

'INSTANT EXTENSION' IDEAS

- Internet to research further on the topic being taught, then present to rest of class.
 - Plan a starter or plenary for teacher to use next lesson (or this lesson!)
 - Have an on going project for those pupils who are continually working beyond the rest of the class, e.g. researching more about a particular planet; finding out more about a particular historical event or scientist; experiments on how our bodies work.
 - Lateral thinking, (Some ideas in 'The Nature of Science by Dorothy Warren - RSC £ 9.50)
 - Write a poem to illustrate the learning with the following rules:
Line 1 the idea (1 word) -given by teacher
Line 2 describe meaning of idea (2 words)
Line 3 describe what idea does (3 words)
Line 4 says what idea means to you (4 words)
Line 5 says idea using another word
e.g. DISSOLVING
 break apart
 makes pieces smaller
 solid mixes with liquid
 PHYSICAL
 - Design a crossword of 5 words, increasing the number of words through the topic.
 - A short comprehension or DARTs activity related to the lesson – this will need preparing, but you then have a bank of them for later. Try using a news article that is relevant asking the pupil to summarise it.
 - Encourage faster workers to support their colleagues – the best way to learn is to teach!
 - More lateral thinking could be to use some 'code' for a scientific description, e.g. transposed letters; mirror writing etc for pupils to decipher and write back to you.
 - Summarise a current science news event by e.g. cartoon/write/strip/play/radio broadcast
- Created by Tara Lievesley: 10.01.04

'PROMOTING THINKING' IDEAS

- Ask open ended questions, e.g. How...? Why...? What if...? What do you think / feel about...?
 - Wait between 3 to 5 seconds for the answer to any question to ask. If a pupil struggles, move on, but come back to them later
 - Offer a range of activities for learning, e.g. creative, auditory, visual, kinaesthetic etc. Often a circus of events in practical can do this
 - Have a 'breather' during longer content led lessons, by using a 'brain gym' to allow the brain to make connections between the left and right sides, e.g. alphabet soup, rub tummy and pat head etc.
 - Read a story related to a process or scientists discovery and provide a range of tasks for pupils to chose from to further their ideas, i.e. create a story board of the story, be a reporter for the incident, discuss the implications the story has in the long term etc. e.g. a famous discovery by a scientist (DNA structure, penicillin etc)
 - Set a question that requires debate or discussion, e.g. what would happen if there weren't any more energy resources, or what would be the consequences of banning cigarettes
 - Use de Bono's hats to focus a discussion on e.g. Joule Island or GM foods, or test tube babies, so that pupils have a time for certain tasks, i.e. 2 mins white hat (facts known/unknown), 1 min red hat (feelings), 2 mins green hat (ideas, both black hat (-'ve) and yellow hat (+'ve)), 2 mins blue hat (conclusions)
 - Encourage pupils to stand up to answer questions, as 10% more oxygen goes to your brain
 - Use lateral thinking, e.g. 'yolk of the egg is white or are white – which is correct?'
- Created by Tara Lievesley: 23.06.03

'REVISION' IDEAS

Most of these ideas are based around the use of a Revision Guide. They can be adapted for use with lesson content or text books.

Try one at the end of each lesson as a plenary!

- Choose a diagram from a particular page and describe it in words
- Give series of key words and ask students to find relevant page/meaning
- Students sketch a 'picture' to summarise a chapter, section, double page spread of key learning point. Collect in a give back a few weeks later or swap with partner and ask them to translate the picture back into words.
- Produce an acrostic for each contents page
- Produce a scrapbook of things in the guide or key learning points from news papers, magazines, TV radio etc
- Give students 5 answers and ask them 'what is the question?'
- Give students key words and ask them for a sentence 20 words long using all of them
- Create a timeline of key events in science every time a student comes across a date in a lesson or revision guide
- Produce a Haiku for a specific word or page
- Students produce an exam question and mark scheme for a section
- Students look at pages and identify which key ideas involved or linked to
- Look at index under e.g. 'a' and pick a key word. Write a sentence using that word. Continue to see how far pupils get
- Apply the 5 W's to a section, what, where, why, when, who
- Copy a page onto OHP and ask pupils to annotate and discuss the them
- Cover diagrams and ask students to label
- Create a spider diagram of mind map or concept map of a double page spread or everything related to the subject studied

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'TYPES OF ENQUIRY' IDEAS

An enquiry is not just a practical to be carried out as a 'fair test'. Anything that poses a question to be answered is an 'enquiry'

Surveys and Sample Size.

- Looking at the number of organisms in a particular habitat
- Growing pollen tubes and observing rate in different sugar concentrations
- The use of quadrats in counting organisms in a field.

Surveys and Correlations

- Do taller pupils have taller arm spans?
- Do longer holly leaves have more prickles?
- Does smoking cause cancer?
- Do red cars travel faster?

Evaluating a technique

- Comparing different timers to record speed
- How much water is present in an apple
- Use of time lapse photography to record changes in rocks
- Craters on the moon experiment

Using Secondary Sources

- Mary Anning and her fossil collecting
- List plants that grow in fresh and salt water
- To write a travel brochure to another planet
- Researching a balanced diet for a vegan

Identification and Classification

- Elements and non-elements, as well as metals and non-metals
- Similarities and differences of reactions of groups of metals
- Different minerals in rocks, or rock types
- Organisms with a habitat or taxonomy

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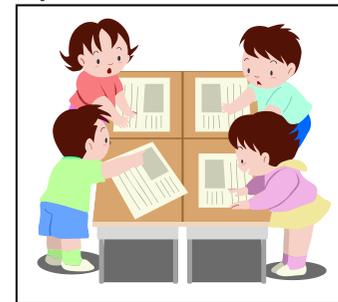
'ARRIVAL/ENGAGEMENT' IDEAS

Having an activity for the pupils as they arrive, especially if they do so over a period of time, helps settle them & start the learning process.

- Have a graph on the board/OHP with a question based on the interpretation of it. It might be related to a recent practical or something silly
 - Put the answer on the board/OHP and ask pupils what the question is, e.g. 'Balanced', so the question could be related to forces or equations
 - Have a cartoon for pupils to interpret related to lesson or to write a caption for
 - Set a regular slot for acting on targets written into exercise books/marked work or correcting spellings
 - Have a diagram, possibly from a previous lesson, that needs completing or labels and annotations to finish it, e.g. refraction, ear, etc.
 - Five things learnt in unit so far: work in pairs then each pair joins up to exchange ideas.
 - Lateral thinking is good for new topics, so have a scenario on the board/OHP for pupils to figure out the answer, e.g. the one about the man lying dead in a field, with now visible marks, only a package next to him...how did he die?
 - Use short quizzes, as worksheets, e.g. crosswords or word searches with focussed questions on the words found
 - Use a DARTs activity, where pupils read some text highlighting the key words or produce a summarising sentence
 - Pupils could write down all the words they know that have a certain Greek or Latin stem. This leads to the meaning of the stem, e.g. bio = life
- Planned carefully, lots of these ideas can link straight into the starter, so you only produce one!

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A Helpful Little Booklet



'DEALING WITH DIFFICULTIES' IDEAS

- Set your rules in September and stick to them. Make them fair for all pupils all of the time.
- Be positive & give praise for good behaviour when possible. Don't only notice poor behaviour
- Give pupils a choice so they have some control of the situation, e.g. 'Sit over here, or next to Fred'. Request action and list consequences.
- Allow pupil take up time so they don't lose face, e.g. express an expectation and a time to return to check progress.
- Partially agree to deflect confrontation, by acknowledging feelings e.g. 'it might not be fair but...' 'the talk may be about work but now...'
- Avoid negatives, , e.g. 'when you have... then you can', rather than starting with 'No'.
- Have some set signals the class responds to, e.g. one arm in the air for attention and quiet. Have private signal for a pupil who continually is distracted so they don't feel singled out, but still know you are watching, e.g. snap of fingers.
- Tactically ignore attention seeking behaviour. Praise behaviour of nearby pupil, focussing on the behaviour that is not being exhibited by the offending pupil.
- Stick to sanctions, especially school ones and remind pupil of them, e.g. 'you know the rule for not handing homework in on time...'

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