

# The National Strategies



## Progression skills module 2: Getting ahead in learning

Teacher notes



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## **Disclaimer**

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Please check all website references carefully to see if they have changed and substitute other references where appropriate.

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# Preface to Progression skills modules

## Aims of this series

Progression skills modules are designed to support schools in delivering practical pupil workshops to help focus gifted and talented (G&T) or potential G&T pupils to aim high and achieve their best. For example, over the course of the series, pupils will be asked to assess their prior achievements and successes, as well as some of the barriers they have overcome and may still face; they will reflect on what it means to be gifted and/or talented and how this may impact on their identity; they will be supported with strategies for learning and achieving the highest grades and they will be encouraged to think ahead and plan for an ambitious future. Although the materials are designed with Key Stage 4 in mind, they can easily be adapted for use with younger pupils as appropriate.

## Each skills module comprises:

- a teacher or tutor guide with notes, plans and resources for a sequence of workshops;
- linked pupil handouts to accompany the activities. Pupils' handouts are also supplied in these teacher notes.

## How to use these resources

Each Progression skills module consists of a number of workshops that are designed to last for up to 90 minutes. However, these can be adapted and used selectively, as separate activities, with gap tasks for pupils to complete independently.

It will be helpful to provide pupils' handouts as a workbook for them to keep and use. Pupils' handouts have been offered in Word™ format to provide schools with the flexibility to adapt and tailor them to their own needs. Some elements of the handouts, such as *the Progression workshop contract*, *Handout 1: Top tips for action* and *Handout 2: The good word guide*, are the same in every module, to encourage pupils actively to capture learning and apply it elsewhere. Similarly *Handout 12: Conclusion – how to learn from this workshop* is provided in every module for pupils to read for themselves. Teachers should prompt pupils to use these pages.

The activities can work with small groups of pupils or larger groups, but a minimum membership of six is recommended. The optimum group size is 10 to 15 pupils. The social networks built up in these skills workshops are a key to their success and it is important to try and create new friendships and peer groups by bringing different types of pupils together. For example, passive compliant pupils could be encouraged to work with more extrovert pupils; bright under-achieving pupils may benefit from working with highly able pupils. Schools and local authorities (LAs) may wish to consider pooling resources with other schools and working collaboratively on providing opportunities for their pupils to work together in the Progression Skills workshops. Teachers who run workshops for larger groups will find it helpful to recruit mentors to support small-group and paired work. Non-teaching staff or older pupils, for example, Year 12 and Year 13 students, can be briefed for this role. Ensure every adult in the room knows how to facilitate rather than tell; at every opportunity they should encourage pupils to think about how the topics link back to their everyday lives, and how they may use what they have learned to change their future.

## Some practical tips

Before workshops start, set up the room with all the chairs in a U-shape or circle (or two U-shapes, one inside the other) around the centre of the room with the tutors' chairs at the front. The mentors' and teachers' chairs should be part of the circle or U-shape. Place name stickers on each chair and arrange for the pupils to be in mixed groups. Try to avoid friendship groups. Explain that the learning objectives include developing social skills and building new social networks. It is good for pupils to work with people they don't know.

Explain how important it is to build up friendships in life beyond school and that college and university students enjoy making new friends, once they get over the initial awkwardness.

**Optional:** Ask mentors (or a few pupils) to take responsibility for a camera and take pictures throughout the workshop. They can put these pictures onto a screensaver slide show and play this and music at the appropriate times, and in future workshops.

## Useful resources

- Laptop, slides and music or relevant, illustrative movie clips
- Music list
- Slide presentations
- Camera
- Flipchart paper, pens and reusable sticky pads
- Sticky notes
- Paper
- Pens
- Glue
- Pupils' handouts
- Envelopes
- Name stickers

# Key themes and objectives addressed in this skills module

Key theme or concept	Main aims and goals	Pupils' starting points	Outcomes
<b>Getting ahead – curriculum achievement</b>	<p>Maximising achievement both in lessons and independent study – reach for the stars!</p> <p>Helping pupils see a route to A/A* achievement</p>	<p>May not understand what is required to achieve A/A* grade</p> <p>May be working in a middle set or working with a low attaining peer group</p> <p>May have low levels of academic language</p>	<p>Familiarity with criteria for A/A*</p> <p>Self- and peer-assessment experience at this level</p> <p>Growing confidence to aim for A/A* excellence</p>

# 1 Introduction – You can make it happen!

## Objectives

- To set the context and motivate and enthuse pupils
- To begin to explore pupils' understanding of higher-order thinking and questions
- To consider how that relates to A/A\* grade descriptors
- To begin to plan for A/A\* achievement.

## Resources

Progression workshop contract handout

Handout 1: Top tips for action

Handout 2: The good word guide

Handout 3: The grades I want

Slide 1: The grades I want

Flipchart paper and pens

Sticky notes

Reusable sticky pads

### Important notes:

Some of the pupils who completed *Progression skills Module 1: Who am I?* will be revisiting the same questions about G&T; this gives them a chance to consider how their attitudes may have changed. Teachers may want to refer back to the responses from Module 1. Other pupils will not have completed the first module and will need a chance to reflect on their views and perceptions. It is a good idea to explore and establish a common understanding of what being G&T means to the group and, if necessary, correct any erroneous assumptions.

Make sure pupils are aware of and encouraged to use *Handout 1: Top tips for action* and *Handout 2: The good word guide*.



## Activity

1. Explain who everyone is, why they are all here and, in particular, why the pupils are here. Read the *Progression workshop contract* handout together to make the expectations clear to everyone.
2. Ask pupils what they think the terms 'gifted' and 'talented' mean. Collect their thoughts on sticky notes and attach them to flipcharts around the room. Mentors should help. Comment on any changes or surprises, compared to responses in Progression Skills Module 1.
3. Facilitate discussion on what it takes to achieve an A/A\* grade. Show slide 1.

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### The grades I want

Course	Grade I want	Importance high/medium/low	Total effort (hours)	Effort (hours per week)	Key activity to help me

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How much extra time does an A/A\* pupil have to put in, to achieve high grades? Ask them to complete columns 1, 2 and 5 on *Handout 3: The grades I want*. They will refer to this again in *Workshop 4: Focused learning*.

4. Ask what they are expecting: what have they been told or have heard about this workshop so far. Use this as a basis to build confidence and reinforce the message of individuality and individual journeys. Taking part in a *Progression skills* workshop is an opportunity for them to 'get ahead'. Talk about the aims of this series of workshops, in particular:
  - to gain increased self-confidence as a successful learner;
  - to understand more about higher-order questions and thinking;
  - to understand more about what it takes to aim for the stars (A/A\*).
5. Lead a discussion about why it might be useful to achieve these aims. You could explore the possible barriers that pupils feel may exist for them as a baseline for the workshop series. This will anchor the subsequent tasks and strategies to a concrete issue they have already raised. Record the responses on a flipchart for later reference.

## 2 Thinking skills and questions – *Bloom's Taxonomy of Learning*

### Objectives

- To introduce Bloom's Taxonomy, so that pupils begin to understand how the grading structure is linked to levels of mastery of a subject. Mastery includes both depth and breadth of knowledge, combined with higher-order thinking and study or process skills.
- To use Bloom's Taxonomy to develop thinking about a specific topic or theme.

**Practical notes:** Keep any notes and flipcharts from this workshop, for use in later workshops.

### Resources

Handout 4: Higher-order learning (Bloom's Taxonomy)

Slide 2: Higher-order learning and thinking (Bloom's Taxonomy)

Flipchart paper and pens

Sticky notes

Reusable sticky pads

### Activity

#### 1. Group activity: explain the different grades

The purpose of this exercise is to check pupils' understanding of what the grades mean. This will lead into and link clearly with Bloom's taxonomy and will be followed up in more detail in *Workshop 4: Focused learning*.

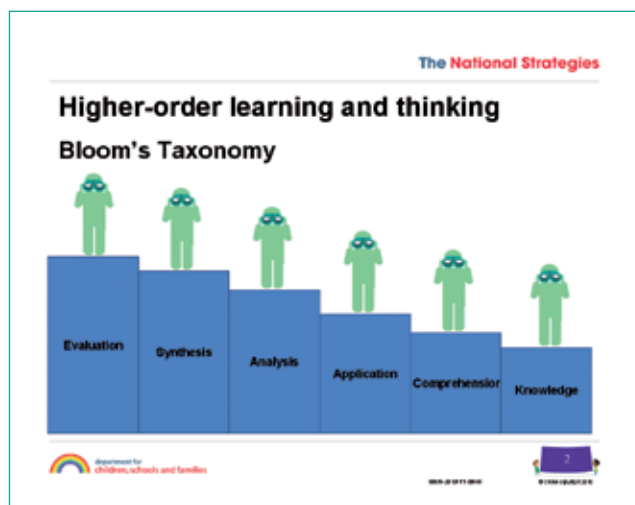
Organise groups into subject areas. Each group should use a flipchart to explain what they think the examiner, system or marker is looking for when assessing a pupil's work at grade levels A\*, A, C and E (Optional: G and U). Keep these flipcharts as they will come back to this later and in the next workshop in greater detail.

Quickly debrief. Run through examples of the conclusions from the different groups.

Initiate discussion about how easy is it to decide who is better at a subject. How do you know that person A is better than someone else at English or mathematics or science? Establish the idea of levels of mastery. This does not involve just knowing more, it is about how to use knowledge, thinking and process skills. (See *Take it further*, below.)

## 2. Introduce Bloom's taxonomy

Show slide 2.



Run through these points.

- A key model used in education is Bloom's *Taxonomy of Learning*. Check if anyone has heard of it and can explain it. Refer pupils to *Handout 4: Higher-order learning*.
- Examination grades are closely related to Bloom's Taxonomy.
- Types of questions and answers are related to Bloom's Taxonomy.
- Pupils are going to learn a skill to help them to understand the model better.

Explain that the skill they are about to learn is active, to use some energy. This is a sensible approach to aiding learning!

**Important note:** There are optional tasks for each stage of the following section 3. It will not be necessary nor will there be time to do all of them, so choose carefully which levels of thinking to focus on according to the needs of your pupils.

## 3. Explaining Bloom's Taxonomy through a topic: body language or non-verbal communication

**Important note:** The example here is based on body language and non-verbal communication, to enhance pupils' self-awareness and how they interpret others. However, teachers can select and adapt any topic of choice to demonstrate the levels of thinking.

More than 70% of what we communicate is through non-verbal language, so it is crucial that we understand this 'language' and use it well.

**Note:** To find out more about non-verbal communication see [www.businessballs.com/body-language.htm#eyes-body-language](http://www.businessballs.com/body-language.htm#eyes-body-language). Alternatively, substitute any preferred topic or theme and follow a similar approach, using the same levels of thinking and learning from Bloom's Taxonomy.

### Knowledge and recall: what is body language?

When considering body language it helps to think in terms of *conscious* and *unconscious* actions. Consciously, we know what we're doing; unconsciously, we probably don't know we're giving off signals. For example:

- conscious – pointing at a door to show the way out, telling someone to go away, standing up when a grandparent comes in;

- unconscious – showing emotions, blushing, biting your lip when unsure, covering your mouth when holding back, avoiding eye contact.

Other body language cues that give away our thinking include blinking, eye movement, moving hands to weigh up ideas but emphasising one more than another.

Ask the group to suggest examples and model them. We can often be good at conscious-level examples that we pick up from childhood. See if anyone knows examples from different nations or cultures.

## Comprehension (understanding)

Check that everyone understands what the different body language cues mean. Explain that this is comprehension. We are starting to form an understanding of a subject rather than just having bits of knowledge.

### Optional task

Develop this further by asking pupils to work in pairs and take turns to express emotions and feelings without using words, but using simple gestures. Their partner has to guess what emotion they are trying to express. They have good comprehension if they understand.

## Application

Take this up another level by **using and applying** the knowledge and understanding. To apply it, consider whether body language is revealing the truth about how someone feels. *Is everyone using the same signals or are they different? Do we always use the same signals if we are with, for example, a parent, a friend, a stranger?* Use the pupils' posture as an example. Check their normal posture: slouching may appear to indicate lack of interest, but some people slouch for comfort.

Does everyone follow general rules? Or are we each unique? Does everyone have their own little gestures or mannerisms? Is body language different in a stressful situation or when distracted by something else?

### A note about looking right and left

Check eye movement (left and right relate the person giving the signals and making the movements). Eyes tend to move right when the brain is imagining or creating, and left when the brain is recalling or remembering. This relates to right and left sides of the brain. In this context, broadly, the right side of the brain handles creativity and feelings and the left facts and memory. Under certain circumstances, 'creating' can mean fabrication or lying, especially, *but not always – beware* when the person is supposed to be recalling facts. A person looking right when stating facts is not necessarily lying; for example, it could mean that they do not know the answer, and are talking hypothetically, speculating or guessing.

Adapted from [www.businessballs.com/body-language.htm-eyes-body-language](http://www.businessballs.com/body-language.htm-eyes-body-language)

### Optional task

Pupils practise using and interpreting body language in pairs. Can they spot the non-verbal clues that give away what the other person thinks?

In pairs, pupils take turns at the activity.

Make sure the other person is relaxed. Ask a couple of questions they should answer truthfully and that you know to be true, to establish the norm. *Do you live in... (the local area)? Are you in Year 11?*

Then ask questions that should trigger memory. *What does your front room look like?* (Partner's eyes may move to their left.)

Ask questions where the partner needs to think up an answer. *What would your perfect holiday be like?*

(Partner's eyes may move to their right.)

One pupil asks their partner for a sequence of statements that may or may not be true and must try to guess which are which.

### **Analysis: break a problem or topic down into its parts to look at each different aspect and consider its importance**

Ask pupils to consider what aspects of body language and tone are more important when:

- presenting to the class;
- comforting a friend;
- trying to walk through a crowded corridor?

#### **Optional task**

Two or three pupils role-play one of the above scenarios and the rest of the class decide which aspect of body language was most and which was least effective, for example physical gestures, eye contact, tone of voice, facial expression, etc.

To analyse things properly, we need to understand them and be able to compare them with other situations, so that we can weigh it all up.

### **Synthesis: making links with other areas of knowledge and experience and fitting it all together**

Ask how they would integrate their understanding of non-verbal communication into their everyday lives to improve their own communication skills in:

- understanding parents;
- helping friends;
- anticipating frustration;

through actually using body language signals? Ask pupils, in their pairs, to share examples of where they have seen this in action and been able to prevent problems (or make them worse!). If necessary you can provide scenarios to prompt discussion. For example, listening to their parents talking about their hard day at work, supporting a friend who is always getting into trouble, or explaining to a teacher that they have spelled a word incorrectly on the board.

### **Evaluation: reaching judgements**

*Ask: What are the benefits and challenges associated with body language or non-verbal communication? Can it improve communication or are there examples where it can get in the way and cloud what people are trying to say?*

#### **Optional task**

Debate, in just one minute, whether it is really possible to understand someone from a text message or an email, when you can't see or hear them. Ask pupils to get into two 'camps' – those who think email and text are good ways to communicate and those who disagree. Then ask them to work in opposing pairs to discuss, debate and explain why they hold their views. If all pupils seem to be one side of the argument, allocate roles.

Ask the group how it worked. *How accurately did they communicate in their paired tasks? How much of the discussion was verbal and how much was non-verbal?* The teacher can add observations.

## Conclusion

Pupils should complete the table in *Handout 4: Higher-order learning*.

## Take it further

Ask pupils to research the awards marks scheme for their specifications, to check that they have accurately understood what is expected.

Pupils could research Benjamin Bloom to find out more about his work as a cognitive psychologist.

Suggest that they watch and review *Casino Royale* at home, to see the importance of non-verbal cues to poker players!

# 3 Thinking skills and questions – applying Bloom’s Taxonomy to school and examination questions

## Objectives

- To link Bloom’s Taxonomy to the grading structure and to pupils’ ability to demonstrate levels of knowledge of a subject.

## Resources

Handout 5: Grade descriptions

Flipcharts from *Workshop 2: Thinking skills and questions – Bloom’s Taxonomy of Learning*

Examination board marks scheme and past papers\*

Optional: a summary chart of GCSE results for your school

**\*Practical tip:** Teachers will need to prepare and distribute a relevant Awarding Body grading scheme document and associated examination paper for a specific subject, for example, citizenship studies or history, so that the whole group works on the same subject. In *Take it further* (below), pupils will find it helpful to refer to a model examination answer at A/A\* grade.

## Activity

### 1. Group activity: apply Bloom’s Taxonomy to the school context

Pupils work in subject groups, to find examples of higher-order learning for a given subject area at school. *Handout 4: Higher-order learning* from workshop 2 will be helpful with this task. They present their findings to the whole group. Explain that this is an application-level activity that also checks pupils’ understanding.

**Review and recap from previous session:** You could include the following examples to clarify terms.

- **Knowledge:** There are course books for reference. Shakespeare wrote *King Lear*.
- **Comprehension:** This is checked by tutors asking questions in class, tests of knowledge, pop quiz, multiple choice; pupils should practise looking up meanings in a dictionary and using a new word accurately.
- **Application:** Pupils may be asked to work through an example, or use an equation to solve a problem.
- **Analysis:** This involves breaking down a problem into smaller parts, for example, in essays and comparison questions (*Why is this like...different from that?*), using techniques to solve problems or equations.

- **Synthesis:** This involves hypothesising or making links between topics and themes. For example, essays (How does this fit with other literature of the era. What do you feel about...? What if Hitler had not invaded Russia?).
- **Evaluation:** This means arguing the case for one side of a debate; having reviewed both sides, to reach an informed or reasoned opinion; for example, decide which article is most persuasive and explain why.

## 2. Group activity: grading levels for different subjects

Explain that pupils should refer to their flipcharts from *Workshop 2: Thinking skills and questions – Bloom’s Taxonomy of Learning*, when they recorded notes about grading levels for the different subjects, and apply the Taxonomy to the grade levels, for example, levels of understanding for C grades.

Now introduce them to *Handout 5: Grade descriptions*. What are the main similarities and main differences between their flipcharts and the grid? Can they identify Bloom’s Taxonomy in the gradings?

**Note:** Some subjects will tend to use mainly one type of thinking, for example, mathematics and science rely heavily on analysis.

Now distribute the awards scheme for a specific subject with one or two sample exam questions (see practical tip above). Split pupils into different groups. Each group should interpret or map the grading levels for A/A\* and link the examination questions to the higher-order learning model. Groups should share what they notice and raise any questions. What do they think is required to achieve an A or A\*?

**Debrief:** Draw conclusions, for example, including these points.

- Assessments provide opportunities to demonstrate the different levels of learning.
- To achieve top marks you need to demonstrate higher levels of learning.
- Questions that involve analysis, evaluation and synthesis require relevant, detailed and accurate subject knowledge.
- How does this apply to other subjects?
- Is it harder to demonstrate higher levels in science and mathematics?
- Do you need to focus on:
  - comprehension and application;
  - breadth over depth of knowledge?

## 3. Reach for the stars

Ask pupils what they can begin to do differently to ‘reach for the stars’ and improve their grades. If they don’t know then where will they go to find out more? Remind pupils to record their ideas in *Handout 1: Top tips for action*.

## Take it further

Show a GCSE grades chart generated from results in your school and compare with national or Local Authority data. What questions or comments does this raise for pupils? Are there any surprises?

Provide a ‘model’ answer and ask pupils to grade it. Ask them to moderate their assessments, in groups or pairs. Then tell them what the answer was actually awarded.



# 4 Focused learning

## Objectives

- To identify effective ways of achieving higher-order learning
- To identify effective application of these methods.

## Resources

Handout 3: The grades I want. (It will help to have a set of blank photocopies)

Handout 6: The 'onion' model

Slide 3: The 'onion' model

Examples of subject specifications

Slide 1: The grades I want

Examples of concept maps

Examples of mnemonics

## Activity

### 1. Discussion: focused learning

Ask pupils individually to consider: *How much or how little effort do you need to put in to guarantee top grades?* Then ask pupils to review and complete columns 3, 4 and 6 in *Handout 3: The grades I want*, started in session 1. Take some feedback across a range of subjects and see if anyone wants to revise their total number of hours.

Explain that the next step is to see how to work the system more effectively.

To get top grades in the GCSE system, pupils individually need to ask themselves these questions.

- Do I have the right breadth of knowledge? Do I know all the relevant aspects of my course? Can I make links between my subject and other topics and subjects? (For example, can a pupil studying literature link their study of a novel or poem to its historical context? Can they draw on a different example of a poem by the same author, or a poem on a similar theme by a different poet?)
- Do I have the right depth of knowledge? Can I accurately use detailed evidence and examples to explain my answers? Have I revised and learned enough?
- Do I learn and process knowledge in the most effective way? Can I use higher-order thinking skills? Have I practised analysing, synthesising and evaluating questions?

Explain that, when they start a course, pupils can predict exactly what they need to know and the level of learning they will need. If they are in any doubt they can ask teachers for more information and they can also research this themselves, if they know the examination board and course details. If possible, show an example of a subject specification.

To be as efficient and effective as possible, pupils need to work on how they learn the subject and then how they use and demonstrate their knowledge to get top grades.

## 2. Group activity: effectively acquiring different levels of knowledge

Split pupils into subject groups. Ask them to brainstorm techniques for learning the breadth of content on their courses and then present their findings to the whole group. Pupils should also consider one or two barriers that prevent them making good progress. Ensure they think about the different scenarios in which they learn, such as:

- in school versus out of school;
- examination time versus non-examination time.

## 3. Discussion: top tips

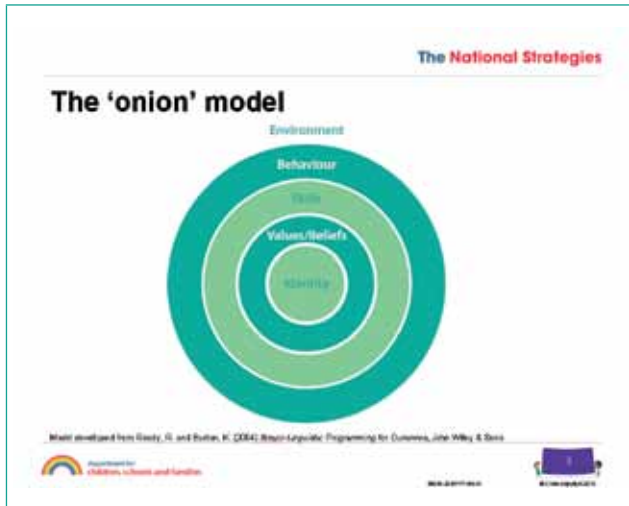
Gather pupils' ideas on a 'Top tips' flipchart. Ensure you include the ideas and techniques listed below.

- **Start with the end goal in mind.** Know what is required to get a top grade.
- **Develop breadth of knowledge and understanding.** Concept maps replicate how our brain sorts information; use them to help understand the big picture and to draw out the whole course to see how things fit together. Make links between what you have just learned and what you know about the world from your other knowledge and subjects.
- **Prime yourself.** The more you anticipate something, the more receptive you are when it arrives. If you can feel motivated about it – *This is coming up and I really need to learn it!* – even better.
- **Find your motivation.** You concentrate more on things that interest you, such as songs or football scores. Find your motivation and see it as a reward. *Learning it in class will save me time, memorising it now means less work later, if I concentrate now I can watch...go to...*
- **Timely reminder.** Short-term memory doesn't hold ideas for long, so early recall and repetition help shift learning to long-term memory.
- **Make it vivid when learning.** Exaggerate, add colour and sound, make large, use mnemonics. (Provide examples.)
- **Use peer-pressure and support.** Get someone to keep you on track: *I need to do an hour of...OK, I'll encourage you. Work in groups, more fun, share ideas.*
- **Further study.** What more research, reading, films, plays, websites, museums or exhibitions could help you gain depth of knowledge? Who can guide or advise you with this?
- **Ask questions** if you need help: *Sir/Miss, I understand this bit, but I'm not sure why I'm learning it, what I'm comparing it against, what it leads to. Could you explain that again? Am I right in thinking that...? Could you give me an example?*
- **So what do I need to do...?** When memorising, ask yourself: *What do they want me to do with this knowledge?*

## Take it further

### Visualise yourself reaching for the stars

Show slide 3.



Ask pupils to use *Handout 6: The 'onion' model* to complete an analysis of themselves as they will be when they have become successful sixth formers. What will they be like? How will they have changed or developed as students?

Then ask them to review and update their *Handout 3: The grades I want* sheets.

# 5 Critical thinking and deeper questioning skills

## Objectives

- To build analytical skills by challenging information for validity
- To demonstrate that writing high-level answers requires 'showing what you know' as well as demonstrating critical thinking
- To improve relevance and focus in pupils' answers.

## Resources

Handout 7: Analysis – critical thinking

Handout 8: Question analysis framework

Handout 9: Understanding exam questions – what are you being asked to do? (copy some spare blank sheets for pupils to work on)

Slide 4: Analysis – critical thinking

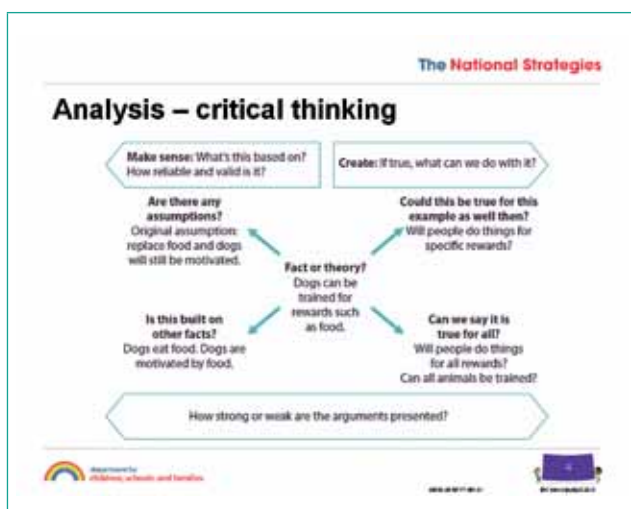
Slide 5: Types of question

Provide a list of typical examination questions for Activity 1, either a selection or from one specific subject

## Activity

### 1. Explanation and discussion: modelling critical thinking

Show slide 4.



Talk through slide 4, or develop your own slide offering a similar approach to critical thinking.

Explain that critical thinking means not accepting things at face value. You show your thinking skills by interrogating what you are studying or writing about. There are lots of aspects to it. Pupils have already covered 'fact versus opinion' in previous workshops (Module 1, *First impressions* activity). It is fine to analyse things but what if the fact or opinion is wrong or invalid? This is especially important in examinations that provide sources and extracts of information for pupils to consider.

To demonstrate critical thinking well, you need to know the subject. In building knowledge, you will discover new information, especially when researching on the web. You need to decide if it is valid or not. Does it support or fit with what you already know? Does it give you an alternative view or approach? Do you need to research it a bit further?

In challenging a fact, opinion or information, you can think in terms of where it comes from, what the author's purpose or motives are, and what you can do with it, to take your knowledge further. For example, a biased source from an election campaign may not be entirely factual, and you may not agree with it, but it can still teach you about the political debate under discussion.

Other questions to ask include:

- Are there any other facts or assumptions?
- Is there any key information missing?
- How strong is the case for this?
- Is it true for another example?
- Is it true for all examples? Is it always true?

## 2. Make sense of a source or question

Provide an example of an exam question and ask pupils to highlight or underline the most important words or elements of the question. Take some feedback and compare their answers.

Show slide 5.

Question type	Purpose	Assumption	Why used	Example
Closed	To identify facts	There is certainty, common belief	To check comprehension To check breadth of knowledge	In which year? Explain, detail, describe
Open	To see thinking	There are different points of view	To demonstrate analysis based on comprehension	Compare, contrast
Linking	To see thinking	There are different points of view, ideas/theses can be linked	To demonstrate analysis based on specific areas of comprehension (breadth of knowledge)	Compare and contrast A and B
Hypothetical	To see personal thinking	You are aware of different views and also have your own	To check how you have added comprehension and analysis of an issue to your thinking (synthesis)	Why do you think... if you were to...
Leading	To encourage a specific answer (often unambiguous)	The questioner wants their answer to be considered	To direct answers (often a/b/c/d/e/f)	Would you agree that A is better than B?

Use or adapt *Handout 7: Analysis – critical thinking* to enquire into a statement or exam question of your choice.

Ask pupils to work through *Handout 8: Question analysis framework* individually and then work in threes or fours to compare their analysis. You will need to point out that although they may not have revised this topic, they can still practise the skill of question analysis.

**Key point:** When writing answers for higher grades, pupils need to show critical thinking. They need to demonstrate that they are not accepting opinions or subjective information at face value. Show an examination question as an example, to demonstrate this.

### 3. Types of question

The purpose of this section is for pupils to review questioning techniques in terms of critical thinking and how the system tests their knowledge levels.

Show slide 5 and work through each question type. They will find *Handout 4: Higher-order learning* and *Handout 5: Grade descriptions* helpful to refer to before they try to complete *Handout 9: Understanding exam questions – what are you being asked to do?* Stress why each type of question would be used by an examiner. The challenge is to work out why the examiners use the question. *What skills are they asking the student to demonstrate?*

### 4. Paired activity: Plan an answer

Provide a list of examination paper questions and ask pupils to analyse one question and plan an answer, using *Handout 8: Question analysis framework* as a guide.

#### Optional Task

Design a revision guide for another A or A\* pupil who is preparing to answer this question. Refer back to your notes from *Workshop 2: Thinking skills and questions – Bloom's Taxonomy of Learning* and *Workshop 3: Thinking skills and questions – applying Bloom's Taxonomy to school and examination questions*.

### Take it further

Thinking critically means not accepting information at face value in any context. Try the same critical thinking methods in relation to today's news. Look for a front page newspaper article, or TV news story from today. What questions would you wish to consider to help you understand the story better? How does this approach differ from your usual reading of the news?

# 6 A-grade skills – focus on the academic word list (AWL)

## Objectives

- To identify the language skills required to get top grades
- To understand the importance of the AWL and how to use it
- To facilitate understanding of what is within pupils' control.

## Resources

Handout 2: The good word guide

Handout 10: The academic word list

Handout 11: Classifying scientific language

Slide 6: Academic word list

Slide 7: Headwords

Slide 8: Analysing words for deeper meaning

Slide 9: Pandemic – epidemic

Optional: For *Take it further* (below), provide photocopied extracts of text or articles with challenging language.

Flipcharts and pens

## Activity

### 1. Review: skills for top grades

#### Group brainstorming activity

Split pupils into groups. Each group brainstorms the skills needed to achieve a top grade. Explain that this, is in part, an attempt to recall learning from previous workshops but they should add any additional ideas. Review their feedback and check the elements below are included:

- Behaviours
  - Thinking: find out, using divergent methods, different tools (not just teacher notes), have ideas (include make sense (see patterns, use models) and create from critical reasoning – reliability and validity), choose options – (analyse, evaluate, choose material to answer the actual question)
- Understand others: for example, teachers, literary and historical characters, their assumptions, their points of view; their motives
- Communicate clearly, using well-structured plans, build-up and use articulate language, accurate grammar, academic language

- Motivation, show interest in subject – it’s easier to work hard when you are enthusiastic
- Breadth and depth of knowledge – go beyond the minimum tasks set by teachers; look for links between your learning and the news, the arts, literature and music for example
- Effective learning techniques – what works well for you?

## 2. Explanation: the academic word list

Good academic language needs to be expressed in subject-specific terms, used accurately and precisely. It also requires the accurate use of abstract and conceptual terms. The purpose of this section is to highlight the importance of language in building knowledge and improving grades. It introduces skills for analysing language and building vocabulary. Remember to emphasise the importance of using *Handout 2: The good word guide* to note any words they are not sure of and may need to explore further. This is a good strategy for all subjects.

Ask the group to suggest some words of which they always forget the meaning, or muddle with similar words, for example, affect: (verb) to influence; effect (verb) to bring about, or effect (noun) a consequence.

Ask: *What is the impact of this in school life?* Pupils may suggest:

- not saying what they mean;
- not using the correct word because they are unsure;
- using other words that aren’t quite right, such as ‘thingy’, ‘doobry’, ‘whatsit’, ‘thingymajig’, ‘whatsamacallit’, ‘gizmo’.

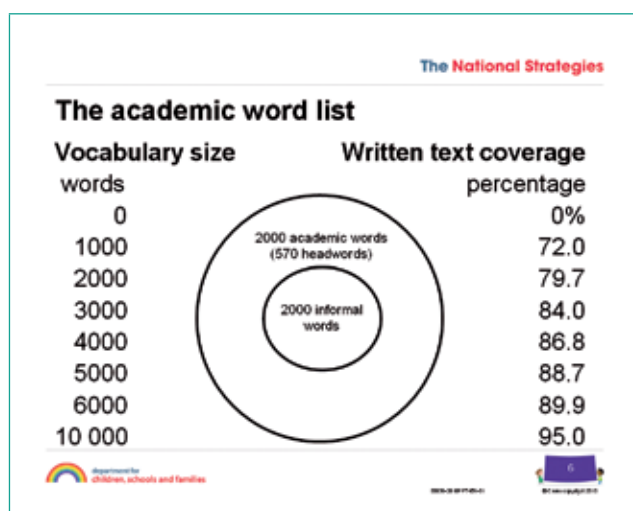
Ask: *So what’s the impact in examinations of not knowing the right words?* It can mean guessing what a question is asking. It can also mean failing to write the best answer you are capable of.

Point out that many pupils fail to achieve the top grades, simply because they lack the academic language to interpret the question accurately and answer it to the best of their ability. The good news is it is not difficult to acquire the language you need. You just need some inside knowledge.

Explain that this section is about building up language effectively.

Say that the 1000 most frequently used words in English make up more than 70% of the words you see in texts.

Show and discuss slide 6.





## Background to the AWL for teachers

Researchers studied texts totalling one million words and found that if someone knows the words that occur with the highest frequency, they will quickly know most of the words in a text.

Vocabulary size	Written text coverage
0 words	0%
1000	72.0
2000	79.7
3000	84.0
4000	86.8
5000	88.7
6000	89.9
10 000	95.0

So anyone who knows the 2000 words with the highest frequency would know 80% of the words in those texts.

The numbers look even better than this if we include the words we encounter in an informally spoken context; here the 2000 most common words would cover 96% of the vocabulary.

**Note:** Check that pupils understand the differences between informal speech and formal written communication.

But before you start thinking you could learn a language in no time, think about how well you would understand a book in your own language if every fifth word were blacked-out! We cannot always guess meanings from the context when that many words are missing. With academic and subject language, guessing incorrectly can have serious consequences.

To recap, the **1000** highest frequency words account for more than 70% of individual words in texts, but this common core vocabulary does not include much of the formal language required for high achievement.

To be fully confident, we need to understand about 95% of a text. Research shows that we need more than **10 000 words** to be able to do that! The 10 000-word level is more or less what is required for undergraduate study, so what can you do to develop your language for academic purposes?

The academic word list (AWL) relates to the words needed by pupils to access and understand academic texts. It comprises 570 word families that are not in the common core but which occur reasonably frequently over a very wide range of texts in many different subjects.

The AWL words are useful for studying any curriculum subject and consist of formal vocabulary with words such as access, authority, define, environment, assume, criteria, imply.

Each of the 570 headwords has a family of words attached to it.

For example, *access* has *accessed*, *accessibility*, *accessing*, *accessible*, *inaccessible*. When added to the 2000 word-level list this provides access to approximately 90% of words in all texts.

Learning the AWL will provide most of the language pupils need for writing across their subjects, meaning that they can spend their time focusing on subject language, with more confidence that they have the vocabulary to support themselves.

Adapted from: [www.en.wikipedia.org/wiki/Vocabulary\\_size](http://www.en.wikipedia.org/wiki/Vocabulary_size)

**Key point:** Show slide 7 and refer pupils to *Handout 10: The academic word list*.

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**Headwords**

For example, ACCESS

- Accessed
- Accessibility
- Accessing
- Accessible
- Inaccessible

Can you think of another example?

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EUROPEAN UNION

Pupils need to check they understand the purpose of the list and the words included in it. They need help and encouragement to understand and use academic language accurately to enable them to fulfil their potential. There is more information on academic language at [www.realproject.org.uk](http://www.realproject.org.uk). An academic word highlighter tool is a useful extra resource that pupils can access independently. Teachers will also find it helpful. Find out more at: [www.nottingham.ac.uk/~alzsh3/acvocab/awlhighlighter.htm](http://www.nottingham.ac.uk/~alzsh3/acvocab/awlhighlighter.htm). These links are provided for pupils on *Handout 10: The academic word list*.

## Activity

Pupils look through the academic word list provided in *Handout 10: The academic word list* and underline three or four words that they would find difficult to define accurately. Clue: Can they think of any similar associated words that may be in that word family? What would be a good way to learn and use these words accurately? They can add these to *Handout 2: The good word guide*.

## 3. Practical activity: building academic language and more specific language

Suggest that pupils now look at how language works in a specific subject, such as science.

Distribute *Handout 11: Classifying scientific language*. This includes the article, *The mother of all flu pandemics*.

Ask pupils to read the text out loud around the group. Other pupils should underline any words they are unsure of.

Ask participants to consider the *italicised* scientific language that is used in the first section.

Explain that subject language can be classified in a number of different ways according to the **meaning** of the original word: we can build logically to increase our knowledge.

Ask the group to explain the difference between 'pandemic' and 'epidemic'. *Is it an important difference?*

Show slide 8.

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### Analysing words for deeper meaning – For example, Infect

Specific meaning in this context

- to affect or contaminate with disease producing germs

Family words in this context

- Infectious, infection...

Opposite (or antonym)

- Disinfect (for example, cleanse a wound)

Similar (synonym)

- Contagious – can be transmitted by bodily contact unlike infection which can also be airborne

Same word – completely different meaning in a different subject

- Does infect have a different meaning in another subject, such as IT?

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Using slide 8 work through the criteria outlined below for 'infect' and then set pupils the task of using similar criteria to build knowledge based on the words 'pandemic' and 'epidemic'.

- Specific meaning in this context
  - Infect
    1. to affect or contaminate (a person, organ, wound, etc.) with disease-producing germs;
    2. to affect with disease.
- Family words in this context: are they more general, more specific or just linked?
  - Infectious: communicable by infection, as from one person to another or from one part of the body to another – *infectious diseases*.
- Opposite (antonym)
  - Disinfect: to cleanse (e.g. rooms, wounds, clothing) of infection; destroy disease-carrying germs.
- Specific similar meaning: important difference
  - Contagious: capable of being transmitted by bodily contact with an infected person or object – *contagious diseases*.  
**Note:** *Contagious* means through physical or bodily contact but *infectious* does not mean this; an infection can be airborne.
- Same word, completely different meaning
  - Wave (Ask for examples of how the meaning of this word can be entirely different, depending on context, to build general language and give the word more context; for example, a wave of a hand, a wave in the sea, electromagnetic waves.)
- General meaning: applies to other contexts
  - Catching, spreading, for example, infectious/contagious laughter.
- Similar meaning (synonym): differences less clear.

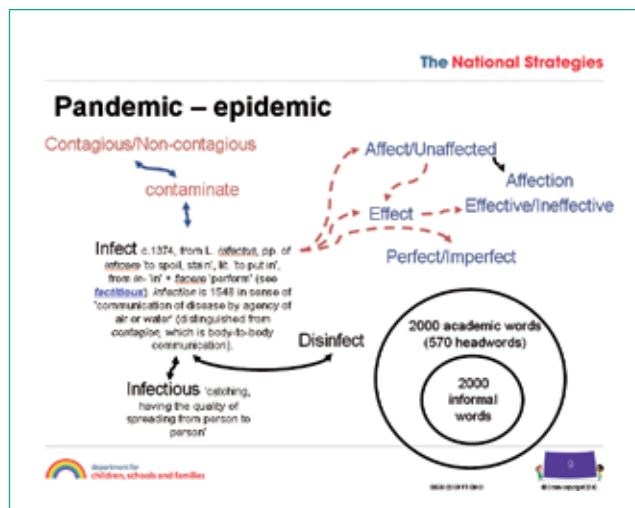
Parts of words can also indicate meaning, and provide useful clues, sometimes based on classical and foreign languages. The 'fect' in infect is also seen in *affect*, *effect*, *perfect*. It comes from the Latin word *facere*, 'to do, make, perform', and, in the list given, suggests something is happening. Those studying French will see the link with the French *faire*, to do.

The prefix 'per' can indicate completion, as in *perfect*, *performance* or *permanent*.

**Important note:** Making a 'fuss' of language regularly, in this way, gives pupils very important transferable skills for coping with unseen and unfamiliar words they encounter in reading or examinations.

## 4. Group activity: build vocabulary around 'pandemic' and 'epidemic'

Show slide 9 and ask the group to do a similar analysis for pandemic – epidemic.



Ask pupils to use their knowledge of words and of science to build a web of connected words and topics.

**Note:** The task is not just to create a list of words. It is about building their knowledge through making links between words.

### Task

In pairs, pupils discuss these questions: *How can you make the words you have listed as memorable as possible to aid recall and memory? How can you become confident at using the words?*

### Review and feedback

Call the group together and take suggestions, recording them on a flipchart. Ideas might include:

- colour-coding;
- concept maps;
- visual cues and images;
- science talk – opportunity for discussions;
- reading science articles.

### Take it further

Ask pupils to use *Handout 2: The good word guide* to record and check the meaning of at least ten academic words they need to use more frequently to improve their work. These may be words to which you choose to direct them, or words they have encountered in this workshop.

**Alternatively,** using an extract from a newspaper or text they are studying, they highlight the key academic words they find. They should note these in their good word guide and check meaning, so they can use the words more effectively in their work.

Do any of the headwords have different meanings in different subjects? For example, the word 'capital' as used in geography has a different meaning from 'capital' as used in economics and business studies. Ask pupils to find more words that they use differently in different subjects.

# 7 Close (use at the end of each workshop)

## Objectives

- To encourage pupils to engage further in the topics and apply the learning between workshops
- To ensure all pupils are clear about the key learning points and what they have gained from the workshop
- To check how everyone is feeling and address any unresolved issues
- Elicit feedback on the materials and check that aims have been met
- To check motivation for the task and programme, in order to ensure continued attendance
- To finish on a high so that pupils leave feeling upbeat and positive.

## Activity

1. Encourage networking; ensure pupils have a buddy or group to support the use of new skills and knowledge between workshops. Mentors can help here.
2. Ask pupils to summarise key learning points, reiterating and clarifying if necessary.
3. Ask pupils to complete the handouts or learning logs as necessary. Mentors can also check how they're doing with this.
4. Encourage pupils who can, or wish to, to try the take it further tasks.
5. Ask pupils to congratulate each other (in pairs or groups) for something they did well during the workshops.

# Handouts

## Progression workshop contract

I want to take part in a workshop that is fun and engaging, and where I feel free to relax, be myself, challenge myself and learn from everyone around me, with an open mind. To make this true for everyone I will do my bit to contribute. Specifically, I will:

- Show respect for others by looking at them and listening to them.
- Show respect for myself by not putting myself down.
- Be positive about the contribution of others by seeing what's good in what they say before I think of what I disagree with.
- Make others feel safe to speak their mind by not making fun of them, but by encouraging them.
- Think of how I can build on or add to the discussion (I may have a key link that will help everyone).
- Cooperate with the task instructions so the workshop can run as intended.
- Feel free to disagree or challenge (politely) anything I need to, so that I can understand the skills I'll need to succeed.
- Be curious and open-minded about others' opinions and ways of doing things.
- Ensure I allow the space for others to make contributions too and not hog all the air-time.
- Appreciate that what I, and others, are good at will differ; that it's not a competition and it's fine to just be myself.
- Realise that everyone learns at different speeds and in different ways; sometimes I'll get something done more quickly than others and sometimes it will take me longer.

So that's OK.

<b>Signed:</b>	<b>Date:</b>
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## Handout 1: Top tips for action

*Record your big ideas and thoughts here to remind you and give you something to look back on*



## Handout 2: The good word guide

*Successful pupils use a wide vocabulary – sometimes called the academic word list. Keep a note of good words you can use again. Note down any you are not sure of and look them up in a dictionary. Ask your teachers for help in how to use the word if you are not sure.*

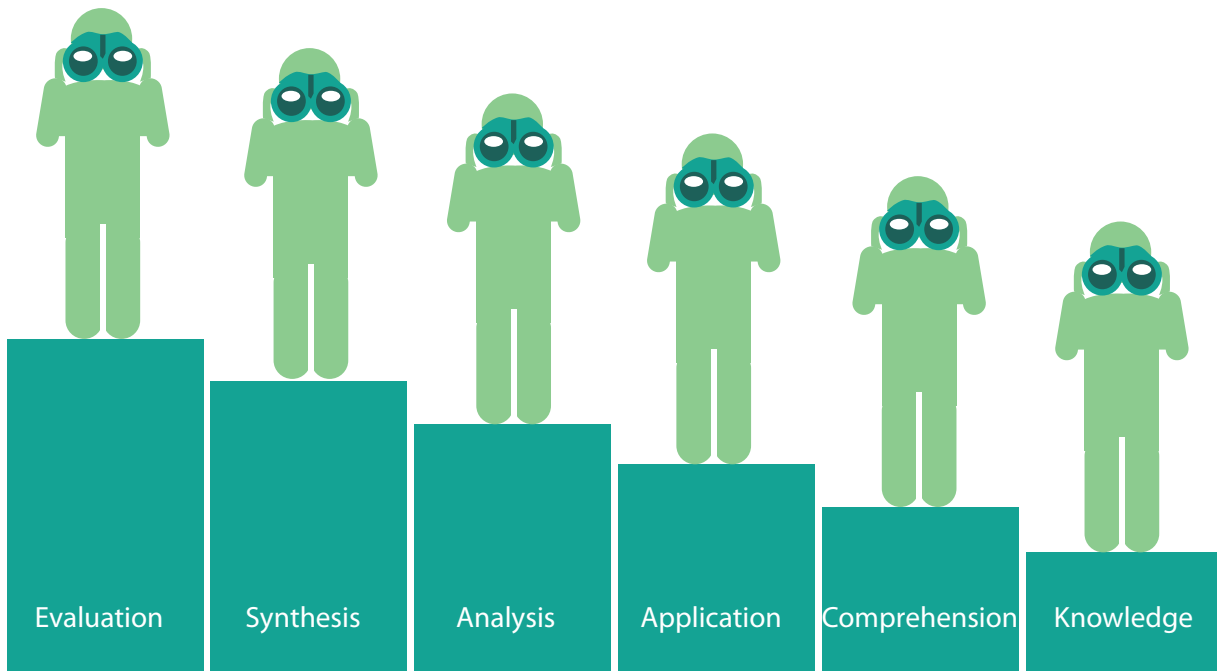


## Handout 4: Higher-order learning

The education system is designed to identify different levels of pupils' learning across a range of subject areas. Essentially, it checks the breadth and depth of your knowledge. One way of thinking about this is as learning and knowledge taking a form of hierarchy, like a pyramid. As your learning moves up the hierarchy, it gains more importance as you can see more of what you can do with it.

### Higher-order questions

A similar hierarchy for questions is used by teachers to add challenge and complexity to your learning. It is sometimes called Bloom's Taxonomy, after the researcher who developed the system.



Now rewrite the text above in your own words, so it will be easier to remember.

Level	
Evaluation	
Synthesis	
Analysis	
Application	
Comprehension	
Knowledge	

Level of thinking		Learning objectives
<p><b>Lower-order questions</b> are often closed questions. Answers are either right or wrong</p>	<p><b>Knowledge</b></p>	<ul style="list-style-type: none"> <li>● observation and recall of information</li> <li>● knowledge of dates, events, places</li> <li>● knowledge of major ideas</li> <li>● mastery of subject matter</li> </ul> <p><i>Question cues:</i>            list, define, tell, describe, identify, show, label, collect, examine, tabulate, quote, name, who, when, where</p>
	<p><b>Comprehension</b></p>	<ul style="list-style-type: none"> <li>● understanding information</li> <li>● grasp meaning</li> <li>● translate knowledge into new context</li> <li>● interpret facts, compare, contrast</li> <li>● order, group, infer causes</li> <li>● predict consequences</li> </ul> <p><i>Question cues:</i>            summarise, describe, interpret, contrast, predict, associate, distinguish, estimate, differentiate, discuss, extend</p>
<p><b>Middle-order questions</b> test whether you can apply your knowledge in a practical way</p>	<p><b>Application</b></p>	<ul style="list-style-type: none"> <li>● use information</li> <li>● use methods, concepts, theories in new situations</li> <li>● solve problems using required skills or knowledge</li> </ul> <p><i>Questions cues:</i>            apply, demonstrate, calculate, complete, illustrate, show, solve, examine, modify, relate, change, classify, experiment, discover</p>

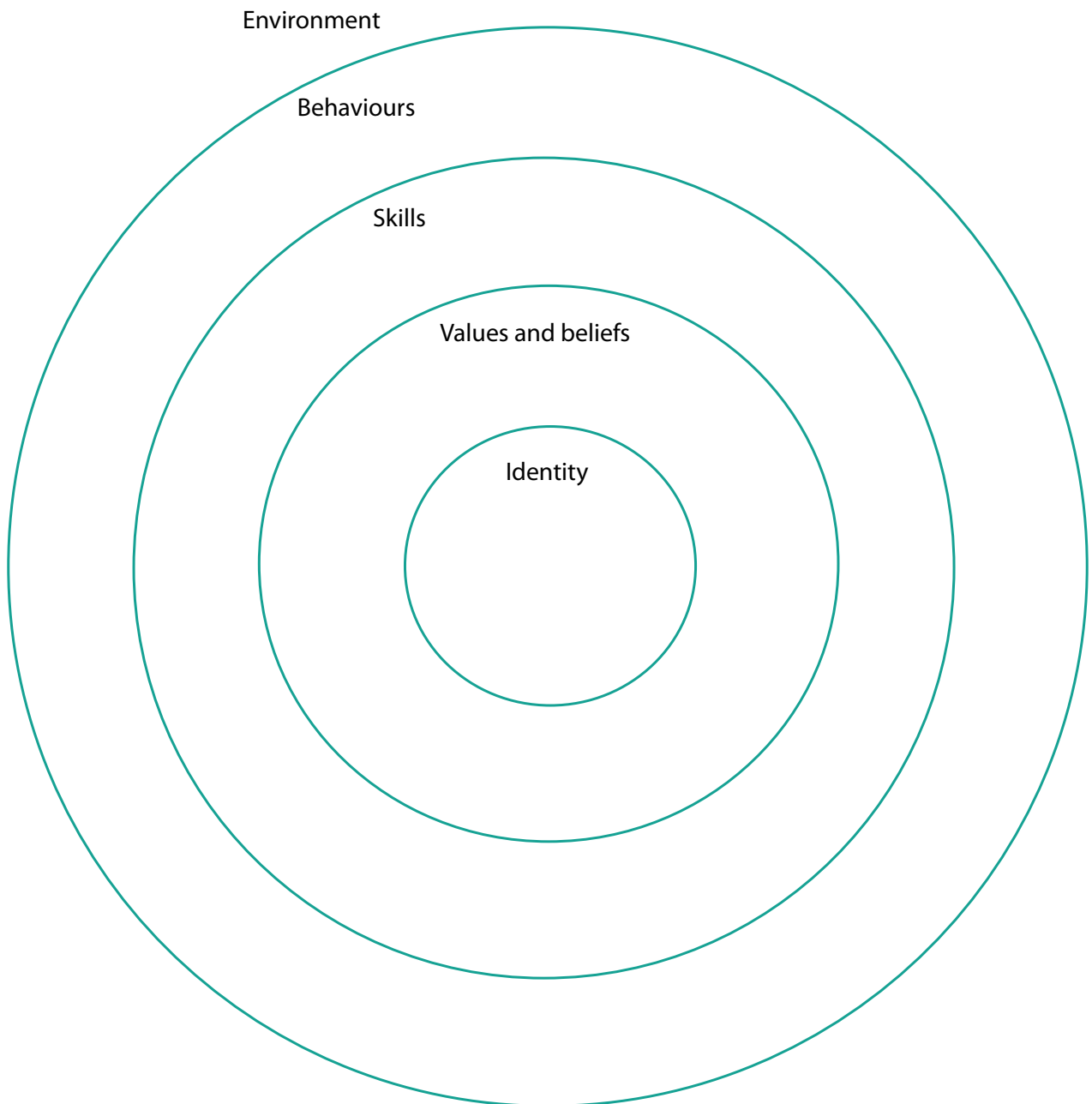
Level of thinking		Learning objectives
<p><b>Higher-order questions</b>                      can have a wide range of possible answers. High marks usually depend on how effective and relevant the answer is and how much depth of knowledge and understanding is demonstrated</p>	<p><b>Analysis</b></p>	<ul style="list-style-type: none"> <li>● seeing patterns</li> <li>● organisation of parts</li> <li>● recognition of hidden meanings</li> <li>● identification of components</li> </ul> <p>Question cues:                      analyse, separate, order, explain, connect, classify, arrange, divide, compare, select, explain, infer</p>
	<p><b>Synthesis</b></p>	<ul style="list-style-type: none"> <li>● use old ideas to create new ones</li> <li>● generalise from given facts</li> <li>● relate knowledge from several areas</li> <li>● predict, draw conclusions</li> </ul> <p>Question cues:                      combine, integrate, modify, rearrange, substitute, plan, create, design, invent, what if?, compose, formulate, prepare, generalise, rewrite</p>
	<p><b>Evaluation</b></p>	<ul style="list-style-type: none"> <li>● compare and discriminate between ideas</li> <li>● assess value of theories, presentations</li> <li>● make choices based on reasoned argument</li> <li>● verify value of evidence</li> <li>● recognise subjectivity</li> </ul> <p>Question cues:                      assess, decide, rank, grade, test, measure, recommend, convince, select, judge, explain, discriminate, support, conclude, compare, summarise</p>

Adapted from Anderson & Krathwohl, *A Taxonomy for learning, teaching, and assessing*, © 2001 by Addison Wesley Longman, Inc. Reproduced by permission of Pearson Education, Inc.

## Handout 5: Grade descriptions

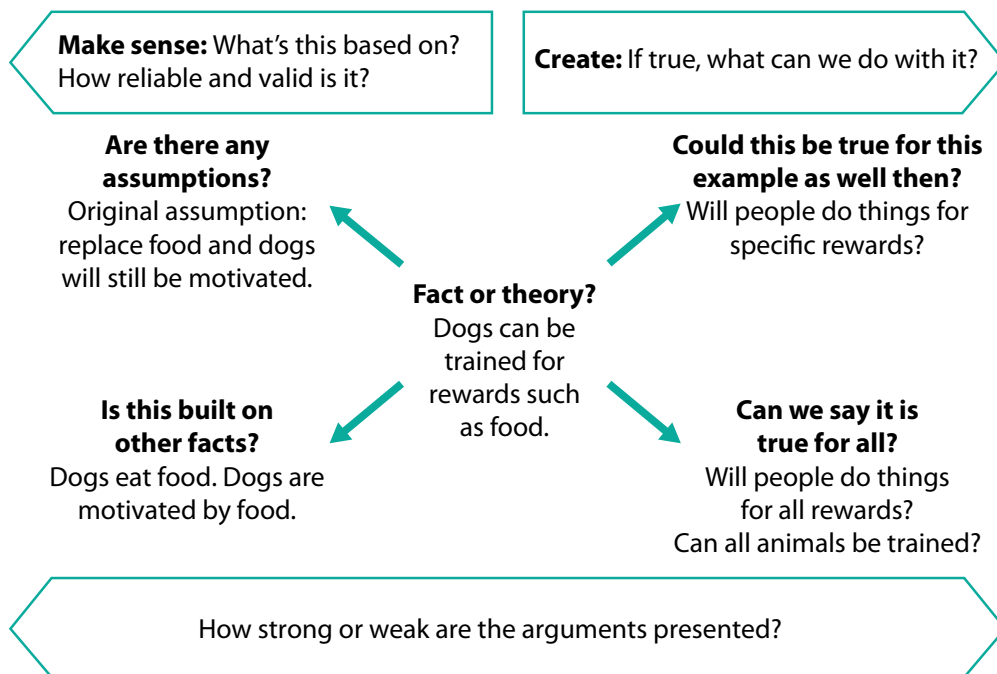
Grade descriptions	A*	A	C
<b>Knowledge and content</b>	Detailed knowledge and understanding of the subject recalled, selected, organised and deployed consistently with accuracy, effectiveness, originality and imagination	Detailed knowledge and understanding of the subject recalled, selected, organised and deployed consistently with accuracy and effectiveness; fluency with technical terms	Good overall range of knowledge and understanding across most situations
<b>Application of knowledge</b>	Exceptionally high ability in a range of roles, applying knowledge to familiar and unfamiliar contexts with ease, perception and sensitivity	Knowledge applied to a range of familiar and unfamiliar contexts, giving reasoning for accepting and rejecting methods	Use and application of knowledge to general situations and familiar contexts; application justified, using generalisations and some insight
<b>Level of detail</b>	Confident and fluent use of high level of details and technical terms, making cross-references where apt	Consistent high level of detail, accurate and relevant, cross-references made where apt	Knowledge of technical vocabulary and techniques used with accuracy and relevance
<b>Analysis and interpretation</b>	Draw conclusions, justify and evaluate them and appreciate their limitations, making suggestions for improvements  Consider the value and implications of different opinions and values and evaluate complex interrelationships	Draw conclusions, justify and evaluate them and appreciate their limitations, making suggestions for improvements  Consider the value and implications of different opinions and values and understand complex interrelationships	Demonstrate understanding of relevant issues, recognise different opinions  Reach plausible conclusions that are evaluated by appreciating some of their limitations
<b>Communication</b>	Perceptive and sensitive communication, readily adapted to suit all situations	Range of skills applied to appropriate contexts, presenting convincing, reasoned argument	Communication and numerical skills suitable for most situations, clearly expressed
<b>Overall</b>	Excellent depth and accuracy of knowledge and understanding, applied with originality and flair	A confident, assured and accurate performance highly developed to suit a range of contexts	An accurate performance, demonstrating understanding and knowledge of a broad appreciation of the subject
<b>UMS (/300)</b>	270–300	240–269	180–209

## Handout 6: The 'onion' model



Model developed from Ready, R. & Burton, K. (2004) *Neuro-Linguistic Programming for Dummies*, John Wiley & Sons.

## Handout 7: Analysis – critical thinking



### Types of question

Question type	Purpose	Assumption	Why used	Example
Closed	To identify facts	There is certainty, common belief	To check comprehension  To check breadth of knowledge	In which year...?  Explain, detail, describe
Open	To see thinking	There are different points of view	To demonstrate analysis based on comprehension	Compare, contrast



Question type	Purpose	Assumption	Why used	Example
Linking	To see thinking	There are different points of view, ideas/themes can be linked	To demonstrate analysis based on specific areas of comprehension (breadth of knowledge)	Compare and contrast A and B
Hypothetical	To see personal thinking	You are aware of different views and also have your own	To check how you have added comprehension and analysis of an issue to your thinking (synthesis)	Why do you think...If you were to...
Leading	To encourage a specific answer (often unintentional)	The questioner wants their answer to be considered	To direct answers (often unintentional)	Would you agree that A is better than B?

## Handout 8: Question analysis framework

### Exam question

What are the important words to consider?	
What is the main topic being tested? <i>(Consider what knowledge you will need to show)</i>	
What is the question asking us to do – the key focus of question? <i>(Consider what level of thinking is required)</i>	
What useful points can we make?	
Some good evidence or examples to use:	
Other ideas:	

## Handout 9: Understanding exam questions – what are you being asked to do?

Many pupils fail to get the highest grades because they have not properly understood the command words in a question. The highest grades are awarded to answers that are focused and relevant to the question set. Use this table to identify the level of knowledge the question is looking for. Is a question asking you to show known facts or identify assumptions? Or is it asking you to create links with other knowledge and have new ideas about how it could be used?

Question	Definition	Level of thinking
<b>Account for</b>	give a good account of	
<b>Analyse</b>	take to pieces, to separate, distinguish or ascertain the elements of anything complex, a detailed examination of the area	
<b>Appreciate</b>	form an estimation of worth or value	
<b>Apply knowledge</b>	show how you have applied knowledge to your situation	
<b>Calculate</b>	solve, determine by judgement	
<b>Communicate</b>	impart knowledge, to exchange thoughts, to transmit ideas	
<b>Compare/contrast</b>	give example/s to show how the two are similar/dissimilar	
<b>Define</b>	give meaning to a word or phrase	
<b>Describe</b>	give a detailed graphic account of	
<b>Discuss</b>	present arguments for and against – debate	
<b>Evaluate</b>	work out the value of – explaining why and how	
<b>Examine</b>	inquire into, to investigate, to discuss critically	
<b>Explain</b>	make clear	
<b>Explore</b>	search into, seek to find out	
<b>Illustrate</b>	show with examples (could be illustrations)	
<b>Interpret</b>	clarify or explain the meaning of	
<b>Investigate</b>	search or inquire into, to examine systematically or in detail	
<b>Justify</b>	explain your reasoning and your evidence	
<b>Recall</b>	remember correctly	

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<b>Show</b>	state or prove something to make it clear to someone	
<b>Summarise</b>	give the main points or facts	

## Handout 10: The academic word list

### Academic word list headwords

This list contains the headwords of the families in the academic word list. The numbers indicate the sublist of the academic word list, with Sublist 1 containing the most frequently occurring words, Sublist 2 the next most frequent and so on. For example, 'abandon' and its family members are in Sublist 8 of the academic word list.

abandon 8	append 8	challenge 5	conceive 10	convert 7	differentiate 7
abstract 6	appreciate 8	channel 7	concentrate 4	convince 10	dimension 4
academy 5	approach 1	chapter 2	concept 1	cooperate 6	diminish 9
access 4	appropriate 2	chart 8	conclude 2	coordinate 3	discrete 5
accommodate 9	approximate 4	chemical 7	concurrent 9	core 3	discriminate 6
accompany 8	arbitrary 8	circumstance 3	conduct 2	corporate 3	displace 8
accumulate 8	area 1	cite 6	confer 4	correspond 3	display 6
accurate 6	aspect 2	civil 4	confine 9	couple 7	dispose 7
achieve 2	assemble 10	clarify 8	confirm 7	create 1	distinct 2
acknowledge 6	assess 1	classic 7	conflict 5	credit 2	distort 9
acquire 2	assign 6	clause 5	conform 8	criteria 3	distribute 1
adapt 7	assist 2	code 4	consent 3	crucial 8	diverse 6
adequate 4	assume 1	coherent 9	consequent 2	culture 2	document 3
adjacent 10	assure 9	coincide 9	considerable 3	currency 8	domain 6
adjust 5	attach 6	collapse 10	consist 1	cycle 4	domestic 4
administrate 2	attain 9	colleague 10	constant 3	data 1	dominate 3
adult 7	attitude 4	commence 9	constitute 1	debate 4	draft 5
advocate 7	attribute 4	comment 3	constrain 3	decade 7	drama 8
affect 2	author 6	commission 2	construct 2	decline 5	duration 9
aggregate 6	authority 1	commit 4	consult 5	deduce 3	dynamic 7
aid 7	automate 8	commodity 8	consume 2	define 1	economy 1
albeit 10	available 1	communicate 4	contact 5	definite 7	edit 6
allocate 6	aware 5	community 2	contemporary 8	demonstrate 3	element 2
alter 5	behalf 9	compatible 9	context 1	denote 8	eliminate 7
alternative 3	benefit 1	compensate 3	contract 1	deny 7	emerge 4
ambiguous 8	bias 8	compile 10	contradict 8	depress 10	emphasis 3
amend 5	bond 6	complement 8	contrary 7	derive 1	empirical 7
analogy 9	brief 6	complex 2	contrast 4	design 2	enable 5
analyse 1	bulk 9	component 3	contribute 3	despite 4	encounter 10
annual 4	capable 6	compound 5	controversy 9	detect 8	energy 5
anticipate 9	capacity 5	comprehensive 7	convene 3	deviate 8	enforce 5
apparent 4	category 2	comprise 7	converse 9	device 9	enhance 6
	cease 9	compute 2		devote 9	enormous 10

enforce 5	implicate 4	interpret 1	medium 9	overseas 6	protocol 9
enhance 6	implicit 8	interval 6	mental 5	panel 10	psychology 5
enormous 10	imply 3	intervene 7	method 1	paradigm 7	publication 7
ensure 3	impose 4	intrinsic 10	migrate 6	paragraph 8	publish 3
entity 5	incentive 6	invest 2	military 9	parallel 4	purchase 2
format 9	incidence 6	investigate 4	minimal 9	parameter 4	pursue 5
formula 1	incline 10	invoke 10	minimise 8	participate 2	qualitative 9
forthcoming 10	income 1	involve 1	minimum 6	partner 3	quote 7
foundation 7	incorporate 6	isolate 7	ministry 6	passive 9	radical 8
found 9	index 6	issue 1	minor 3	perceive 2	random 8
framework 3	indicate 1	item 2	mode 7	per cent 1	range 2
function 1	individual 1	job 4	modify 5	period 1	ratio 5
fund 3	induce 8	journal 2	monitor 5	persist 10	rational 6
fundamental 5	inevitable 8	justify 3	motive 6	perspective 5	react 3
furthermore 6	infer 7	label 4	mutual 9	phase 4	recover 6
gender 6	infrastructure 8	labour 1	negate 3	phenomenon 7	refine 9
generate 5	inherent 9	layer 3	network 5	philosophy 3	regime 4
generation 5	inhibit 6	lecture 6	neutral 6	physical 3	region 2
globe 7	initial 3	legal 1	nevertheless 6	plus 8	register 3
goal 4	initiate 6	legislate 1	nonetheless 10	policy 1	regulate 2
grade 7	injure 2	levy 10	norm 9	portion 9	reinforce 8
grant 4	innovate 7	liberal 5	normal 2	pose 10	reject 5
guarantee 7	input 6	licence 5	notion 5	positive 2	relax 9
guideline 8	insert 7	likewise 10	notwithstanding 10	potential 2	release 7
hence 4	insight 9	link 3	nuclear 8	practitioner 8	relevant 2
hierarchy 7	inspect 8	locate 3	objective 5	precede 6	reluctance 10
highlight 8	instance 3	logic 5	obtain 2	precise 5	rely 3
hypothesis 4	institute 2	maintain 2	obvious 4	predict 4	remove 3
identical 7	instruct 6	major 1	occupy 4	predominant 8	require 1
identify 1	integral 9	manipulate 8	occur 1	preliminary 9	research 1
ideology 7	integrate 4	manual 9	odd 10	presume 6	reside 2
ignorance 6	integrity 10	margin 5	offset 8	previous 2	resolve 4
illustrate 3	intelligence 6	mature 9	ongoing 10	professional 4	resource 2
image 5	intense 8	maximise 3	option 4	prohibit 7	respond 1
immigrate 3	interact 3	mechanism 4	orient 5	project 4	restore 8
impact 2	intermediate 9	media 7	outcome 3	promote 4	restrain 9
implement 4	internal 4	mediate 9	output 4	proportion 3	restrict 2
		medical 5	overall 4	prospect 8	retain 4
			overlap 9		reveal 6

revenue 5	similar 1	subsidy 6	terminate 8	unify 9
reverse 7	simulate 7	substitute 5	text 2	unique 7
revise 8	site 2	successor 7	theme 8	utilise 6
revolution 9	so-called 10	sufficient 3	theory 1	valid 3
rigid 9	sole 7	sum 4	thereby 8	vary 1
role 1	somewhat 7	summary 4	thesis 7	vehicle 8
route 9	source 1	supplement 9	topic 7	version 5
scenario 9	specific 1	survey 2	trace 6	via 8
schedule 8	specify 3	survive 7	tradition 2	violate 9
scheme 3	sphere 9	suspend 9	transfer 2	virtual 8
scope 6	stable 5	sustain 5	transform 6	visible 7
section 1	statistic 4	symbol 5	transit 5	vision 9
sector 1	status 4	tape 6	transmit 7	visual 8
secure 2	straightforward 10	target 5	transport 6	volume 3
seek 2	strategy 2	task 3	trend 5	voluntary 7
select 2	stress 4	team 9	trigger 9	welfare 5
sequence 3	structure 1	technical 3	ultimate 7	whereas 5
series 4	style 5	technique 3	undergo 10	whereby 10
sex 3	submit 7	technology 3	underlie 6	widespread 8
shift 3	subordinate 9	temporary 9	undertake 4	
significant 1	subsequent 4	tense 8	uniform 8	

There is more information on academic language at [www.realproject.org.uk](http://www.realproject.org.uk). An academic word highlighter tool is a useful extra resource that pupils can access independently. Teachers will also find it helpful. Find out more at [www.nottingham.ac.uk/~alzsh3/acvocab/awlhighlighter.htm](http://www.nottingham.ac.uk/~alzsh3/acvocab/awlhighlighter.htm)

## Handout 11: Classifying scientific language

An example text for analysis.

### The mother of all flu pandemics (abridged version)

**The flu virus is a survivor. It must continually evolve in order to evade its biggest threat – the immune system.**

Mammals, including humans, make antibodies, which recognise and target the virus. *'So it has to keep mutating to escape being destroyed'* explains David Morens from the US National Institute of Allergy and Infectious Diseases.

Despite these tactics, most of the strains that make people ill during the eponymous 'flu season' are sufficiently similar to infections most of us have been exposed to before.

Our immune systems recognise common parts that these new strains share with their ancestors, and can launch an effective defence.

Every so often, however, a different strain emerges and infects people – one that contains new genes from an animal virus.

Its novelty is its most effective weapon against our immune defences. And if it is infectious enough to find its way easily into a new host – perhaps via an innocent sneeze – it can spread rapidly and cause a global epidemic – or pandemic.

### Overdue

*'These events seem to be cyclical – they've occurred about every 20–40 years,'* says Mark Honigsbaum, a researcher at the Wellcome Trust Centre for the History of Medicine at University College London.

*'And all of these pandemics have been associated with just a few strains,'* he says.

But beyond what is currently speculation that only a few strains may be transmissible among humans, the structure of flu gives us almost no clues about how it might behave and change.

*'History teaches us to take these pandemics very seriously,'* says Howard Markel, director of the Center for the History of Medicine at the University of Michigan. *'But it also teaches us that they are predictably unpredictable.'*

The first of the four pandemics was Russian flu – each takes its name from the country where the first case was reported – which emerged in 1889.

This was well before the science of virology had even been conceived.

It rapidly spread through Europe, and reached North America and Latin America, lasting until 1892 and eventually killing an estimated one million people.

Although at its early stages, work is already progressing on a universal vaccine – one that would stimulate human immune systems to recognise and raise antibodies against parts of the influenza virus shared by all strains.



## 'Mother of pandemics'

But, during the last century, the virus has shown a deadly ability to change beyond recognition.

In 1918, an influenza pandemic started that became a global disaster – eventually killing more people than the Great War.

Estimates of the death toll from the 1918 outbreak of Spanish flu range from 20 million to 40 million. Some historians argue it could have been as high as 100 million.

*'There was a mild wave in the spring, but the very serious, lethal wave was in the autumn to the winter,'* says Professor Markel. *'Then a third wave in January to April 1919, and a fourth wave in the winter of 1920.'*

This tendency for 'waves' of infection and re-infection makes the virus yet more unpredictable.

Dr Morens refers to the 1918 H1N1 strain as 'the mother of all pandemics'.

*'In the category of Influenza A, which is the category of virus that has caused all human epidemics and pandemics, every virus circulated since 1918 has been a descendant of this virus in one way or another,'* he says.

*'Descendants of the 1918 pandemic are still infecting human beings, but they have mutated again and again and again to be able to survive.'*

## Hybrids and mutants

The 1918 influenza pandemic gripped a vulnerable, unprepared human population, but its ability to 'reassort' – or exchange its genes with other viruses – was what made it 'dangerously novel'.

*'Every species has its own flu – when those species live together, and they can transmit their flu to different species, the virus itself changes its structure,'* says Professor Markel.

But how exactly the virus adapts to enable it to attach to receptors on the cells of a different species, is an 'unanswerable' question, says Dr Morens.

*'We don't know where the 1918 virus came from, but the evidence is that it was a new virus.'*

*'At the same time that it infected humans, it also infected pigs. And at that point, we began to have two lineages of that disease – the human virus and the pig virus, which persisted too,'* he adds.

The progeny of the 1918 influenza strain evolved and mutated as they were transmitted from one host to another.

And on two further occasions, these strains incorporated completely new genes and spread globally once again.

## Controlled outbreak

*'That's what happened in 1957 and 1968 – a hybrid formed of the 1918 virus with genes that were never part of it before,'* says Dr Morens.

In the case of the 1957 Asian flu outbreak, a human H2N2 virus combined with the genes of a strain found in wild ducks.

The pandemic killed an estimated one million people worldwide.

An outbreak of H3N2 Hong Kong flu in 1968, when avian and human virus genes combined once again, claimed another million lives.

In both cases, the impact was minimised by health authorities, who identified the virus, and made vaccines available.

*'Now, every year, around summer time, a group of flu experts get together and see what strains are circulating so they can design an appropriate vaccine,'* says Dr Markel.

And in the last few years, principally because of the global concern about avian flu, anti-viral drugs that target influenza, such as *Tamiflu*, have been introduced.

But Professor Markel points out that, despite having reached new levels of medical preparation, *'we live in a world of emerging infectious diseases'*.

*'We have learned to take avian flu very seriously, and we have learned to take the animal kingdom very seriously,'* he says.

But in the rare event that a virus does develop that is able to cross the species barrier, he points out that the close proximity of domestic farm animals to humans provides an opportunity for human infection.

*'Human beings travel farther and faster than ever before. All of this means that we are set up for a potential epidemic or pandemic,'* concludes Professor Markel.

*'We learn more every time, but the story of flu pandemics is still very much a story in progress.'*

Victoria Gill, Science reporter, BBC News

The full version of the article can be found at: [www.news.bbc.co.uk/1/hi/sci/tech/8024718.stm](http://www.news.bbc.co.uk/1/hi/sci/tech/8024718.stm)

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## Handout 12: Conclusion – how to learn from this workshop

Your learning is your responsibility. You have probably heard the expression 'You can lead a horse to water but you can't make it drink'. It's the same with learning. You can give a pupil all the information they need but you can't make them learn; they have to do the majority of the work themselves.

Part of the learning process is considering the actual journey of learning as you build your skills and knowledge. Looking back at how far you have come is very rewarding and you will see patterns in your approach that can help you become an even more skilful pupil.

What can you do for yourself to build on the learning from this workshop?

Try out these techniques and apply them to other situations.

- When you meet someone for the first time, think about the initial impression you will make on them, and also that they make on you. Make a note of it somewhere and have a look back after you've known them a while to see how accurate you were.
- Before you ask a question, think about the kind of response you want, then phrase the question accordingly.
- Seek feedback about yourself; ask people what you do well and what you could do better in some areas, then thank them for sharing that with you. It's not easy for people to do this, so don't make it any more difficult for them.
- Pay attention and evaluate either another aspect of yourself or someone else, according to one of the models you learned about (such as personality or the 'onion' model).
- Work on 'future-proofing' your brand. Starting today, develop aspects that you will need in the near future – it comes more quickly than you think.
- Look at profiles of other people and the way they present themselves. Consider what aspects would work for you and apply them to your profile too, if they fit.
- Think about some groups you could join that would help you develop some aspects of either yourself or your skills or gift or talent

## Acknowledgements

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The Onion Model developed from Ready, R. & Burton, K. (2004) *Neuro-Linguistic Programming for Dummies*, John Wiley & Sons Ltd. Used with kind permission.

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