



TEACHING STRATEGIES MANUAL



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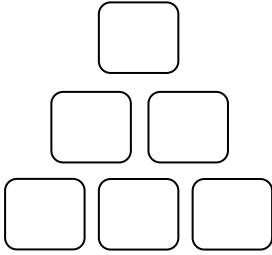
APPENDICES

Pages 51 – 54 - Jigsaw Arithmetic – Geoff Petty – this tells you how to organise ‘Jigsaw activities’ for any size class.

Page 55 - Bloom’s Taxonomy question stems

REFERENCES – page 56

TITLE: 1,3,5,7 – things from last lesson	IND/GRP/CLASS: ALL
DETAILS: Write down one thing remembered from last week, then swap your thing with someone else and see if you can agree three things, now at the table – agree five, then as a class see if we can agree seven.	
RESOURCES: None needed	ICT: No
BOOK REFERENCE: Accelerated learning – A users guide pg 26	ADDITIONAL INFO: No prep needed

TITLE: 3,2,1 block review	IND/GRP/CLASS: IND
DETAILS: This consists of: One thing I already know Two questions I still want to ask, The three most important things I have learnt Very similar to Plenary triangles	
	
RESOURCES: none	ICT: no
BOOK REFERENCE: Accelerated learning – a users guide – pg 43	ADDITIONAL INFO: No prep required

TITLE: KEYWORD ANAGRAMS – SMARTBOARD LAT	IND/GRP/CLASS: CLASS
DETAILS: Using the Lesson Activity Toolkit to create anagrams of the keywords. The key words come in the same order when you run the activity so there is not enough variation to use it more than one lesson, but you can make more than one slide with keywords on. Maximum number of words: 5 per slide Any keywords from any topic.	
RESOURCES: Lesson activity toolkit – smartboard	ICT: NEEDED
BOOK REFERENCE:	ADDITIONAL INFO: PREPARATION NEEDED

TITLE: ART GALLERY	IND/GRP/CLASS: INDIVIDUAL / CLASS
DETAILS: Use at the beginning of a topic. The teacher has set up an art gallery of A3 laminated images and or statements about the topic to be studied. On entry, classical music is played and students are invited to wander round the gallery in pairs. They are told that in five minutes they must choose an image or statement that makes a connection with them. And when the music stops they must go and stand next to it and be prepared to justify their decision.	
RESOURCES: Pictures and images or statements ready	ICT: No ICT needed
BOOK REFERENCE: ACCELERATED LEARNING - USERS GUIDE	ADDITIONAL INFO: Prep needed

TITLE: ARTEFACT OR PROP	IND/GRP/CLASS: ALL – DEPENDING ON SETUP
DETAILS: Have an artefact or prop relating to the topic. The item is introduced and the connections are explained or pupils to ask relevant questions about the object to start discussions, assess current knowledge. SCIENCE USE: fossils, piece of equipment, chemicals,	
RESOURCES:	ICT: None
BOOK REFERENCE: Accelerated learning - A users guide	ADDITIONAL INFO:

TITLE: ASSEMBLY ACTIVITIES	IND/GRP/CLASS: GROUP
DETAILS: Students work on their own or in pairs to assemble material that has been cut up into separate parts. Choose the material and divisions carefully. Simplest form is sequencing but there should be enough clues to make it possible to link them together, such as an experimental procedure or process Material could also be text, pictures, symbols or a combination. Other forms of assembly include arranging equipment in the correct way to carry out an experiment and inserting labels that have been cut out from a diagram.	
RESOURCES: Material needed	ICT: no
BOOK REFERENCE: Teachers Toolkit – Paul Ginnis	ADDITIONAL INFO: Prep needed

TITLE: BACK TO BACK	IND/GRP/CLASS: GROUP
DETAILS: Pupils work in pairs sitting with their backs to each other. One pupil describes what they see – it could be a key diagram, image or similar from the topic that could be on the board or on paper. The pupil who can see the image has to describe it to their partner who has to draw it from the description. The drawing pupil can ask as many questions as possible. The person who can see the image is not allowed to draw in the air and there should be no peeking! This can be done with any kind of visual material including photographs, diagrams, drawings, flow diagrams and maps. You can also do it for 3D modelling such as circuit diagrams.	
RESOURCES: Mini whiteboards or paper	ICT: No
BOOK REFERENCE: Teacher's Toolkit – Paul Ginnis	ADDITIONAL INFO: Minimal prep

TITLE: BEAT THE TEACHER	IND/GRP/CLASS: ALL
DETAILS: Explain that you are going to do an activity (eg calculation, describe procedure, demonstrate a practical, draw a diagram) and that you are likely to make some mistakes. The student's job, working individually, is to spot and make a note of the mistakes. At the end of the teacher's presentation students pair up and compare results and come up with their joint list. The teacher goes round the class asking each pair to offer a mistake. Discussion follows to clarify the points. Use this for any kind of calculation, examination question, experimental method or process description.	
RESOURCES:	ICT: optional
BOOK REFERENCE: Teachers Toolkit – Paul Ginnis / Accelerated learning - A user's guide	ADDITIONAL INFO: Minimal prep

TITLE: CARD RACING / QUICK ON THE DRAW	IND/GRP/CLASS: CLASS working as GROUPS
DETAILS: A series of questions are placed on numbered cards and pupils are organised into teams. Each team comes and collects their first card (best if the cards are mixed up) takes it back to their table, reads out the question and finds the answer. When they have the answer they write it on a mini whiteboard and come up to have it checked (the numbers help with checking). If they have it correct then they collect the next card – if they do not then they are sent back to get it correct. The winning team is the one who answers all their cards correctly first. It is easier to check if the question cards and answers are numbered but makes it more interesting when the cards are given to pupils randomly.	
RESOURCES: Cards needed, reference materials	ICT: No
BOOK REFERENCE: Teachers Toolkit – Paul Ginnis	ADDITIONAL INFO: Prep needed

TITLE: CARD SORTING	IND/GRP/CLASS: IND / GROUP
DETAILS: This can be used for many purposes including classification, ranking, matching exercises. This strategy links to the following: Team sort – classification Sentence matching DARTs – sequencing of sentences or paragraphs. Dominoes Sentence matching Question and answer matching	
RESOURCES: Card packs	ICT:
BOOK REFERENCE:	ADDITIONAL INFO: Prep needed

TITLE: CAROUSEL	IND/GRP/CLASS: GRP
DETAILS: 1. Each group is given a flip chart sheet or an A3 sized piece of paper with a question relevant to a particular topic at the top. Each piece of paper might have a different question. 2. Pupils work in their groups within a time limit to write down their responses, thoughts and ideas which stem from the initial question. 3. Each group might be given a different colour of pen to allow for easy identification of responses afterwards. 4. After the allocated time pupils rotate to another sheet with a different question. 5. They read the responses of the previous group and discuss whether they agree or disagree. If they agree, they tick. If they disagree, they could justify this by writing an explanation. 6. Pupils then write down their own thoughts on the issue. If their ideas have stemmed from the previous groups' written responses, they could connect the ideas with an arrow. 7. The carousel could be continued, if time permits, until each group has had the opportunity to see and respond to each question.	
RESOURCES: Flip chart paper and pens	ICT: No
BOOK REFERENCE: Northern Ireland – Active learning strategies	ADDITIONAL INFO: Minimal prep

TITLE: CAROUSEL FEEDBACK	IND/GRP/CLASS: CLASS
DETAILS: Teams spread out their projects around the room and the project has a feedback form attached. Teams start at one project and for a specified time, discuss their reactions to the other teams project with no writing. Student 1 records the feedback on the feedback form (encourage positive comments). The teacher calls time and the teams rotate and repeat the process. A new recorder is chosen each time. Teams rotate until each team rotates back to its own project, then review the feedback they received from the other teams CAN BE COMBINED WITH DE BONO'S THINKING HATS FOR FEEDBACK	
RESOURCES: FEEDBACK FORMS – CAN BE COMBINED WITH THINKING HATS	ICT: NO
BOOK REFERENCE: KAGAN CO OPERATIVE LEARNING - KAGAN	ADDITIONAL INFO: Prep needed

TITLE: CARTOON STRIP	IND/GRP/CLASS: IND
DETAILS: Create a cartoon strip to explain a process for example steps in a experiment or scenes from a book. For example the rock cycle cartoon strip can show a piece of rock going through each stage in the cycle including weathering, transportation, deposition and cementation etc.	
RESOURCES: Paper, blank cartoon strip	ICT: none
BOOK REFERENCE: Accelerated learning – A users guide – pg 38	ADDITIONAL INFO: Little preparation

TITLE: CARTOONS	IND/GRP/CLASS: IND
DETAILS: Cartoons can be used in a similar way to key images – to start discussions or pupils can create their own about a topic – for example creating their own ‘concept cartoon’ about other explanations about scientific discoveries. Software such as Kartouche can also help with this and the cartoon strip strategy to develop understanding of scientific concepts.	
RESOURCES: Kartouche software – need to be familiar with it.	ICT: OPTIONAL
BOOK REFERENCE:	ADDITIONAL INFO: Prep needed

TITLE: CHECKER TOOL	IND/GRP/CLASS: CLASS
DETAILS: SMARTBOARD lesson activity – this involves setting up labels, or words that can be checked by dragging them into the checker tool box. For example if labelling a diagram – the labels would be at the bottom and the arrows linked to a checker tool box. When the label is dragged into the box it tells you if it is correct or incorrect. If it is incorrect the pupil can drag another word in for a second attempt and it will ‘check’ that one. SCIENCE USE: labelling digrams , key definitions, matching activities,	
RESOURCES: SMARTBOARD – lesson activity toolkit	ICT: YES
BOOK REFERENCE: Smartboard	ADDITIONAL INFO:

TITLE: CIRCUS TIME	IND/GRP/CLASS: IND/GRP
<p>DETAILS: The basic plan is for pupils to work through a series of tasks in any order within a given timescale. Design a number of tasks and set them out around the room, if needed you can double up on tasks. Explain the learning objectives and the assessment to be conducted at the end of the series of lessons. Show the large wall chart on which all the tasks appear as columns in random order and the pupils names appear in rows. Students are given a record sheet with all the tasks on. Progress with be recorded on both the public and private sheets. Each time a student completes a task to the teacher’s satisfaction, both sheets are signed and dated. Then set the challenge – for example - can you get 5 out of 8 tasks completed with the next three lessons (modify to allow for differentiation) with a reward at the end. Students set off, tackling tasks in an order that suits them with the teacher monitoring and supporting. At the end of the time, learning is consolidated by the teacher and a concluding assessment is undertaken.</p>	
RESOURCES: Task materials	ICT: Optional
BOOK REFERENCE: Teacher’s Toolkit – Paul Ginnis	ADDITIONAL INFO: Preparation needed

TITLE: CLICK AND REVEAL	IND/GRP/CLASS: CLASS
<p>DETAILS:</p> <p>Smartboard software has a series of flash animation tools that can allow you to hide and reveal answers, or images that you have prepared. The tool turns and reveals when clicked. Various shapes can be used. There is also a balloon pop template – ‘when clicked the balloon pops and reveals the image behind.</p>	
RESOURCES: Smartboard notebook and lesson activity toolkit	ICT: YES
BOOK REFERENCE: Smartboard Lesson Activity Toolkit	ADDITIONAL INFO: Preparation needed

TITLE: CLOZE ACTIVITY	IND/GRP/CLASS: IND / CLASS
<p>DETAILS:</p> <p>The Smartboard Lesson Activity Toolkit has a variety of ways to complete cloze activities including drag and drop and use the checker tool to get the software to check their answers.</p> <p>In addition, there is a commercial package called Cloze Pro that produces interactive cloze activities. To make them more challenging add distractor words or use infinite cloner tool on Smartboard in order to leave the word in as an option for pupils to carry on choosing from even when it has been selected once before.</p>	
RESOURCES: Software if chosen	ICT: YES
BOOK REFERENCE: Smartboard Lesson Activity Toolkit	ADDITIONAL INFO: Preparation required

TITLE: COLLECTIVE MEMORY	IND/GRP/CLASS: CLASS
DETAILS: A poster / mind map / image is kept at the front of the room. Pupils are organised into teams. The first members of the teams come up and look at the poster and try and memorise it without using any pen or paper etc. They have a limited time eg 15 seconds to do this before returning to their groups and trying to recreate what they have seen. This is then repeated with the next person on their team until all members have had a go. The winning team is the one who has recalled the most correctly.	
RESOURCES: Image / poster / mind map	ICT: No
BOOK REFERENCE:	ADDITIONAL INFO: Prep needed

TITLE: COMPARE AND CONTRASTING	IND/GRP/CLASS: GRP
DETAILS: Comparing and contrasting has been found to improve students understanding of the topics compared by much more than one grade. It is a preferred method for helping students to clarify concepts that are often confused, or poorly understood. Students are put in pairs or small groups, and are given a grid on flip chart or A3 paper. They work in groups to make a bullet pointed list of important similarities and differences between the two concepts. They can work from previously unseen, or from other notes to do this. Clearly this could be used in any subject to help teach almost any pair of similar concepts. For example: <ul style="list-style-type: none"> Plant and animal cells Osmosis and diffusion Respiration and photosynthesis 	
RESOURCES:	ICT: No
BOOK REFERENCE: Evidence based Practice – Geoff Petty	ADDITIONAL INFO: Prep needed

TITLE: CONCEPT CARTOONS	IND/GRP/CLASS: ALL – DEPENDING ON SETUP AND USE
DETAILS: Concept cartoons are cartoon-style drawings which put forward a range of viewpoints about the science involved in everyday situations. By offering new ways of looking at the situation they make it problematic and provide a stimulus for developing ideas further. Many teachers use them at the start of a topic to provide a stimulus for discussion and raise questions about what needs to be done to find out more. This can help learners to identify starting points for investigation or research. Since the concept cartoon sets the context and offers alternative ideas about the situation, the focus and purpose for enquiry is usually quite clear. They can be used at the end of a topic, where the emphasis might be on reviewing or consolidating learning. When used during or at the end of a topic they can offer an opportunity for learners to apply their learning, with the everyday nature of the situations challenging learners to apply scientific theory to real life.	
RESOURCES: CONCEPT CARTOONS BOOK OR SOFTWARE	ICT: SOFTWARE AVAILABLE
BOOK REFERENCE: CONCEPT CARTOONS FOR SCIENCE	ADDITIONAL INFO: Can use the software

TITLE: CONSEQUENCE WHEEL	IND/GRP/CLASS: GRP
DETAILS: 1. Pupils write the main event or action in a centre circle in the middle of the page. Eg global warming 2. Pupils write a direct consequence of the event in a circle which is linked to the main circle with a single line. Pupils try to think of as many direct consequences as possible. 3. Pupils then consider second order consequences. These are drawn once again in circles and linked to the direct consequences with double lines. Third order consequences have a triple line, etc. 4. Pupils could colour circles depending on whether the consequence is positive or negative. 5. Feedback afterwards could compare and contrast pupils' consequences as well as lead into deeper exploration or arising issues through the use of tools such as Consider All Factors . 6. A debrief after this activity may be beneficial.	
RESOURCES: Paper and pens	ICT: No
BOOK REFERENCE: Northern Ireland – Active learning strategies	ADDITIONAL INFO: No

TITLE: CONSEQUENCE CARDS	IND/GRP/CLASS: GRP
DETAILS: <u>'Consequences cards'</u> which state consequences of the facts given in the text. These consequences are not actually stated in the text itself. Again some are true and some false E.g. <ul style="list-style-type: none"> • If you blocked the left ventricle no blood would get to the head • Furring of the arteries would usually raise blood pressure. <p>The pairs of students must decide which cards are correct, and what is wrong with the incorrect ones. This is a greatly enjoyed activity with the atmosphere of a game.</p>	
RESOURCES: Paper and pens	ICT: No
BOOK REFERENCE: Evidence Based Practice – Geoff Petty	ADDITIONAL INFO: Prep needed

TITLE: CREATE A MOBILE	IND/GRP/CLASS: GRP
DETAILS: Teams of four work together to create a mobile illustrating a scientific concept. To make sure everyone participates, have the team discuss what the mobile should look like, then decide who is doing what. For example, if the mobile is on natural disasters, each student may work on a different natural disaster. <p>After the mobile is completed the students write individual explanations of their team's mobiles. OR teams plan, rehearse and present their mobile to the class or to another team. Each team member must have an active role in the presentation. Mobiles can be hung in the classroom.</p>	
RESOURCES: Needed for mobile creation	ICT: No
BOOK REFERENCE: Write Science (Coop learning) - DeBolt	ADDITIONAL INFO: Yes

TITLE: CREATE A NEWSPAPER REPORT	IND/GRP/CLASS: IND / GRP
DETAILS: Pupils can write a newspaper story about a science topic. Give the newspaper a name and include a headline and graphic. To support the pupils in developing their writing get them do the following: Divide up the page into 5 sections labelled Who, What, Where, When and Why. They can record their ideas on the sheet and then share in pairs. Partners can get additional ideas from each other.	
RESOURCES: Newspaper template	ICT: No
BOOK REFERENCE: Write Science (Coop learning) - DeBolt	ADDITIONAL INFO: Minimal prep

TITLE: CREATE A WEB PAGE	IND/GRP/CLASS:
DETAILS: Real or intended. The student or students design a web page with all the appropriate features to share their learning. Use A3 paper template to promote discussion about editing, navigation, use of text and image. Older and more able students can do the real thing	
RESOURCES: A3 paper	ICT: Optional
BOOK REFERENCE: Accelerated learning – A user’s guide – pg 37	ADDITIONAL INFO: Little prep

TITLE: CROSSWORDS WITH CLUES	IND/GRP/CLASS: IND
DETAILS: Crosswords with clues provide a good way of checking understanding and recall of key words and their meanings. Several programs are available to produce your own crosswords. Currently I use ‘Schoolhouse Technologies Vocabulary Worksheet Maker’ that produces a range of worksheets from the same clues and words loaded into the program. It can also be modified to include the word lists for lower ability pupils.	
RESOURCES: Crosswords	ICT: Optional
BOOK REFERENCE:	ADDITIONAL INFO: Preparation required

TITLE: DARTS	IND/GRP/CLASS: IND
DETAILS: There are many different activities that come under the term 'DARTs' including Text completion – cloze activity Diagram completion – using text to predict labels Table completion – using text to predict missing parts Prediction of the next part of the text Underlining or highlighting Labelling Segmenting into units Diagrammatic representations Tabular representation	
RESOURCES: Text needed	ICT: No
BOOK REFERENCE: Pedagogy and Practice – Active Engagement Techniques	ADDITIONAL INFO: Prep needed

TITLE: DARTS - CONVERSION	IND/GRP/CLASS: IND/GRP
DETAILS: Ask students to take material that is presented in one format and convert it into a different format. Typical examples include: Text into – mind map, flow diagram, storyboard, chart, key word plan, overlapping circles, graph, ranked bullet points Turn the following into text – mind maps, graphs, flow diagrams, storyboards, bullet points Turn the teacher's explanation or a video into any of the above	
RESOURCES: Materials to convert	ICT: NO
BOOK REFERENCE: Teacher's Toolkit – Paul Ginnis	ADDITIONAL INFO: Prep needed

TITLE: DEFINE THIS	IND/GRP/CLASS: IND/GRP
DETAILS: Give pupils a series of words and ask them to write a definition for each word being as clear and complete as possible. When the team agrees on the definition then they can tick it. This can be checked by the team using the pairs check method.	
RESOURCES:	ICT: No
BOOK REFERENCE: Write Science (Coop learning) - DeBolt	ADDITIONAL INFO: No prep

TITLE: DELEGATION aka JIGSAW ACTIVITY	IND/GRP/CLASS: GROUP
DETAILS: Set up a series of resource stations around the room. Students form groups of say 4 or 6. All the members of the group have the same objective – to understand all the aspects of the topic exhibited around the room. Each group sends one student to each resource station where they have to make notes and understand the material well enough to teach the rest of their group when they return. While at the resource station pupils work together to help each other understand the topic. When the original groups go back together pupils take turns to teach each other. The teacher moves round responding to questions and checking the quality of teaching. You can add in a ‘test’ to check the quality of learning. An additional strategy is to add in a double check by sending everyone out to a second station to check the work of the first student.	
RESOURCES: Resources for each station	ICT: OPTIONAL
BOOK REFERENCE: Teacher’s Toolkit – Paul Ginnis	ADDITIONAL INFO: Preparation needed

TITLE: DEMONSTRATION	IND/GRP/CLASS: ALL – DEPENDING ON MANAGEMENT
DETAILS: Demonstrate an activity – eg chemical reactions, electrical circuits – pupils to explain what is happening, generate questions, discuss ideas – this should be done in conjunction with higher order thinking and questioning skills and possibly using other techniques such as think – pair – share SCIENCE USE: any practical activity that can generate questions particularly at the start of a lesson.	
RESOURCES: Scientific equipment	ICT: None
BOOK REFERENCE:	ADDITIONAL INFO: Prep needed

TITLE: DESIGN A POWERPOINT SLIDE	IND/GRP/CLASS:
DETAILS: To summarise the lesson – pupils are asked to plan a summary powerpoint slide that has a relevant title and the three key points from the lesson. Pupils can then share their summary points and discuss and debate until a consensus is reached where they agree the three or six key points of the lesson	
RESOURCES:	ICT: Optional
BOOK REFERENCE: Teachers Toolkit – Paul Ginnis	ADDITIONAL INFO: No prep

TITLE: DIAMOND NINE ACTIVITY	IND/GRP/CLASS: GRP
DETAILS: 1. Pupils receive (or write out beforehand) nine ideas based on a particular question on card or post-its. 2. They place their first priority card at the top, followed by two in second place, three in third place, a further two and then the card which represents the lowest priority at the bottom. This forms a diamond shape. 3. Pupils should strive for a consensus amongst themselves. This may involve various discussions on the order of cards involving justification. Examples could be factors to reduce global warming, reasons to use genetic engineering and cloning.	
RESOURCES: Cards for pupils.	ICT: No
BOOK REFERENCE: Northern Ireland – Active learning strategies	ADDITIONAL INFO: Prep needed

TITLE: DIARY OR LEARNING LOG	IND/GRP/CLASS: IND
DETAILS: A learning log allows pupils to be reflective about their learning and set targets for what they need to achieve. Pupils should reflect on both the skills and concepts they have learnt and the processes they used to embed that learning. For them to be effective, pupils must be carefully trained to use the learning logs. The science learning log contains a record page for pupils to record their test marks and levels; a section to traffic light their understanding of the topic and the space to record the results of any level assessed tasks they undertake. In addition to the reflection page for each topic the learning log contains the level ladders, glossary sheets and summary sheets for all the topics covered throughout the year.	
RESOURCES: Learning logs / paper	ICT: None
BOOK REFERENCE:	ADDITIONAL INFO: Prep needed

TITLE: DICEY BUSINESS	IND/GRP/CLASS: Group
DETAILS: Prepare a series of questions that the pupils need to respond to. These should be in logical order and labelled A,B,C D etc on the back. Each group needs a pack of the questions. Students work in groups of 6. Each group sits at a table with its pack of cards in the middle, face down, with card A on top. The group also has a die. Each person is has a number 1 to 6. The group decide who goes first. The first player rolls the die and the person with the number shown picks up the first card and responds to the prompt or question. The second player throws the die. The person with the number shown picks up card B and responds and so on round the circle as often as it takes to get through the cards. As the prompts or questions are connected, and no one knows whose number will be next, everyone has to pay full attention all the time.	
RESOURCES: Prepared questions	ICT: None
BOOK REFERENCE: Teacher's Toolkit – Paul Ginnis	ADDITIONAL INFO: Preparation needed

TITLE: DISTILLATION	IND/GRP/CLASS: GRP/ CLASS
DETAILS: Draw a large filter funnel and beaker on the board. Students work on given text in pairs. They are challenged to find the five (or ten or however many you choose) most important words. Some discussion of what is meant by 'most important' might be needed. As soon as a pair is ready, one of the two comes to the board and writes their proposed five words in the filter funnel. Other pairs follow and from their selection can only add words that are not already in the funnel. As soon as every pair has contributed, lead a debate with the class about which five (or whatever) words to let through the filter funnel into the beaker. These should be the essential words that capture or trigger the meaning of the whole passage. The agreed, filtered words become the basis for notes, which everyone makes individually.	
RESOURCES: Text	ICT: Optional
BOOK REFERENCE: Teacher's Toolkit – Paul Ginnis	ADDITIONAL INFO: Minimal prep

TITLE: DOMINOES	IND/GRP/CLASS: CLASS although can be modified to group
DETAILS: Prepare a set of cards – A6 or A7 size, each divided in half like a domino tile. On one half of each card is a question and on the other half an answer. The question and answer on any card do not match. The cards are shuffled and given out, one to a person. Anyone can begin by reading out their question. Someone in the room has the answer, they read it out and everyone else has to indicate whether they think it is right or wrong by using thumbs or similar. If no one offers, the teacher can ask for those who think they might have the right answer and then the class can debate which one is correct. Whoever had the right answer asks the question on their card and so on. VARIATIONS - Dominos can be played in small groups, groups can create their own and swap. Can create dominos with pictures and words. SOFTWARE – Smartboard lesson activity toolkit, or Cardit from Crown Publishing	
RESOURCES: Domino cards	ICT: OPTIONAL
BOOK REFERENCE: Teacher's Toolkit – Paul Ginnis	ADDITIONAL INFO: Preparation needed

TITLE: DREADLINES	IND/GRP/CLASS: IND/CLASS
DETAILS: Have a list of pupils names on a clipboard and move round looking at the students work and talking with them about their progress. As you move, agree with each of them a deadline by which the next stage of the task will be completed. Explain you will return at that time. You make a note of the deadline on your list and the student makes a note in the margin of their exercise book or file. Remain flexible about who sets the deadline – you or them, and make sure there is a clock in the room. Return to each student at the stated time. Look at what they have done and offer praise, challenge, support etc as appropriate. Then set a new deadline for the next stage of learning. Timescales for deadlines will vary. Some students will need short steps and frequent visits, others will need to see you less often. To begin with, go to those students who are likely to need most help or chivvying. Deal with them first, then visit the students who are more self sufficient.	
RESOURCES: Class list	ICT: No
BOOK REFERENCE: Teacher's Toolkit – Paul Ginnis	ADDITIONAL INFO: No prep needed

TITLE: EVALUATE YOUR PRODUCT	IND/GRP/CLASS: IND / GRP
DETAILS:	
<p>Students pick a household product they use often. They write about the intended use of the product, the ingredients, the benefits and the potential hazards and their overall evaluation of the product. (Can use the template from the book)</p> <p>After the students have written their product evaluation, have them share with teammates. Students can also share their evaluation with the class using a product museum – students display their product and their evaluation.</p>	
RESOURCES: Products and templates	ICT: NO
BOOK REFERENCE: Write Science (Coop learning) - DeBolt	ADDITIONAL INFO: Min

TITLE: EXPERIMENTAL REFLECTIONS	IND/GRP/CLASS: IND / GRP
DETAILS:	
<p>Students reflect on their experiments and the implications for more research and their learning using the prompts on the template. Ask the first question then give students 10 – 15 seconds think time. They then pair up to discuss their ideas for 45 seconds to a minute. Students write their own idea and their partners idea, a combination of both ideas or some new idea that came from a discussion.</p> <p>The steps are repeated for each question on the template.</p> <p>This activity can also be done independently, then shared with teammates with each student taking turns to record the teams answers</p>	
RESOURCES: Template	ICT: No
BOOK REFERENCE: Write Science (Coop learning) - DeBolt	ADDITIONAL INFO: Min

TITLE: EXPERIMENTS	IND/GRP/CLASS:
DETAILS:	
<p>This is self explanatory for science teachers however, it is vital to think about what you want the pupils to learn.</p> <p>How are they going to record their findings? What skills are they learning? What concepts are they learning? Are they 'discovering' in their learning? What kinds of key questions need to be asked?</p>	
RESOURCES: Whatever practical equipment is needed	ICT: Not always needed
BOOK REFERENCE: Write Science (Coop learning) - DeBolt	ADDITIONAL INFO: Prep usually required

TITLE: FACT OR OPINIONS	IND/GRP/CLASS: GRP
<p>DETAILS: 1. Pupils are presented with a series of statements which are based on a particular issue. These may often include the position statements of key stakeholders on both sides of the issue in question.</p> <p>2. Pupils analyse the statements and decide whether they are fact or opinion. Pupils consider the justifications for their choice and present these to the class during a whole-class feedback session. Pupils could further explore any similarities and differences in judgement between groups.</p> <p>3. In a debrief afterwards pupils could concentrate on the processes which led to judgements being made. How did groups arrive at a judgement? Where there a variety of opinions? Was consensus reached? Were judgements justified effectively? Were judgements articulated effectively? Were there allocated roles within the group?</p> <p>4. Based on feedback pupils may wish to explore the issues further using a Plus-Minus-Interesting or Consider All Factors approach. A Consequence Wheel or Fishbone Strategy may also be employed to consider cause and consequence.</p>	
RESOURCES: statements	ICT: NO
BOOK REFERENCE: Northern Ireland – Active learning strategies	ADDITIONAL INFO: PREP NEEDED

TITLE: FAN AND PICK	IND/GRP/CLASS: GROUP
<p>DETAILS:</p> <p>Each team receives a set of question cards:</p> <ol style="list-style-type: none"> 1. Student 1 holds the question cards in a fan and says – ‘pick a card, any card’ 2. Student 2 picks a card, reads the question aloud and allows five seconds of think time 3. Student 3 answers the question 4. Student 4 responds to the answer – for right / wrong answers student 4 checks and then either praises or tutors. For questions that have no right or wrong answer, student 4 does not check for correctness, but praises and then paraphrases the thinking that went into the answer. 5. Students rotate roles, one person clockwise for each new round. 6. Modifications – fan and pick can be played in pairs – 1 fans, 2 picks and reads, 1 answers, 2 tutors or praises. Students then switch roles. 	
RESOURCES: Fan and pick cards	ICT: No
BOOK REFERENCE: KAGAN COOPERATIVE LEARNING - KAGAN	ADDITIONAL INFO: Prep required

TITLE: FIND SOMEONE WHO	IND/GRP/CLASS: WHOLE CLASS ACTIVITY
<p>DETAILS:</p> <p>Pupils to have a grid (usually 3 x 3 or 4 x 4) with a series of questions such as ... can tell you two types of fire extinguishers? ... the parts of the fire triangle?</p> <p>Pupils move round the classroom until their pair up. In pairs, A asks a question from the worksheets, B responds. A records the answer on his or her own sheet. B checks and initials the answer. B asks the question and A responds, B then records the answer and then A checks and initials. Pupils then move off, find a new partner to repeat the process. When they have a full worksheet they can sit down and be approached as a resource for other pupils.</p> <p>In teams pupils then compare answers – if there is uncertainty then all members of the team raise their hands to ask a team question.</p>	
RESOURCES: FIND SOMEONE WHO GRIDS.	ICT: NO
BOOK REFERENCE: Kagan Co operative Learning - Kagan	ADDITIONAL INFO: Prep required

TITLE: FIND THE FICTION / FIND THE LIE	IND/GRP/CLASS: Group or class
DETAILS: Teammates each write 3 statements: two true and one false, attempting to trick their teammates. One student on each team stands and reads his/her statements to team mates. Without consulting team mates, each student writes down his / her own best guess which statement is false. Teammates 'round robin' and defend their 'best guess' (you may or may not ask the team to reach a consensus). Team mates announce their guesses. The standing student then announces the false statement. Students celebrate if they guess correctly and congratulate the standing student if they were fooled. The next team mate stands to share and the process is repeated. VARIATIONS – played with the whole class, the teacher or a student may attempt to outwit the whole class. FACT OR FICTION – students state either a true or false statement then it is up to teammates to decide if the statement is either fact or fiction. This is easier for younger students.	
RESOURCES: None needed	ICT: No
BOOK REFERENCE: KAGAN CO OPERATIVE LEARNING - KAGAN	ADDITIONAL INFO: No prep required

TITLE: FLASHCARD GAME	IND/GRP/CLASS:
DETAILS: Each student has their own set of flashcards. Pupils are in pairs – one as the tutor and the other is the student. The student gives the tutor their cards: The tutor shows the question on the first card, reads the question, shows and then reads the answer written on the back of the card. The tutor then turns the card back over and again reads the question. The student answers from memory. The student answers and if they are correct the student wins the card back. If they are wrong - the tutor shows the student the answer and coaches them. The card is returned to the stack to try again later. When the student wins all the cards, partners switch roles. When you have both done this move to round 2. ROUND 2 The tutor shows the question on the first card and the student answers from memory. If they are correct the student wins the card back. If they are wrong - the tutor shows the student the answer and coaches them. The card is returned to the stack to try again later. When the student wins all the cards, partners switch roles. When you have both done this - try the bonus cards!	
RESOURCES: Cards needed	ICT:
BOOK REFERENCE: KAGAN CO OPERATIVE LEARNING - KAGAN	ADDITIONAL INFO: Prep needed

TITLE: GIVE ONE – GET ONE	IND/GRP/CLASS: IND / GRP / CLASS
DETAILS: In teams, students brainstorm 'Give one' items (eg bones in the body, chemical elements, parts of an electrical circuit) without writing anything. When they agree they have come up with a good 'Give one' item, they take up their pencils and each in their own words write it in the 'Give one' column on the template. When their give one column is full the team stands up. When all the teams are standing all the members find a new partner. In pairs, students each give one idea and get one idea. Students write the idea they received in their own words in the 'get one' column. Pairs part and repeat the search again. When a student's form is full then they stand at the side of the room to give one to anyone whose form is not full. When all students have finished the forms they return to the teams and share the ideas they have received.	
RESOURCES: Template – 2 columns, 12 rows with get one and give one as column headings	ICT: No
BOOK REFERENCE: Coop learning and High School Science - Michels	ADDITIONAL INFO: Minimal prep

TITLE: GRAPHIC ORGANISERS	IND/GRP/CLASS: IND / GRP / CLASS
DETAILS: Graphic organisers are a way of representing information in a visual way. Examples include – Venn Diagrams, target diagrams, tree diagrams, flow diagrams, storyboards, timelines, fishbone diagrams, decision trees, cycles	
RESOURCES: Graphic organiser templates	ICT: No
BOOK REFERENCE: Evidence Based Teaching – Geoff Petty	ADDITIONAL INFO: Preparation required

TITLE: GROUP BRAINSTORM	IND/GRP/CLASS: IND/GRP
DETAILS: Give pupils a topic and ask them to brainstorm their answers onto paper as a group. You can then ask for feedback as a group or from individuals. Examples for this type of activity include – what are the consequences of global warming, what are the benefits of genetic engineering. This can be followed by a classification exercise or a mind map exercise to put the answers into a more organised format.	
RESOURCES: Paper, pens	ICT: No
BOOK REFERENCE:	ADDITIONAL INFO: No prep needed

TITLE: GROUP POSTER CREATION	IND/GRP/CLASS: GRP
DETAILS: Pupils can work in a group to produce posters – pairs or fours. They need to be clear how they are working together and divide the work up. Pupils can then present their poster to the class. A good tool to support this aspect is ‘Proportional Representation’ where the team have to decide their percentage of the group’s effort. For a full description of Cooperative Learning Project methods – use Kagan Cooperative Learning – Kagan	
RESOURCES: Poster paper	ICT: No
BOOK REFERENCE: Teacher’s Toolkit – Paul Ginnis / Kagan Cooperative Learning - Kagan	ADDITIONAL INFO: Prep needed

TITLE: GROUP PRESENTATION	IND/GRP/CLASS: GRP
DETAILS: Get one group to present what they have learned to another group who offer feedback and suggestions for improvement. This can be used if you have split up the topic into sections and each group of pupils presents to the class who have to take notes or can be provided with a summary sheet.	
RESOURCES:	ICT: Optional
BOOK REFERENCE: Accelerated learning – A users guide pg 38	ADDITIONAL INFO: Prep needed by pupils
TITLE: GUESS WHO	IND/GRP/CLASS: GRP
DETAILS: Students work in groups of four, sitting so the group members can easily see and hear each other. Give each group a pack of cards, which is shuffled and placed face down in the middle of the table. The card depict items that should have been learnt eg equipment, processes, definitions. Group members take turns or have number and use a die to determine who goes next. The player whose turn it is picks up the top card and looks at it, taking care not to let anyone else see. The rest of the group ask questions. The player holding the card can answer only yes or no. If preferred the number of questions, or the time, can be limited. Once the item has been successfully identified by the group, the turn passes to the next player.	
RESOURCES:	ICT:
BOOK REFERENCE: Teacher’s Toolkit – Paul Ginnis	ADDITIONAL INFO:
TITLE: HIERARCHIES	IND/GRP/CLASS: IND
DETAILS: Each student draws a page size pyramid, divided up into 5 layers. Explain that most non fiction text is made up of hierarchies of information and finding the hierarchies provide structure for good notes. Show how newspapers make hierarchies explicit with the use of headlines, bold paragraphs, subheadings and smaller print. Well – written textbooks present information in a similar way. Give out a non fiction text appropriate to the topic in hand and to the reading ages of the students. Ask students to find the big idea in the text – the headline. They write this in the apex of the pyramid. Students then work out the next level of information – the main points – and note them in the next ‘layer’ down	
RESOURCES: Text and training	ICT: Optional
BOOK REFERENCE: Teacher’s Toolkit – Paul Ginnis	ADDITIONAL INFO: Prep needed

TITLE: HIGHLIGHTING TEXT	IND/GRP/CLASS: IND/GRP
DETAILS: Pupils have a piece of text that they are to highlight. Highlighting can be used for many different purposes. For example – highlighting processes, key words, key definitions, words that they do not understand, key points.	
RESOURCES: Text, highlighter pens	ICT: NO
BOOK REFERENCE:	ADDITIONAL INFO: Minimal prep

TITLE: HOT SPOT	IND/GRP/CLASS: CLASS
DETAILS: Smartboard lesson activity toolkit allows you to create ‘hot spot’ activities. For example – using a map of the world the flash animation asks where a particular country is and the student has to hit the spot where they think it is. When tapped the animation brings up the correct answer and can score the student based on proximity to the correct answer. This can be modified to use diagrams of any type and adding labels.	
RESOURCES: Smarboard notebook and lesson activity toolkit	ICT: YES
BOOK REFERENCE: Smarboard	ADDITIONAL INFO: Prep needed

TITLE: I WANT TO KNOW...	IND/GRP/CLASS: IND / GRP
DETAILS: Ask students to think of two questions they have about the topic. Give them 10-15 seconds of think time, then get them to write them down on paper. Students pair up to read their questions to a partner. Select a few students to share their questions. The questions can be recorded until they have generated a number of questions about the topic and got the pupils interests. For independent writing – pupils write the questions they are interested in or hope to learn about down the left hand side of the paper, then the paper is stored until the topic is complete. At the end of the topic – students answer their own questions on the right hand side.	
RESOURCES: Template from book	ICT: No
BOOK REFERENCE: Write Science (Coop learning) - DeBolt	ADDITIONAL INFO: No prep needed

TITLE: IDEAS FUNNEL	IND/GRP/CLASS: GRP
DETAILS: 1. Pupils in groups of four-to-six receive a large piece of paper. 2. Pupils decide on their roles within the group. Such roles might include scribe, timekeeper, facilitator and presenter. 3. The groups generate as many ideas or options as possible around the given topic, and note them on the top half of the piece of paper. 4. Groups then prioritise their ideas by selecting the five which they believe are most important or relevant to the given topic. They write these on the bottom half of the sheet. 5. The presenter in each group brings their A3 page to the front and presents their findings and five priorities to the class. 6. In groups once again, pupils decide upon the one idea which they feel is the most relevant to the topic. This may be an idea from their own list or one from another group which they have heard during the group presentations. Each group should aim to reach agreement on their choice through negotiation and justification. 7. The one idea from each group might be noted on a flip chart and similarities or differences between groups could be discussed. The ideas noted on the flip chart could also be referred to at various times through the course of the topic.	
RESOURCES: Paper and pens	ICT: No
BOOK REFERENCE: Northern Ireland Active learning strategies	ADDITIONAL INFO: Minimal prep

TITLE: INFORMATION HUNT	IND/GRP/CLASS: INDIVIDUAL
DETAILS: Students are commissioned to find out information about the topic in hand. Each student is supplied with a Fact Finder sheet. The materials enable the students to solve riddles that entitle them to a crack at the treasure chest key question. It's important that there be a variety of information types, not all the same type, otherwise the exercise can become tedious. For younger students it could be in the form of a bingo grid with questions in the boxes. For older students the sheet would be more regular matrix to fill in or a standard question and answer sheet. The idea is to find accurate and complete information against the clock. Students have to organise themselves. At any point in the proceedings students can get their sheet checked, but this takes precious time. As soon as someone has a full set of answers or has a full house, the activity stops and the teacher and class go over the questions together.	
RESOURCES: Information stations setup	ICT: Optional
BOOK REFERENCE: Teacher's Toolkit – Paul Ginnis	ADDITIONAL INFO: Prep needed

TITLE: JIGSAW ACTIVITY	IND/GRP/CLASS:
DETAILS: This is described under 'delegation' and appears as a regular active learning strategy. For further information about how to organise 'jigsaw activities' see the article in the appendices from Geoff Petty – Evidence Based Practice.	
RESOURCES: Materials for each station	ICT: No
BOOK REFERENCE: Kagan Cooperative Learning – Kagan	ADDITIONAL INFO: Prep needed

TITLE: KEY IMAGES	IND/GRP/CLASS:
DETAILS: Use a key image to generate questions – for example a rock formation at the start of a geology topic or particular animals for an ecology topic. This could be a rotating slide show for pupils. Encourage open questioning and discussion.	
RESOURCES: Key images – search the internet	ICT: Can be used
BOOK REFERENCE:	ADDITIONAL INFO: Some preparation

TITLE: KEY WORDS AND DEFINITIONS	IND/GRP/CLASS: GROUP
DETAILS: Put students into groups of 2 or 4 and give each group an envelope containing 10 key words and separated definitions on pieces of paper or card. The key words can be from previous lessons or topics. Students must reach a consensus and place the correct definition next to the key words on the desk in front of them.	
RESOURCES: Key words and definitions on cards	ICT: No
BOOK REFERENCE: Accelerated learning - A users guide – pg 26	ADDITIONAL INFO: Some preparation needed

TITLE: KEYWORD BINGO	IND/GRP/CLASS: IND
DETAILS: Give pupils a series of key words on the board – usually at least 15. Get them to draw a 3 x 3 grid and select 9 words to place in the grid. The caller (teacher) reads a randomly selected definition and the pupils cross out the matching key words if they have them. When pupils have a line they then have to read back the key words and their meanings. Then proceed to a full house and repeat the read back. It can also be used using more demanding questions that just the definitions. This can also be done using images such as circuit symbols, predators and prey, and equipment.	
RESOURCES: None	ICT: Optional
BOOK REFERENCE:	ADDITIONAL INFO: Little prep needed

TITLE: LABEL IT!	IND/GRP/CLASS:
DETAILS: Take a labelled diagram from a textbook and photocopy without the labels so that you are just left with the picture. Ask the students to discuss what they think the picture shows and to add their own labels.	
RESOURCES: Photocopied diagrams	ICT: No
BOOK REFERENCE: Accelerated learning – A users guide pg 31	ADDITIONAL INFO: Preparation required

TITLE: LOOP GAMES	IND/GRP/CLASS: CLASS
DETAILS: A standard National Strategy tool. Pupils have a question and an answer on a card. The first person reads their question. The person who has the answer – reads the answer and then reads their question, the person with this answer repeats and so on. To spice this up you can do it on a timer and see if they can improve their times from lesson to lesson.	
RESOURCES: Loop game cards	ICT: None
BOOK REFERENCE:	ADDITIONAL INFO: Preparation needed

TITLE: MARKET PLACE	IND/GRP/CLASS: GRP
DETAILS: Stage 1 – Show the students the learning objectives and the test they will sit at the end – (1 minute) Stage 2 – Each group converts the resource material into a visual display – add limits eg 10 words, use symbols, numbers, diagrams, pictures, graphs. The group collaborates and makes sure everyone understands the poster. (15min) Stage 3 – One member is stallholder who explains their poster while the rest go out into the marketplace to collect information. They should all take notes so they can teach at stage 4. Stage 4 – Everyone returns to home base and those who were in the marketplace explain and teach what they have found out to the rest of the group. The aim for the end of this stage is to be ready for the test. Stage 5 – all notes and posters are out of sight – the test is carried out under examination conditions Stage 6 – the group put their heads together to see if they have an accurate set of answers between them.	
RESOURCES: Resource materials, poster paper, pens	ICT: NO
BOOK REFERENCE: Teacher's Toolkit – Paul Ginnis	ADDITIONAL INFO: Prep needed

TITLE: MASTERMIND	IND/GRP/CLASS: GRP / CLASS
DETAILS: Divide a topic up into manageable and equal chunks. Ask the pupils to organise themselves into small research groups. Each research group takes a different aspect of the topic and is expected to research it thoroughly by a common deadline. Resources both in and out of the classroom can be used. The teacher is on hand to advise. Each group is asked to ensure that every member fully understands the material. At the appointed time groups enter the mastermind competition as experts in their field of research. The rules are changed slightly – the whole team enters and can confer on all answers. The questions set should reflect the level of assessment the students are studying for.	
RESOURCES: Question cards and resource material	ICT:
BOOK REFERENCE: Teacher's Toolkit – Paul Ginnis	ADDITIONAL INFO:

TITLE: MATCHING ACTIVITIES	IND/GRP/CLASS: GRP
DETAILS: Students are given envelopes containing cut out statements and pictures. They work in groups of four or pairs and match the statements to the pictures. You can also do this with key words and definitions. This is visual because it contains images, auditory because students discuss their choices and kinaesthetic because they are physically arrangement information on the table in from of them.	
RESOURCES: Card sort statements	ICT: no
BOOK REFERENCE: Accelerated learning - A users guide pg 34	ADDITIONAL INFO: Prep needed

TITLE: MEMORY BOARD	IND/GRP/CLASS: IND /GRP
DETAILS: Write a dozen or more technical terms on the board, taken from a topic just completed or topic being revised after some time. Give the students a minute to remember the list. As soon as the time is up, remove them from view. Students have to write out not the terms themselves, but their definitions, remembering as many as they can and again in a specified length of time. Go over the terms and discuss the different ways in which students have defined them. VARIATIONS: have pupils work in pairs, use pictures or diagrams on the memory board, make it a cooperative exercise so no one person can get them all. Students work in groups and organise their strategy in advance for completion of the task	
RESOURCES:	ICT: Optional
BOOK REFERENCE: Teacher's Toolkit – Paul Ginnis	ADDITIONAL INFO: Minimal prep

TITLE: MIND MAPPING	IND/GRP/CLASS: IND/GRP
DETAILS: 1. Pupils write the main topic or issue in the centre of a large page. 2. Using branches, pupils draw the main ideas around the central concept, connecting them to the centre. Pupils could use a different colour for each main idea and highlighters to underline key words and concepts. Pupils could also add images to enhance further the visual aspect of their map. 3. Pupils draw sub-branches in order to highlight ideas connected to the main branch. 4. If used as a revision tool, pupils might want to use the mind map as a springboard for more extensive revision. They might, for example, wish to develop revision notes on a postcard – one postcard for each sub-branch. These postcards could contain the same colours and images as the relevant sub-branch on their mind map.	
RESOURCES: Large paper, felt pens	ICT: Optional
BOOK REFERENCE: Northern Ireland Active learning strategies / Mind map book – Tony Buzan	ADDITIONAL INFO: Minimal

TITLE: MODELLING	IND/GRP/CLASS: CLASS
DETAILS: Also known as ‘assisted performance’ or ‘teacher demonstration’, modelling is recognised by teachers as an effective strategy for when pupils are attempting new or challenging tasks. Modelling is an active process, not merely the provision of an example. It involves the teacher as the ‘expert’, demonstrating <i>how</i> to do something and making explicit the thinking involved. Through modelling, the teacher can: <ul style="list-style-type: none"> • ‘think aloud’, making apparent and explicit those skills, decisions, processes and procedures that would otherwise be hidden or unclear; • expose pupils to the possible pitfalls of the task in hand, showing how to avoid them; • demonstrate to pupils that they can make alterations and corrections as part of the process; • warn pupils about possible hazards involved in practical activities, how to avoid them or minimise the effects if they occur. 	
RESOURCES:	ICT: Optional
BOOK REFERENCE: Practice and Pedagogy series DFES	ADDITIONAL INFO: Minimal prep

TITLE: NUMBERED HEADS TOGETHER	IND/GRP/CLASS: GROUP
DETAILS: Pupils need to number themselves 1-4 or 5 The teacher reads a question and gives the pupils thinking time before pupils write down their answers privately. Then students stand up and ‘put their heads together’ and discuss their answers. When they are all in agreement and has the answer (or something to share) then they sit down. The teacher calls a number and the pupil with that number answers using mini whiteboard, flashcard or similar method. VARIATIONS: Paired heads together – students in pairs to improve answers and then share best answer in teams. Travelling heads together – when the teacher calls the number the students with that number travel to a new team to share their answers.	
RESOURCES:	ICT:
BOOK REFERENCE: KAGAN COOPERATIVE LEARNING BY KAGAN	ADDITIONAL INFO: Prep required

TITLE: ODD ONE OUT	IND/GRP/CLASS: IND / GRP
DETAILS: 1. Pupils cluster in pairs or groups. 2. Pupils are given a set of key words/ideas/places/things or people, depending on the learning area and topic. These may come, for example, in the form of a list or grid on an Overhead Projector or hand-out. 3. Pupils must find the odd one out on each grid or list. Often there may be no right or wrong answers and any word might be the odd one out. Pupils must, therefore, give a justified and valid response as to why they chose a particular word and the nature of the relationship between the other words on the list. 4. As an extension activity, pupils could suggest another related word to add to those which are not odd ones out. Alternatively, pupils could think of their own odd one out list or grid.	
RESOURCES: Odd one out lists	ICT: Optional
BOOK REFERENCE: Northern Ireland Active learning strategies	ADDITIONAL INFO: Minimal prep

TITLE: ON TOUR	IND/GRP/CLASS: GROUP
DETAILS: Decide on series of challenging questions that require long answers. Each question is written at the top of a large sheet of flip paper and the sheets are put out on desks around the room. There have to be more question sheets than there are pairs of students to avoid congestion. Students work in pairs and at the word 'go' they make a start on the question nearest to them. They are allowed to work on it for a few minutes until the teacher shouts 'move' then they move to another question to tackle. Pairs are encouraged to add, delete, and redraft in an attempt to create perfect answers. The only rules – one pair at a question, only 5 minutes at each question. When time is up – pairs return to their original questions and mark them with the answer scheme, or write up a finished version then photocopy and distribute to the class, or go through the main teaching points as a class.	
RESOURCES: Examination questions	ICT: NO
BOOK REFERENCE: Teacher's Toolkit – Paul Ginnis	ADDITIONAL INFO: Prep needed

TITLE: ONE TO ONE	IND/GRP/CLASS: CLASS
DETAILS: Divide the class in half and the topic under study in half. Give each half a sub topic and the appropriate study materials. Set a reasonable deadline by which the students must have mastered their subtopic. They have to create an A3 teaching aid with a mixture of words and pictures. They can work in pairs in their 'half' and ask for help from other people in their half or the teacher. Pair students up across halves and get them to teach each other using the teaching aids they have prepared. You could pair up the first two to finish and then the second pair to finish from each half and set differentiated extension tasks. Reasonable deadlines are given.	
RESOURCES: Resource materials, A3 paper	ICT: No
BOOK REFERENCE: Teacher's Toolkit – Paul Ginnis	ADDITIONAL INFO: Prep needed

TITLE: PAIRS CHECK	IND/GRP/CLASS: GROUP
DETAILS: Pairs check involves eight steps: 1 Pair work – teams break into pairs. Partners work on a single set of questions or problems. One student works on the first problem while the other watches and coaches, helping if necessary. 2 – Coach checks – the coach checks their partner’s work for agreement. If the partners don’t agree on an answer they may ask the other pair on the team. 3 – Coach praises – if the partner agrees, the coaches praises 4 – 6 – partners switch roles and repeat steps 1 – 3 7 – Pairs check – the two pairs on the team get together to check their answers. If they disagree and are unable to figure out why, four hands go up. 8 – Team praise – if the team agrees on the answer, they congratulate each other.	
RESOURCES: Questions or problems	ICT: No
BOOK REFERENCE: Write Science (coop learning) - DeBolt	ADDITIONAL INFO: Prep

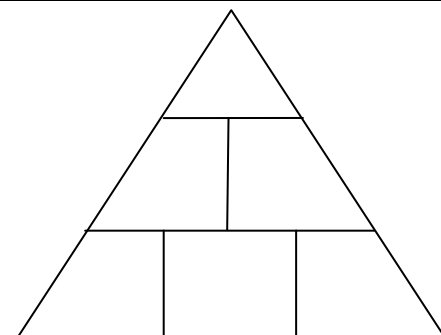
TITLE: PASS THE BUCK	IND/GRP/CLASS: CLASS
DETAILS: Students work in pairs and have five minutes to draft an answer to a difficult question. It is best if they work on large flip chart paper. As soon as the time is up, they pass their partial answer to the pair behind them and receive the work from the pair in front of them. They now have five minutes to continue on the received answer, picking up from where it was left. They are encouraged to add, delete and redraft. Again, when time is up they pass on the paper. When the process has served its purpose papers are returned to the original authors who use the contributions to draft a final polished version of the answer.	
RESOURCES: Resource materials	ICT: Optional
BOOK REFERENCE: Teacher’s Toolkit – Paul Ginnis	ADDITIONAL INFO: Prep needed

TITLE: PEER COACHING	IND/GRP/CLASS: GRP
DETAILS: Explaining: Students explain to each other how they did something, for example, solving a problem. It has been found that students who explain their method to each other learn mathematics much faster than those who do not. By explaining conceptual relationships to others, tutors define their own understanding. <i>Question Pairs:</i> Learners prepare for the activity by reading an agreed text, and generating questions and answers focused on the major points or issues raised. At the next class meeting pairs are randomly assigned. Partners alternately ask their questions of each other, and provide corrective feedback on the answers. <i>Learning Cells:</i> Each learner reads different selections and then teaches the essence of the material to his or her randomly assigned partner. Often used in Kagan Cooperative Learning structures	
RESOURCES: None	ICT: No
BOOK REFERENCE: Evidence Based Practice – Geoff Pett	ADDITIONAL INFO: No prep

TITLE: PEER MARKING / SPOOF ASSESSMENT	IND/GRP/CLASS: IND/GRP
DETAILS: Peer assessment is a skill that needs to be developed over a period of time and modelling this aspect can help them as well as supporting them to understand what they are aiming for. The following stems may be helpful in supporting them: You have met the criteria here by... This is your best sentence because... You could improve this example further by... You have not met this part of the criteria because... To reach the next stage you need to include more of...	
RESOURCES: Sample work to mark	ICT: No
BOOK REFERENCE: Pedagogy and Practice – Assessment for Learning	ADDITIONAL INFO: Prep needed

TITLE: PIECE IT TOGETHER	IND/GRP/CLASS: GRP
DETAILS: Cut a page of written information into sections. Put the sections into envelopes and give them out to students. Working in pairs, the students put the sections back in the right order so the information makes sense.	
RESOURCES: Written information	ICT: NO
BOOK REFERENCE: Accelerated learning – A users guide – pg 31	ADDITIONAL INFO: PREP NEEDED

TITLE: PLENARY TRIANGLE	IND/GRP/CLASS: INDIVIDUAL
DETAILS: At the bottom – 3 things you have learnt this lesson Next level – 2 strategies that have helped you learn Top – 1 question you still have about the lesson	
RESOURCES: PLENARY TRIANGLE SHEETS	ICT: No
BOOK REFERENCE:	ADDITIONAL INFO: No prep



TITLE: PMI	IND/GRP/CLASS: IND/GRP
<p>DETAILS: This method helps pupils to examine all sides of an idea, topic or argument. It steers pupils away from their initial emotive responses to an issue and encourages them to think about the disadvantages of an idea which they may like very much. A PMI obliges them to consider all ideas, even ones they might normally reject at first sight, and to decide their stance on an idea or issue <i>after</i> they have analysed it instead of before. See Consider All Factors and Other People's Views for similar activities.</p> <p>1. The facilitator may need to discuss with pupils the meaning of PMI and explain what each term means: Plus = a benefit, Minus = a downside, Interesting = an interesting point stemming from the topic under discussion.</p> <p>2. Pupils use a Plus-Minus-Interesting template to note the plus points of the issue as they see it, followed by the drawbacks and then any interesting points. Pupils might hopefully come to understand that ideas which they perceive to be bad can also be interesting, if they lead on to other ideas.</p> <p>3. A debrief afterwards could compare and contrast pupils' PMIs, followed by an exploration of any interesting points highlighted.</p>	
RESOURCES:	ICT: No
BOOK REFERENCE: Northern Ireland Active Learning Strategies	ADDITIONAL INFO: Prep needed

TITLE: POST IT SNOW STORM	IND/GRP/CLASS: INDIVIDUAL TO CLASS
<p>DETAILS: Give students a sticky note as they enter the room. Ask them to write down the three most important things they think they learned in the last lesson. They have about 3 minutes to do this and can use notebooks, and / or talk to a partner. After 3 minutes ask them to come up and stick their note on the board. Three minutes into the lesson you now have a blizzard of pieces of paper outlining what the students think are the most important things they have learned. Summarise a number of these, making sure that you emphasize (recall is dramatically improved with review) what you think were the important points. You can now start the lesson.</p>	
RESOURCES: Post it notes	ICT: No
BOOK REFERENCE: Accelerated learning – A users guide page 26	ADDITIONAL INFO: No prep

TITLE: PULL TAB GAME	IND/GRP/CLASS: CLASS / GROUP / IND
<p>DETAILS: The pull tab game created using the SMARTboard software allows you to place 16 keywords on tabs in 'boxes' and when you pull a tab the key word is revealed.</p> <p>This can be used in several different ways: -</p> <p>1 Pupils pick a number, and then have to define the key word, or use the word in a sentence correctly. If they cannot then they can 'phone a friend', when they complete the task satisfactorily then pick the next pupil.</p> <p>2 Pupils can select 4 tabs and then work either individually or in groups to come up with sentences using the key words correctly.</p>	
RESOURCES: Pull a tab gallery item for SMARTboard	ICT: YES
BOOK REFERENCE: Created by LG	ADDITIONAL INFO: Preparation required

TITLE: QUESTION AND ANSWER MATCHING	IND/GRP/CLASS: IND/GRP
DETAILS: A series of questions and answers are provided – pupils have to match up the correct question with the correct answer. The questions can be taken from a textbook or teacher generated. Pupils have to read the text to be able to match the correct answer, or it can be used as a revision exercise. It can be used as a drag and drop activity on the interactive whiteboard. This is a good way of supporting students who find writing difficult.	
RESOURCES: Question and answer worksheet	ICT: Optional
BOOK REFERENCE:	ADDITIONAL INFO: Prep needed

TITLE: QUESTION FLIPPERS	IND/GRP/CLASS: CLASS
DETAILS: Smartboard has a flash animation template where you can type text or place an image on one side of a square and a text or image on the other side. When the square is touched it flips round. This can be used in many ways including putting questions on one side and answers on the other, images and descriptions, key words and definitions. Templates with 10 'question flippers' can be created for pupils to work with.	
RESOURCES: Smartboard Notebook software and lesson activity toolkit	ICT: YES
BOOK REFERENCE: SMARTBOARD	ADDITIONAL INFO: Template created by LG

TITLE: QUESTION GENERATOR	IND/GRP/CLASS: ALL
DETAILS: Describe the topic to be studied. Ask pupils to generate as many questions as they can about the topic. This can be done as a whole class, groups, pairs, individually. The questions are needed to be sorted – they can rank it from most to least interesting. The teacher then builds the teaching inputs and materials around the questions, beginning with the most popular. The first few questions might last for a couple of lessons, the minority interest questions can be dealt with on the quiet with individuals or small groups.	
RESOURCES: Materials relating to questions.	ICT: No
BOOK REFERENCE: Teacher's Toolkit – Paul Ginnis	ADDITIONAL INFO: Prep needed

TITLE: QUESTION TIME	IND/GRP/CLASS: GRP /CLASS
DETAILS: Place a number of resources around the room relevant to the topic. They should be non text or low text resources eg photos, pictures, diagrams, maps. Make sure there are more resources than pairs of pupils. Students work in pairs and go round examining the resources. For each resource they define one question raised by the resource about the topic. The pairs write down their questions that they have agreed (each keeping a record). Pairs move round the resources spending as long as they need at a resource but knowing they have a final deadline. The pair must agree the most significant question raised by the resource. Once the time is up the pairs go back to their places and the teacher leads a discussion about each resource in turn, based on the student's questions. The quality of the questions is discussed and the key questions identified. The teacher provides the input to the lesson by answering the key questions. Individual students can note down the answers during the process or at the end.	
RESOURCES: Visual or low text resources for stations	ICT: No
BOOK REFERENCE: Teacher's Toolkit – Paul Ginnis	ADDITIONAL INFO: Preparation needed

TITLE: QUESTION WALL	IND/GRP/CLASS: IND
DETAILS: A question wall is part of your display set aside for students to attach sticky note questions to. The exercise is similar to a 'post it snowstorm' but this time the students are asked to write two important questions they still have from the previous lesson. You can start your lesson by answering a number of questions and again taking the opportunity to clear up any misunderstandings.	
RESOURCES: Post it notes	ICT: No
BOOK REFERENCE: Accelerated learning – a users guide pg 26	ADDITIONAL INFO: No preparation

TITLE: QUICK QUIZ QUESTIONS / POP TESTS	IND/GRP/CLASS: INDIVIDUAL
DETAILS: Regular review through the use of short but frequent pop tests. These are four types of test: test yourself, test your partner, test the teacher and teacher tests the class. Of these, the most useful is the self test. Encourage varied but frequent testing of short duration. Research evidence shows that spaced, active testing significantly improves recall.	
RESOURCES: None	ICT: No
BOOK REFERENCE: Accelerated learning - A users guide pg 42	ADDITIONAL INFO:

TITLE: QUICK QUIZ TRADE	IND/GRP/CLASS: GROUP
DETAILS: The teacher prepares a set of question cards for the class, or each student creates a question card. The students mix around the room, find a partner and quiz them by asking a question relating to their card. The partner answers. If they get it right then they are praised and coached if they get it wrong. Partners then trade cards and repeat the steps again.	
RESOURCES: Card set	ICT: No
BOOK REFERENCE: Kagan Co operative Learning - Kagan	ADDITIONAL INFO: Some prep needed

TITLE: QWIZDOM QUESTIONS	IND/GRP/CLASS: INDIVIDUAL
DETAILS: The Qwizdom hardware and software allows all pupils to participate in questions. Questions are written in PowerPoint and then run as a slide show. Feedback can be given to pupils via the handsets and if participant lists are set up properly then individual pupils progress can be monitored and misconceptions identified. Types of questions you can ask include: Multiple choice, True and false, Demographic, Sequencing, Multiple marking, Rating scale	
RESOURCES: QWIZDOM HANDSETS AND SOFTWARE	ICT: YES
BOOK REFERENCE:	ADDITIONAL INFO: PREPRATION REQUIRED

TITLE: QUIZ SHOWS	IND/GRP/CLASS: GRP / CLASS
DETAILS: Any quiz show format can be used in the classroom for example blockbusters (Software available for this), Who wants to be a millionaire?, The Weakest link.	
RESOURCES: Templates	ICT: OPTIONAL
BOOK REFERENCE: Creative Teaching Pocket book – Roy Watson Davies	ADDITIONAL INFO: Prep needed

TITLE: RANDOM TEXT OR IMAGE GENERATOR	IND/GRP/CLASS: CLASS
DETAILS:	
<p>Random text generator can also be used as a name selector if you place in the names of the pupils in the class. Use class photographs for the same effect in the image generator to select the pupil turn.</p> <p>With random text – use to define key words, use key words in sentences With random images – equipment, diagrams</p>	
RESOURCES: SMARTBOARD notebook and lesson activity toolkit	ICT: YES
BOOK REFERENCE: SMARTBOARD	ADDITIONAL INFO: Preparation needed

TITLE: RANKING STATEMENTS	IND/GRP/CLASS: IND / GRP
DETAILS:	
<ol style="list-style-type: none"> 1. Pupils in small groups receive a range of cards. 2. Pupils arrange them in order of importance/priority. They might do this in a straight line or build up tiers. 3. Pupils might then compare each other's ranking as a starting point for class discussion of the issue. 4. A debrief after this activity might be beneficial. 	
RESOURCES: Statement cards	ICT: No
BOOK REFERENCE: Northern Ireland – Active learning strategies	ADDITIONAL INFO: Prep needed

TITLE: REAL LIFE CHALLENGE	IND/GRP/CLASS: GROUP/ INDIVIDUAL
DETAILS:	
<p>Present the learning in the context of a real life situation or problem to be solved. For example, 'how can we ensure that everyone on the planet has access to fresh water?' You are a team of experts brought in to advise the Australian government on a series of emergency measures for dealing with drought conditions.</p> <p>Or say to students 'You have been asked to prepare a lesson to teach Year 5 students the chemistry of salt. What will they need to know? How will you explain quite complex ideas in simple language? Remember you will also need to present the information in an interesting way to hold their attention.</p>	
RESOURCES:	ICT:
BOOK REFERENCE: Accelerated learning – A users guide pg 31	ADDITIONAL INFO: Preparation needed

TITLE: REVEAL IT!	IND/GRP/CLASS: CLASS
DETAILS: A picture related to the topic is placed on an OHP (or interactive whiteboard). The teacher covers all but a small part of the picture. The students are asked what the picture shows. The teacher then reveals more of the picture and asks the students if they have changed their minds. This carries on as more and more of the 'whole' picture is revealed. With an interactive whiteboard the reveal tool can be used, or cover the image with a pen the same colour as the background and magically 'erase' the picture to reveal it.	
RESOURCES: Image	ICT: Optional
BOOK REFERENCE: Accelerated learning – A users guide pg 31	ADDITIONAL INFO: Prep needed if using IWB

TITLE: REVIEW RACES	IND/GRP/CLASS:
DETAILS: Divide the class into three teams. Give each team a different coloured marker pen, that is, green team, red team, blue team. Three flipchart size pieces of paper are attached to the board with blu-tack. One person in each team starts with the pen and goes to the board. They write one thing they have learned on their team's piece of paper. They return and pass the pen to the next member of the team. The rule is you can only move when you have been passed the marker pen. This person then goes up and writes something different they have learned and so on... the winning team is the one with the most number of new things learned.	
RESOURCES: Marker pens, flip chart paper	ICT: No
BOOK REFERENCE: Accelerated learning – a users guide pg 43	ADDITIONAL INFO: No preparation

TITLE: REVISION QUESTIONS	IND/GRP/CLASS: IND/GRP
DETAILS: Get pupils to write their own revision or test questions that they can pass onto another pupil, group or pair. They can create multiple choice questions or possible 'test questions' for others to attempt.	
RESOURCES:	ICT: No
BOOK REFERENCE:	ADDITIONAL INFO: No prep needed

TITLE: ROUND ROBIN / RALLY ROBIN		IND/GRP/CLASS:
DETAILS: Teacher poses a problem to which there are multiple possible responses or solutions and provides think time. Students take turns stating responses or solutions. Rally robin – if the pupils are working in pairs Round robin – when working in groups		
VARIATIONS All write – round robin – during round robin, students each record each answer on their own paper. Timed round robin – each student shares in turn for a specified time Think, write, round robin – students think about their response and write it down before the round robin		
RESOURCES: none	ICT: Not needed	
BOOK REFERENCE: KAGAN COOPERATIVE LEARNING - KAGAN	ADDITIONAL INFO: No prep	

TITLE: ROUND TABLE		IND/GRP/CLASS: GRP
DETAILS: Students take turns generating written responses, solving problems or making contributions to projects. The teach provides a task to which there are multiple possible responses, and provides think time Students take turns passing a paper and pencil or team project, each writing one answer or making a contribution.		
VARIATIONS: In pairs – rally table – partners taking turns. Roundtable consensus – students must reach a consensus before recording each answer Pass and praise – students praise the contribution of the person passing the paper to them		
RESOURCES: PAPER	ICT: No	
BOOK REFERENCE: KAGAN COOPERATIVE LEARNING - KAGAN	ADDITIONAL INFO: Minimal prep	

TITLE: SATS QUESTIONS		IND/GRP/CLASS:
DETAILS: SATs questions can be selected according to topic using the TESTBASE software. Questions can be used at particular levels and in a variety of ways including: Individual work Group activities Peer and self assessment Spoof marking For assessment for learning at the start, middle and end of units		
RESOURCES: Any prior SATS papers	ICT: Testbase	
BOOK REFERENCE: None	ADDITIONAL INFO: Prep needed	

TITLE: SCIENCE BOOKS	IND/GRP/CLASS: IND / GRP
DETAILS: Students are assigned a book topic for example rocks. The team meets to research and discuss the main topics they want to cover, and the type of book they want to create. Students divide the work between themselves. It is important to tell pupils before the discussion that they must divide the book into sections. Students must research and write their sections separately. Students work independently to produce their section of the book in draft form. Then 'round robin' to get feedback on the content. Some students may need to do a second draft in light of the comments. Then 'round table' to check work for spelling, punctuation etc before they write the final draft independently. Teams then complete a front and back cover and a contents page. The books can be shared	
RESOURCES: Materials for research and book production.	ICT: Optional
BOOK REFERENCE: Write Science (Coop learning) - DeBolt	ADDITIONAL INFO: Preparation needed

TITLE: SCIENCE BOOKS VERSION 2	IND/GRP/CLASS: IND / GRP
DETAILS: Pupils can produce a small book on a particular topic – for example if they have just covered the topic of cells and organs they can write about the different types of cells and the cell parts. Ensure pupils think about layout, readability, contents page and the front and back covers.	
RESOURCES: Materials for research and book production.	ICT: Optional
BOOK REFERENCE: Learning skills in Science -	ADDITIONAL INFO: Preparation needed

TITLE: SCIENTIFIC BREAKTHROUGH TELEGRAM	IND/GRP/CLASS: IND / GRP
DETAILS: Tell the students to pretend that they are to present during a historical scientific discovery. Students can all be given the same event or write about different events. For example, they can pretend to have witnessed the first man on the moon. Students write a telegram or letter to a friend describing the event and the implications for the world. Students can use the text or other sources to include relevant information. Tell them to be ready to share their telegram or letter. Students can then read their telegram or letter to their teammates. After hearing it, team mates take turns asking the writer relevant interview questions for two minutes.	
RESOURCES: NO	ICT: OPTIONAL
BOOK REFERENCE: Write Science (Coop learning) - DeBolt	ADDITIONAL INFO: No prep needed

TITLE: SEND A PROBLEM	IND/GRP/CLASS: GROUP
DETAILS: Each student writes a question or problem on a card. For review pick questions that have a clear correct answer, but it can also be used with higher level thinking questions. Students check their questions with their team mates and if all the team agree then the answer is written on the back of the card or on a separate answer key. When the teams have completed their problem then they send them to another team to solve. Student one reads the first problem aloud to their team mates and the team works together to answer the problem. Problems can also be solved in pairs. Students check their answers by flipping over the card or checking with the key. If the team disagrees with the answer, they can work with the sending team to solve the discrepancy. Student 2 reads the next card and the process is repeated until all the problems have been read and answered. After the team has solved the problems or after a set amount of time has passed teams send the problems to another team to answer.	
RESOURCES: paper	ICT: No
BOOK REFERENCE: Write Science (Coop learning) - DeBolt	ADDITIONAL INFO: Min prep

TITLE: SENTENCE MATCHING	IND/GRP/CLASS: IND/GRP
DETAILS: Pupils are given the start and end of sentences – they have to match them up correctly. This can be done as a card sort, written exercise or interactive whiteboard activity. An alternative is also provided in the Science intervention materials where pupils have to select elements of a sentence from boxes to make a correct scientific sentence. See intervention materials for an example	
RESOURCES:	ICT: Optional
BOOK REFERENCE: Science intervention materials	ADDITIONAL INFO: Prep needed

TITLE: SHARED / GROUP READING	IND/GRP/CLASS: GRP / CLASS
DETAILS: When using text –get pupils to share reading activities for examples in groups of 2-4. Pupils should be encouraged and supported in order to read aloud. To develop pupil’s understanding of the text teacher questioning should be open and higher level in order to make sure pupils comprehend what they have read.	
RESOURCES: Texts	ICT: No
BOOK REFERENCE:	ADDITIONAL INFO: Minimal prep

TITLE: SHOW ME	IND/GRP/CLASS: IND
DETAILS: <i>A way of getting all students to answer questions instead of just the usual few! This is a strategy for encouraging an expectation of participation. Students will need to be “trained” in appropriate use of their whiteboards if this technique is new to them.</i> <i>Also an assessment for learning strategy that enables the teacher to be enterprising in adapting the lesson according to the feedback received from the whiteboard session.</i> When a question is asked, everyone writes down their answer on a student whiteboard and shows it to the teacher. The teacher can gain a very quick impression of the nature of the responses and can adapt the lesson accordingly. A variation is to work in pairs or in a group to produce an answer. Whiteboards can be used for a number of different tasks. The key is that they signal an expectation that all students will participate.	
RESOURCES: Mini whiteboards	ICT: No
BOOK REFERENCE: Northern Ireland Active Learning Strategies	ADDITIONAL INFO: No prep

TITLE: SHOWDOWN	IND/GRP/CLASS: GROUP
DETAILS: Each team has a set of question cards stacked face down in the centre of the table. The teacher selects one student to be the Showdown captain for the first round. The captain draws the top card, reads the question and provides think time. Working alone, all students including the captain, write their answers. When finished, team mates signal they are read. The captain calls – ‘showdown’ and team mates show and discuss their answers. The captain leads the checking. If correct then praise, if not then team mates tutor their peers. The person on the left of the showdown captain becomes the captain for the next round. VARIATION – rather than cards – students can play show down with oral questions, questions on a handout or questions displayed on the IWB	
RESOURCES: cards	ICT: Optional
BOOK REFERENCE: Kagan Cooperative learning - Kagan	ADDITIONAL INFO: Prep needed

TITLE: SIMULTANEOUS ROUNDTABLE	IND/GRP/CLASS: IND/GRP
DETAILS: In teams each student writes down the first idea or sentence about the topic in hand on their own sheet of paper. They all do this at the same time. Then they pass the paper clockwise. Team mates read the information on the paper, make a contribution, and then pass it clockwise again. When completed, each team has four papers loaded with ideas or four different writings on a topic or on different, related topics. Simultaneous Round Table can also be used to edit each other’s work. Often a set length of time is determined by the teacher. Students pass papers when you call pass.	
RESOURCES: paper	ICT: No
BOOK REFERENCE: Write Science (coop learning) - DeBolt	ADDITIONAL INFO: No prep

TITLE: SKELETON MIND MAP	IND/GRP/CLASS: IND / GRP
DETAILS: Give pupils an outline mind map and ask them to add to it. You may choose to give them the main branches as a starting point If you wish to use ICT – imindmap is the official mind mapping software that meets the rules set out by Tony Buzan. An alternative is 'Inspiration' or 'Mind manager'	
RESOURCES: Paper or ICT	ICT: Optional
BOOK REFERENCE: Accelerated learning A users guide – pg 33	ADDITIONAL INFO: Min prep

TITLE: STADS	IND/GRP/CLASS:
DETAILS: In Student Teams-Achievement Divisions (STAD) (Slavin, 1994a), students are assigned to four-member learning teams that are mixed in performance level, gender, and ethnicity. The teacher presents a lesson, and then students work within their teams to make sure that all team members have mastered the lesson. Finally, all students take individual quizzes on the material, at which time they may not help one another. Students' quiz scores are compared to their own past averages, and points are awarded on the basis of the degree to which students meet or exceed their own earlier performance. These points are then summed to form team scores, and teams that meet certain criteria may earn certificates or other rewards.	
RESOURCES:	ICT: No
BOOK REFERENCE: Using student team learning – Salvin / Kagan Cooperative Learning – Kagan	ADDITIONAL INFO: Prep needed

TITLE: STEPPING STONES	IND/GRP/CLASS: CLASS
DETAILS: Sit the class in circle. In the centre place several sheets of flip chart paper and a thick felt pen. Discuss with the class the number of steps in the process under discussion. For example a procedure, physical process, thinking process. Number the pieces of paper and set them out in sequence across the circle to represent the stages of the process. These are the stepping stones. If necessary add key words to each one. For example in the water cycle – evaporation, condensation, precipitation. Ask for a volunteer who thinks they can get right across the circle on the stepping stones. They stand on the first stone and explain the step accurately and fully. If the teacher is satisfied they move to number 2 and explain it and so on. If the student gives an incomplete or inaccurate answer, they've fallen off , sit back down and another volunteer takes up the challenge.	
RESOURCES: Flip chart or sugar paper	ICT: No
BOOK REFERENCE: Teacher's toolkit – Paul Ginnis	ADDITIONAL INFO: No prep

TITLE: STORYBOARD	IND/GRP/CLASS: IND
DETAILS: Create a storyboard to explain a process – for example the steps in an experiment or the scenes from a book. Similar to creating a cartoon strip but pupils need to explain the image underneath.	
RESOURCES:	ICT: NONE
BOOK REFERENCE: Accelerated learning – A user’s guide pg 38	ADDITIONAL INFO: Little prep

TITLE: SUMMARIES / REVISION SHEETS	IND/GRP/CLASS: IND
DETAILS: Pupils can create summary summaries of the lesson or the topic and / or create their own revision sheets for themselves or others to use. If summarising a topic you can ask them to summarise the unit in 30 words and list 5 key points from the unit as a way of providing themselves with a key summary at the end of the topic.	
RESOURCES: None needed	ICT: no
BOOK REFERENCE: Strategies for closing the learning gap – Mike Hughes and Andy Vass	ADDITIONAL INFO: No prep

TITLE: SUMMARISE THE LESSON	IND/GRP/CLASS: IND
DETAILS: Students must prepare a bullet point summary of the key learning points in the lesson. This must be in the form of an essential guide that they offer as a learning resource for other students to use.	
RESOURCES:	ICT: No
BOOK REFERENCE: Accelerated learning -A users guide pg 39	ADDITIONAL INFO: No prep needed

TITLE: TEAM SORT	IND/GRP/CLASS: GRP
DETAILS: Working together as a steam, students sort items into given categories or into a categorisation system like a Venn diagram or two by two matrix, or ranking ladder. The items for sorting can be generated by a team brainstorming session or can be provided. Students take turns placing items into categorisation system. When teams are done sorting, they can share or compare their resulting product with another team, or post their work for the class to see.	
RESOURCES: Catergorisation system template, items for sorting	ICT: No
BOOK REFERENCE: Write Science (Coop learning) - DeBolt	ADDITIONAL INFO: Prep needed

TITLE: TEAM WORD WEB	IND/GRP/CLASS: GRP
DETAILS: To make word webs in teams, give each student a different coloured marker and each team a large sheet of paper. Word webs can also be made on smaller paper. The main topic of the word web is written in a rectangle in the centre of the paper. Students do a 'round table' adding core concepts sprouting from the main topics, circling the core concepts in ovals. Then, students have a free for all, adding as many supporting details as possible and making connections where appropriate. Encourage students to suspend judgement and to quickly write down and integrate everything that comes to mind. Have students to add illustrations, symbols and arrows.	
RESOURCES: Large paper, coloured markers.	ICT: No
BOOK REFERENCE: Write Science (Coop learning) - DeBolt	ADDITIONAL INFO: Minimal prep

TITLE: THINK – PAIR – SHARE	IND/GRP/CLASS: ALL
DETAILS: The teacher poses a question for the class. It works best for questions where there is no right or wrong answer for example 'should we use fossil fuels?' Give students 10 – 15 seconds of think time. Then, have students pair up with another student on their team to share what they think. After students have shared their ideas, select a few students to share their ideas with the class. Think – pair – share can be used several times in succession to follow a line of reasoning or more fully develop a concept with interrelated issues. Have students pair up with a different team mate with each new question. VARIATIONS – Instead of sharing at the end pupils write down their own notes (Think, pair, write) or you can use the structure – think, write, pair and share where pupils write their ideas down before pairing up	
RESOURCES: None needed	ICT: No
BOOK REFERENCE: Write Science (Coop learning) - DeBolt	ADDITIONAL INFO: Minimal prep

TITLE: THINKING HATS ACTIVITIES	IND/GRP/CLASS: IND/GRP
<p>DETAILS: White Hat thinking Facts, figures, information needs and gaps. "Let's drop the arguments and proposals for a minute and look at the data."</p> <p>Red Hat thinking Intuition, gut feelings and hunches. It allows an intuition to be put forward without justification. "I think the proposal's rubbish"; "It's brilliant!"</p> <p>Black Hat thinking Judgement and caution. Used to point out why a suggestion does not fit the facts, the context or the objectives. The black hat must always be logical.</p> <p>Yellow Hat thinking Optimism and positivity. Why something will work and why it will offer benefits. "Let's consider the advantages of this idea". "What sells this plan?"</p> <p>Green Hat thinking Creativity, alternatives, possibilities, provocations and changes. "Let's brainstorm other ideas"; "What if we turn this suggestion on its head?"</p> <p>Blue Hat thinking Overview and process management. Doesn't look at the subject itself but at the 'thinking' about the subject. "I feel we should do some more green hat thinking at this point." Meta-cognition.</p>	
RESOURCES: Thinking hats prompt cards	ICT: OPTIONAL
BOOK REFERENCE: Thinking hats – Edward De Bono	ADDITIONAL INFO: MINIMAL PREP

TITLE: THINK PAD BRAINSTORM	IND/GRP/CLASS: IND / GRP
<p>DETAILS:</p> <p>Students are to generate a number of ideas on a given topic, each written on a piece of paper. Students work individually, recording their brainstormed ideas on think pad slips, small sheets of paper or cards. After a period of time or after students have generated enough ideas on a topic, students share their ideas in a Round Robin. Teammates work together to see if they can build on ideas generated or come up with new and even better ideas. The ideas that are generated can be easily sorted and categorised – see Team sort</p>	
RESOURCES: Small slips of paper	ICT: No
BOOK REFERENCE: Write Science (Coop learning) - DeBolt	ADDITIONAL INFO: No prep

TITLE: THIS IS THE ANSWER – WHAT IS THE QUESTION?	IND/GRP/CLASS: IND
<p>DETAILS:</p> <p>Give the pupils a key word, number or similar. Ask them to come up with as many questions as they can where the word or number you have given them is the answer. For example: The answer is metals... The questions could be... What materials conduct electricity? What materials conduct heat? What elements are on the left hand side of the periodic table?</p>	
RESOURCES: None needed	ICT: None
BOOK REFERENCE:	ADDITIONAL INFO: No preparation

TITLE: TIMED PAIR SHARE	IND/GRP/CLASS: GRP
DETAILS: The teacher announces a topic and states how long each student will share, then provides 'think time'. In pairs partner A shares and partner B listens Partner B responds with a positive comment Partners then switch roles.	
RESOURCES: None	ICT: No
BOOK REFERENCE: Kagan Cooperative Learning – Kagan	ADDITIONAL INFO: No prep

TITLE: TRAFFIC LIGHTS	IND/GRP/CLASS: IND
DETAILS: Traffic lights are another tool for AfL. Pupils have coloured cards that they can then rate their understanding – red if they need help / do not understand, amber if they are unsure or stuck on some bits and green if they understand and are confident. Traffic light cards can be used at any point in a lesson to check pupil understanding but they can also rate their understanding of the lesson objectives in the same way. For example the Level ladder in the Exploring Science scheme allows pupils to rate their understanding of levelled objectives in order to help them meet their targets.	
RESOURCES: Traffic light cards	ICT: No
BOOK REFERENCE: Strategies for Closing the Learning Gap – Paul Hughes	ADDITIONAL INFO: No prep

TITLE: TRUE / FALSE	IND/GRP/CLASS: INDIVIDUAL / GROUP
DETAILS: Give pupils a series of statements that are either true or false. Pupils have to decide which are true and which are false. They can do this individually or as a group. Feedback can be in a variety of forms including true / false flashcards, Qwizdom handsets, or a group spokesperson.	
RESOURCES: STATEMENTS	ICT: optional
BOOK REFERENCE:	ADDITIONAL INFO: minimal

TITLE: TWO STARS AND A WISH	IND/GRP/CLASS: IND
DETAILS: 1. Before commencing this activity, pupils could review their own work using the two stars and a wish method (see point three below). 2. Once a piece of work has been completed, pupils can rotate in groups to view other people's work. 3. Pupils carry a set of yellow Post-It slips. For each piece of work they review, pupils write down two things they like and express a wish which they think would enhance the work in question. 4. Pupils then return to their own piece of work to read through and discuss what others have indicated on their Post-it slips. 5. They then make a list of stars and wishes for their work and indicate in a short written evaluation how they intend to enhance their work next time.	
RESOURCES: None	ICT: No
BOOK REFERENCE: Northern Ireland Active learning strategies	ADDITIONAL INFO: No prep

TITLE: VERBAL FOOTBALL	IND/GRP/CLASS: CLASS
DETAILS: Explain the aim of the game is to test knowledge and understanding. Divide the class into two teams and each team appoints a captain. Success is dependent on training and training involves the team going over the given topic and checking understanding ready to answer the teacher's questions. When training is over all notes and books are put away. A coin is tossed to decide who kicks off and the game begins. The team with kick off receives a question from the teacher. Anyone can answer within five seconds. If they are correct they retain possession and another question is asked. 3 correct answers in a row and it is a goal. Once a person has answered a question they cannot have another go until everyone on their team has had a go. If a player answers incorrectly then it is a tackle and possession moves to the opposition. The teacher then asks them questions. If no one answer within five seconds then it is a loose ball then the opposition can answer with the next five sec and pick up the ball. Fouls are committed by shouting out when its not your turn, arguing with the ref and answering when ineligible. Refs are encouraged to use yellow and red cards. Winning team is the one with the most goals at the end of the session.	
RESOURCES: Resource materials and questions	ICT: Optional
BOOK REFERENCE: Teacher's Toolkit – Paul Ginnis	ADDITIONAL INFO: Prep needed

TITLE: VERBAL TENNIS	IND/GRP/CLASS: CLASS
DETAILS: Students sit facing each other in pairs. No notes or books are allows. A topic is set by the teacher. Each pair tosses a coin to see who serves first. The server begins by saying a word or phrase associated with the topic, the partner immediately gives a second word or phrase, the server gives a third and so on. When a student hesitates, repeats a word, gets stuck or gives a word off topic or inaccurate their partner gains a point. The scoring follows the rules of tennis. Some topics can be sustained for a number of games or even sets. Otherwise write a list of topics on the board and ask students to change to a new topic at the start of each game.	
RESOURCES: Questions	ICT: No
BOOK REFERENCE: Teacher's Toolkit – Paul Ginnis	ADDITIONAL INFO: Minimal prep

TITLE: VIDEO CLIP	IND/GRP/CLASS: CLASS
DETAILS: Short clips such as Clipbank can provide an opportunity for discussion and questioning. Good for any aspect of lessons. Questions can be used to focus and support their use.	
RESOURCES: Clipbank	ICT: Yes
BOOK REFERENCE:	ADDITIONAL INFO: PREP NEEDED

TITLE: VIDEO WITH QUESTION SHEET	IND/GRP/CLASS: CLASS
DETAILS: DVDs of Science in Action and Scientific Eye are approximately 20 minutes long. Question sheets that can be answered by watching the video provide a good summary of the key learning points. For lower ability students – true or false statements or circle the correct word activity can make it easier to deal with. Give pupils time before the video to read through the questions and at the end to fill in any questions they have missed before a class discussion.	
RESOURCES: Video and question sheet	ICT: DVD player
BOOK REFERENCE:	ADDITIONAL INFO: Prep needed – Question sheet

TITLE: WHAT HAPPENS NEXT?	IND/GRP/CLASS: ALL
DETAILS: Get students to predict what comes next. For example, in a music lesson, the teacher plays the first part of the song and then presses pause and asks the students to sing what comes next. Or in an English lesson, the teacher writes the first three lines of a verse of poetry on the board and deliberately leaves the fourth line blank. Students are asked to work in pairs to come up with a fourth line before the teacher reveals what the author wrote.	
RESOURCES:	ICT: Optional
BOOK REFERENCE: Accelerated learning – A users guide pg 27	ADDITIONAL INFO: Little / no prep

TITLE: WHEEL OF FORTUNE	IND/GRP/CLASS: GRP / CLASS
DETAILS: <p>Make a set of large cards with prompts or questions on one side and numbers on the back. Make a wheel of fortune out of card. Divide it into as many sectors as there are question cards and number (the finished product should look like a twister wheel). The students sit in one large circle. The cards are spread face down covering most of the floor space with numbers clearly visible. The first student spins the wheel and the number shown on the spinner is the card that they pick up. They respond to the prompt or question. If they are correct then the card is placed face up and that number is now void, if they are wrong it is placed face down. The wheel passes to the next person. If they get a void number then the player simply passes the wheel to the next student. Can use this in smaller groups with each having their own set.</p>	
RESOURCES: Wheel of fortune spinner, question cards	ICT: No
BOOK REFERENCE: Teacher's Toolkit – Paul Ginnis	ADDITIONAL INFO: Prep needed

TITLE: WORD GUESS	IND/GRP/CLASS: CLASS
DETAILS: <p>Word Guess is another interactive template in the Smartboard Lesson Activity Toolkit. It is similar to 'hangman' although the options allow you to customise to football or basketball – hit and miss depending on if you get the letter correct. About 6-8 words can be used for each template.</p>	
RESOURCES: Smartboard notebook and lesson activity toolkit	ICT: YES
BOOK REFERENCE: Smartboard	ADDITIONAL INFO: YES

TITLE: WRITE A TV SLOT	IND/GRP/CLASS: GRP
DETAILS: <p>Pupils to write their own TV ad, explanation slot or news bulletin which they can then perform and be videoed if you choose. Example topics include – adverts for renewable energy, explanation of household acids and alkalis and news bulletins of the effects of global warming.</p>	
RESOURCES: Video camera	ICT: Optional
BOOK REFERENCE:	ADDITIONAL INFO: Prep needed

The Arithmetic of Jigsaw. Geoff Petty

How do you arrange a class of a given number in a jigsaw?

The following diagrams try to show the alternatives visually. They seem complicated at first, but if you look at them for a few minutes you will begin to get the hang of them. If you are good at algebra you may be able to glance at the diagrams and then go straight to 'the algebraic approach' at the end of this paper.

A brief summary of how jigsaw works.

Initially the class work in "sub-topic learning groups". These study one section of the topic, or look at the material through one 'pair of spectacles'. They become 'experts' in this sub-topic.

Then each sub=topic group member is given a number: 1, 2, 3, etc.

Then all the 1s go into one group, all the 2s into another group and so on. There is then one expert from each subtopic in each new group. These new groups are called "teaching groups", and students teach other their 'expert' topic, and then preferably go on to do combined tasks as a whole group. See the handout on Jigsaw, or "25 Ways For Teaching Without Talking" for the detail.

Many people think you can only do jigsaw with $4 \times 4 = 16$ or $5 \times 5 = 25$ students etc. This is not the case. You can do jigsaw with any number of students and pretty well any number of sub-topics. The diagrams below represent the approach visually, but there is a more general algebraic explanation at the end of the paper.

The following diagrams assume there are four subtopics but the arguments can obviously be adapted for any number of sub-topics.

Help! I have a few too many students to do the jigsaw I want!

E.g. I want to use four groups of three students which needs 12 students but I have 14.

This doesn't matter. Make two sub-topic groups bigger by one student. Don't say who is the 'extra' student. When it comes to numbering students you pair up two students in each of the bigger groups to work together. Do this just before creating the 'teaching groups' (not earlier), to ensure one of the pair doesn't become a passenger. Be unpredictable about who you pair up.

This is called Pairing up.

Help! I am one or two students short of the jigsaw groupings I want!

E.g. I want to use five groups of four students which needs 20 students but I only have 18.

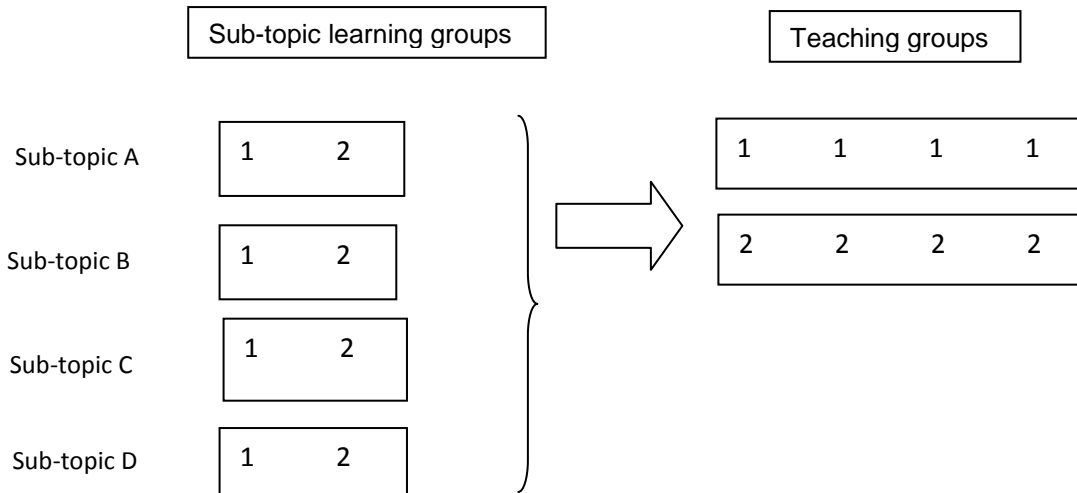
This doesn't matter either. Let the sub-topic groups work with only 3 students. When the teaching groups are formed two of them will be down by one member, and by one subtopic. You can visit these two groups and do the teaching for these groups yourself.

This is called substituting.

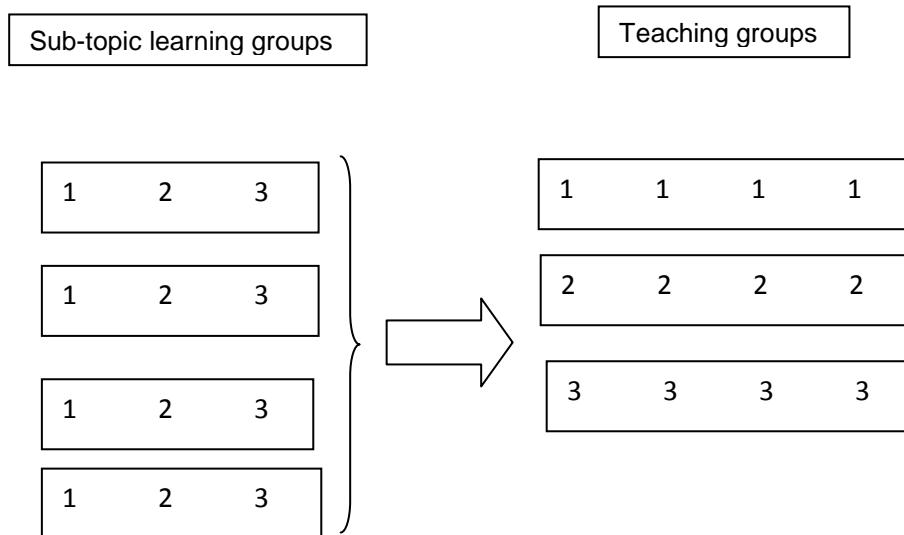
How to arrange jigsaw groups for any size class

The following examples assume four sub-topic groups. Similar approaches work for two, three, five etc sub-topic groups.

4 pairs of students becomes a jigsawed 2 sets of 4 students (Works for 8 , 16, etc)



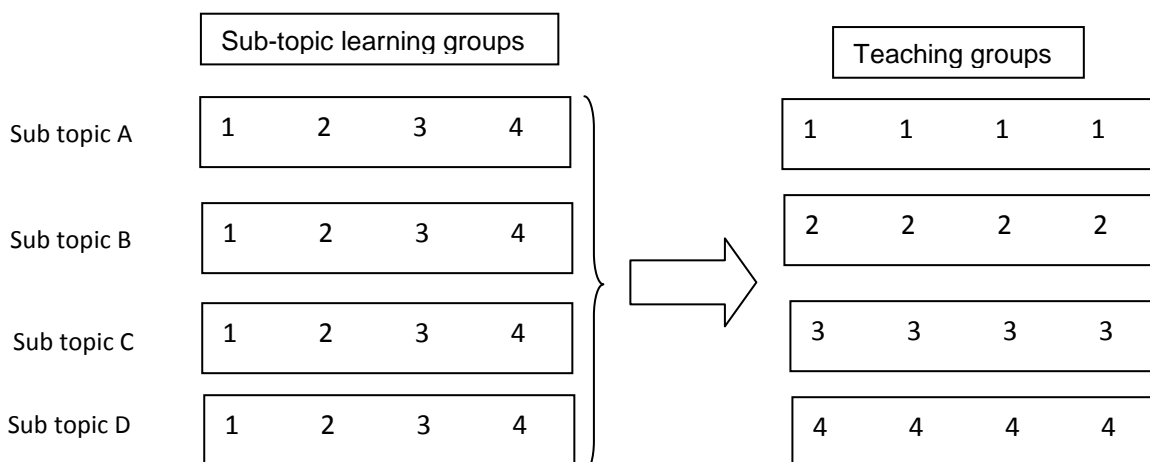
4 sets of 3 students becomes a jigsawed 3 sets of 4 students (Works for 12, 24, etc)



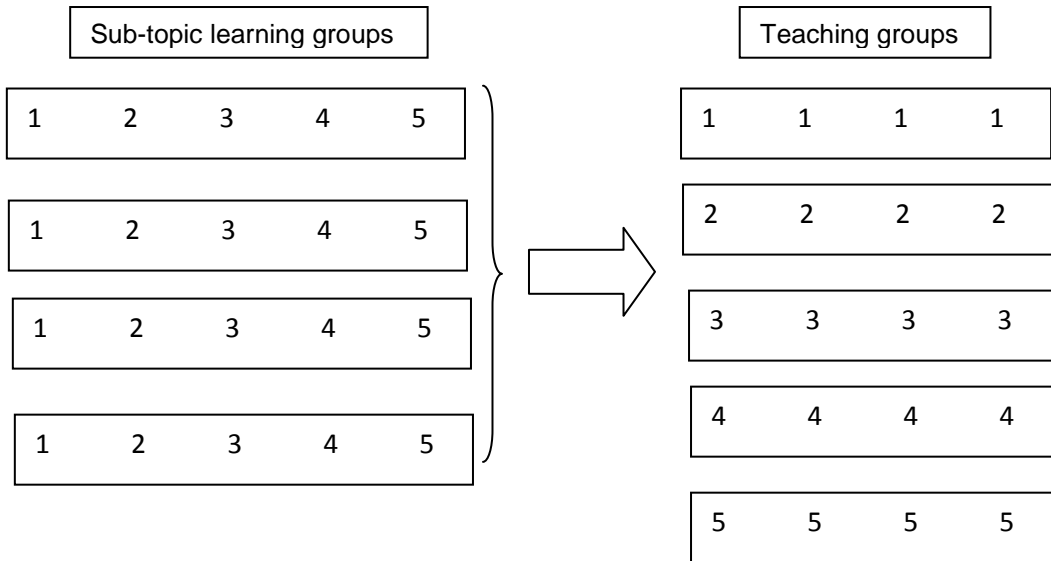
4 sets of 4 students becomes a jigsawed 4 sets of 4 students (Works for 16, 32, etc)

Four groups of four study four initial sub-topics, then number themselves 1, 2, 3, or 4. Then new groups are formed with all the 1s together, all the 2s together and so on. The new groups have one 'expert' from each original topic.

In the diagram below each number is a student, and each box is a group.



4 sets of 5 students, becomes a jigsawed 5 sets of 4 students (Works for 20, 40, etc)



Dealing with larger classes by splitting the group.

Suppose you have 36 students and four sub-topics. If you have four subtopics this means each sub-topic group will contain 9 students. But a group of nine is unlikely to work productively. What can you do?

You could split each group of 9 into a **5** and a **4**. This means in effect you are using:

4 groups of **5** students ($5 \times 4 = 20$)

Plus

4 groups of **4** students ($4 \times 4 = 16$)

This will accommodate your 36 students. The class must be split into a 20 and a 16, and Students must not switch between these two sections during the jigsaw! The best way of doing this is to get the 20 (4 groups of 5) to number themselves 1,2,3,4, 5, and the 16 (four groups of 4) to number themselves 6, 7, 8, 9.

The general principles for relatively small classes are:

- You must start with the same number of "sub-topic groups" as you have sub-topics.
- Students must number themselves and go to the teaching group that has their number.

For example suppose I have 15 students and three subtopics. I must have three subtopic groups. Each of these will have five students of course. They number themselves 1 to 3, and will then 'jigsaw' to three groups, each with five students.

Suppose instead I have 16 students and three subtopics then again I have three subtopic groups. But this gives two groups of five and one of six. You must pair up two students in the larger group. See pairing up above.

How do I calculate what jigsaw grouping to use?

If you make use of the following approach you can accommodate almost any group size for your given number of subtopics. I will describe the approach with two examples, at the end is an algebraic description of the approach.

Suppose you have **21** students and **4** sub-topics

First divide the number of students by the number of subtopics: (This will give you the number of students in each sub-topic group)

$$\underline{21} = 5 \text{ (remainder 1)}$$

4

You will need four groups of 5. Because there is a remainder of 1, one of the four groups will be a 6. You will need to pair up two students in this group just before the teaching groups are formed. (See pairing up above)

The four groups of five will jigsaw to become five groups of four. See the last diagram above. There is always this symmetry, so if you start with six groups of four you will end up with four groups of six for example.

Summary: The Algebraic approach to decide groupings

You may not need what follows if you are usually dealing with groups less than about 20.

If you can't understand what follows the above descriptions will probably work better for you.

If you have N students and X subtopics then:

You must start with X groups, (with N/X students in each group.)

These then jigsaw to N/X groups (with X students in each group.)

Help! I

have a remainder when I divide N by X.

Doesn't matter!. Let some subtopic groups be one student bigger than the others. Then pair students up in these larger sub-topic groups. For example if the remainder is two, you will have two subtopic groups that are one bigger than the others. Pair up two students in each of these groups and let them share the tasks.

This pairing up strategy will always work, whatever the remainder.

Alternatively, if the remainder is large, and you want to avoid pairing up too many students then consider the following:

Again allow some of your sub-topic groups to be one larger than the others. Number off and form 'teaching groups' in the usual way. You will find that some of the teaching groups are one 'expert' short. You can take the place of these missing experts by visiting these groups in turn.

BLOOM'S TAXONOMY



KNOWLEDGE – involves recall of previous learning:

What do you know about.....?

Can you find out about.....?

Where does it say.....?

Who is it about.....? Who did it.....?

What is it called.....?

APPLICATION

Can you explain why/how/which.....?

What would you have done.....?

What do you think will happen/would have happened next.....?

What makes you think.....?

What would you use for.....?

How would you use.....?

How would you organise.....?

Why is.....an example of.....?

SYNTHESIS

Can you think of a better way to.....?

What would you have done if.....?

How would you tackle this next time.....?

How would you change/adapt to make a new.....?

Given the choice, what would you do.....?

Could you design/invent a new way to.....?

What could you add to improve/embellish/enhance.....?



COMPREHENSION

What do you understand.....?

Why do you think.....?

Can you give a reason for.....?

Can you explain how/why/what.....?

Why did.....?

Why does.....?

ANALYSIS

How would you group/sort/categorise/classify?

Can you work out the parts/features/structure of.....?

How can you show the differences/similarities of.....?

What patterns can you find.....?

What evidence can you find to.....?

What can you infer/conclude from.....?



EVALUATION

How successful was.....?

How would you rate.....?

What do you think of.....?

What makes.....good/bad/average?

What went well/didn't go well?

'It is crucial for people to have skills in questioning, analysing, comparing, contrasting and evaluating so that they will not become addicted to being told what to think and do...' Freseman 1990

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SOFTWARE

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Schoolhouse Technology - <http://www.schoolhousetech.com/>

Cardit - <http://www.cardit.info/>