.
- After two minutes of questions ask the class to vote on who is the weakest link! If there is a tie then the teacher has to make a choice!
- The game carries on until there are two people left.
- The first person to get two questions wrong is out.
- You could give responsibilities out to class. For example, a timer, a person to score questions, a person to work out who was strongest and weakest in each round etc.
- Buy a ginger wig!!

Odd one out!



- Write four things from the lesson on the board.
- In pairs, students have to work out which is the odd one out.
- They must also explain why they made their choice.
- Take feedback on the thinking of pairs.
- Say that there is more than one right answer.
- Make comments about similarities/differences in groups.
- Make comments about which answers are more likely to be accepted.

E.g in a lesson on materials and their properties



- Ketchup is odd one out because it is made of glass and the others are made of metals.
- Hammer is odd because it wouldn't be found on a kitchen table
- Fork because it is made from only one material—a metal etc

The pwr of txt ;-)



- Explain to students that they have got to write a text message on paper.
- The text message is to a friend explaining what they have found out in a lesson!
- The message has a maximum number of characters (including spaces)
- The text message can contain abbreviations and emoticons!
- You could do this as a starter on what happened in last lesson.
- Remember to do a warning about mobile phones and sending people bullying text messages.
- This can cause a problem when students get their phones out!!

E.g. In a lesson on magnets (100 characters maximum)

