



Wanstead High School
EDUCATION WITH CHARACTER

Moving forward to Disciplinary Literacy

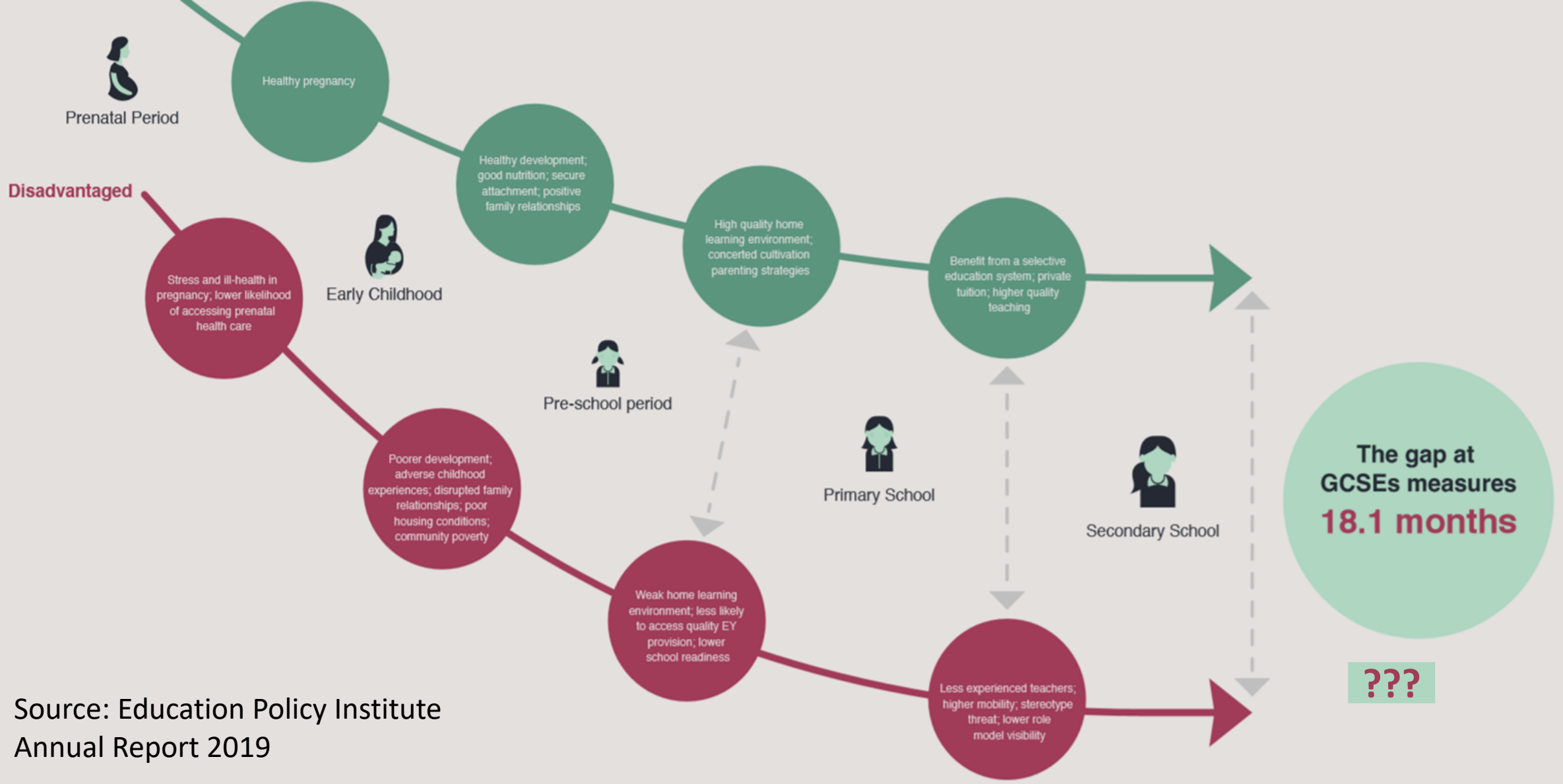
25.1.2024

Ruth Everett

School Improvement Partner, Evidence Lead for Unity School Partnership Research School

Literacy is fundamental for success in school and later life. Students who cannot read, write and communicate effectively are highly unlikely to access the challenging curriculum in secondary school and are more likely to have poor educational outcomes across all subjects.

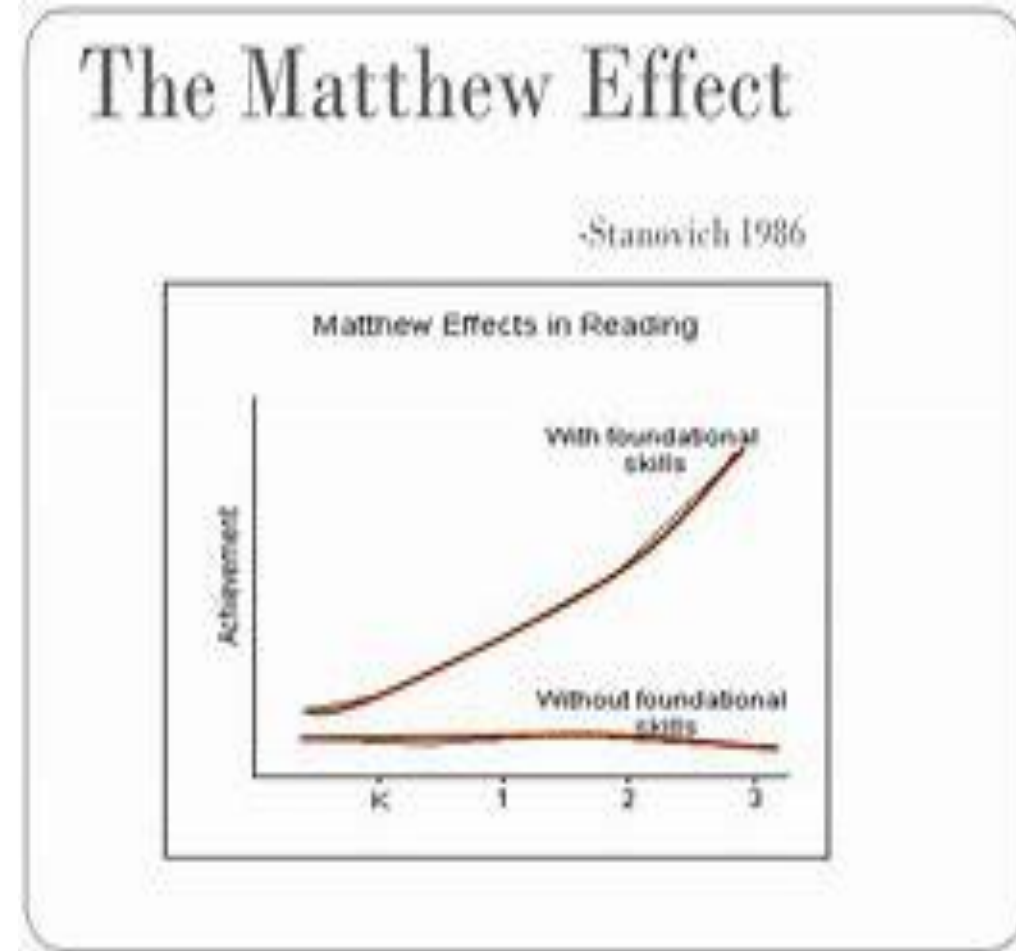
Improving literacy in secondary schools: a shared responsibility, Ofsted, published April 2013



The Matthew Effect – 1986, Stanovich

“The concept of the Matthew Effect springs from findings that individuals who have advantageous early educational experiences are able to utilise new educational experiences more efficiently”

p381 Reading Research Quarterly, xxi/4



Reading ages for 15 year olds

%

have a reading age of
12 or below

%

have a reading age of
11 or below

%

have a reading age of
9 or below

Reading ages for 15 year olds

25%

have a reading age of
12 or below

20%

have a reading age of
11 or below

10%

have a reading age of
9 or below

Gender gap in literacy skills

53%



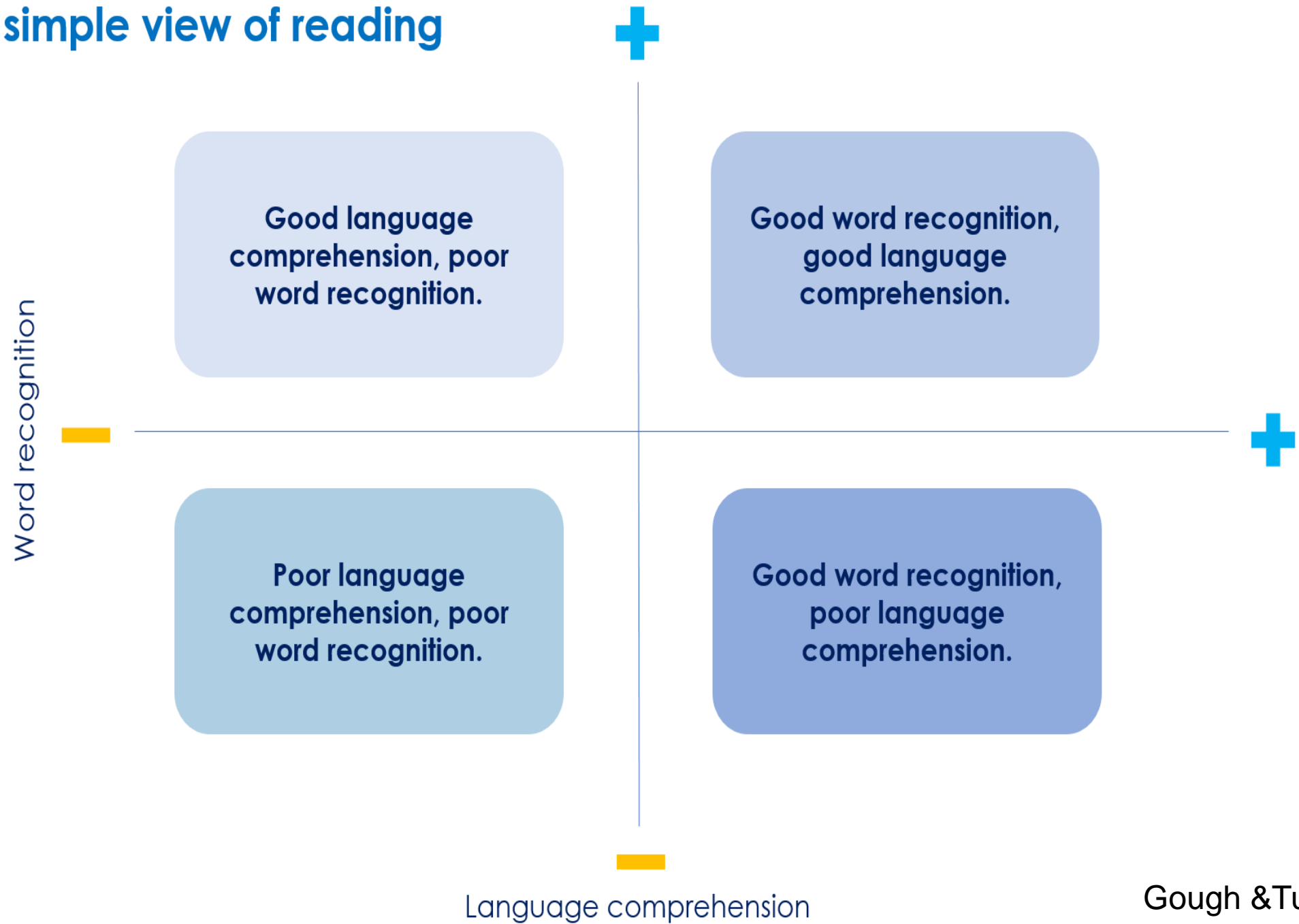
of 15 year old girls have expected or higher reading ability for their age compared to...

47%



of boys (this gender gap in reading ability widens in Secondary school)

The simple view of reading

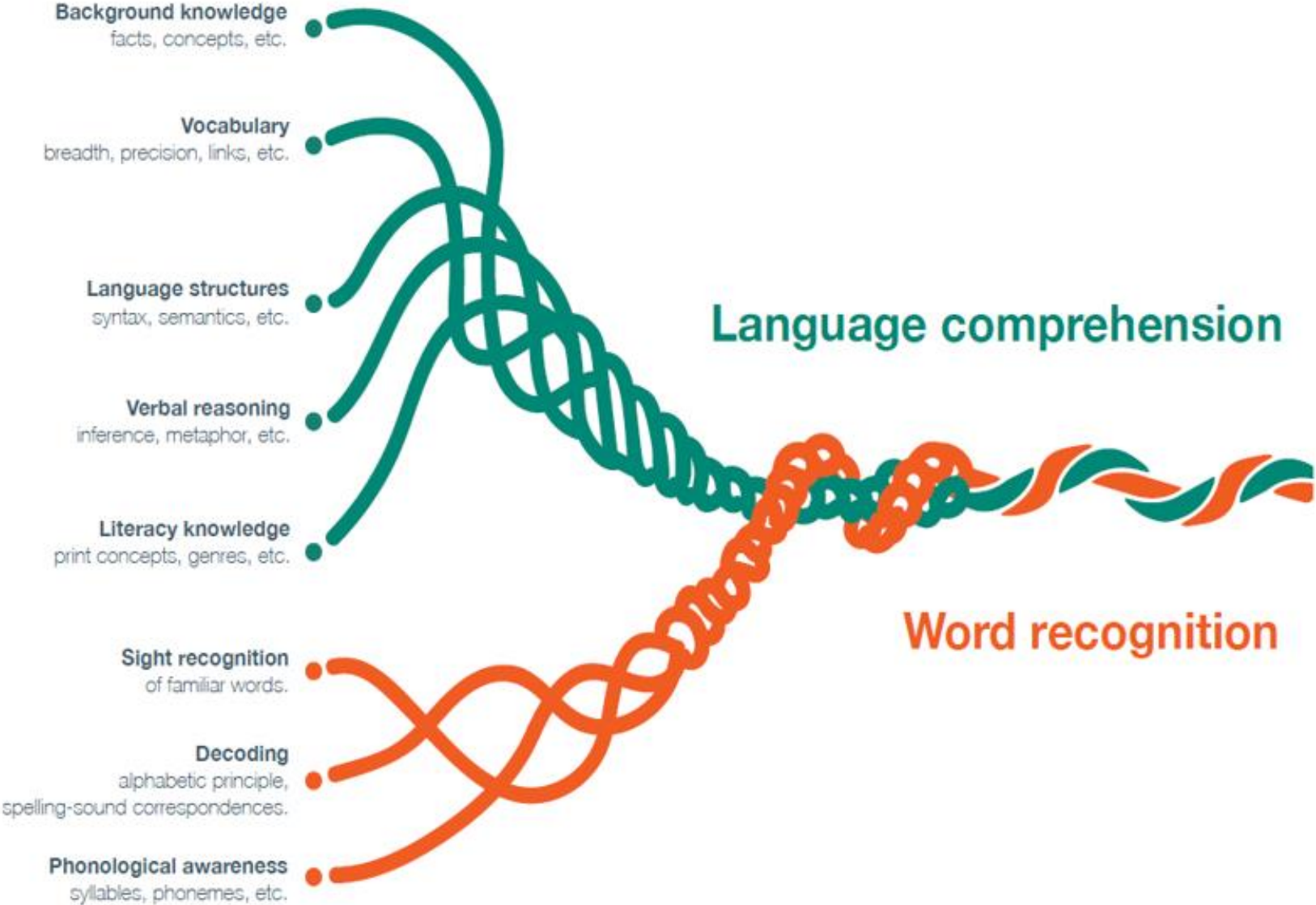


Language comprehension

Gough & Tunmer 1986

Scarborough's Reading Rope

FIGURE 1: THE MANY STRANDS THAT ARE WOVEN INTO SKILLED READING⁷



Reading at secondary school

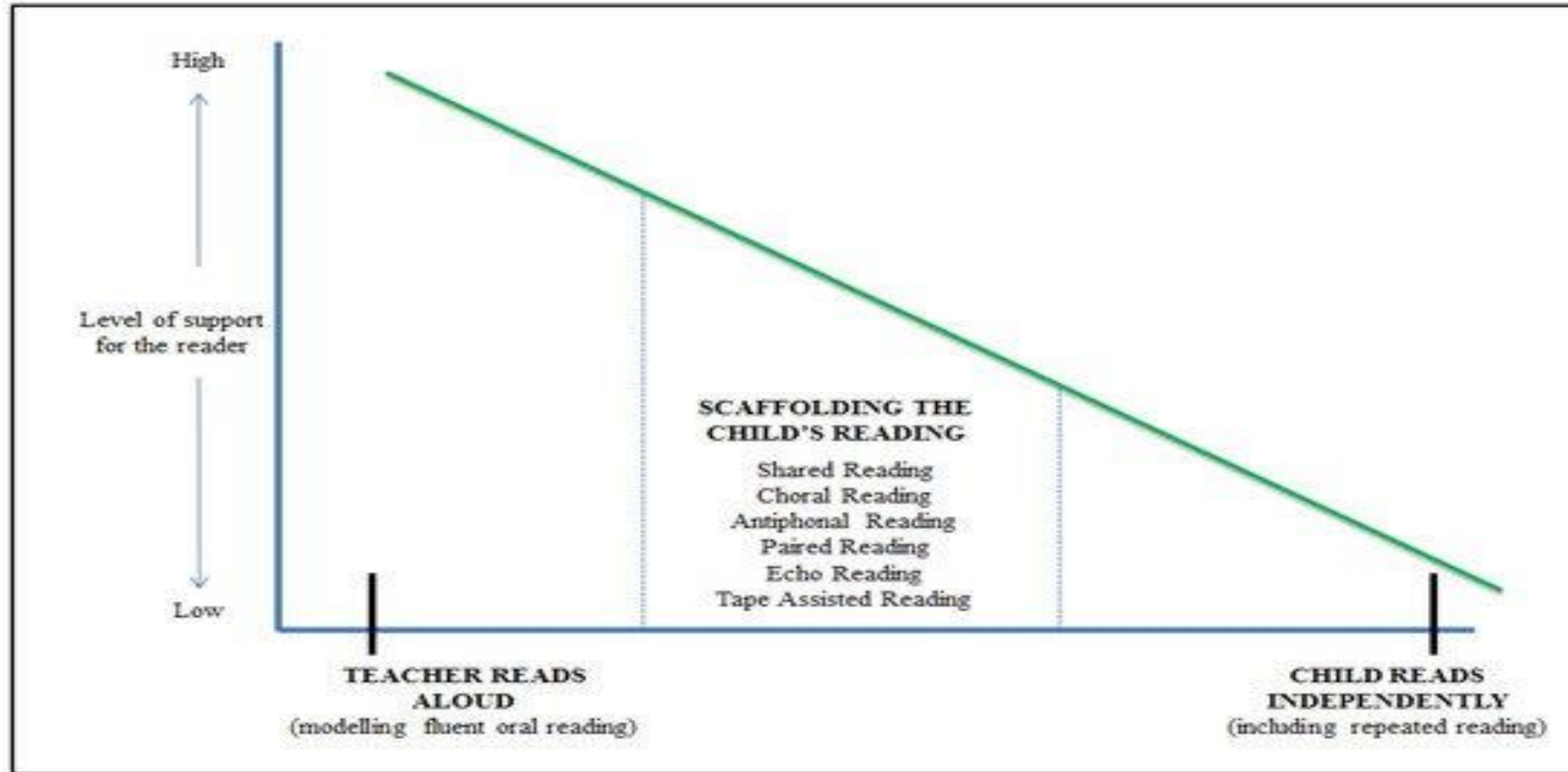
Around **50,000 words** needed at KS4 to comfortably access more dense, complex, academic GCSE texts.

Non-fiction texts are particularly challenging - **95%** of words need to be understood for full comprehension.

As Longnor is within a commuting distance for Manchester and the houses are much cheaper than Manchester, villages like Longnor are attracting more and more YUPPIES and commuters. Also villages like Longnor are attractive to retirees as they are quiet and peaceful, they have places to walk and relax with lots of open spaces and greenery and clean air. They are far enough out of busy cities and younger generations but are within distance of local towns. With so many commuters and retirees buying many of the houses in Longnor, they are raising the prices of all houses in Longnor. Also the houses have doubled in price during the property boom of the 80s and keep on rising. There is a lack of affordable housing and most locals and young families can't afford the prices of the houses, with many unable to afford to live in Longnor, they have to find homes elsewhere, often out of the village. Also there is a shortage of social housing available to buy or rent as council houses have been sold off. As there is such a shortage of affordable housing and very little other properties available, this is causing other major problems in the village. The numbers of pupils attending the village primary school are declining and have gone down from 80 to 36 in the last 25 years. Also the number of young people and families moving into the area has declined, yet the number moving out has increased. Both of these problems are due to the lack of housing and so families have to leave the area to find new homes.

Another major problem in the village of Longnor is the shortages of jobs and work. The biggest decline in jobs and work is in agricultural employment. Dairy farming was the main source of income and jobs for many of the villagers, however due to the large decline in agriculture and due to the increased mechanisation, this has declined. Before mechanisation over a dozen men were needed to milk 270 cows, now due to the new machines and technology, it only takes 2 and is far quicker. Also the recent milk quotas have hit the dairy farmers as there are now restrictions on the volume of milk produced. These milk quotas have meant a large drop in the farmer's income and so many have had to sell off land and the farm buildings, with many farm buildings being turned into holiday homes.

Positive Impact of Fluency Instruction and modelled reading on Motivation for Reading of Struggling Readers (MDPI)



Modelling Reading Fluency



Wanstead High School
EDUCATION WITH CHARACTER

To fully understand what you read, you must:

1. Read to **punctuation** . , ? !
2. Read with **expression** and **volume**
3. Read at a conversational **pace**
4. Read **accurately**, correcting mistakes

What is reading comprehension? Catherine Snow

The process of simultaneously extracting and constructing meaning through interaction and involvement with written language.

Comprehension entails **3** elements:

The **reader** who is doing the comprehending

The **text** that is to be comprehended

The **activity** in which comprehension is a part

How effective is the teaching of reading comprehension strategies?

On average, reading comprehension approaches deliver an additional six months' progress.

EEF Teaching and Learning Toolkit

Reading comprehension strategies

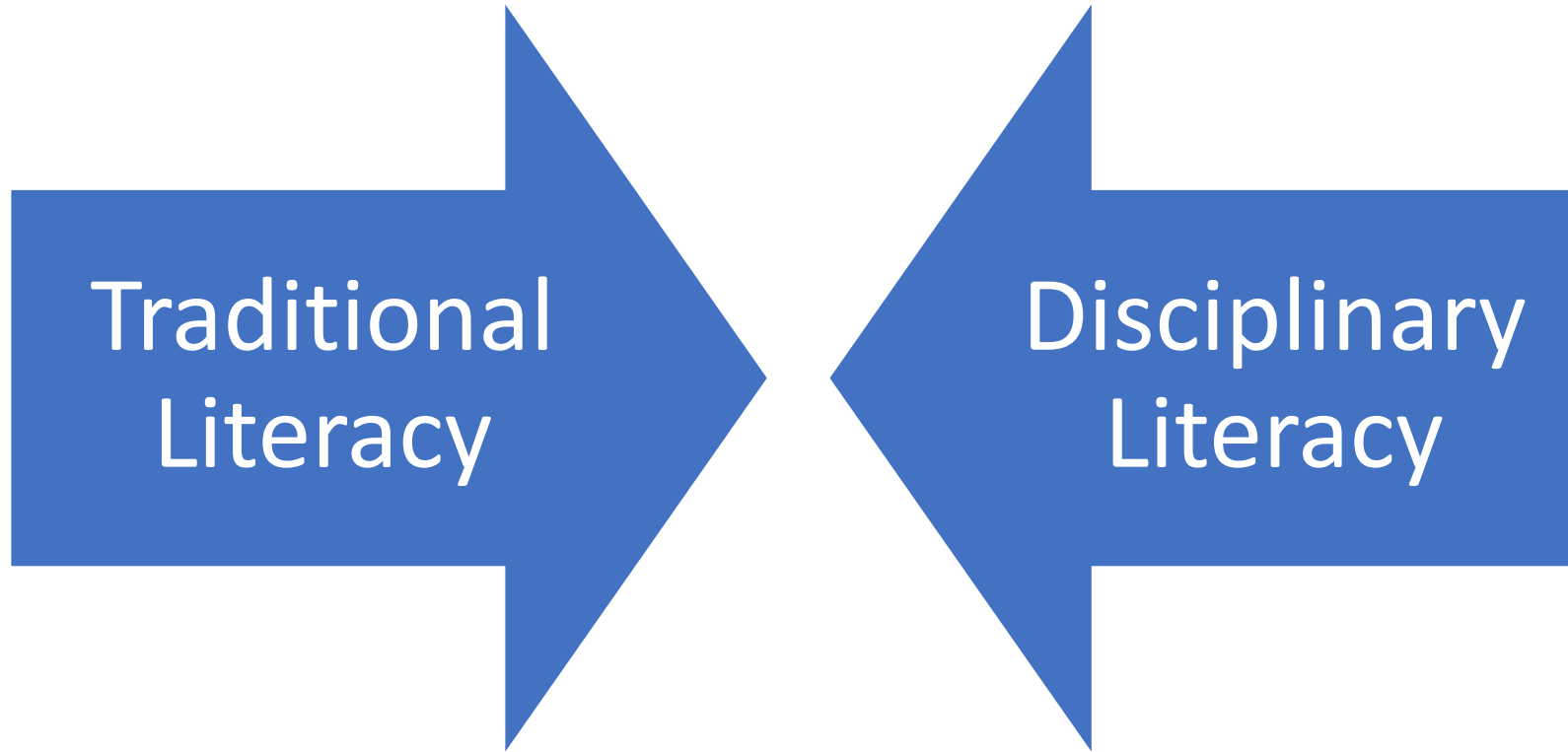
Very high impact for very low cost based on extensive evidence



Wanstead High *Strategic* Readers:

1. Read to **fluency**, imitating the modelled reading of their teachers who: read to *punctuation*, with *expression*, at an appropriate *pace* and *self-correct* as needed.
2. **Reread** parts of a text to ensure their understanding.
3. Consider their own **prior knowledge** of a topic before they read a text.
4. **Question** what they read *before*, *during* and *after* to clarify their understanding.
5. Know how to **skim and scan** to retrieve key information.
6. **Navigate** a non-fiction text knowing the purpose of conventions e.g. italics

Two elements of literacy



1

Prioritise 'disciplinary literacy' across the curriculum



- Literacy is key to learning across all subjects in secondary school and a strong predictor of outcomes in later life.
- Disciplinary literacy is an approach to improving literacy across the curriculum that emphasises the importance of subject specific support.
- All teachers should be supported to understand how to teach students to read, write and communicate effectively in their subjects.
- School leaders can help teachers by ensuring training related to literacy prioritises subject specificity over general approaches.

2

Provide targeted vocabulary instruction in every subject



- Teachers in every subject should provide explicit vocabulary instruction to help students access and use academic language.
- Effective approaches, including those related to etymology and morphology, will help students remember new words and make connections between words.
- Teachers should prioritise teaching Tier 2 and 3 vocabulary, which students are unlikely to encounter in everyday speech.
- Teachers and subject leaders should consider which words and phrases to teach as part of curriculum planning.

3

Develop students' ability to read complex academic texts



- Training focused on teaching reading is likely to help secondary school teachers teach their subject more effectively.
- To comprehend complex texts, students need to actively engage with what they are reading and use their existing subject knowledge.
- Reading strategies, such as activating prior knowledge, prediction and questioning can improve students' comprehension.
- Strategies can be introduced through modelling and group work, before support is gradually removed to promote independence.

4

Break down complex writing tasks



- Writing is challenging and students in every subject will benefit from explicit instruction in how to improve.
- Teachers can break writing down into planning, monitoring and evaluation, and can support students by modelling each step.
- Targeted support should be provided to students who struggle to write fluently, as this may affect writing quality.
- Teachers can use a variety of approaches, including collaborative and paired writing, to motivate students to write.

5

Combine writing instruction with reading in every subject



- Combining reading activities and writing instruction is likely to improve students' skills in both, compared to a less balanced approach.
- Reading helps students gain knowledge, which leads to better writing, whilst writing can deepen students' understanding of ideas.
- Students should be taught to recognise features, aims and conventions of good writing within each subject.
- Teaching spelling, grammar and punctuation explicitly can improve students' writing, particularly when focused on meaning.

6

Provide opportunities for structured talk



- Talk matters: both in its own right and because of its impact on other aspects of learning.
- High quality talk is typically well-structured and guided by teachers.
- Accountable talk is a useful framework to ensure talk is high quality, and emphasises how talk can be subject specific.
- Teachers can support students by modelling high quality talk, for example including key vocabulary and metacognitive reflection.

7

Provide high quality literacy interventions for struggling students



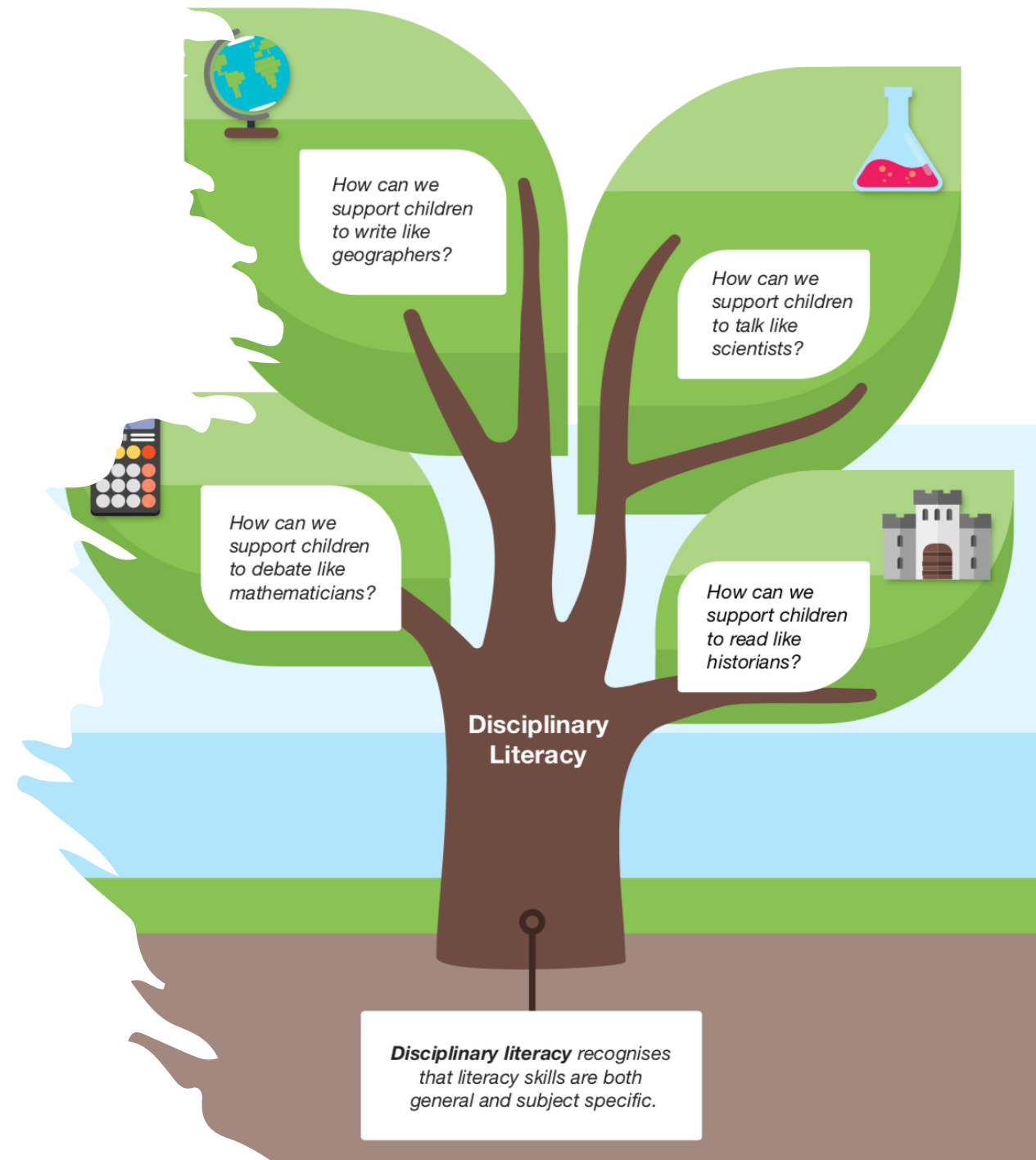
- Schools should expect and proactively plan to support students with the weakest levels of literacy, particularly in Year 7.
- Developing a model of tiered support, which increases in intensity in line with need is a promising approach.
- Assessment should be used to match students to appropriate types of intervention, and to monitor the impact of interventions.
- Creating a co-ordinated system of support is a significant challenge requiring both specialist input and whole school leadership.

#1: Prioritise 'disciplinary literacy' across the curriculum

EEF Guidance Report 2019 challenges traditional approaches to literacy.

*Secondary teachers should ask not
what they can do for literacy, but
what literacy can do for them.*

*The guidance challenges the notion
that literacy in secondary schools is
solely the preserve of English
teachers.*



Differences stem from the way disciplines create, communicate and evaluate information.

Shanahan, Shanahan, & Misichia; 2011

Disciplinary reading should be the responsibility of **all** staff, not the primary responsibility of any one member of staff.



Academic code-switching

“There is only so much room in our working memory...if we try to put too much stuff in there, we lose the story we are trying to follow.”

Dan Willingham: *Why students don't like school*

Students need around **50,000 words** to comfortably access dense, complex academic **non-fiction** GCSE texts.

It's estimated **95%** of words in the text need to be accessible for comprehension.

Key messages of this EEF Guidance

1. Secondary school teachers to **change their approach** to raising standards of literacy
2. Literacy instruction should be grounded in the specific **literacy demands of each subject**
3. Specific approaches should sit **alongside** more **generic literacy approaches** already adopted
4. Teaching of disciplinary literacy **explicitly** should **increase all students' success** in these subjects

Why should
subject
leaders
prioritise
disciplinary or
subject
specific
literacy?

Each subject has its own specific literacy demands which students need to **identify** and **understand**.

Teachers must teach students to **read, write and communicate** in their own academic disciplines.

CPD must be provided for **literacy subject specificity** as well as more generic approaches.

KS3/4
curriculum
specialised
with different
literacy
conventions in
each subject

Each subject has its own unique language

Students need to develop “disciplinary habits of mind” in each subject.

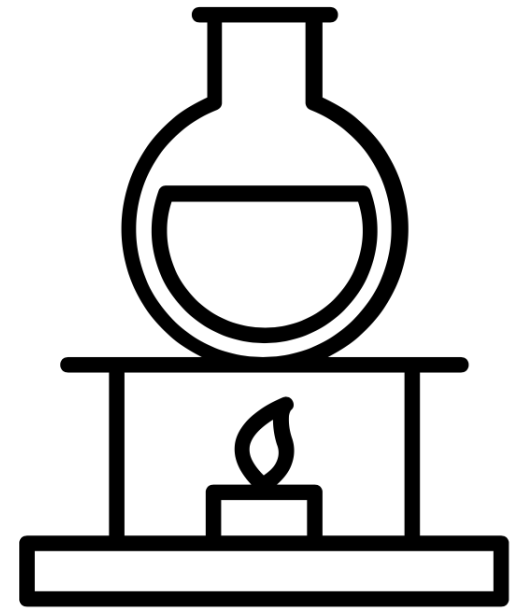
English requires students to write full sentences, whereas in Science these might not be useful.

In Art, students need teaching how to annotate their drawings using detailed, specialised vocabulary in note form.

In Maths, legibility of workings is crucial.

Chemical change: Supercooled water

In order to freeze, most liquids require impurities or the addition of a single crystal for the molecules which make up the liquid to start to form a solid around. These are known as condensation nuclei, and if they are missing (the liquid is really pure) then the liquid will not freeze. In theory, ultra-pure water can be cooled to $-48\text{ }^{\circ}\text{C}$ before it will spontaneously turn into a solid; however, this is very difficult to achieve.



Extract from a papal bull excommunicating Elizabeth in 1570

Elizabeth, the pretended queen of England and the servant of crime has monstrously usurped the place of Supreme Head of the Church in all England, reducing the said kingdom into a miserable and ruinous condition. We declare the aforesaid Elizabeth as being a HERETIC and to have incurred the sentence of excommunication. We do command and charge all people not to obey her.

Some Maths subject specific vocabulary

- Factor
- Prime
- Fraction
- Improper
- Value
- Area
- Mean
- Term

These words have **specific meanings** but are different when used in **other contexts** (*false friends*)

Each subject's own unique reading: Maths

Equations written in a specific mathematical language.

$$n(a + b) = na + nb$$

Students should be taught how to read this disciplinary code.

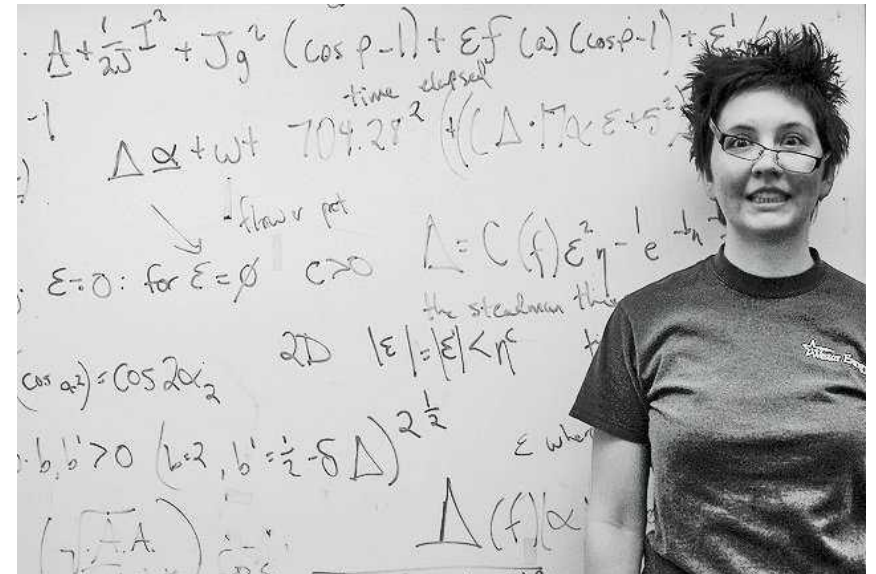
e.g. Symbols and numbers in brackets have to be read *before* symbols and numbers outside.

$$f(x) = \frac{-2x^2}{n\pi} \cos\left(\frac{n\pi x}{2}\right) \Big|_0^1 + \int_0^1 \frac{4x}{2\pi} \cos\left(\frac{n\pi x}{2}\right) dx$$

$$= \frac{-2x^2}{n\pi} \cos\left(\frac{n\pi x}{2}\right) \Big|_0^1 + \frac{4x}{n\pi^2} \sin\left(\frac{n\pi x}{2}\right) \Big|_0^1 + \frac{8}{n^2\pi^3} \cos\left(\frac{n\pi x}{2}\right) \Big|_0^1$$

$$= n\pi \left[\frac{4}{n^2\pi^2} - \frac{4}{n} \right] + \frac{8}{n\pi^2} \sin(n\pi) - \left[\frac{2}{\pi} \cos(0) \left[\frac{4}{n^2\pi^2} \right] + 0 \right]$$

$$= \frac{8}{n^2\pi^3} [(1 - n\pi^2) \cos(n\pi) - 1] + \frac{8}{n\pi^2} \sin(n\pi) \quad n = 1, 2, \dots$$



GCSE Tricky Word Questions

Rehan is on holiday in the USA.

He has \$200 to spend on clothes.

Rehan buys

1 pair of trainers costing \$60

3 T-shirts costing \$25 each.

He also wants to buy a jacket costing \$80

(a) Has Rehan got enough money to buy the jacket?

You must show how you get your answer.

The trainers cost \$60

The exchange rate is $\$1 = \pounds 0.749$

Rehan says,

“The trainers cost less than £40”

Rehan is wrong.

(b) Using a suitable approximation, show working to explain why.

Challenging GCSE question

Write an account of the importance of... (16 marks)

(including 4 marks for correct use of spelling, punctuation and grammar)

This final question requires you to produce a complex argument in response to a statement, using the **second-order concepts** of change and continuity and cause and consequence. You should give a balanced answer that considers ways in which the statement could be valid and ways in which it is not.

Example:

'The main purpose of great Norman churches was to glorify the Norman King of England more than God.'

How far does a study of _____ support this statement?

Explain your answer.

You should refer to _____ and your contextual knowledge.

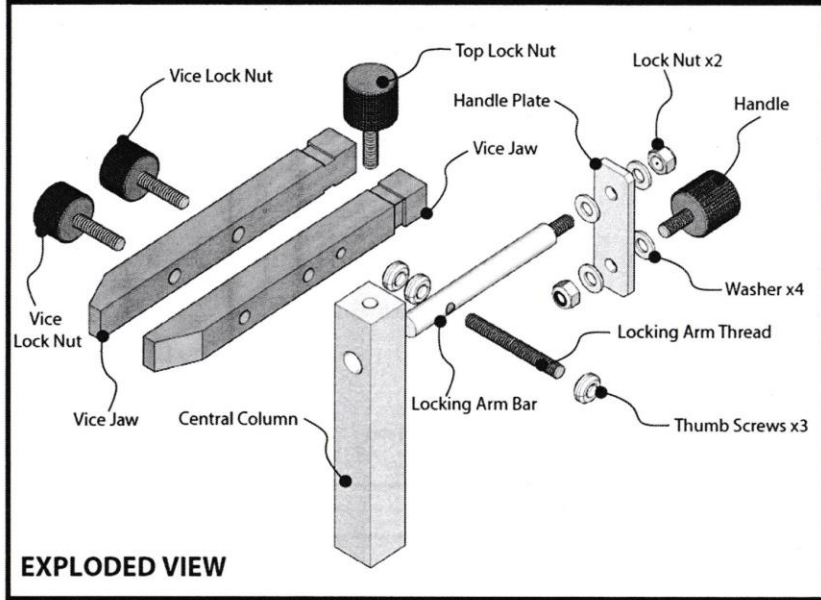
This question relates to a historic environment, chosen from a changing list provided by the exam board each year. The kind of statement given in the exam paper will vary according to whether the environment is a stately home, a church or a site.

Tips:

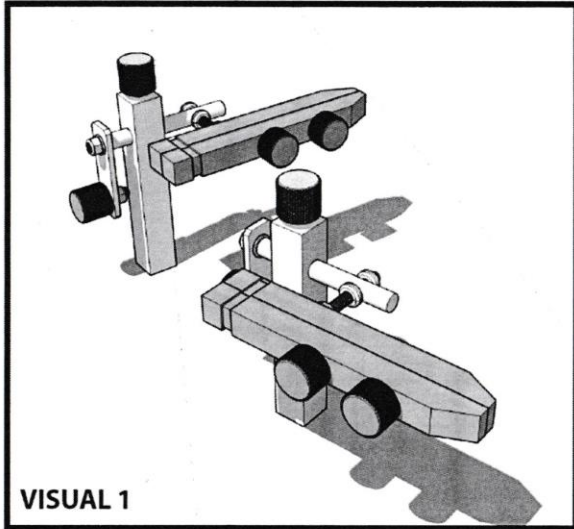
High mark questions such as this one usually take longer to plan and answer. Before jumping straight in, **plan your response carefully** before you start writing it, so you can arrange your arguments and examples in a logical manner.

Develop your explanation of change or causation by thoroughly explaining the relationship between factors. Support your answer with detailed factual knowledge and understanding of the historic site, and Norman England in general, to form a **sustained judgment**.

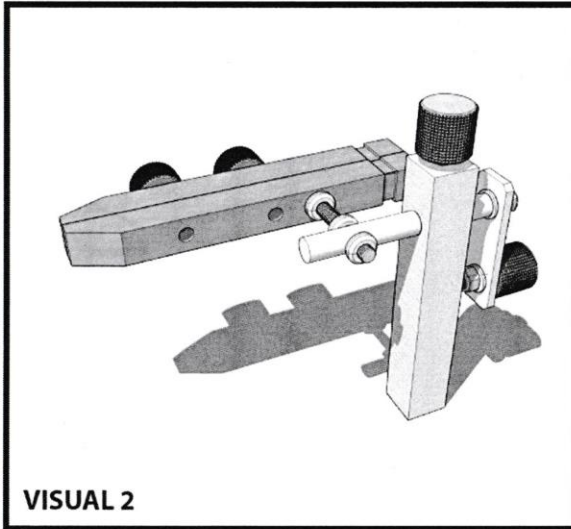
When you have finished, **read your answer thoroughly to check for any spelling, punctuation or grammatical mistakes.**



EXPLODED VIEW



VISUAL 1



VISUAL 2

DATA PACK

Tap/Thread	Tap Drill Size	Diameter		Speed (rpm)						
		Inches	Metric	Softwood	Hardwood	Acrylic	Brass	Aluminium	Steel	
M1.6 x 0.35	1.25mm									
M2 x 0.4	1.60mm	1/16 - 3/16	1.6 - 4.8	3000	3000	2500	3000	3000	3000	
		1/4 - 3/8	12.7 - 9.5	3000	1500	2000	1200	2500	1000	
		7/16 - 5/8	11.1 - 15.9	1500	750	1500	750	1500	600	
M2.5 x 0.45	2.05mm									
M3 x 0.5	2.50mm	3.2	3.2	1800	1200	1500	-	-	-	
		6.3	6.3	1800	1000	1500	-	-	-	
		9.5	9.5	1800	750	1500	-	-	-	
M3.5 x 0.6	2.90mm	12.7	12.7	1800	750	1000	-	-	-	
		15.9	15.9	1800	500	750	-	-	-	
M4 x 0.7	3.30mm									
M5 x 0.8	4.20mm	1/4 - 3/8	6.3 - 9.5	2400	700	-	-	-	-	
		1/2 - 5/8	12.7 - 15.9	2400	500	250	-	-	-	
		3/4 - 1	19.05 - 25.4	1500	500	250	-	-	-	
M6 x 1	5.00mm									
M8 x 1	7.00mm	1/4 - 1/2	6.35 - 12.7	2000	1500	-	-	-	-	
		5/8 - 1	15.9 - 25.4	1750	1500	-	-	-	-	
		1 1/8 - 1 1/2		1500	1000	-	-	-	-	
M10 x 1.25	8.50mm									

Thread Sizes

Drill Speeds

Material	Cutting Speed m/min	5mm End Mill Feed in mm/tooth/rev	10mm End Mill Feed in mm/tooth/rev
Aluminium	500	0.050	0.080
Hard Plastic	550	0.060	0.100
Hard Wood	450	0.065	0.095
Soft Wood	500	0.070	0.110
MDF	450	0.200	0.500

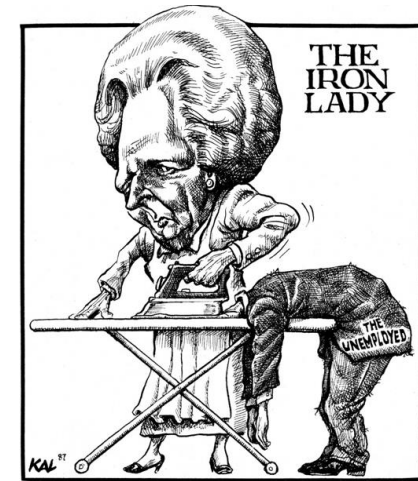
Milling Feed Speeds

UNIT 1 CONTROLLED ASSESSMENT TASK		CENTRE NUMBER
DRAWN BY C Thomas		ENGINEERING
SCALE: 1:1	DESCRIPTION: Component Parts Visual	
DATE: 09/10/2022	DWG No: U1-2022.3.4	

Politics students read texts with many **perspectives** and **interpretations**

To encourage depth and breadth of reading, teachers should expose students to *multiple* texts. This will support understanding of how interpretations are formed.

e.g. artifacts, cartoons, memoirs, audio and video recordings, newspaper articles, maps, census data, songs, transcriptions of interviews, speeches, paintings, photographs.



Each subject discipline needs to focus on its unique **reading** demands

Historians read critically, considering an author's perspective and date of writing, the text's purpose and audience.

Mathematicians read very carefully, misinterpretation of one word or symbol can change meaning: a mistake can result in the wrong answer.

Scientists have at least 2 approaches to reading:

(i) they read to learn about new findings and

(ii) read with critical eye looking for errors or departures from scientific methods.

Literary critics look for literary tropes (recurrent themes) to help them interpret a text often through a particular viewpoint e.g. Marxist, feminist...

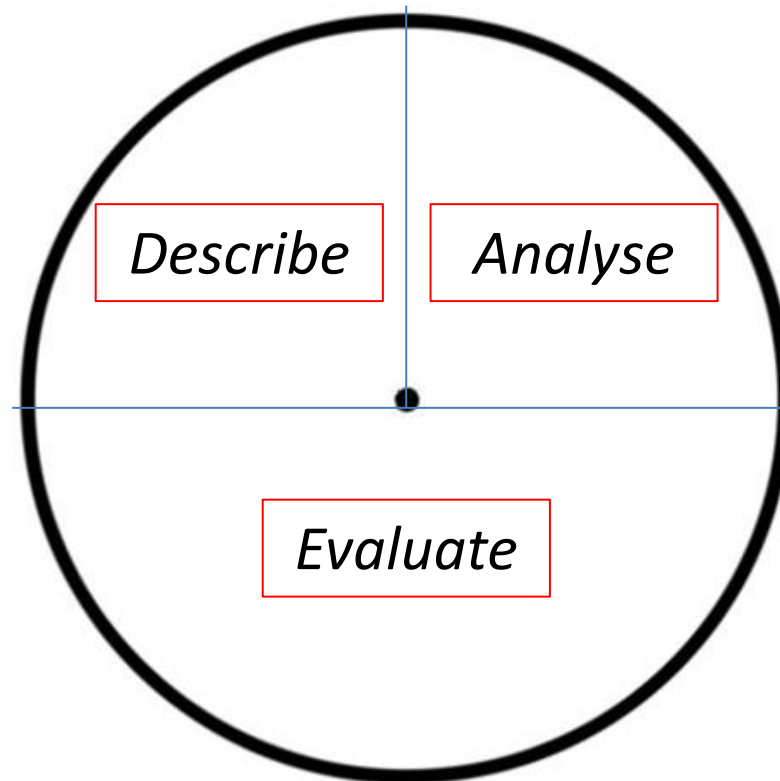
“Teachers should examine their subject’s unique literacy demands...”

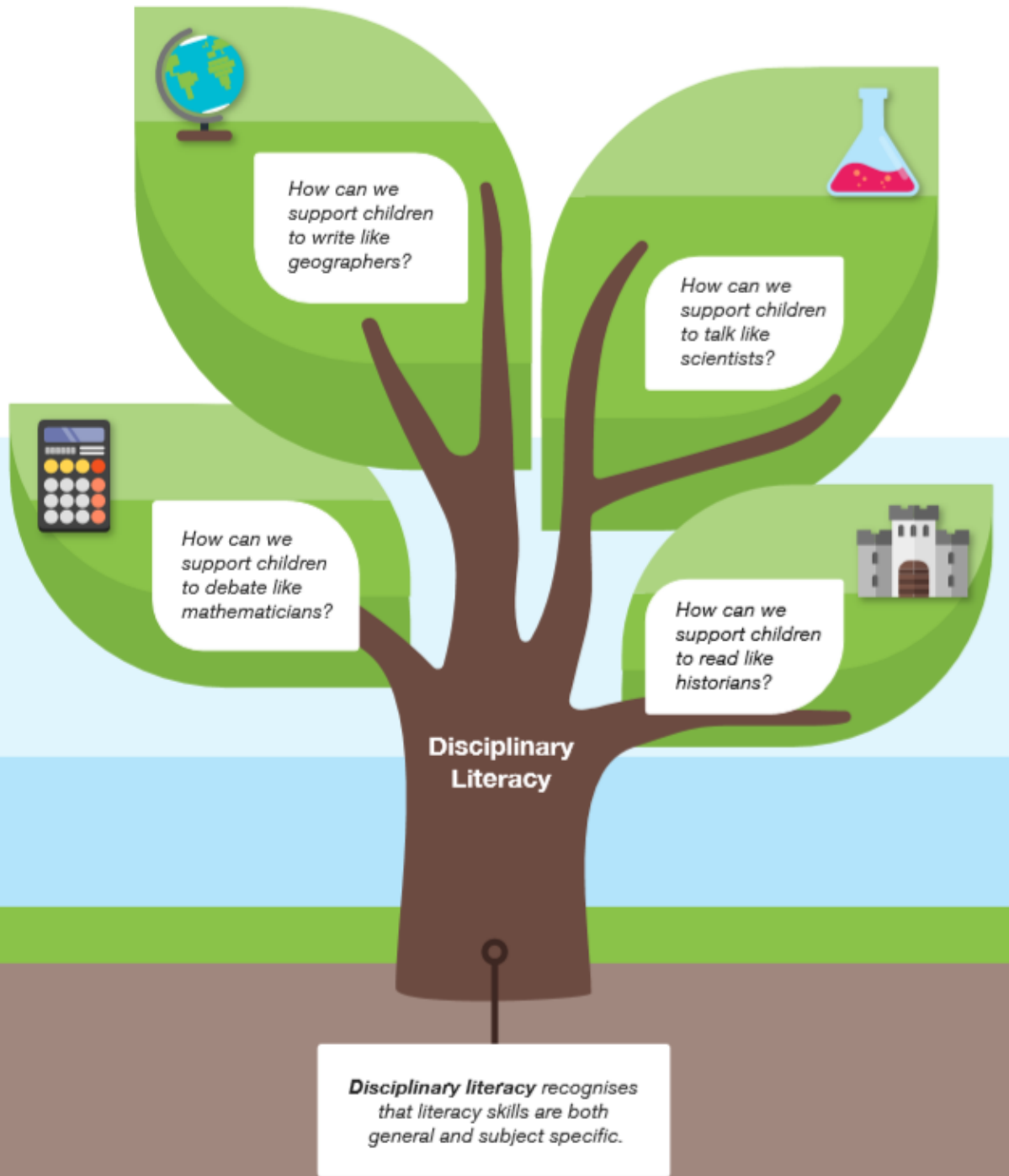
- Vocabulary or phrases used typically or uniquely
- Syntax (word order in a sentence)
- Tense and writer’s point of view
- Reading challenges/barriers
- Writing demands of syllabus
- Exam rubric
- Anything in common with other subjects?
- Any particular literacy misconceptions held by students?

Types of writing (thinking)

- Different types of writing we ask students to do (command words)
- What is the master writing form(s) in a particular subject?
- When does the writing matter most (is not just a vehicle)?

Types of writing
Explain (an advantage)
Describe (a method)
Complete
Analyse
Evaluate (how far do you agree)
Annotate
Calculate





Begin looking at disciplinary literacy in **your subject's context.**

1. As a team, examine your subject's specific/unique literacy barriers to understanding?
2. What literacy difficulties cause the **main** obstacles to understanding?
3. Which obstacle will you focus on first?
4. How do you intend to proceed?

Choose a team member to briefly feedback on points 2-4.

Auditing existing practice...

RAG Self-Assessment

RECOMMENDATION 1

Prioritise 'disciplinary literacy' across the curriculum



Ineffective



Teaching staff have **limited** knowledge about disciplinary literacy. There is little awareness of the general and subject specific literacy skills that would benefit students in accessing the curriculum.

Teachers and teaching assistants have not had appropriate training relating to disciplinary literacy. Department/faculty training time is limited and generic CPD is not contextualised with subject specific CPD.

Intermediate



Teaching staff have **good** knowledge about disciplinary literacy. They have had some support with training and time in departments to contextualise disciplinary literacy in their subject and classroom. They have done some sharing of the unique language, ways of knowing, doing and communicating in their respective subject disciplines with colleagues and in their classroom practice with their students.

All teachers have had some training relating to disciplinary literacy, but it is not necessarily embedded into the school's CPD programme consistently. Some teaching staff may need updated training on disciplinary literacy, but there are not systematic processes to support this and there can be limited time for departmental/faculty CPD.

Exemplary



Teaching staff have **excellent** knowledge about disciplinary literacy. They have been supported with training and time in departments to contextualise disciplinary literacy in their subject and classroom. They consistently share the unique language, ways of knowing, doing and communicating in their respective subject disciplines with their colleagues and in their classroom practice with their students.

All teachers and teaching assistants are appropriately trained on disciplinary literacy, including a range of general and subject specific literacy skills; this is kept up-to-date with iterative CPD, with new staff being appropriately trained. Departments/faculties are supported with expert input on general literacy skills, alongside appropriate time