

Educational Support for Vision Impaired Students with Additional Impairments

Presented by:

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The role of vision in the learning process

Vision is the primary sensory input; about 80% of learning takes place through the visual system. Vision is responsible for providing feedback about the world; it is also the unifying sense allowing sighted people to integrate their sensory experiences. At 3 months of age vision is the lead sensory modality and at 6 months it is the primary source of information about the environment.

For children with low vision and for those who are blind, particularly if additional impairments are present, the acquisition of information about the world may be more challenging, particularly in the areas of concept development, language acquisition and movement.

Limited near or distance vision, diminished visual field, impaired colour perception or fragmented vision may singly or in combination cause a number of difficulties for the child in the learning environment.

Incorrect, incomplete or distorted information transmitted from the eye to the brain can significantly impair the learning process.

Children with vision and additional impairments may need to learn to use alternative means and strategies for performing various daily tasks at school and at home.

Behavioural signs which may indicate visual difficulties include: constant frowning, blinking, tilting of the head, rubbing the eyes, holding learning materials close to the face, apparently poor eye-hand coordination and clumsiness.

Do you suspect that a student at your school is experiencing visual difficulties? You can:

1. refer to the school's records for information on the student's vision
2. find out if the student's parents/carers have had the student's vision examined
3. refer the student to the Educational Vision Assessment Clinic: (03) 9841 0242

**It is important to remember that
each child is a unique individual and
adjustments to their educational program
need to be tailored accordingly.**

The nature and degree of vision impairment

Educators will be better able to make adjustments to accommodate the student's learning process by developing an understanding the nature and degree of the vision loss and the educational implications of this loss.

Vision impairment refers to a significant loss of vision in both eyes, which cannot be corrected with glasses. The degree of loss may vary significantly, which means that each student with low vision or blindness needs individual adjustments to learn most effectively.

There are two main categories of vision impairment:

- "low vision" (people with low vision may also be referred to as "partially sighted") and
- "blind"

The majority of students with vision impairments have "low vision", which means they are print users but may require special equipment and materials. These students should be encouraged to use their residual vision in their educational program as much as possible.

You may also come across the term "legally blind". Legal blindness is used to indicate entitlement to important government and private agency services and/or funding. Students who are described as "legally blind" usually have some vision. The term "legally blind" also refers to people who are totally blind.

Vision impairments are also classified as:

- congenital (vision loss which is present at birth) or
- adventitious (vision loss later in life as a result of a degenerative condition, illness or accident)

The presence of additional impairments – congenital or acquired – can also impact on the child's ability to process or gain meaning from visual stimuli.

It is important to be aware that although two children with vision impairments may be assessed as having the same visual acuity, they may each function and learn in very different ways.

Vision may fluctuate or may be temporarily influenced by such factors as vision fatigue, lighting and/or glare.

An understanding of the type of vision impairment is certainly important, but generalisations about the student's visual functioning cannot be made solely on the basis of the diagnosed eye condition.

For more information about vision impairment see: www.svrc.vic.edu.au/AV.shtml

What is visual acuity?

Visual acuity

Visual acuity refers to the measure of the eye's ability to resolve detail at both short and long distances. Each eye has its own level of visual acuity and this can vary considerably.

Distance visual acuity

The capacity of the eye to resolve fine detail is measured by determining the smallest size print/picture that the student is able to read from an eye chart. The student's visual acuity is often recorded as a "Snellen fraction", the numerator representing the testing distance and the denominator indicating the smallest letter/picture size the student is able to identify. A student who has a visual acuity of 6/24 sees at 6 metres what the "normal" (ie 6/6 vision) eye can see at 24 metres.

Near visual acuity

Determining near visual acuity involves assessing the capacity of the eye to resolve fine detail. Near visual acuity is recorded as an "N point" size. The N point originally referred to a measure of print size used by printers. The "normal" eye can generally read print which is N6 (newspaper print) or even N5.

The N point size indicated on the Educational Vision Assessment Clinic reports (and other ophthalmologist's reports) generally refers to the minimum size print a student can resolve. A student with low vision generally requires a different size print (usually larger) for sustained reading.

Assessing students with additional impairments

It may be inappropriate to use standard testing tools for young children and people with additional impairments. It is possible, however, to assess students' level of vision less formally with careful observation and the use of adapted testing materials (eg symbols or pictures instead of letters; Smarties and Hundreds & Thousands).

What is distance visual acuity?

Measurement of distant vision acuity explained

The distance visual acuity test establishes the distance visual acuity (distance vision) and is only one of the tests undertaken to assess eyesight. The distance visual acuity test is made up of capital letters, numbers, symbols or pictures which are larger at the top and smaller at the bottom of the eye chart. Distance visual acuity is usually measured at 6 metres; the chart may be viewed using a mirror.

The top line of the chart is usually of a size that could be read at a distance of 60 metres by a person with “normal” distance vision. The second line is of a size that could be read at a distance of 36 metres by a person with “normal” distance vision and so on.

Below is an example of a Snellen chart (not to scale).



“Normal” eye could read at 60 metres

“Normal” eye could read at 36 metres

“Normal” eye could read at 18 metres

“Normal” eye could read at 12 metres

“Normal” eye could read at 9 metres

“Normal” eye could read at 6 metres

“Normal” eye could read at 5 metres

“Normal” eye could read at 4 metres

The result of the test is written as a fraction.

- 6/18 means that the third line down on the chart above can be read from 6 metres away
- 6/6 or 6/5 is considered to be “normal” distance vision

If no lines can be read from 6 metres then assessment may take place at shorter distances.

- 3/36 means that the second line down on the chart above can be read from a distance of 3 metres
- 2/60 means that the top line on the chart above can be read from 2 metres

Near vision – Print size (recorded as N point eg N80)

N

80 yes have

64 two kiss

48 sun back happy

40 his come

32 box down mummy saw

24 day once because how girl

20 big time children zoo will

16 out baby going hot been

12 and went birthday for some

10 got play friend him back

8 cat like about can make little but very daddy must

6 car over truck was shop party get with after help

Adapted from: Near Vision Test for Children, Selected Word Reading Chart

Simulation of vision impairment

Visual acuity



6/6 – normal vision



6/24 – partially sighted range

Eligible for Visiting Teacher Service



6/36 – partially sighted range



Worse than 6/60 – legally blind range

Eligible for Program for Students with Disabilities funding (DEECD schools) and the Disability Support Pension (Blind) at age 16 years

Fields of vision

Students may also be eligible for additional support due to restricted visual fields:

- fields reduced to less than 20 degrees – eligible for Visiting Teacher support
- fields reduced to less than 10 degrees – eligible for Program for Students with Disabilities funding (DEECD schools) and the Disability Support Pension (Blind) at age 16 years

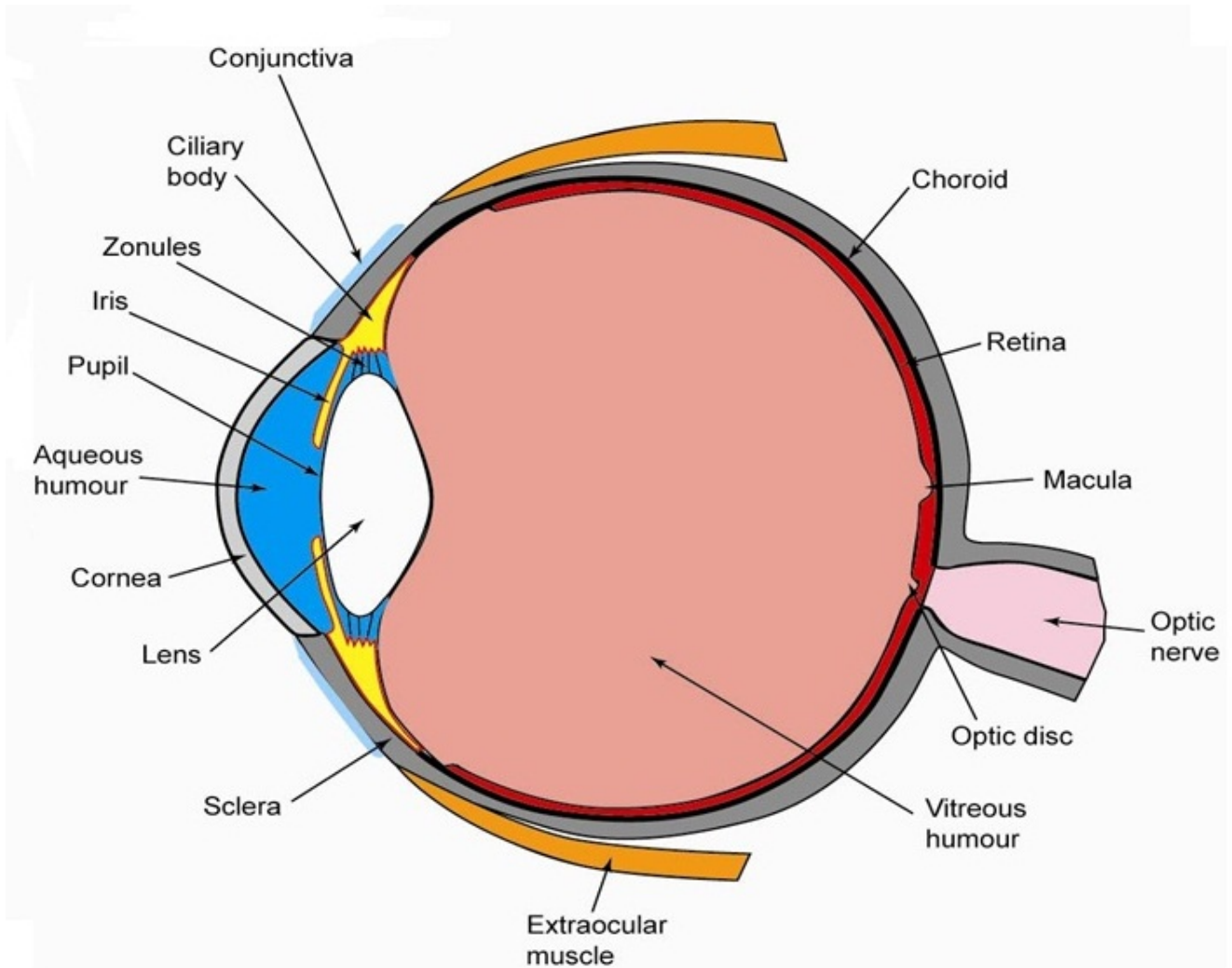


Peripheral field loss
eg Retinitis Pigmentosa



Central field loss
eg Macular degeneration

The anatomy of the eye



Functional vision – Visual skills and visual perception

Functional vision refers to the interaction between environment and how visual information is processed.

Functional vision relates to the experiences, motivation, needs and expectations of each individual, along with their ability to process visual information.

Functional vision can be divided into several inter-related areas:

1. Visual Skills
2. Visual Perception

1. Visual Skills

Children develop visual skills at different rates; the specific nature of the vision impairment will influence the rate and level of achievement. Visual potential, level of cognition and previous experience are important factors in the development of visual skills.

- **Visual Awareness** – knowing something is present in the visual field
- **Visual Attention** – the conscious direction of vision for gathering of information
- **Visual Fixation** – directing or aiming the eye/s to a specific spot or object
- **Visual Focus** – adjusting the eye/s to converge on an object to achieve the clearest possible image
- **Visual Tracking** – following with the eyes and/or head the movement of visible things
- **Visual Scanning** – searching for a particular visual stimulus among other visual stimuli

2. Visual Perception

Visual perception is the ability to identify and interpret visual stimuli. It is an active process of perceiving, integrating and recalling visual information; and is a developmental process which is related to cognitive ability and language skills.

- **Visual Discrimination** – making distinctions between and within visible objects
- **Visual Figure-Ground Discrimination** – isolating a particular object from the background or surrounding visual stimuli
- **Visual Memory** – storing and recalling past experiences and integrating these with the present to identify aspects of the environment or relate one aspect to another
- **Visual Closure** – Perceiving a total picture or object when only part is visible
- **Visual Spatial Relations** – perceiving self and other visual stimuli in relation to position within space
- **Mobility** – moving with ease and confidence about familiar and unfamiliar environments
- **Visual Motor Co-ordination** – manipulating concrete objects using hands and eyes in harmony

Developmental screening checklist

Functional Vision

The following informal screening device is a composite of many checklists, which are commonly used in observing visual functioning in children with vision impairments and developmental and multiple disabilities. This checklist follows the sequence of normal visual development. It can be used as a guideline to identify potential vision problems, delays, and areas of need. It can be used in cooperation with a teacher of vision impaired children to plan appropriate goals and activities.

It is important to remember that visual development does not surpass cognitive development.

If a child is functioning overall at the age of one year, this child will probably not be able to perform the items listed for a three-year-old.

Selection of visual skills to be reinforced and activities to be performed should take the child's functional age into consideration. The checklist can be used over time to compare changes in the child's vision usage.

Birth to One Month

- Stares at windows and bright walls
- Blinks when light is too bright
- Pupils dilate when penlight is shone into the eyes, pupils constrict; when light is removed, (pupillary response)
- Looks at faces briefly
- Looks briefly at objects placed in field of vision
- Eyes turn the opposite direction that head turns or tilts; this reflex is inhibited after the first few weeks as a child's fixation increases (doll's eye reflex)
- Grasping, looking, and sucking occur in isolation of each other; hands are usually fistled
- Seems to focus best on objects 20-30 cm from face

One to Three Months

- Stares at objects within field of vision
- Eye-to-eye contact increases
- At one month looks at outside features of face such as hairline, ears, chin
- At two months, looks at inside features such as eyes, nose, mouth, eyebrows
- Eye movements are poorly coordinated and eyes may not always appear to be straight or working together
- Follows or tracks a slowly moving object horizontally with eyes only over a 90 degree arc (can't cross mid-line so tracks from centre to side and side to centre)
- Follows movement of person nearby
- Focuses on objects from 12 cm to as close as 7 cm (convergence)
- Looks at hand on side favored by tonic neck reflex; may swipe at objects on this side
- Visually inspects nearby surroundings; may move head and eyes as well as body toward the stimulus
- Prefers to look at some pictures, people, or toys longer than others; alerts to a favorite object
- Smiles when looking into face of an adult who is smiling, talking, and moving head
- Looks at high-contrast patterns, such as checkerboards, stripes, geometric shapes
- Looks at brightly colored and patterned three-dimensional objects

- Will turn toward an object to the side when facing forward
- Searches with eyes for sound source presented to the side; later will turn and look
- Visually locates objects presented to the sides, above, and below and follows their movements in and out
- Shifts gaze between objects on the table
- Visually scans to locate objects or people in the environment
- Follows variety of objects moving toward and away in visual field, such as a ball being rolled to her on the table

Three to Five Months

- Head is in midline; little or no asymmetric tonic neck reflex is observed; the hands are predominantly open; child looks at hands and plays with hands at midline
- Looks at the objects in her hands momentarily
- Shifts gaze from hand to object and back
- Most objects within reach are looked at, reached for, and brought to mouth
- Focuses on objects at distances of five to twenty inches
- Tracks balls rolling on a table or floor when sitting or on her stomach
- Follows with eyes (or eyes and head) a fast moving object over 180 degree arc
- Visually reverses direction easily
- When sitting or laying down, child turns head to either side to look at something she hears
- Looks for caregiver in a group of people
- Looks for a specific toy in a group of toys, and reaches directly for it
- Watches toys go out of sight and looks for them
- Watches objects drop
- Looks frequently at small objects and details
- Fixates on objects at three feet

Five to Seven Months

- Binocular eye movements are well coordinated; both eyes work together and appear to be in balance with each other; any deviations with one eye turning in, out, up, or down seen at six months should be followed medically
- Prefers to look at more realistic pictures
- After dropping a toy, looks for it, and attempts to recover it
- Looks into mirror and may smile or pat image
- Babbles spontaneously to person's face
- Discriminates strangers and reacts with staring, frowning, withdrawal, crying
- Looks at and responds to a variety of facial expressions
- Laughs at peek-a-boo games

Seven to Twelve Months

- Tilts head to look up
- Smooth visual pursuit – follows or tracks objects with eyes and not necessarily head
- Fixates on facial expressions and imitates
- Looks for, reaches for, and picks up small objects such as pieces of cereal, etc.
- Visual behaviours such as fixating, following, shifting gaze, scanning, converging and diverging are well developed and integrated into reaching and manipulating objects
- Looks for objects found in and under other objects
- Recognises some pictures
- Depth perception emerging; as crawling around, combines changes in body position with what he sees; inconsistently aware of danger

Twelve to Eighteen Months

- Identifies likenesses and differences
- Makes linear marks with crayon on paper
- Points to object asked for on a picture
- Points to familiar persons, animals, or toys on request
- Looks toward indicated objects and areas when told to look
- Points and vocalizes to indicate wants
- Looks at picture book and turns page

Eighteen Months to Two and Three Years

- Well-developed convergence although localization in distance is crude and child may run into objects she sees
- Looks behind mirror when shown her reflection
- Differentiates between pictures of familiar animals
- Imitates simple actions on request
- Looks at and handles many simple objects in environment
- Imitates vertical and circular strokes
- Discrimination and identification of familiar objects such as toys, food, and clothing
- Matches pictures to objects and pictures to pictures
- Matches colored objects regardless of shape
- Matches circle, square, and triangle shapes
- Points to body part on doll or in picture when asked
- Stares or points to sex differences
- Imitates horizontal line
- Shows use of familiar object when requested
- Names or points to self in photograph

Three to Four Years

- Copies geometric figures
- Sorting, grouping and categorizing by colour, length, size, use or sequence of events
- Matches coloured shape to coloured outline on paper
- Chooses one object in set which is a different color, shape, size
- Imitates body positions

Four to Five Years

- Color recognition; differentiates shadings
- Depth perception is fully developed
- Matches letters
- Abstract symbols – discrimination, recognition, association of letters and words
- Can reproduce body motions to pictures
- Associates words with pictures

Cortical Vision Impairment (CVI)

Information summary regarding CVI

Over 40% of the brain is devoted to visual functioning (Dutton, 2006). Cells in the visual cortex are strictly organised; the visual cortex analyses each aspect of an image in an orderly sequence and there is a precise and organised way in which specific visual functions are separated and processed by specific cortical areas. Essentially, each nerve cell stimulated is responsible for a particular detail of a figure.

Depending on the extent or severity of damage to the brain, children who have CVI do not consistently understand or interpret what the eye sees.

Children with CVI usually have a normal or near normal eye examination that cannot explain the level of vision impairment.

CVI is best identified and diagnosed by:

- A normal eye exam or an eye exam that reveals an eye condition that cannot explain the profound lack of functional vision
- A medical history that includes neurological problems
- The presence of unique visual and behavioural characteristics

The unique visual and behavioural characteristics of CVI include:

- Distinct colour preference
- Attraction to movement
- Visual latency
- Visual field preferences
- Difficulties with visual and environmental complexity
- Light gazing or non-purposeful gaze
- Difficulties with distance viewing
- Absence or atypical visual reflex responses
- Difficulties with visual novelty
- Absence of visually guided reach

Children with CVI (infants)

- Visual function improves or declines but rarely remains static
- Vision can be rehabilitated with permanent increased function during the critical windows of visual plasticity in the period of infancy
- Progress and permanency of visual function depends upon neurostability and environmental supports

Children with CVI (older)

- It is unknown when plasticity regarding the development of vision ends; therefore, progress in visual function should be expected, although the rate may be slower when the child is beyond the critical period of visual plasticity in infancy
- Adaptations must be designed on the basis of assessed needs
- Intervention should be integrated into daily routines
- "Vision stimulation" as an end goal should be avoided

CVI may coexist with ocular forms of vision impairment:

- Optic nerve atrophy, optic nerve hypoplasia, optic nerve dysplasia and strabismus (turned eyes) are the most commonly associated with CVI

Functional Vision Assessment for students with CVI

- Has a specialised protocol based on the unique CVI visual and environmental characteristics. It is assessed by observation, interview and direct assessment.

Intervention for children with CVI must emerge from assessed needs.

- Phase I: building consistent visual behaviours:
 - dominant colour preference
 - strong interest in objects that have movement
 - disinterest in highly patterned objects
 - require significant “wait” time
- Phase II:
 - Integrate vision with functions
 - Eye-to-object contact
 - Begin to explore objects that have two colours
- Phase III:
 - Resolution of all CVI characteristic

Environments for children with CVI must be adapted:

- Adaptations must consider visual complexity
- Adaptations must consider sundry complexity - that both the item itself and the background needs to be simple
- Adaptations must be embedded as part of the daily routine rather than a stand-alone “treatment”

Ref: Cortical Visual Impairment: An Approach to Assessment and Intervention by Christine Roman-Lantzy

Setting up a visually stimulating space

Why?

It has been estimated that 80% of learning occurs through the visual system. A stimulating space in the classroom:

- provides opportunities for vision development in the areas of awareness, attention, fixation, tracking and scanning
- encourages the use of vision to investigate the environment
- offers opportunities for recreation and leisure

Where? (Consider the space)

- ensure space has adequate ventilation
- darken the area – consider blinds, curtains, paint etc
- consider “carpet walls” for attaching vision stimulus using Velcro
- consider student positioning: what is the student’s most comfortable position eg lying on the floor, hanging in a hammock, sitting in a wheelchair
- provide adequate space for students and staff
- ensure the space has safe power outlets
- consider storage space for items/toys

How/What?

- consider using themes
- music creates atmosphere/relaxation/motivation
- begin with items or lighting that the student enjoys
- consider individual student rewards
- ensure activities/vision stimulus is age appropriate
- consider independence when selecting toys/items and activities
- organise vision stimulus for easy access
- reduce visual and tactual clutter when presenting items to student

Useful items:

- a range of torches
- fairy lights
- foil and tinsel
- toys with a light component
- glow in the dark toys/items
- light box
- overlays for light box
- oil lamps
- reflective/sparkle toys/items
- reach and grab, pull toys
- multi-sensory toys/items
- fluorescent toys/items eg balls, shapes
- black and white, high contrasting patterns/pictures/toys

Caution: Consider epilepsy prior to presenting any vision stimulus, which may stimulate an epileptic reaction; vision stimulation programs are not suitable for children with CVI.

Optimising the learning environment

It is important to determine the factors that will provide each student with their optimal visual environment – and it is important that the student understands and can communicate their unique needs in relation to their vision impairment.

Lighting

Eyes “run” on light therefore the most critical issue in being able to access the learning environment is the amount, intensity, position and direction of the light in all learning areas.

- consider “task” lighting ie a light being focused on a particular area – the majority of children with low vision require some form of task lighting to increase visual efficiency
- an individual lamp will instantly increase contrast – to reduce glare, the lamp should be placed below eye level and should shine onto the task from a 45 degree angle
- the student needs to be aware of how to manage their lighting needs and why
- inappropriate lighting increases vision fatigue and may impact on behaviour:
 - fluorescent globes are the most efficient globes and produce the most light for ambient purposes but they tend to create glare and distort colours
 - halogen globes produce a very white light but they also emit a lot of heat and use more energy.
 - the best light to maximise lighting levels are warm white bulbs (2700-3500 Kelvins)
- light from computer screens can increase vision fatigue – changing the setting to white print on black background may reduce fatigue. Computer users may benefit from the use of glare filters.
- for those who are light sensitive, bright or direct natural light should be filtered through UV blocking film or tinted glass, usually of a clear, amber, or pink colour
- for visual comfort and glare reduction, avoid white or blue walls – the best wall colours are pink, peach, and warm beige. Textured walls are better than smooth, shiny ones. Put up posters or wall hangings to soften highly reflective areas.
- consider lighting conditions in all areas of the school environment in which the student will be moving – both inside and outside eg stairs, covered walkways, locker areas and toilets
- torches can be useful to a student experiencing difficulties in areas of low illumination eg locker, school bag and dark corners of a room

Glare

- some students are particularly sensitive to glare eg photophobia
- avoid positioning a student facing a light source (natural or artificial)
- avoid bright backlighting when teaching eg stand away from bright windows
- consider sunglasses and a hat, particularly when working/playing outside
- reduce glare in the classroom eg use blinds, curtains, posters etc to cover glary windows
- avoid reflection on tasks, work surfaces etc – avoid using glossy paper and toys/work surfaces painted in high gloss
- consider the placement of computer screens to minimise glare
- turn off overhead lighting when using the smartboard
- allow students to reduce glare by using a hat or sunglasses inside

Contrast

- improve contrast on work surfaces by using contrasting coloured cloth (eg a piece of beige or black felt), a coloured tray or place mat; this will improve contrast and therefore ensure the visual stimuli is more visible (eg a black cup on a light surface)
- task lighting (eg a lamp) may assist
- when producing learning materials for a student, consider contrast eg bolder lines for maths worksheet
- use black felt pens on a clean whiteboard
- allow students to use texta colours in preference to coloured pencils when drawing/colouring
- bold lined paper and black felt tipped pens increase contrast for the student
- consider areas in the school environment which need to be made more visible eg paint edges of steps, highlighting a light switch and doorways
- consider the clothes you wear eg a class teacher wearing bright clothes is easy to find, particularly when on excursions in unfamiliar environments
- if you are signing, wearing dark plain clothes will contrast with your hands
- wearing lipstick can highlight the teacher's facial expressions

Crowding

- children with low vision may become overwhelmed with cluttered worksheets and whiteboards – their functioning may be improved by reducing the visual stimuli
- use masks such as black pieces of cardboard to block out various questions on worksheets etc
- large print with additional spacing may be preferred to regular print
- detail in illustrations and drawings may need to be reduced

Print

- size of print is not nearly as critical as the quality of the print
- encourage students with low vision to access N12 print either by use of low vision aides or other technology if this is possible
- students with low vision tend to prefer the San Serif fonts: Arial, Tahoma and Verdana
- holding materials close to the eyes will not cause harm – allow the student to place materials in a position and at a distance that they choose

Materials in alternative format

- students generally have a preferred format for their learning materials – etext, braille/tactile, audio, large print
- ensure that student's learning materials are available in a timely manner
- the student's preferred format may change from one activity to another eg braille for Maths, etext for novels

Seating

- ensure that the student is in the most appropriate seating position
- consider residual vision – where is the student's best field of view? (including null position)
- consider low vision aids – if the student is using a telescopic aid, they may need to sit towards the back of the room
- if contact lenses and/or spectacles are worn, what distance/s have they been set at?
- does the student require access to a power point?

Organisation

- if possible, keep classroom environment static
- keep the classroom tidy eg put chairs under desks
- alert student to any changes in the room layout
- a student may need extra storage room for equipment etc
- if the student has a laptop or other heavy items, they may like to consider using a suitcase on wheels
- encourage the student to develop good study and exam techniques

Size/Distance

- each student will have his/her own distance for reading – don't be concerned if this distance is very short – most young students are able to focus at short distances
- reading stands may help avoid back and neck pain
- consider the size of stimulus used eg toys, items on worksheets – do the diagrams need enlarging or reducing?
- consider offering the student their own example of an item being demonstrated for close inspection
- consider the size and colour of print on the white board
- allowing the student to move to the board or sit at the front of the group may improve visual access
- consider allowing the student to access the board using iPad or other technology eg the iPad can be synced with the interactive whiteboard
- use of the 'pinch and zoom' feature on the iPad may improve access to whiteboard and worksheets

Time

- students with vision impairments may require additional time to investigate and respond to a visual stimulus
- allow the young student additional organisational time eg when asked to pack up and collect school bag, coat and homework – meanwhile work on streamlining for best efficiency
- it may be appropriate for students to view stimulus material prior to the class eg models, complex diagrams
- it may be appropriate for students with vision impairments to perform fewer tasks than their sighted peers

General teaching strategies

- ensure that students have their learning materials in their preferred format – braille, etext, audio, large print – at the same time as their sighted peers
- use black felt pens on a clean whiteboard
- read out loud as you write on the whiteboard and spell new words as you go – this will assist the student with impaired vision who may not be able to see the board
- email students information and worksheets or use a flashdrive to transfer files to and from students
- reduce visual clutter – leave out unnecessary detail on worksheets and on the whiteboard
- consider vision fatigue – signs of vision fatigue include red eyes, rubbing eyes, watering eyes and/or headaches. Allow for rest breaks or alternate visual with non-visual activities eg listening to audio materials.

- each student will have his/her own distance for reading – don't be concerned if this distance is very short – young students are able to focus at short distances
- encourage the use of reading stands which may help avoid back and neck pain
- verbalise activities using directional language eg today's spelling words are on the section of the whiteboard nearest to the door
- allow the student to hand out materials – this will help them to know where the other students in the class are
- provide verbal cues eg say the student's name and verbalise what is about to happen
- use verbal rewards and praise as the student cannot see a smile or nod of approval
- ensure all relevant staff including replacement teachers are aware of the student's vision impairment and the related implications
- encourage eye contact and appropriate body language
- encourage appropriate social skills
- encourage "looking" by using words such as "look", "find" and "see"
- encourage the use of low vision aids and other technologies to improve access to the learning environment
- encourage the use of touch typing and key commands to make computer use efficient

See also: www.svrc.vic.edu.au/PLadditional2013.ppt (PowerPoint presentation)

The tactual learner with additional impairments

Ideas for developing a student's sense of touch & reducing tactile defensive behaviours

- tactual treasure box – fill with items related to student's educational program eg classroom theme items, favourite toys
- tactual diary – use object symbols where possible eg a pair of bathers to indicate swimming, a bunch of keys to indicate going on the bus
- develop tactual symbols for classroom activities eg different songs and whole class games
- fill an old handbag or basin with tactile objects eg "lucky dip" type activity (have students find an object in a bowl of lentils or scrabble pieces)
- tactual necklace to be worn by student and/or class teacher/carer
- textured snake which could include a knitted/button/sheep skin/plastic/sand paper/scotchbrite/herbs/perfumed tissue/crunchy paper sections
- find the object hidden in the sandpit
- create a "feely" corner of the room
- threading activities – include sorting, grading and matching of different textures
- "feely bags" for the students to find and identify objects – include items, which are hot/cold, rough/smooth, heavy/light, soft/hard
- "feely" medals for students to wear
- "feely" bingo games eg present student with a board of four different textures to match with textured cards
- tactile dice – throw the dice and find the matching texture on a tray
- tactile dominoes
- tactile matching eg buttons or different sizes and shapes
- cooking activities involving hands to mix eg kneading dough, mixing dry ingredients, rolling meatballs
- art activities such as finger painting with shaving cream/warm finger paint, working with clay and play dough, making textured pictures/murals, working in the garden, planting "smelly" plants with various textures, make mud pies etc
- tactual scanning activities eg a tactual version of "What's missing?" – place items on a tray or in a box

Ideas for making your classroom tactual

- use different floor surfaces to designate various sections of the classroom eg lino for the washing area, a plastic path leading from the classroom door to the student's table
- provide tactual cues to assist with orientation within the classroom eg tactile labels on the student's chair, table, locker
- textured curtains to separate working spaces

For more ideas see: www.svrc.vic.edu.au/CUtacmivi.shtml

Recipes for tactile development

<p><i>Finger Paint (1)</i> 1 cup flour 4 cups cold water Food colouring</p> <p>Combine flour and 1 cup of water and stir until smooth. Add remaining 3 cups of water. Cook and stir over medium heat until mixture thickens and bubbles. Reduce heat. Cook and stir one minute more. Pour into bowls and tint with food colouring. Cover with plastic wrap until cool enough to paint with.</p>	<p><i>Finger Paint (2)</i> 1 cup corn flour 2 cups boiling water Food colour or essence as required</p> <p>Add a small amount of water to make a paste Add colour or essence and remaining water, stirring all the time It should become thick, milky and glossy. If it doesn't, heat it on the stove.</p> <p>Suggestions Add 1 tablespoon of glycerine or ½ cup of soap flakes for a different texture</p>
<p><i>Scratch and Sniff Paints</i> 1 tablespoon unsweetened powdered drink mix 1 tablespoon warm water Several small containers</p> <p>Mix water and drink mix in a small bowl. Repeat using several different flavours to create different smells and colours to paint with. Paint on chosen surface, and let finished work dry overnight before scratching and sniffing.</p>	<p><i>Puff Paint</i> 1 cup flour 1 cup salt 1 cup water Tempera paint powder Plastic squeeze bottle</p> <p>Stir together flour, salt, and water. Add several teaspoons of tempera paint. Stir and pour into clean, recycled squeeze bottle. Use paint within two to three days.</p>
<p><i>Soap Show Painting</i> 2 cups soap flakes ½ cup cold water</p> <p>Beat mixture until stiff Divide up and add colour Can be used with hands, brush, piping bag Dries to a fluffy, fragile texture</p> <p>Caution: This will clog drains!! Dispose of in the bin!!</p>	<p><i>Bubbles</i> 1/3 cup Dawn or Joy dishwashing liquid 2 tablespoons sugar 1 cup water Pipe cleaners</p> <p>Mix the first three ingredients in a plastic dish (one with a cover to save for later). Form pipe cleaners into different shapes and attach to unsharpened pencil for a bubble wand.</p>

<p>Slime!!!</p> <p>1 cup Lux (for washing woollens) flakes 2 litres of warm water Colour or fragrance Mix and then leave until it becomes jelly-like Beat with beaters</p> <p>Suggestions: Use outside on grass as this makes a slimy mixture children love to pour. Supply containers, funnels etc and stand back!!</p>	<p>Goop</p> <p>2 packets corn flour 2 cups water Food colouring</p> <p>Mix to thick consistency</p>
<p>Cooked Play Dough</p> <p>1 cup plain flour ½ cup salt ¾ cup water 1 tablespoon oil 2 teaspoons cream of tartar Food colouring</p> <p>Mix all ingredients together Cook over low heat for 3-5 mins Turn out on to floured bench Knead until smooth</p> <p>Variations Add glitter and/or essence (eg peppermint or lemon for fragrance)</p>	<p>Uncooked Play Dough</p> <p>2 cups plain flour 4 tablespoons cream of tartar 1 cup salt 2 tablespoons oil 2 cups boiling water Food colouring of your choice</p> <p>Mix all ingredients together in a bowl. Sprinkle bench with flour and kneed play dough until it becomes a good consistency. Add more flour to bench as needed.</p> <p>When not in use To keep your play dough from getting crusty, store it in a plastic bag.</p>
<p>Sidewalk Chalk</p> <p>2 tablespoons temper paint ½ cup water 3 tablespoons plaster of Paris Paper cup</p> <p>In the paper cup, stir the ingredients until you have a creamy consistency. Once hardened (several hours), peel off paper cup to produce a giant piece of sidewalk chalk.</p>	<p>Poker Chip Bank</p> <p>Empty coffee can Plastic poker chips</p> <p>Cut a 1cm x 4cm inch slit in the lid. Students can post the poker chips through the slit to produce a great clinking sound – great for fine motor skills.</p> <p>Safety Ensure that the slit doesn't have sharp edges.</p>

Curriculum considerations for students with vision impairments

Educators of students with vision impairments refer to the **core curriculum** and the **expanded core curriculum**.

Core curriculum

The **core curriculum** refers to the knowledge and skills a student should have acquired by the completion of their secondary education:

- The Arts
- Civics and Citizenship
- Communication
- Design, Creativity and Technology
- English
- Health and Physical Education
- Information and Communications Technology
- Interpersonal Development
- The Humanities
- The Humanities – Economics
- The Humanities – Geography
- The Humanities – History
- Languages
- Mathematics
- Personal Learning
- Science
- Thinking Processes

For additional information and ideas to improve access to the core curriculum for students with vision impairments see: www.svrc.vic.edu.au/CUcore.shtml

Expanded core curriculum for students with vision impairments

Students with vision impairments – low vision and blind students – must achieve mastery of an array of additional disability-specific knowledge and skills in addition to the regular core curriculum ie the **expanded core curriculum** for students with vision impairments.

The **expanded core curriculum** is unique to each student with impaired vision and, depending on their specific needs, may include:

- **Compensatory or functional academic skills** eg braille, auditory skills, concept development, exam technique, handwriting, perceptual skills,
- **Use of access technology** eg touch typing and key commands; refreshable braille display, electronic magnification unit, scanner, text to speech software
- **Visual efficiency skills** eg eccentric viewing, use of optical aids, managing vision fatigue
- **Orientation and mobility** eg cane use, road crossing, public transport
- **Social interaction skills** eg eye contact, body language, making friends
- **Independent living skills** eg banking, shopping, money, shoelaces, use of knife and fork, telling the time, preparing a snack or a meal
- **Recreation and leisure skills** eg games and sports, use of social media, taking turns,
- **Career education** eg career awareness, job skills, work experience
- **Self determination** eg explaining vision impairment, self advocacy, managing learning

Expanded core curriculum

The **expanded core curriculum** refers to essential additional disability-specific skills for students with vision impairments – including many students with additional impairments. Each student with low vision is unique, and so are the additional skills each student will require in order to achieve success in their educational setting.

The expanded core curriculum for students with vision impairments includes the following:

Compensatory or functional academic skills

Compensatory skills, including communication modes, involve the use of tools, adaptations, modifications and behaviours that maximise the student's opportunity to access the learning environment. Communication needs of students with vision impairment will vary, depending on the degree of functional vision, the impact of additional disabilities, and the task to be done. Students may communicate through braille, large print, print with the use of optical aids, regular print, tactile books, a calendar system, sign language, audio materials, or combinations of these methods.

Other compensatory skills may include, but are not limited to: writing adaptations, computer keyboarding, study and organizational skills, abacus, and accessing information through the auditory and tactile senses.

Low vision and blindness may result in the need for specialised instruction in concept development, spatial awareness, and listening skills.

Use of compensatory skills will minimise the effects of reduced vision and will optimise access to the educational environment.

Access technology

Access technology can assist people with vision impairments to independently perform a task or job that they might otherwise be able to complete only with assistance. Access technology can include devices designed specifically for people with vision impairments, such as braille displays, electronic magnification units, magnifiers, and telescopes. Access technology can also include large computer screens, computer software, voice output devices and commonly used aids such as white canes, visors and sunglasses. Training in the efficient use and maintenance of access technology increases the potential for maximum involvement in all areas of curriculum and in life.

See also the SVRC Access Technology page: www.svrc.vic.edu.au/AT.shtml

Visual efficiency skills

Visual efficiency skills refer to the manner, technique or approach a student uses to complete a visual task as effectively and efficiently as possible. With thorough, systematic training, most students with functional vision can learn to use their remaining vision better and more efficiently.

Using the best strategies to maximise acuity levels is one component of efficient visual functioning. Interpreting visual information is another component. Efficient use of vision, aided by optical and non-optical aids and strategies, correlates highly with success in the classroom. Students can learn about their eye condition and how it affects visual tasks,

what aids and strategies are most useful, and how to explain their visual needs to others. Efficient study skills, exam techniques and management of visual fatigue can also assist.

Orientation and mobility

Orientation and Mobility is a vital area of learning for students with vision impairments. It emphasises the basic right of people who have vision impairments to travel as independently as possible, enjoying and learning to the greatest extent possible from the environment through which they are passing.

Students will need to learn about themselves and the environment in which they move from basic body image to independent travel in rural areas and busy cities. Developing body concepts, spatial awareness, orientation strategies and an understanding of the world are building blocks for age-appropriate, independent travel for students who are blind or who have low vision.

Students need to develop problem-solving strategies necessary to travel in familiar and unfamiliar school and community settings. Further, they may require training in specific skills such as cane use, road crossing, and use of public transport.

Optimising the use of residual vision may require the use of low-vision aids such as telescopes and sunglasses, or strategies such as wearing hats or visors to reduce glare.

For further information regarding orientation and mobility services for children contact:

- **Guide Dogs Victoria's Children's Mobility Service**
www.guidedogsvictoria.com.au or (03) 9854 4444
- **Vision Australia's Orientation and Mobility instructors**
www.visionaustralia.org or 1300 84 74 66

Social interaction skills

Effective social interaction skills are essential for students with vision impairments. Sighted children and adults have learned almost all their social skills by visually observing other people and behaving in socially appropriate ways based on that information. Individuals who are blind or who have low vision may not be able to learn skills of social interaction in this casual and incidental fashion. They may require thorough, careful, conscious, and sequential teaching.

Effective social interaction skills enable the student to participate in healthy and safe social relationships, seek information to solve problems, and participate in recreation/leisure activities.

Understanding the role of body language, facial expressions, gestures and vocal tones is especially important when the visual cues cannot be used.

Students with vision impairments need to be effective self-advocates. They should be able to accept or decline help graciously. Instruction in these skills may mean the difference between social isolation and a satisfying and fulfilling life as an adult.

Independent living skills

Independent living skills and personal management skills are an essential and often overlooked need area for students with vision impairments. This area encompasses all the tasks and functions people perform, according to their abilities, in order to live as independently as possible. These needs are varied and include among others, skills in personal hygiene and food preparation, money and banking, time management, home management, and organisation of personal belongings.

Recreation and leisure skills

Recreation and leisure skills are important for quality of life during the school age years and beyond. With adaptations, modifications and safety supervision, students who are blind or who have low vision can participate in many of the same individual and group activities enjoyed by sighted peers. Sighted people usually select such activities by visually observing them and choosing those in which they wish to participate. Recreation and leisure skills may need to be deliberately planned and taught to students with vision impairments and should focus on the development of life-long skills.

In addition to traditional games and activities, there are games such as goalball, swish and blind cricket etc, which are designed to be played with low or no vision. Australia fields international teams in each of these sports

Basic motor skills, as well as cooperative play strategies, may need to be taught in a specific manner in order to maximise success. Students may benefit from exposure to a healthy balance of solitary, social, passive and physical activities.

Students should be aware of local, state and national organisations that promote recreation, leisure and sporting activities for people with vision impairments. A high correlation has been shown between recreation experiences, satisfaction with life, self-esteem and success in the workforce.

Career education

Career and vocational education focuses on skills, experiences, and adaptations necessary to understand, prepare for, and access the world of work.

Career and vocational education may need to be specifically designed to fit students' needs, as general instruction may assume a basic knowledge of the world and of work based on prior visual experiences.

Career and vocational education for students with vision impairments should begin in early childhood. This can provide learners with vision impairments of all ages the opportunity to learn first-hand about the variety of work people do, through strategies such as role-playing, peer mentoring, and job shadowing. Career education should be structured to address personal strengths and weaknesses, work habits, ethics, workplace social skills, vocational interests, personal options, and specific skills training programs. Older students may require instruction in employment-seeking skills, employment-keeping skills, financial management, adult service providers, training programs, etc. Work experience is very important for teens.

Unemployment and underemployment continue to be a leading issue facing adults with vision impairments, making this area of the expanded core curriculum vital for students of all ages.

See also the SVRC Career Education page: www.svrc.vic.edu.au/CUcareered.shtml

Self determination

Self determination encompasses defining and achieving goals based on a foundation of knowing and valuing oneself. It comprises a knowledge of self and others, personal management, effective communication, self-advocacy and advocacy within systems, decision-making, goal setting and problem solving.

Self determination may be as basic as making choices but may also include accepting and declining help, managing equipment breakdowns, disclosing vision impairment to a future employer and dealing effectively with bullying.

For more information about the expanded core curriculum, see www.svrc.vic.edu.au/CUecc.shtml

Aids and technology that your student may use

There are many equipment options available which can greatly assist students with vision impairments to access the curriculum and to pursue personal and career goals. Students need to learn to select the most appropriate aid or technology option that best meets their needs in a given situation; and they may require direct instruction in the use of each aid or item of technology.

In alphabetical order, the aids and technology which may assist students with vision impairments include:

Audio recorders/players can be useful to listen to talking books, take notes, record lessons, answer extended questions and complete exams. They can also be used to give extended directions or information; and record excerpts from texts and handouts. Teachers can record feedback regarding assignments, tests, and projects.

Braille writers allow users to input using braille and/or read and edit using braille hard copy or via refreshable braille display.

Computers and notetakers may improve student access to their learning materials. The accessibility options for larger print, voice output etc which are available with “off the shelf” computers may be adequate for some students with low vision, however students may need specialised software – large print, speech, refreshable braille. Speak to your Visiting Teacher about how to enhance access to the computer for students with vision impairments.

Electronic magnification units can be used to enlarge print and graphic material on a monitor or screen. Magnification, contrast, and illumination can be optimised for individual student use. Handwriting, craft activities and interesting objects can be enlarged for detailed viewing.

Green/Bold lined paper has bold lines and enlarged spaces for students who have difficulty writing with regular lined paper. A range of different bold lined paper is available, eg graph paper for mathematics or staves for music notation. There are “masters” for a range of green/bold lined paper on the SVRC website:

www.svrc.vic.edu.au/CUboldp.shtml

iDevices and Windows compatible alternatives (including iPad, iPhone etc) with inbuilt accessibility including Zoom (enlargement) and VoiceOver (speech output) can offer students with vision impairments improved access to text, worksheets, the internet, GPS, interactive whiteboards etc.

Keyboarding/Typing can be used as an alternative to handwriting for students with vision impairments. Using the key commands can assist the student to efficiently navigate around the screen. Keyboarding skills should be introduced as early as possible.

Low vision aids such as hand held magnifiers for reading print, or a monocular for reading from the whiteboard can assist the student to work independently in the classroom. An assessment of the suitability of a low vision aid for a particular student can be obtained from an optometrist.

Materials in alternative format, including textbooks, novels and class handouts, can be provided for eligible students in a range of formats – etext, braille, audio – by the SVRC. Speak to your Visiting Teacher about provision of materials in alternative formats.

Reading stands bring work closer to the eyes for improved posture and optimum reading angle.

Reading windows and line markers may assist students with low vision.

Scanning devices and software can offer access to print material in the student's preferred format.

Talking books versions of many novels (eg DAISY and mp3 format) are available to borrowers through the local library or a specialist library such as the Vision Australia Library (email library@visionaustralia.org). Many titles are also available commercially through suppliers such as Bolinda (www.bolinda.com/aus/).

Talking or enlarging calculators, either stand-alone or as calculator emulator software, can enhance student access to basic and/or scientific/graphing calculators.

iPad accessibility features – iOS7 update

Although there is no need to rush into upgrading to iOS7 it is inevitable that sooner or later, iOS7 will be appearing on iPad screens. The main accessibility features are the same but there are also some changes to be aware of.

The iPad offers a number of inbuilt features to enhance accessibility for students who are vision impaired. All of these options can be found in the Accessibility menu on the iPad.

To get to Accessibility you need to do the following:

- Tap Settings on the iPad Home Screen
- Tap General (left side of the screen).
- Tap Accessibility (right hand side of the screen)

Once in Accessibility you will find the following headings:

- VoiceOver
- Zoom
- Invert Colors
- Speak Selection
- Speak Auto-text
- Larger Type
- Bold Text
- Increase Contrast
- Reduce Motion
- On/Off Labels
- Switch Control
- Accessibility Shortcut

VoiceOver

If you want to use VoiceOver you need to make sure Zoom is turned off.

- With Accessibility selected on the right hand side of the screen the first heading is VoiceOver, tap once and then once more to turn it on.

Operating the iPad with VoiceOver

VoiceOver will read the icons as you tap on the screen. The nice thing about this is that nothing else will happen until you double tap on the screen. This will cause the selected app to open.

- To hear the app – tap once with one finger (or flick once anywhere on the screen)
- To open the selected app – tap twice with one finger
- To scroll to the next page – flick with three fingers (this is quite a firm action and may take a bit of practice)
- To turn VoiceOver off go back into Accessibility and select VoiceOver, one tap, then two taps.
- If you are having trouble with the gestures there is a VoiceOver Practice link directly under the VoiceOver heading. It is worth getting to know this option to learn the VoiceOver gestures. There is also an app called VO Starter if you want to be a power user.

A note of caution: Beware of the *screen curtain* when VoiceOver is on!

- The screen curtain is like a screen saver. It is activated by tapping three times with three fingers when VoiceOver is on.
- If you accidentally do this, tap three times with three fingers to turn it off.

Zoom

The second heading down is Zoom, tap once to get into Zoom and then tap to turn it on. From now on the gestures for Zoom change:

- To Zoom – double tap with three fingers (do the same to turn it off)
- To move the screen – drag three fingers around the screen i.e. left, right, up and down
- To change the level of Zoom, make sure Zoom is on then double tap twice with three fingers. Leaving your fingers on the screen slide all three fingers up or down to change the level of enlargement

Invert Colors

- This next option creates a black screen with white print.
- A single tap will turn it on.

Speak Selection

- This option allows you to hear text read out loud.
- A single tap activates Speak Selection.
- Now when you use Notes or iBooks you can make a bubble by pressing on the screen until a bubble appears.
- Tap “Select All” then all the text will be highlighted.
- Another menu pops up.
- Tap “Speak” and the text will read for you.

Speak Auto Text

- This option can be used if you want a spoken warning that auto correction is offering you a word.
- A single tap activates Speak Auto Text

Larger Type

- Tap once to select Larger Type.
- Select your preferred print size.
- This will make print larger in Contacts, Mail and Notes etc.
- Can be used with Zoom or VoiceOver on.

Bold Text

- Tap once to turn on Bold Text. The print will be slightly thicker.

Increase Contrast

- For Increase Contrast, tap once to turn it on.

Reduce Motion

If you don't like the new iOS 7 3D wallpaper or find the movement distracting, you can change it. This also has the added advantage of saving the battery.

- Turn on Reduce Motion with a single tap.
- When you turn on Reduce Motion the Home screen transitions will fade instead of zoom.

Accessibility Shortcut (Triple Click Home)

This option allows you to alternate between VoiceOver, Zoom, Invert Colors, Switch Control etc.

- Go to the Settings → General → Accessibility.
- Go down to the Accessibility Shortcut and tick the options you want.
- A triple-press on the iPad's physical Home button will bring up the options you have selected.
- Another triple-press on the Home button turns the option off.

This is useful if students like to use more than one accessibility option. E.g. some students like to toggle between Zoom and Invert Colors.

On/Off Labels

- Allows you to customise labels on things such as video.

Switch Control

- This is new in iOS7 and allows you to set up a switch to be used with the iPad.
- You can also quickly turn the switch on and off by selecting it as an option in Accessibility Shortcut and pressing the Home Button 3 times.
- There is also an "Enable Motion Sensing Controls" setting so the iPad can be activated with head movements.

Charlene Cullen from Spectronics has a good article with videos if you would like to find out more: www.spectronicsinoz.com/blog/apps-and-mobile-learning/accessibility-and-access/switching-it-up-in-ios-7/

Other Changes in iOS7

Here are some of the new gestures for iOS7

- To close apps, double press with the home button then flick up to close apps
- Use swipe gestures to back a screen. E.g. Flick from left to right to go back (this is instead of using the back button)
- Unlimited apps in folders.
- Spotlight search is now available from any screen with a downwards swipe
- Access to AirDrop file sharing from the Control Panel

Also in settings

Outside of Accessibility there are a number of other menu headings worth exploring for vision impaired users including:

- **Brightness and Wallpaper**
You can alter the brightness of the screen and change the background the colour of the iPad.

- **Mail, Contacts, Calender**
Select a large font size
- **Bluetooth (under General)**
Try Bluetooth for syncing a small portable keyboard or braille device to the iPad.
- **Keyboard (under General)**
Customise keystrokes e.g. Auto-Capitalisation, auto-correction, enable caps lock, check spelling. There is also an option for adding your own shortcuts keys.

Vision fatigue – Students with low vision

Vision fatigue is a feature of some eye conditions including:

- aniridia
- coloboma
- congenital nystagmus
- deteriorating central vision
- ocular albinism

The student is likely to experience vision fatigue from 5-10 minutes after starting a vision-related activity. The differences in onset can vary with:

- the time of day
- intensity and type of vision activity
- previous exposure to the vocabulary and subject matter of the text, test or non-test context
- lighting and glare

Common symptoms of vision fatigue may include:

- avoidance of visual activity
- blurred vision
- double vision
- headaches
- inability to change focus from near to far objects and vice versa
- increase in nystagmus
- loss of concentration
- sore eyes
- watering eyes

Suggestions for teachers to assist in minimising student's vision fatigue:

- allow student to take a vision break (2 minutes max.) within the classroom
- intersperse reading/pencil and paper tasks with oral or aural discussion/lecture sessions where ever possible
- if glare is a problem, student can move to a darker area in the room or lower the blinds
- provide worksheets in a "sans serif" font such as ARIAL or TAHOMA in a size that is no smaller than the recommended sustainable print size
- allow extra time or reduce quantity of vision task

Suggestions for students to delay the onset of vision fatigue:

- look away from the task for 30 seconds or so, or close the eyes
- gentle massage to forehead, temples and eye brows
- relaxation techniques
- use a different reading method such as large print or audio
- alter position or posture by using a reading stand
- change the lighting conditions eg use a near soft light
- avoid glare

Factors influencing successful outcomes for students with vision impairments

In 1986, US researchers determined that the **most important factor** influencing successful outcomes for students with vision impairments in mainstream schools is an **accepting and flexible classroom teacher**. Their findings relating to successful outcomes are summarised, in order of importance, below:

1. **Accepting and flexible class teacher**
2. Peer acceptance
3. Social skills
4. Academic achievement
5. Positive self-image
6. Independence
7. Accepting attitude of family
8. Motivation
9. Available support personnel
10. Adequate special supplies and equipment
11. Ability to compete
12. Participation in school activities
13. Acceptance of vision impairment
14. Adequate special skills
15. Normalisation
16. Realisation of potential
17. Equal opportunity/expectations
18. Expected outcomes
19. Adequate basic skills
20. Open communication between school & home
21. Travel skills
22. Supportive family
23. Emotional stability
24. Positive attitude of the school principal
25. Knows when to ask for help
26. Realistic goals
27. Realistic expectations from family
28. Responsibility
29. Personality
30. Encouragement
31. Family interest in school activities
32. Adaptability or flexibility
33. Competency of VI teacher
34. Community acceptance/support
35. Family cooperation in problem solving or planning
36. Stimulating home environment
37. Ability to follow directions in a group
38. Intelligence (average or better)
39. Personal growth
40. Ability to care for personal needs
41. Continuing contact between regular teacher and VI teacher
42. Opportunity for VI student to participate in peer group
43. Access to related services
44. Earned grades
45. Attractive appearance
46. Preschool training/early intervention
47. Treated "like other kids" in family
48. Maximised use of vision
49. Problem solving skills
50. Self advocacy/assertiveness
51. Sense of humour
52. Available counselling services
53. Play and/or leisure skills
54. Organisational skills
55. Persistence
56. Discipline
57. Reinforcement of success
58. Career awareness
59. Able to be challenged
60. Available support groups
61. **Amount of vision**
62. Well arranged classroom
63. Support from citizen groups
64. Stability of vision
65. Independent work/study skills
66. Family interest in out-of-school activities
67. Adequate public transport
68. Available recreational resources
69. Community advocacy

Research findings by V. Bishop from the Journal of Visual Impairment Blindness, November 1986

Further information

For students enrolled in government schools, Visiting Teachers specialising in the area of vision impairment, are employed in each region. Visiting teachers provide direct teaching, high-level advice and a range of supports to classroom teachers, education support staff, students, families and the wider school community.

For students enrolled in non-government schools, please contact the principal.

The Statewide Vision Resource Centre's website is a great source of information which will support you to work with your student who is blind:

www.svrc.vic.edu.au

Selected pages from the SVRC website

- **Access technology:** www.svrc.vic.edu.au/AT.shtml
- **Art for students who are blind or have low vision:** www.svrc.vic.edu.au/CUart.shtml
- **iPad for students with vision impairments:** www.svrc.vic.edu.au/ATipad.shtml
- **Materials in alternative format** eg audio, braille:
www.svrc.vic.edu.au/ATaltformat.shtml
- **Ozzie Dots** - Teaching contracted braille to beginning braille readers:
www.svrc.vic.edu.au/CUozzie.shtml
- **PE, recreation and games:** www.svrc.vic.edu.au/CUpe.shtml
- **References available in print – Vision impaired students with additional impairments:** www.svrc.vic.edu.au/AVpubs.shtml#multi
- **Strategies to support students with vision and additional impairments in the classroom:** www.svrc.vic.edu.au/PLadditional2013.ppt (PowerPoint presentation)
- **Students with vision impairments and additional impairments:**
www.svrc.vic.edu.au/CUadditionalimpairments.shtml

Other websites

- **American Printing House for the Blind** – Educational produces and resources:
www.aph.org/
- **LilliWorks** – Information and resources for “active learning”: www.lilliworks.com/
- **Texas School for the Blind** – Information and ideas: www.tsbvi.edu/
- **Vision Australia Online Shop** – Adapted equipment available for purchase:
www.visionaustralia.org/shop

NOTES

***Please feel free to copy and distribute this material
which was presented at***

***“Educational Support for Vision Impaired Students
with Additional Impairments”***

Professional Development Day

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