



## Visual impairment support

### Supporting a pupil with a visual impairment in science

#### About this fact sheet

This fact sheet explains how to support a pupil with a visual impairment during science lessons. The aim is to enable them to access science lessons and to maximise independence whenever possible within safety guidelines.

#### Recommendations

- The pupil should be seated close to the board and teacher
- During demonstrations the pupil should be given 'hands on' experiences
- The pupil should be provided with desk top copies of board work if necessary
- Apparatus/equipment should be adapted i.e. markings such as measurements on glassware could be highlighted using brightly coloured pen or tactile highlighter and appropriate parts of equipment such as the base or top of a bunsen burner could be painted in bright contrasting colours
- Adapted/modified apparatus should be well labelled and kept in a separate tray or drawer
- When pouring or measuring transparent liquids, the liquids should be coloured using food colouring
- Apparatus such as plastic syringes should have engraved measurements
- Specialist equipment may be used i.e. light probe, colour indicator, talking thermometer, talking scales. Low vision aids can be used to enlarge small objects e.g. a video magnifier can be used for viewing parts of a plant or hand held magnifier for identifying mini bugs. The video magnifier can be connected to a microscope.
- Models of plants, animals and humans can be purchased, adapted or made by hand.
- All chemicals need to be clearly labelled
- Diagrams, pictures and graphs may need to be modified. Sometimes this may involve simplifying or de-cluttering or it may involve replacing a picture with a text description. Modified graph paper is available.
- Worksheets may need to be presented in a different format e.g. enlarged print, bold, reduced text on only one page, information re-organised, braille or tactile diagrams
- Follow laboratory safety rules and ensure that safety goggles (scratch free) are worn during all experiments. Safety 'overall' garments should also be worn to prevent loose clothing such as cuffs and ties from catching fire etc.

## Tips for including a visually impaired pupil in whole class activities

Encourage your visually impaired pupil to work in a group with sighted peers, and to be involved in the whole activity. Support from a support assistant can then be given to the group as a whole.

If facing time constraints when a pupil is carrying out an experiment which involves taking a number of readings, suggest that they take the first few readings to prove their ability and then ask a support assistant to take the following ones. This idea can also be applied to group work with sighted peers, when the visually impaired pupil should have responsibility for taking their share of the readings

A sense of ownership and independence can be very important for the self-confidence of a visually impaired child.

If accuracy is a problem when taking readings, the pupil can take their own readings and ask for it to be checked. This offers support without loss of independence.

For a GCSE assessed practical, planning, conclusion and evaluation can still be assessed, even if a pupil needs help to obtain readings. An alternative experiment can be carried out to assess their ability to take independent readings.

For a practical investigation, many schools will issue each pupil with a planning sheet. These are easily adapted for partially sighted pupils, particularly if they include boxes to fill in at relevant stages of planning.

### Handy tips

- Use a 'clutter' board behind equipment to take away visual distractions
- Solid chemicals are more easily seen if placed on piece of coloured card
- Liquid chemicals are more easily seen if coloured card is placed behind glassware
- Use card or paper folded to pour powders into test tubes
- Use funnels for transfer of liquid chemicals into test tubes
- Liquid levels changes can be marked with rubber bands
- In electric circuits, use a buzzer instead of a bulb.
- Teat pipettes can be used to transfer small quantities of liquid
- Tactile marked syringes with extension tubes can be used for accurate measurements of liquids
- Place cold items onto a tripod and gauze and move the hot Bunsen into position.
- Use a tripod and gauze if necessary, to indicate where to hold test tubes for heating.
- Small items, like peanuts, can be held safely and firmly with tweezers while pupils attempt to spear them.
- Paint the top of the bunsen burner with a contrasting colour so that partially sighted pupils can see where to place their taper.
- Stand a tripod around a bunsen burner. Use plain gauze over it giving off an orange glow this indicates the position of the flame to partially sighted pupils.
- To avoid melted leads on an electric thermometer, drill a hole through a heatproof mat and feed the lead through.
- Have a supply of very long tapers for visually impaired pupils to use to light the bunsen burners also long handled matches make it easier to light a burner

## More information

The visual impairment service is part of Dudley Disability Service. We are a team of qualified teachers of the visually impaired and specialist teaching assistants.

We provide advice and information to parents and teachers. We help teach and support children with a visual impairment of all ages and abilities. We also assess children's vision. In addition we support and advise on the use of specialist equipment and train in the use of low vision aids, provide Braille and enlarged or modified learning materials, provide training independence and mobility training and teach touch typing and specialist software. We will also liaise with other professionals such as social care, healthcare and RNIB.

### **For further information or advice, please contact us at:**

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