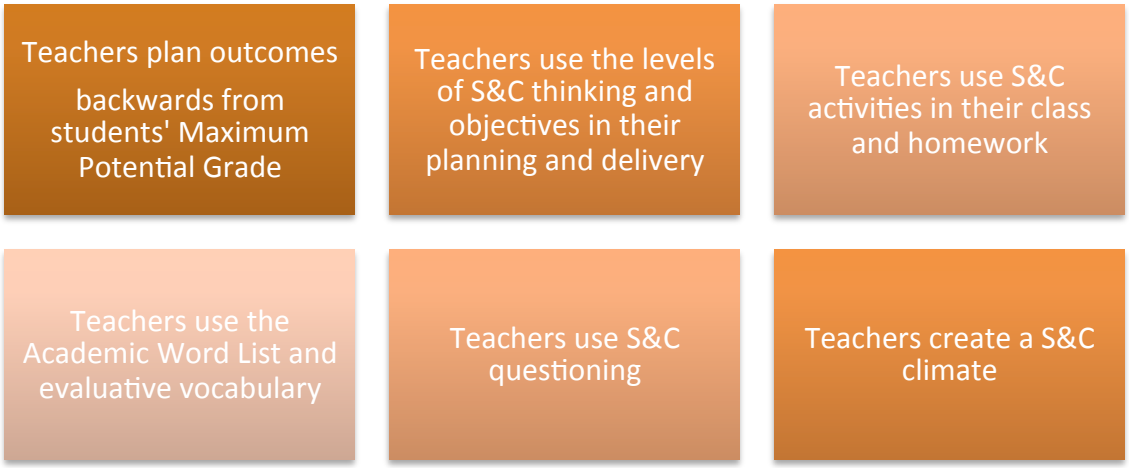
6 strategies to build a Stretch and Challenge Culture



1. Teachers plan outcomes backwards from students' Maximum Potential Grade

Students need access to the knowledge, understanding and skills that will allow them access to their MAXIMUM POTENTIAL GRADE (MPG):

- Students have MPGs which are used by their teachers
- Teachers plan appropriate 'flight paths' taking students from where they are to the MPG level of the mark scheme
- Teachers provide appropriate resources for this to occur including learning tasks, resources, reading lists, mark schemes/ criteria, dictionaries

2. Teachers use the levels of S&C thinking and objectives in their planning and delivery

Two alternative models of S&C thinking are Bloom's Taxonomy and SOLO Taxonomy. For an explanation of SOLO Taxonomy and further examples of S&C verbs please see the *Ideas for a S&C School* power point

Level of thinking	Bloom's Taxonomy	SOLO Taxonomy
Level 6	Evaluating	Extended Abstract
Level 5	Synthesising	
Level 4	Analysing	Relational
Level 3	Applying	Multi-structural
Level 2	Understanding	Uni-structural
Level 1	Knowing/ Remembering	Pre-structural

- Schemes for Learning indicate the level of S&C thinking

MPG requirements	S&C Objective	Level of S&C thinking	S&C activities	Assessment Opportunities	S&C Resources (inc. Vocabulary)

- Objectives are set using S&C learning verbs

Level 6	**Rank**	**Justify**	**Criticise**	**Judge**	**Solve**
Level 5	**Integrate**	**Generalise**	**Create**	**Modify**	**Compile**
Level 4	**Explain**	**Detect**	**Categorise**	**Connect**	**Compare**
Level 3	**Illustrate**	**Experiment**	**Discover**	**Construct**	**Adapt**
Level 2	**Summarise**	**Complete**	**Demonstrate**	**Extend**	**Discuss**
Level 1	**Identify**	**Describe**	**Investigate**	**List**	**Define**

- Lessons allow a progression through S&C thinking

	5 Lesson Elements	**Link to S&C thinking**
1	Planning/ linking Learning	Knowing/ Remembering Uni-structural
2	Modelling/ Explanation/ Questionning	Understanding Multi-structural
3	Investigation	Applying
4	Consolidation/ Summary	Remembering/ Analysing Relational
5	Evaluation/ Reflection	Synthesising/ Evaluating Extended abstract

- The model of S&C thinking is visible (e.g. wall displays, progress planners, students' books) and modelled across the school so that students and parents can understand and can use it

Menu of Bloom's Taxonomy objectives/ tasks



3. Teachers use S&C activities in their class and homework

- The 5 S&C activities below are built into planning across the curriculum
- The 5 S&C activities are modelled and taught to students across the curriculum
- The 5 S&C activities are assessed with effective feedback given to allow students to make progress
- Students track their progress in the 5 S&C activities in their progress planner

For templates on researching and note taking, look in the Literacy Section. Ideas on thinking skills can be found in the *7 Strategies to Develop S&C Thinkers* power point

Researching	Extended Speaking Presentation	Reading for information Note taking	Extended Writing	Concluding Hypothesizing Lateral Thinking

4. Teachers use the Academic Word List and evaluative vocabulary

- Progress planners are used to encourage students to extend their vocabulary e.g. personalised word lists
- Teachers can write and speak in good formal English and correct students' written and spoken English
- Students are encouraged to extend their vocabulary in lessons and form time through initiatives like 'word of the week'
- There is a focus on 'evaluative' vocabulary as well as subject key words

The Academic Word List can be found below and there are more ideas on S&C literacy in the Literacy Section.

5.Teachers use S&C questioning

Questions fall into two main categories: lower-order questions which require memory, and higher-order, which require thinking. Only 4% of questions in an average lesson are higher order. The optimum wait time for a lower-order question is 3 seconds, compared to 10 seconds for a higher-order question.

- Lessons contain higher order questioning by students and teachers
- Students are able to answer S&C questions in sentences and paragraphs
- S&C questions are used to focus learning and to encourage extended abstract thinking
- Teachers provide question stems to encourage students to ask higher order questions

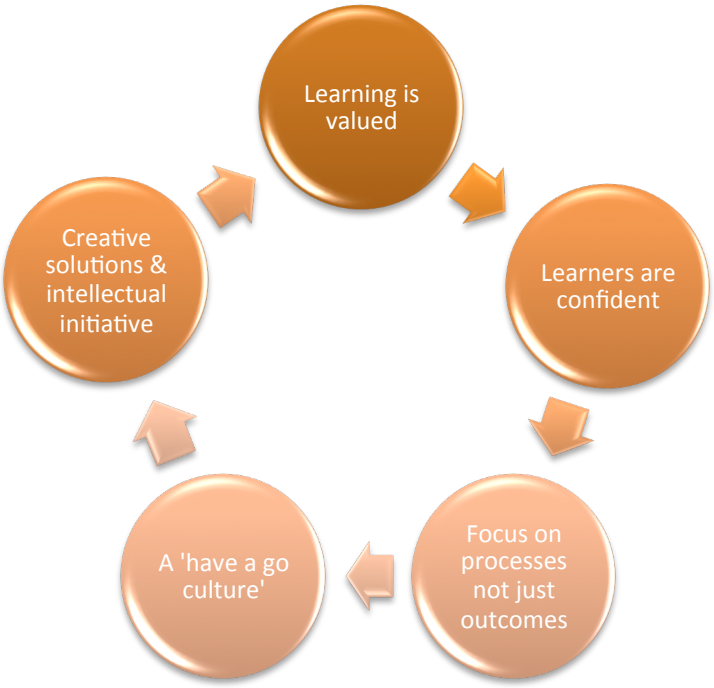
Questions that link to S&C thinking

Applying • 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...?	**Analysing** • 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...?
Synthesising • 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...?	**Evaluating** • How successful was...? • How would you rate...? • What do you think of...? • What makes ... good/bad/average?

For more ideas on S&C questioning see *7 Strategies to Develop S&C questioning* power point and the sections on Socratic Questions and Questions for Critical Thinking below

6.Teachers create a S&C climate

- At school, year-team, department and teacher level there are shared strategies in place to develop the following:



For more ideas see the *7 Strategies* range of power points and the *Learning Contract*

The Academic Word List

The most frequently used 2,000 words in the English language - known as the **common core** - cover approximately 75% of texts that learners are going to encounter. However the common core does not include much of the formal language required for high achievement.

Research has identified an **Academic Word List (AWL)**, which relates to words needed by students to access and understand academic texts. It comprises 570 word families that are not in the most frequent 2,000 words of English but which occur reasonably frequently. When added to the common core, this provides access to approximately 90% of texts.

These words are commonly used in the language of the classroom, and often as command words in questions, but often pass learners by. How can we be sure that all learners will know what we mean by the use of formal language unless we are explicit in our teaching of it?

This list contains the headwords of the families in the academic word list. The numbers indicate the sub list of the academic word list, with Sub list 1 containing the most frequently occurring words and Sub list 10 the least frequent.

abandon 8	accompany 8	acquire 2	administrate 2	aid 7	ambiguous 8
abstract 6	accumulate 8	adapt 7	adult 7	albeit 10	amend 5
academy 5	accurate 6	adequate 4	advocate 7	allocate 6	analogy 9
access 4	achieve 2	adjacent 10	affect 2	alter 5	analyse 1
accommodate 9	acknowledge 6	adjust 5	aggregate 6	alternative 3	annual 4

anticipate 9
apparent 4
append 8
appreciate 8
approach 1
appropriate 2
approximate 4
arbitrary 8
area 1
aspect 2
assemble 10
assess 1
assign 6
assist 2
assume 1
assure 9
attach 6
attain 9
attitude 4
attribute 4
author 6
authority 1
automate 8
available 1
aware 5
behalf 9
benefit 1
bias 8
bond 6
brief 6
bulk 9
capable 6
capacity 5
category 2
cease 9
challenge 5
channel 7
chapter 2
chart 8
chemical 7
circumstance 3
cite 6
civil 4
clarify 8
classic 7
clause 5
code 4
coherent 9
coincide 9
collapse 10
colleague 10
commence 9
comment 3
commission 2
commit 4
commodity 8
communicate 4
community 2
compatible 9
compensate 3
compile 10
complement 8
complex 2
component 3
compound 5
comprehensive 7
comprise 7
compute 2
conceive 10
concentrate 4
concept 1
conclude 2
concurrent 9
conduct 2
confer 4
confine 9
confirm 7
conflict 5
conform 8
consent 3
consequent 2
considerable 3
consist 1
constant 3
constitute 1
constrain 3
construct 2
consult 5
consume 2
contact 5
contemporary 8
context 1
contract 1
contradict 8
contrary 7
contrast 4
contribute 3
controversy 9
convene 3
converse 9
convert 7
convince 10
cooperate 6
coordinate 3
core 3
corporate 3
correspond 3
couple 7
create 1
credit 2
criteria 3
crucial 8
culture 2
currency 8
cycle 4
data 1
debate 4
decade 7
decline 5
deduce 3
define 1
definite 7
demonstrate 3
denote 8
deny 7
depress 10
derive 1
design 2
despite 4
detect 8
deviate 8
device 9
devote 9
differentiate 7
dimension 4
diminish 9
discrete 5
discriminate 6
displace 8
display 6
dispose 7
distinct 2
distort 9
distribute 1
diverse 6
document 3
domain 6
domestic 4
dominate 3
draft 5
drama 8
duration 9
dynamic 7
economy 1
edit 6
element 2
eliminate 7
emerge 4
emphasis 3
empirical 7
enable 5
encounter 10
energy 5
enforce 5
enhance 6
enormous 10
ensure 3
entity 5
format 9
formula 1
forthcoming 10
found 9
foundation 7
framework 3
function 1
fund 3
fundamental 5
furthermore 6
gender 6
generate 5
generation 5
globe 7
goal 4
grade 7
grant 4
guarantee 7
guideline 8
hence 4
hierarchy 7
highlight 8
hypothesis 4
identical 7
identify 1
ideology 7
ignorance 6
illustrate 3
image 5
immigrate 3
impact 2
implement 4
implicate 4
implicit 8
imply 3
impose 4
incentive 6
incidence 6
incline 10
income 1
incorporate 6
index 6
indicate 1
individual 1
induce 8
inevitable 8
infer 7
infrastructure 8
inherent 9
inhibit 6
initial 3
initiate 6
injure 2
innovate 7
input 6
insert 7
insight 9
inspect 8
instance 3
institute 2
instruct 6
integral 9
integrate 4
integrity 10
intelligence 6
intense 8

interact 3
intermediate 9
internal 4
interpret 1
interval 6
intervene 7
intrinsic 10
invest 2
investigate 4
invoke 10
involve 1
isolate 7
issue 1
item 2
job 4
journal 2
justify 3
label 4
labour 1
layer 3
lecture 6
legal 1
legislate 1
levy 10
liberal 5
licence 5
likewise 10
link 3
locate 3
logic 5
maintain 2
major 1
manipulate 8
manual 9
margin 5
mature 9
maximise 3
mechanism 4
media 7
mediate 9
medical 5
medium 9
mental 5
method 1
migrate 6
military 9
minimal 9
minimise 8
minimum 6
ministry 6
minor 3
mode 7
modify 5
monitor 5
motive 6
mutual 9
negate 3
network 5
neutral 6
nevertheless 6
nonetheless 10
norm 9
normal 2
notion 5
notwithstanding 10
nuclear 8
objective 5
obtain 2
obvious 4
occupy 4
occur 1
odd 10
offset 8
ongoing 10
option 4
orient 5
outcome 3
output 4
overall 4
overlap 9
overseas 6
panel 10
paradigm 7
paragraph 8
parallel 4
parameter 4
participate 2
partner 3
passive 9
per cent 1
perceive 2
period 1
persist 10
perspective 5
phase 4
phenomenon 7
philosophy 3
physical 3
plus 8
policy 1
portion 9
pose 10
positive 2
potential 2
practitioner 8
precede 6
precise 5
predict 4
predominant 8
preliminary 9
presume 6
previous 2
professional 4
prohibit 7
project 4
promote 4
proportion 3
prospect 8
protocol 9
psychology 5
publication 7
publish 3
purchase 2
pursue 5
qualitative 9
quote 7
radical 8
random 8
range 2
ratio 5
rational 6
react 3
recover 6
refine 9
regime 4
region 2
register 3
regulate 2
reinforce 8
reject 5
relax 9
release 7
relevant 2
reluctance 10
rely 3
remove 3
require 1
research 1
reside 2
resolve 4
resource 2
respond 1
restore 8
restrain 9
restrict 2
retain 4
reveal 6
revenue 5
reverse 7
revise 8
revolution 9
rigid 9
role 1
route 9
scenario 9
schedule 8
scheme 3
scope 6
section 1
sector 1
secure 2
seek 2
select 2
sequence 3
series 4
sex 3
shift 3
significant 1
similar 1
simulate 7
site 2
so-called 10
sole 7
somewhat 7
source 1
specific 1
specify 3
sphere 9
stable 5
statistic 4
status 4
straightforward 10
strategy 2
stress 4
structure 1
style 5
submit 7
subordinate 9
subsequent 4
subsidy 6
substitute 5
successor 7
sufficient 3
sum 4
summary 4
supplement 9
survey 2
survive 7
suspend 9
sustain 5
symbol 5
tape 6
target 5
task 3
team 9
technical 3
technique 3
technology 3
temporary 9
tense 8
terminate 8
text 2
theme 8
theory 1
thereby 8
thesis 7
topic 7
trace 6
tradition 2
transfer 2
transform 6
transit 5
transmit 7
transport 6

trend 5

trigger 9

ultimate 7

undergo 10

underlie 6

undertake 4

uniform 8

unify 9

unique 7

utilise 6

valid 3

vary 1

vehicle 8

version 5

via 8

violate 9

virtual 8

visible 7

vision 9

visual 8

volume 3

voluntary 7

welfare 5

whereas 5

whereby 10

Socratic Questions

Socrates was one of the greatest educators who taught by asking questions and thus drawing out answers from his pupils. ('Ex duco', means to 'lead out', which is the root of 'education').

Here are the six types of questions that Socrates asked his pupils:

1. Conceptual clarification questions

Get them to think more about what exactly they are asking or thinking about. Prove the concepts behind their argument. Use basic 'tell me more' questions that get them to go deeper.

- *Why are you saying that?*
- *What exactly does this mean?*
- *How does this relate to what we have been talking about?*
- *What is the nature of ...?*
- *What do we already know about this?*
- *Can you give me an example?*
- *Are you saying ... or ... ?*
- *Can you rephrase that, please?*

2. Probing assumptions

Probing their assumptions makes them think about the presuppositions and unquestioned beliefs on which they are founding their argument. This is shaking the bedrock and should get them really going!

- *What else could we assume?*
- *You seem to be assuming ... ?*
- *How did you choose those assumptions?*
- *Please explain why/how ... ?*
- *How can you verify or disprove that assumption?*
- *What would happen if ... ?*
- *Do you agree or disagree with ... ?*

3. Probing rationale, reasons and evidence

When they give a rationale for their arguments, dig into that reasoning rather than assuming it is a given. People often use un-thought-through or weakly-understood supports for their arguments.

- *Why is that happening?*
- *How do you know this?*
- *Show me ... ?*
- *Can you give me an example of that?*
- *What do you think causes ... ?*
- *What is the nature of this?*
- *Are these reasons good enough?*
- *Would it stand up in court?*
- *How might it be refuted?*
- *How can I be sure of what you are saying?*
- *Why is ... happening?*
- *Why? (keep asking it -- you'll never get past a few times)*
- *What evidence is there to support what you are saying?*
- *On what authority are you basing your argument?*

4. Questioning viewpoints and perspectives

Most arguments are given from a particular position. So attack the position. Show that there are other, equally valid, viewpoints.

- *Another way of looking at this is ..., does this seem reasonable?*
- *What alternative ways of looking at this are there?*
- *Why it is ... necessary?*
- *Who benefits from this?*

- *What is the difference between... and...?*
- *Why is it better than ...?*
- *What are the strengths and weaknesses of...?*
- *How are ... and ... similar?*
- *What would ... say about it?*
- *What if you compared ... and ... ?*
- *How could you look another way at this?*

5. Probe implications and consequences

The argument that they give may have logical implications that can be forecast. Do these make sense? Are they desirable?

- *Then what would happen?*
- *What are the consequences of that assumption?*
- *How could ... be used to ... ?*
- *What are the implications of ... ?*
- *How does ... affect ... ?*
- *How does ... fit with what we learned before?*
- *Why is ... important?*
- *What is the best ... ? Why?*

6. Questions about the question

And you can also get reflexive about the whole thing, turning the question in on itself. Use their attack against themselves. Bounce the ball back into their court, etc.

- *What was the point of asking that question?*
- *Why do you think I asked this question?*
- *Am I making sense? Why not?*
- *What else might I ask?*
- *What does that mean?*

Questions for Critical Thinking

Clarity	Could you elaborate further? Could you give me an example? Could you illustrate what you mean?
Accuracy	How could we check on that? How could we find out if that is true? How could we verify or test that?
Precision	Could you be more specific? Could you give me more details? Could you be more exact?
Relevance	How does that relate to the problem? How does that bear on the question? How does that help us with the issue?
Depth	What factors make this a difficult problem? What are some of the complexities of this question? What are some of the difficulties we need to deal with?
Breadth	Do we need to look at this from another perspective? Do we need to consider another point of view? Do we need to look at this in other ways?
Logic	Does all this make sense together? Does your first paragraph fit in with your last? Does what you say follow from the evidence?
Significance	Is this the most important problem to consider? Is this the central idea to focus on? Which of these facts are most important?
Fairness	Do I have any vested interest in this issue? Am I sympathetically representing the viewpoints of others?