

ASE guide to Special Educational Needs and Disabilities

Supporting the achievement of deaf young people



The National Deaf Children's Society (NDCS) is the leading charity dedicated to creating a world without barriers for deaf children and young people across the UK. Ian Noon, Head of Policy and Research at NDCS, writes about how science teachers can support the achievement of deaf young people in their classroom:

Pupils who are deaf span a whole range of abilities and, given the right support, have the same potential to attain and achieve as their hearing classmates. However, as most teaching and learning takes place through the main senses of sight and hearing, pupils who are deaf – even those with mild hearing loss – can face particular challenges. Recent Government figures show that 36% of deaf children in England achieved five GCSEs (including English and maths) at grades A* to C, compared to 65% of other children.

There is a range of simple steps that you can take to support the achievement of deaf pupils in science. The pupil's Teacher of the Deaf and local advisory service can provide further information on each of these areas:

Get to know the deaf pupil

Every deaf child is different and deaf pupils will vary in their use of different types of hearing technology, including hearing aids, cochlear implants and radio aids. Understanding their needs means that you will be better able to support them.

Adapting your teaching and learning strategies

The science curriculum often includes abstract concepts and vocabulary that can be difficult for deaf pupils, who may not have the language or background knowledge to understand them. To address this:

- Try to make your lessons as visual as possible. Use pictures and diagrams that illustrate their meaning.
- Go through key words for the lesson – if possible, these should be visible for the whole lesson.
- Provide supplementary vocabulary sheets when possible (a teaching assistant may be able to prepare these).

Experiments can also be difficult for many deaf pupils, as they cannot use equipment such as a microscope and listen at the same time. You should therefore first explain what you are going to do before giving any demonstration or asking the pupil to look at something.

Take steps to improve the listening environment

Background noise can be a problem for deaf pupils. In some schools, science labs are designed with high ceilings and hard reverberant workbenches. Modifications such as adding acoustic ceiling tiles and putting tips or 'hush-ups' on chairs and stools can help improve the listening environment for all children.

You can also help improve the listening environment by closing doors to noisy areas or corridors and turning off IT equipment, such as interactive whiteboards, when not in use.

Ensure good communication

For communication to be clear and effective:

- Make sure that you have the deaf pupil's attention before you start talking.
- Speak clearly and at your normal level and pace – speaking too slowly or exaggerating mouth patterns will make you harder to understand, as this distorts speech.
- Allow the deaf pupil to see your face and lips when speaking – putting something in front of your face or turning to write on the whiteboard will make it difficult to lip read.
- Check that the pupil understood what was said – repeat or rephrase what you have said if not.

For more information and advice, download *Supporting the Achievement of Deaf Children in Secondary Schools* and watch our short video clip for science teachers at: www.ndcs.org.uk/supportingachievement Our Freephone Helpline can also answer your questions about any issues relating to deaf children and young people. Give us a call on 0808 800 8880, or e-mail us at helpline@ndcs.org.uk

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Jon Hickman, science teacher and science co-ordinator at Kelvin Hall Secondary School, write about the potential of adding British Sign Language to your lesson planning:

Ever thought of using a visual stimulus in class? British Sign Language (BSL) can offer you that free and simple to use resource. As a kinaesthetic process, it is excellent for visual and tactile learners to reinforce key concepts. The majority of signs are very logical and can be used as part of a sequence of vocabulary, such as cell–nucleus–cell wall–cell membrane. The signs are part of a glossary created by the Scottish Sensory Centre based at the University of Edinburgh (see next section). This glossary can also be used to aid literacy by working on spellings with students.

The feedback I have received from students is very positive, as they feel BSL helps to consolidate their knowledge of scientific processes and allows them to explore ideas through a visual means. Students are always very engaged when learning new signs and using ones they have previously learned.

BSL maintains longer levels of attention, as it is a new skill and students are generally fascinated by it. It is fully inclusive and caters for all abilities. I have raised attainment in students with dyslexia and students who are on the autistic spectrum through the use of BSL in lessons. I have successfully worked with a colleague on delivery of a lesson to a high ability class about waves in physics using the science signs for frequency, wavelength and amplitude. The students in the class were shown the signs and asked what they thought the sign represented. Due to the visual and logical nature of the signs, the students were easily able to decipher the context and vocabulary of what each sign represented. Through sharing ideas and teaching BSL to other staff, the trend has taken off and it allows for a greater creativity in lessons.

The Scottish Sensory Centre BSL Glossary Project

This project aims to develop lists of subject-specific terms (called a glossary) in BSL. Although subject-specific signs in BSL can be found in many websites, the unique feature of this project is that there are also definitions in BSL and often lab movies or examples to add additional background knowledge to the definition. The target audience is deaf young people at school who use BSL and want to learn independently using the Internet; however, many teachers, communication support workers, interpreters and parents are using the Glossary too. The project focused on STEM subjects initially, but it aims to expand into all areas of the curriculum and is constantly expanding. For more information, please visit www.ssc.education.ed.ac.uk/BSL