



<http://www.colourblindawareness.org>

ADVICE FOR TEACHERS OF COLOUR BLIND STUDENTS

Colour vision deficiency (CVD) affects 1 in 12 boys and 1 in 200 girls. There are approximately 400,000 colour blind pupils in British schools today but teachers receive no training on the condition. 40% of children do not know they are colour blind on leaving school, therefore teachers are not even likely to be aware that some children they teach have the condition. Likewise, most parents are unaware of their child's condition.

Lack of awareness by the child does not mean they are not affected by the condition, it means the child has developed strategies to help them cope. Even if a child copes well there will be times when the strategy does not work and they are caught out. Not all CVD children are red/green colour blind, some cannot see blue and yellow, some see no colour at all. Colour blind children will not just confuse red and green, they will be unable to distinguish any colours which contain red or green, for example they will 'see' purple as blue because they cannot perceive the red element of the light spectrum which is added to blue to form the colour purple. Therefore all reds, greens, oranges, browns, purples, blues and greys will be impossible to identify accurately.

Most CVD children will try to hide their condition for fear of being marked out as different and it is therefore extremely important that classroom practices take account of the needs of colour blind pupils.

Please try to adopt as many as possible of the suggestions below to ensure you are not unwittingly discriminating against undiagnosed colour blind pupils in your classroom.

GENERAL

- Lighting is important. Bright, low, inside or natural light can affect colour recognition. The brighter the light the easier it is to recognize colour. Seat colour-blind children in good natural light and square on to the board but avoid glare
- Assign a classmate to help the child where coloured diagrams or pictures are being used
- Check worksheets for colour issues and where possible use patterns or secondary indicators i.e. labels to differentiate, rather than colour. Photocopy worksheets into black and white then recheck that the worksheet is still able to perform the task you require. However, depending upon the shade and brightness of the original colours, greyscale copies will not always solve the problems, therefore also check with the child that they can access all of the information required from the worksheet
- Use strong contrast on the board and on computer screens. Do not use red and green or pastel colours to highlight different teaching points
- Check computer settings, web pages and computer-based teaching aids with pupils to ensure the child can pick out all of the relevant information
- Check the child has coloured pencils and paints etc marked with the colour of the pencil, but note some names like 'vermillion' do not give colour clues
- Look out for other children teasing colour blind children for using incorrect colours and ensure self-esteem issues are dealt with immediately
- In games/PE check the child can see which children are in his team and also that he can see the ball e.g. red cricket balls and orange hockey balls are difficult to see against grass, particularly in poor light



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- Do not use a 'traffic light' system for the child to indicate how difficult he thinks his task is, most colour blind children cannot be relied upon to know the difference between red, green and orange
- 'Audit' your classroom, including computer-based interactive white board software packages, to ensure important messages for the children are not indicated in difficult colours, especially red

KEY STAGE 1

- Check all early years books for colour on colour pages e.g. a poem written in red on a blue page will be difficult to read. Red on green will be impossible
- Teach CVD children the 'correct' colours for everyday items so that they know that, say, strawberries, Santa's outfit etc are red, even though they 'see' them as murky green. CVD children can learn to identify many, but not all, colours they can't perceive by identifying through shade rather than hue
- If you suspect a child is colour blind refer the parents to a professional for assessment as soon as possible, either to an optician who can test for free, or to the Local Education Authority Specialist Teaching Services/Visual Impairment team
- Listen out for chance remarks by children which may indicate the condition
- If using coloured counters etc to help with say, maths, check the CVD child can differentiate the colours used. Many teaching aids are in primary colours but a colour blind child will 'see' red and green as the same colour. Board games usually cause problems

KEY STAGE 2 AND ABOVE

- Consult with the student to find out where they might have problems as by this age they will be able to vocalise problems
- In science CVD children might not be able to read litmus paper, carry out chemical titrations, identify a material by its colour when burnt, understand colour diagrams in biology textbooks, etc so in lessons use a buddy system and be mindful of the issues when setting practical tests
- Graphs and charts use colour to illustrate facts. Use secondary indicators such as labeling, patterns and shading rather than, or in addition to, colour
- In art organize a colour palette for the student to memorise colour placement and focus on mediums other than colour e.g. charcoal, textiles, clay
- Food technology students may not be able to cook meat properly, distinguish between ripe and unripe fruit or use colourings and decorations correctly
- Assignments from CVD students may appear 'boring' to read as colour will not be used to its full effect to make statements



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- Always bear in mind that at present textbook manufacturers do not take account of the needs of colour blind children. Most contain at least a few pages which colour blind children are unable to read. In particular atlases, geography, all science, maths and ICT textbooks will present information which colour blind pupils are unable to access
- Make sure external examining bodies are made fully aware of the student's colour blind condition including a detailed breakdown of the questions in exam papers which the pupil will be unable to answer
- Be aware that giving a colour blind pupil extra time in exams to account for colour issues will NOT help the student.

How to obtain a diagnosis and further help

- If you suspect that you have a colour blind child in your class recommend to the parents that the child be referred to an optician for a test as soon as possible. Most opticians are able to undertake free eye tests for children and the parents should make sure that they specify that the child needs to be tested for colour vision deficiency (some opticians charge for this element). You will need to have a formal diagnosis of the specific type of colour blindness so that you will be able to provide effective support for that child in the classroom.

AND

- Refer the child to the Specialist Teaching Services/Visual Impairment team at your Local Education Authority who will be able to advise you about how to support the child's specific type of colour vision deficiency.