Reading in Science

To be an effective scientist, students will read like a subject expert. This means students will:

- Use keywords and break these down, eg. photosynthesis (prefixes and suffixes)
- Use science-specific vocabulary (including science skills)
- Have resilience to reading unfamiliar texts and be able to approach texts with an open mind
- Be able to draw conclusions from primary and secondary sources of evidence
- Recognise patterns of data
- Try to link unknown words to scientific terminology they may have seen before, eg. thermal and thermistor
- Know tier 3 words to make links and develop understanding
- Relate concepts to real life, eg. digestion, muscles etc.
- Identify data within a text
- Link keywords together within and outside of the subject
- Analyse instructions for practical application (reading methods)

  KS5
- Read an article/longer pieces of text and be able to summarise and analyse it - this is a big part of laboratory reports, eg. writing abstracts (mainly at KS5)
- Consider where the information comes from and its validity (sources)

Typical texts that students will encounter in Science lessons are:

- Exam questions
- Paragraphs from the textbook
- Key summaries from the textbook
- Knowledge organisers
- Case studies
- Method sheets
- Safety sheets
- Worksheets
- Data sheets

  KS5
- Short articles
- Essays
- Wider reading including journals and biographies

Students will be taught the following strategies that are specific to reading like a scientist:

- Interpreting graphs - evaluating, describing, looking at relationships between variables (eg. what do the labels on the axis mean)
- Interpreting tables (eg. what do the headings mean)
- Summarising text - turn a piece of text into bullet points or bullet point ideas
- Predicting - experimental practice - hypotheses
- Debating - for and against, eg. ethical topics such as stem cells

- Conclusions and evaluations - what is the difference between the two
- Recognising that different words or words that sound similar (genes/jeans) can have different contexts (nucleus in biology and chemistry) - and being able to look at the context of the text to work this out
- Evaluating a variety of viewpoints and coming to a personal opinion based on the 'weight of evidence'
- Creating a glossary or referring to keyword lists

The key vocabulary for Science can be found:

- Knowledge organisers for every unit in KS3 and KS4 (Tier 3)
- A-Level - PLCs in handbooks with keywords
- PLCs in Year 7 scheme of work
- Command words on walls of science rooms
- AQA: AQA science command words.docx

Students are taught the key vocabulary in Science by:

- Keywords shown on slides during lessons
- Having unfamiliar words broken down by the teacher
- Breaking down exam questions into what they are asking - often done using a visualiser
- Breaking down markschemes - to see the relevance of using scientific terminology
- Spelling and definition quizzes
- Retrieval games, eg. BINGO, articulate, pictionary
- Seneca
- Labelling diagrams, eg. labelling different systems in biology
- Using links to remember words, eg. protons and P for positive, neutron sounds like neutral
- Mnemonics, eg. reactivity series, electromagnetic spectrum
- Encouraging students to make flashcards
- Morphology and etymology
- Frayer model
- Staff speaking like experts
- Teacher modelling with the class 'Repeat after me'

Students are encouraged to read widely around every subject. Suggested reads for Science are:

- Reading list
- Year 11 homework includes the specification, bbc bitesize and seneca
- Topical news articles are shared on google classroom as optional homework
- Research projects
- Being part of animal club and eco-hub
- Yr 11 to 12 transition booklets have wider reading options.