Dyslexia and Science

Pupils with dyslexia can do particularly well in science because it requires acquisition and application of knowledge. It is not open to different interpretations and subjective comments as in arts subjects. The use of diagrams, charts and demonstrations provide visual back-up. It is a practical subject with concrete examples, “Tell – show – do” Literacy skills are not a prime concern - more single word answers and calculations.

Physics
Short-term memory can be a problem since formulae is very important. There is also a large body of specialised vocabulary and words with meanings different from that elsewhere, e.g. force, charge, conducting.

The use of symbols can also be a difficulty. If students struggle in maths they may struggle in physics also.

It is important that pupils are taught to organise their work and time.

Strategies to help.
Use mind mapping
Use colour and highlighting
Make notes, emphasising key words.
Encourage dating of homework and using an index.
Encourage tape recording (use Dictaphones)
Give good concise notes with diagrams and pictures.
Provide opportunities for practical work after demonstrations.
Explain how formulae have arisen.
Give lots of tests and revision.
Use mnemonics
Calculators can be difficult to use; you can buy ones with coloured keys.
A routine should be established for homework, e.g. always write it on same section of board, write date due etc.
Use student checklists.
Make a revision booklet containing essential formulae, vocabulary, diagrams etc.
Use plenary sessions to establish what has been learned.
Encourage students to redo their notes by word processing - this can aid understanding.

Useful software is Inspiration or Redshift from TAG.

Biology
Difficulties can be caused because of huge amount of factual details. There can be confusion with similar words, e.g. cerebellum, cerebrum. Abstract ideas such as respiration or ecosystem can be difficult to understand. It is very important to use diagrams as much as possible as slowness, untidiness and inaccuracy can result in errors.

Some problems
Remembering and recalling names
Spelling technical words
Learning factual details
Assimilating abstract concepts
Drawing and labelling diagrams
Remembering and following instructions
Recording data

Tips and Strategies
Try making an alphabetically arranged biology vocabulary book for spelling and meaning.

Use customised lists with Starspell or Wordshark.

Consider having a few minutes of chanting different words at the beginning of lessons.

Teach students how to draw and label diagrams
1. decide how much page to use
2. hold pencil lightly and sketch rough portions, filling in more detail as they go back.
3. draw permanent lines firmly
4. add shading or colour if needed
5. labels should be in pencil, printed and horizontal
6. labelling lines should be in pencil, ending clearly at appropriate point, long so as not to clutter drawing and radiating around diagram

Practice sheets should be given using families of words so that children can remember visually label and object.

Encourage learning of facts/concepts by providing slogan posters and visual summaries.

Don’t assume a child has understood your explanation. Check by asking him to explain it back to you.

Take care with the way desks are positioned; pupils with dyslexia need to face the teacher and the board.

Orally completing books can be difficult - better to have a copy of a completed table available for pupil to see.

Keywords must be explicitly taught and sufficient time given to make useful notes.

Dictated notes are not a good idea - give the pupils a copy of teacher’s notes. Encourage them to listen and try to make mind map or bullet list.

Use the word bar program to help with vocabulary.

Watch out for pupils who try to disguise bad spelling with really poor handwriting.

Good organisation of work folders is important, i.e. use index, polypockets etc.

In some science tasks, comprehension is necessary. Teach pupils to underline keywords etc. ‘score off’ items as they are used (i.e. put in order/match etc)

In ordinary comprehension teach pupils to look at questions and identify key words, go to passage and underline corresponding key words for answer.

Within exercise books it's a good idea to have outcomes for each lesson displayed to help student follow course.

Try to check books regularly to avoid student having missed chunks of information.