COLOUR BLIND AWARENESS

www.colourblindawareness.org

Teaching children with a colour vision deficiency (colour blindness)

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Contents

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Introduction

In the UK alone there are almost 3 million people colour blind people. The condition affects

- **1 in 12 (8%) males and 1 in 200 (0.5%) females**
- **approximately 450,000 school children**
- **the ability to identify many different colours, not just reds and greens**

25% of colour blind people have a severe form, so around 100,000 school children are severely colour blind - the vast majority are boys.

Statistically speaking there will be at least colour blind child in every classroom.

Normal colour vision

Severe red/green colour blindness

Modern teaching methods heavily rely upon the use of colour to teach, highlight, warn and explain, but what if the colours we describe are not the same for the children we are teaching?

The purpose of this document is to provide teachers, parents and carers with hints and tips about how to identify and support the colour blind children in their care. For those working with children using AAC there is a special section under **Colour Blindness and Education**.

What Is Colour Blindness (colour vision deficiency – CVD)?

Colour blindness (colour vision deficiency- CVD) is usually an inherited condition which affects ability to perceive colours. The image on the right above shows how a person with a severe red/green CVD will 'see' the image on the left. People with CVD can see clearly and in focus but are often unable to perceive objects of a 'problem' colour if they are on top of or adjacent to another 'problem' colour. For example, to a colour blind person a ripe, red, strawberry would be difficult to spot against green strawberry leaves because red and green are both 'problem' colours which look very similar.

Why Does Colour Blindness Matter In School?

There is a common myth that colour blind people only confuse reds with greens but if you are colour blind most colours can be confusing, so CVD can be a major disadvantage in an educational setting.

Let's consider how children are instructed in early years' settings. We ask them to pick up the 'red' brick and in advance of reading we ask concentrate on improving ability to sequence by forming colourful patterns with beads. Colour is used in our descriptions of virtually everything, from the big brown dog, to the pretty pink flower and the green door that marks the entrance to the loo. From the moment they arrive in pre-school we ask them to fill in colouring sheets in specific colours and sing songs about the colours of the rainbow.

If children aren't 'getting' a percentage of what we are saying, they can't learn to full capacity and this can undermine confidence at an extremely impressionable age and provide a faulty foundation for future learning.

As CVD children move up primary school, on to secondary school and into further education the problems they encounter become more complicated, so an understanding of their needs is crucial to ensure they don't miss vital information.

For the average student, colour is an extremely useful tool. For colour-blind students it can be a nightmare – not only because it can undermine confidence but because poor use of colour in the classroom can encourage basic errors and cause frustration and even anger.

Some children may have a mild form of CVD whilst for others (25%) their condition will be severe. It is not possible to find out exactly which colours someone with a less severe condition will be able to see, therefore best practice is to assume

(i) that you will have at least one CVD child in every (co-ed) class and

(ii) to cater for the most severe forms of colour blindness.

This will ensure that all colour blind pupils are adequately supported and even if you have a student with a milder form one year, chances are you'll have one with a severe form next year.

Some important points to note:-

- In the UK Schools and teachers don't generally consider colour blindness to be a Special Educational Need (SEN) despite placing children at a significant disadvantage in most elements of their education, so there is little or no provision to help children who simply cannot operate effectively using colour. On the whole teachers have had no training in how to identify and support colour blind children.

- However, most forms of colour blindness are considered to be a SEN by the Department of Education and the Government Equalities Office also recognises that colour blindness can be a disability.

- This means schools and Local Education Authorities are oblige to cater for the needs of pupils with CVD under the terms of the Children and Families Act 2014, which means there is an anticipatory duty on them to identify and support colour blind children.

- While colour-blind children can learn to identify some colours through their hue and saturation – and experience – they cannot actually see most of them so colour-blindness will affect performance and understanding in many subjects.

- Many children feel embarrassed about not being able to choose the appropriate crayon or colour of paint, or to accurately describe things around them. They may be slower to follow instructions, because those relating to colour may make very little sense. Indeed, they may seem 'slow' or 'hesitant' in many situations, because they can and will be perplexed by the need to make choices based on something they simply cannot see.

- When colour-blind students are faced with a variety of different options based on colour, they will not only struggle to distinguish between them, but they will make basic errors that will compromise their work – and their ability to learn. When they are taught using colour, they will spend precious time trying to work out what is being explained or highlighted and fail to absorb the information either efficiently or correctly.

- Textbooks highlighting 'familiar' key words and sounds are largely useless to colour-blind children, as are those that use colour-on-colour printing, which are almost impossible for many colour-blind students to read e.g. some sections of maths textbooks.

- In secondary school students are encouraged to colour maps and graphs; colour is used to highlight material and as keys in instructions; it is used in the science lab, the art room, in maths, food technology, ICT and history; teachers use it on whiteboards and often use different colours for marking.

What Causes Colour Blindness?

We see colour through specialised cells in our eyes called cones. Humans have 3 of these cones which absorb red, blue and green light respectively. In colour vision deficiency (colour blindness or CVD) one of these cone types doesn't function normally.

In milder cases of CVD one cone type doesn't function properly whilst in severe forms one cone type doesn't function at all.

Colour blindness is largely a genetic disorder associated with the X chromosome, hence it affects males more than females. As a genetic disorder it does not improve or deteriorate through normal life and currently there is no cure.

Colour blindness varies with ethnicity and is more common in people of North American and European descent.

For more detailed information refer to www.colourblindawareness.org

Types of Colour Vision Deficiency

There are 3 main types of genetic CVD conditions which can vary from mild to severe forms;

- Protanopia/protanomaly relates to a red deficiency,
- Deuteranopia/deuteranomaly relates to a green deficiency and
- Tritanopia/tritanomaly relates to a blue deficiency.

In all deficiencies, however mild or severe, accurate perception of more than just one or two colours is affected.

People with red or green deficiencies will see the world in a similar way to each other because red and green are very close together on the light spectrum. Most people think red/green colour blind people confuse just red and green. This is not the case at all - red/green colour blind people have problems with colours right across the spectrum.

Although red/green colour blind people can see blue, blues and purples can be confused because of the red tones in purple. Someone with a red vision deficiency will find it difficult to distinguish dark colours and can readily confuse a deep red with black.

Red/green deficiencies are very common but blue deficiency and total colour blindness (where everything is seen in shades of grey) are extremely rare.


Normal colour vision


A form of severe red/green CVD (Deuteranopia)


Tritanopia (severe loss of blue vision)

Colour blindness can sometimes be acquired as a result of other conditions such as diabetes and multiple sclerosis.

Children with other visual impairments e.g. glaucoma and retinitis pigmentosa, are also more likely to have colour vision defects which may not present in the same way as genetic red/green colour blindness – i.e. different colours may be affected.

Diagnosis

Although LEA colour vision screening in schools has largely been phased out, all opticians can test for the 2 main types of CVD (although not all have the additional test system that covers all deficiencies). Colour deficiency testing is not a statutory part of the NHS eye examination. As a result Colour Blind Awareness surveys show that even if a child has had an eye test with an optician there is only about a 20% chance that their colour vision will also have been tested. However, the test is available from opticians if requested and should be undertaken free of charge.

The standard test is the Ishihara Plate test where numbers formed from coloured dots are set within a circle formed from dots of a different colour. Depending upon which numbers can be seen the optician can advise whether someone is colour blind or not.

What if the child in your care is unable tell you which numbers they can see? A special test is being constructed at the moment which will use eye gaze to determine responses, but this will not be available for some time. A genetic screening test is available in the US but has yet to be approved for use in the UK. In the meantime follow our tips on how to spot possible signs of colour blindness in the sections '**How to Identify a Young Child With CVD**' and '**How to Identify CVD in a Non-Verbal Child**'.

Colour Blindness and Education

This section is aimed specifically at teachers and covers the following:-

- a general overview of the main issues
- information to enable teachers to understand where colour blind students might have difficulties
- hints and tips in how to identify and support a colour blind child at different stages in their school career. See **Nursery/ Pre-School/Key Stage 1** and **Key Stage 2 Onwards**
- **Secondary School**, including **Access Arrangements** for GCSE/ A Level exams
- Other **Special Educational Needs** including those using **Alternative and Augmentative Communication**

Spot the self-portrait by the colour blind student

What Can Teachers Do?

Nursery/ Pre-School/Key Stage 1

First of all, consider screening children as they enter your centre. A local optician may be able to arrange this, as can the visual impairment team in your local authority. Alternatively, visit www.colourblindawareness.org for more information. Knowing which children are colour-blind (and chances are that there will be at least one in every year group), can help you to make appropriate provision for their education.

Normal colour vision

Red/green colour blindness

- Think about the lighting in your classroom. Good lighting can make it easier for children to recognise colour. Colour-blind children should be seated in good natural light, but avoid bright sunlight and artificial light as these can distort a CVD child's perception of colour

- Take time to group and label things like coloured pencils, paints, beads, bricks and colouring material according to colour. Think about how you colour-code boxes of toys, art materials and books. Little ones will obviously find it difficult to read labels using words, but you could find a creative alternative. For example, the red beads could be labelled with a photograph of a fire engine; the green ones with leaves. Some products are available at www.colourblindawareness.org

- Most young children learn the colours of things, even if they do not know what they are, and can confidently tell you that the grass is green, even if they cannot see it. Therefore, giving them clues can help them to make the correct associations and learn to use and choose colours appropriately.

- Avoid using colour-on-colour books and other support materials. Black on white will be most appropriate for colour-blind children.

- In sports and games (including board games), ensure that children can see who is on his or her 'team', and that they can see the ball or the 'men' on the board.

- Checking computer settings, web pages and computer-based teaching aids to ensure that the child can pick out the relevant information. Colour-blind children may struggle with coloured 'keys' that provide instructions and information.

- Use strong contrast on white or chalkboards; red, green or pastel colours should not be used to highlight teaching points.

- Encourage children to help each other choose colours when drawing, painting or colouring, and to reinforce their use by using the correct name. Many colour-blind children will eventually memorise their colours through repeated experience of their use.

- If you are teaching reading, use symbols rather than 'colours' for different levels of books, or clearly explain to children which box is theirs.

- Talk to parents about how they can support their children at home, and direct them to the Colour Blind Awareness website www.colourblindawareness.org for help.

How to Identify a Young Child with CVD

Once a colour blind child realises that he finds colours more difficult to recognise than his peers, he will try to hide his condition. This makes a colour blind child difficult to spot in a group.

Children with CVD are not usually children with seemingly obvious learning difficulties – they are much more likely to be the quiet child trying not to draw attention to themselves, often those who have to be encouraged into answering questions in front of the class.

Normal colour vision

Red/green colour blindness

Look out for:-

- inappropriate use of colours when colouring in e.g. green faces, purple sky, pink elephant, brown Father Christmas, red dog etc

- a young child insisting upon naming a toy using an incorrect colour e.g. a green teddy bear might be named 'blue' or 'grey' bear

- reluctance to help sorting toys when tidying up if the boxes are colour coded boxes (for fear of making a mistake)

- disruptive behavior/unwillingness/inability to play board games, matching games, some memory games, beads, following patterns

- copying other children in colour situations e.g. Art/science, the child might borrow a colour from a friend routinely after the friend has used it, then copy exactly where that colour went

- appearing confused in PE e.g. not sure who is on their 'team', unsure which bean bag to pick up etc

Key Stage 2 onwards

Normal colour vision

Red/green colour blindness

Older children will be less likely to make mistakes in choosing colours for themselves as they have had more time to learn the very subtle differences in shading which help them to identify different colours. They will also have had more time to hone coping techniques such as copying other children in colour situations. However, the older the child becomes the more they will be exposed to situations where they will be expected to interpret colour accurately, especially in school.

Try to remember that whilst colour is very important to people with normal colour vision, to colour blind people it is of little consequence, so where you use colour to make a teaching point a colour blind child won't notice.

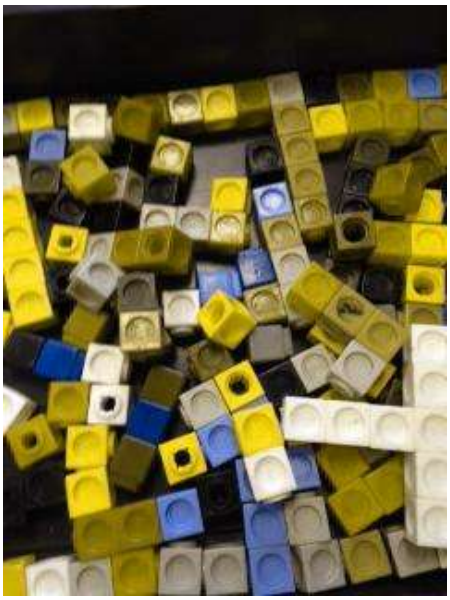
Look out for:-

- inability to interpret some sections of computer games/homework software programmes/websites
- holding back in sports and team games where team colours may confuse e.g. red team and green team
- holding back in peer group work
- uninspiring presentation, lacking in colour and formatting
- reluctance to speak in discussions where colour is a main element (maps in Geography, colour propaganda in History, Art discussions, coloured pie/bar/line graphs in Maths and Science etc)
- inability to read litmus paper, universal indicator and colour changes in chemistry
- 'silly' mistakes in geography, science, maths, history etc which could be caused by poor colour choices used in textbooks
- Difficulties using coding software (which is normally based around colour)

Follow the tips for younger children but also try to:-

- 'Audit' your classroom, including computer-based interactive white board/homework software packages, to ensure important messages for the students are not given in 'difficult colours', especially red and green
- Label all pencils, crayons, paints, felt-tipped pens etc. with the name of their colour – you can buy ready-made stickers from specialist suppliers or visit www.colourblindawareness.org
- Use strong contrast on the board and on computer screens. - not red, green, orange or pastel colours to highlight different teaching points. If using colours, underline the words you wish to emphasise.
- Assign a classmate to help the student where coloured diagrams or pictures are being used or in peer group work, especially science experiments
- Consult with diagnosed colour blind students to identify where they might have problems and encourage them to let you know whenever they think problems with colour might occur
- Check worksheets for colour issues. Where possible use patterns or secondary indicators e.g. labels/patterns/shading/hatching to differentiate rather than, or in addition to, colour. Photocopy worksheets into black and white if this isn't possible

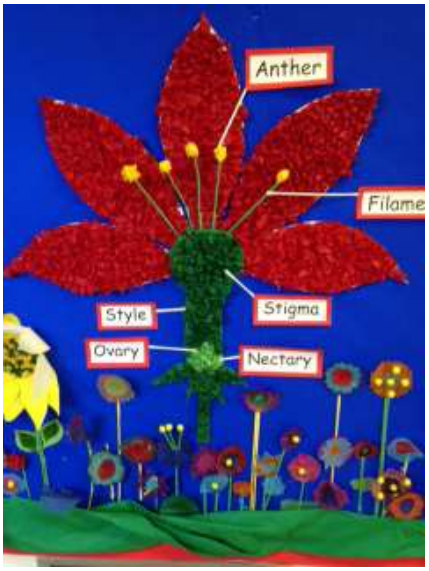
Normal colour vision



Red/green colour blindness

- Check wall posters for potential issues – languages posters are often problematic for those learning colours in a new language
- Avoid 'traffic light' systems for marking without secondary labels. Colour blind people can't be relied upon to know the difference between red, green and orange
- In games/PE check teammates can be distinguished from the opposition. If necessary use blue and yellow bibs to distinguish between teams (red/green colour blind people can see blue and yellow). Also check coloured training cones can be seen against grass, that the pupil can actually see the ball (e.g. red cricket balls and orange hockey balls are difficult to see against grass, particularly in poor light). and so on

- Be aware that at present online educational software/textbook producers don't take account of the needs of colour blind children.



Normal colour vision

Red/green colour blindness

Quick Tips

Simple steps to improve your classroom

- **Label all drawing/art materials - felt tips, paints, pencils etc**
- **Use secondary labels on colour-code boxes of toys, art materials, beads, books**
- **Check computer-based teaching aids, web pages, computer settings, worksheets and textbooks**
- **Use secondary indicators e.g. labels, outlining, underlining, cross-hatching, to differentiate, rather than or in addition to colour.**
- **Use strong contrast on whiteboards – avoiding red, green and pastel highlighting,**
- **Avoid marking in red and green**
- **Avoid 'traffic light' systems without secondary indicators**
- **In sports and games ensure students can differentiate (i) teams and (ii) equipment against background**
- **Organise 'buddies' for science experiments, art and DT projects etc**
- **Check classroom equipment - on/off switches, charged/charging indicators etc.**
- **Remember a CVD student may be entitled to a colour 'reader' for some external exams**

Secondary School

All the same obstacles continue to stand in the way of students in secondary school but there is much more reliance by teachers on online educational resources which are not usually designed with colour blind students in mind.

This means colour blind students can have difficulty accessing information and can misinterpret 'facts' when researching by themselves and struggle with some online homework tasks.

Teaching is at a faster pace and more sophisticated in secondary school and so can be more difficult for colour blind students to follow. Teaching points are often missed because a student is trying to make sense of new information in colour. Whereas his colour normal peers will automatically understand colour cues, these are a distraction to the colour blind pupil who can still be trying to make sense of an initial teaching point when the teacher has already moved on.

Less than 20% of pupils arriving in Year 7 will have had a colour vision test so most colour blind students won't be aware of their condition and so won't understand why they can't always keep up.

Colour becomes an even more important element in the teaching of most subjects. New subjects are introduced and colour blind students might need extra support with coding software, when interpreting financial information in Business Studies, understanding maps and charts in geography and so on.

Normal colour vision

Red/green colour blindness

Some subjects areas of science can be completely misunderstood without proper support – e.g. light waves/chemical reactions. Universal indicator, litmus paper and other chemical indicators are very difficult for colour blind students to understand. Information in diagrams can be easily missed.

Playing sport also becomes more sophisticated and competitive but many line markings in school sports halls are unintelligible to colour blind students

Normal colour vision

Red/green colour blindness

Access Arrangements for External Exams

The Joint Council for Qualifications (JCQ) gives some limited advice for support allowed for colour blind students in external exams.

Clearly schools are only able to offer support in external exams where they are aware of a pupil's diagnosis. As most colour blind students are undiagnosed most are not receiving the full support they are entitled to. This means pupils can easily miss marks in GCSE and A Level exams, resulting in potentially lower grades for students and a lower position in League Tables for schools.

However, under Section 22 of the Children and Families Act 2014 Local Education Authorities and others responsible for the education of children have a proactive duty to identify pupils with disabilities and Special Educational Needs, so you may need to obtain further information from your LEA about how your school's colour blind pupils can be identified.

Where a student is diagnosed with CVD they are entitled to help, as set out in the JCQ Access Arrangements and Instructions for Conducting Exams documents. The latest versions can be found here http://www.jcq.org.uk/exams-office/access-arrangements-and-special-consideration/regulations-and-guidance/access-arrangements-and-reasonable-adjustments-2015-2016

The **JCQ Access Arrangements 2015/16** information is mainly found at Clause 5.16 page 69

'For the access arrangements detailed below there is not a requirement to process an application using *Access Arrangements Online* or to record the use of the arrangement. No evidence is needed to support the arrangement.

*Colour naming by the invigilator for candidates who are colour blind***'**

The **JCQ Instructions for Conducting Exams 2015/16** document covers CVD mainly at page 22

'**8.3** *Colour naming by the invigilator for candidates who are colour blind*

(This arrangement will not be permitted where the ability to identify specific colours forms part of the assessment objectives.)†

No other information or explanation can be given to the candidate. If the candidate has been using a colour chart(*****) he or she will be permitted to do so in written examinations or practical examinations.

Where coloured images are included in a question paper *but do not form part of the assessment objectives and are not specifically testing the candidate's knowledge and understanding of the paper(†*) the centre may photocopy the question paper (*up to 90 minutes before the published starting time of the examination*) where considered beneficial to the candidate.

For diagnosed CVD students ensure your SENDco and all teaching colleagues are aware of potential problems and ensure an Individual Education Plan is put in place for the student at the earliest opportunity.

For further information on Best Practice and Accreditation for your school visit the Colour Blind Awareness website http://www.colourblindawareness.org/teachers/services-for-schools/.

(†) Note some exam boards, particularly with A Level Chemistry papers 'test a candidate's ability to identify colours' and so disallow colour naming by the invigilator. This will cost colour blind students marks.

(*) We do NOT recommend colour charts. These mislead candidates since unless the chart and the exam paper are printed in the same ink on the same paper and neither laminated they will confuse rather than assist.

What If *You* Are a Colour Blind Teacher?

Note that you may not always be aware of the strategies you use to cope with your own condition – these will probably be different to the strategies adopted by a colour blind student. Sometimes you may not be able to notice information which will be readily apparent to your colour normal students. You may have a mild condition or a different type of condition to your colour blind pupil and so will not necessarily be able to appreciate the needs of your colour blind students as they may not match your own. If you have any doubts always seek confirmation from colour normal peers/pupils and your colour blind students before using colour to make a teaching point.

You will be entitled to reasonable adjustments at work yourself, so don't put up with progress charts you can't follow!

Refer to www.colourblindawareness.org for further information.

Other Special Educational Needs

Colour vision deficiencies are likely to affect the results of any tests to indicate other Special Educational Needs which include colours as part of the assessment.

An example is the Rapid Colour Naming subtest of the CTOPP (Comprehensive Test of Phonological Processing) test which is used to indicate phonological processing and help identify dyslexia. Likewise the online Dyslexia Screener has a coloured shapes section which may also cause problems. Before using any such screening tests check them for potential colour issues and refer to the producers if you are unsure.

Be aware that even though a software package might have been put together by a specialist in Special Educational Needs this does not necessarily mean the software takes account of colour vision issues because at present CVD is not considered to be a SEN.

As mentioned in the **Types of Colour Vision Deficiency** section, children with some other visual impairments such as glaucoma and retinitis pigmentosa, are also more likely to have colour vision defects which may not present in the same way as genetic red/green colour blindness – i.e. different colours may be affected.

Dyslexia

Children with dyslexia will inherit colour blindness in the same statistical numbers as non-dyslexic children, so children with colour blindness and dyslexia are not uncommon. At present there is no specific advice in how best to support these children and dyslexia can be assisted using pastel colours whilst colour blind children function best where contrast between colours is strong. You may need to work with individual children to find out which techniques best suit their learning styles.

Autistic Spectrum Disorders

There is some recent scientific evidence which shows children with Autistic Spectrum Disorders have reduced ability to distinguish between colours than other children. Whilst not CVD in a strict sense, ability to absorb information in colour can affect learning so the simple techniques used to support people with CVD may also assist children with ASD.

Complex needs

Without a Visual Impairment Statement it will be difficult or impossible to get access to Visual Impairment services for a child with CVD. Hence if you suspect a child is showing signs of possible CVD it is extremely important to arrange for a child to be tested and diagnosed with a Statement to ensure you can fully access support.

Children in specialist SEN schools with colour vision problems are far more vulnerable than CVD children in mainstream school environments not only because they may not be able to verbalise their inability to distinguish some colours but also because colour is an inherent part of educational tools for early years' teaching and for children with special needs.

Therefore it is extremely important for teachers and carers to be able to identify whether or not a non-verbal child might have colour vision problems so that they can specifically tailor teaching aids to the needs of the individual child.

Alternative and Augmentative Communication (AAC)

Teachers, parents and carers of children using AAC must ensure they find out whether or not the child has problems distinguishing colours as colour is a fundamental component of AAC teaching methods. Often the child will be unable to explain colour problem, especially if they are non-verbal.

There is some evidence to suggest a higher prevalence of CVD in those with cerebral palsy than in the rest of the population, not only because of complications arising from other visual impairments, but also due to increased defects in genetic code.

Where colour vision deficiencies are present in a non-verbal child which have been acquired from non-genetic causes e.g. retinitis pigmentosa, the colours a child has problems with may be different to those which cause problems for someone with genetic CVD (common red/green colour blindness).

At present it is not possible to simulate or fully appreciate what such a child might be able to see, so the only way to understand is to try the ***Colour Blind Awareness Indicative Test for CVD in Non-Verbal Children*** cards, work out the potential problems colours for the individual child concerned and avoid those colours when teaching that child in the future. Cases of acquired CVD are relatively rare in children – around 5% of cases of CVD.The following advice therefore refers to genetic red/green colour blindness only. Contact info@colourblindawareness.org for more information.

How to Identify CVD in a Non-Verbal Child

As mentioned previously, although under development, at present there are no formal tests available in the UK to diagnose CVD in non-verbal children. Contact the Colour Blind Awareness Organisation at info@colourblindawareness.org for further details of indicative tests which can help to identify colour vision deficiencies in non-verbal children (***Colour Blind Awareness Indicative Test for CVD in Non-Verbal Children***) communicating by eye gaze, or for activities suitable for children using hand-grabbing techniques to communicate. You can also register for further details on progress of availability of the formal tests.

Colour Blind Awareness can arrange for a representative to visit and undertake indicative testing at your centre and/or provide training for your staff.

NOTE: A child will not be suitable for indicative testing for CVD unless they are able to indicate differentiation between ‘same’ and ‘different’.

If You Suspect CVD in a Non- Verbal Child, What Next?

Update the child’s communication passport - note possible problem colours and ensure the symbol book is colour blind compliant too. In future try to avoid all combinations of colours the child has found it difficult to tell apart in the test. Remember to include colour blindness as part of the Early Years Moving Up booklet.

Consider all the methods you are using to communicate with the child including communication books, encoding, keyboards, and software packages. **Be aware that even though a software package might have been put together by a specialist in cerebral palsy this does not necessarily mean the software takes account of colour vision issues.**

For more detailed information check the **cp toolkit** section of the Scope website http://www.scope.org.uk/Support/Professional/Professionals/learning-together/Impairment-and-conditions/CVD-overview

If you are unable to find what you need please refer to info@colourblindawareness.org

Where to find resources

Visit www.colourblindawareness.org for

- colouring pencils, felt-tipped pens, crayons etc marked with the name of their colour
- stickers printed with the names of colours for paint pots, crayons, storage boxes etc for both home and classroom use
- Indicative CVD Testing Kit for Non-Verbal Children or very young children

OR

- to arrange visits for staff training/INSET talks/mass colour vision screening/Indicative Testing for non-verbal students etc. –email info@colourblindawareness.org

How to obtain further help

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

Want to know more?

Refer to the Colour Blind Awareness website www.colourblindawareness.org for more detailed information including how to support CVD children at home. You will find a huge range of images, videos and articles to clearly demonstrate the issues faced by CVD sufferers together with tips to manage things day to day.