Vision Resource Guide 2010

Vision Resource Guide:

A Resource for Classroom Teachers of

Students with Visual Impairments

Part One

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Part Two

The K-7 Booklets of the Math and Language Arts Prescribed Learner Outcomes, with related adaptations and recommendations, have been organized by grade level, with some duplication of content, in order for classroom teachers to be able to use specifically the sections that pertain to the grade level(s) that they teach.

K-7 Mathematics: Prescribed Learner Outcomes for K-7 Mathematics With Specific Adaptations and Resources for Students with Visual Impairments (K,1,2,3,4,5,6,7 Mathematics Booklets)

K-7 Language Arts: Prescribed Learner Outcomes for K-7 Language Arts With Recommendations for Strategies and Adaptations for Braille Readers and Low Vision Print Readers
(K,1,2,3,4,5,6,7 Language Arts Booklets)

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Introduction:

This guide was written to support classroom teachers of students, who use Braille or enlarged print as their primary reading and writing medium, to participate in general education, typical grade level curriculum. This resource guide was written for classroom teachers by teachers of students with visual impairments in British Columbia. The purpose of this guide is to provide strategies to maximize learning by providing appropriate adaptations and tools for the format the student uses and understands.

This guide provides a framework for implementation of adaptations to meet the general learning expectations across BC curricula from Kindergarten to Grade 7. BC Prescribed Learner Outcomes are paired with recommended adaptations for students who are visually impaired. Along with PLO's and specific adaptations, are descriptions for the role that team members will fulfill in students' educational development.

> **Prescribed Learner Outcome:** The prescribed learning outcomes set the standards for the provincial K-12 education system and form the prescribed curriculum for British Columbia. They are statements of what students are expected to know and do at the end of an indicated grade or course. http://www.bced.gov.bc.ca

While the Vision Resource Guide has applicability across curriculum areas, the focus for the suggested strategies and specific adaptations are on the learning outcomes in K-7 Language Arts and Mathematics.

Information from the BC Ministry of Education Prescribed Learning Outcomes for K-7 Language Arts and Mathematics Documents were used in preparation of this Vision Resource Guide.

http://www.bced.gov.bc.ca/irp/ela_k7_2006.pdf

http://www.bced.gov.bc.ca/irp/mathk7/apannc.htm

Inclusive Education In British Columbia

The principle of inclusion adopted in British Columbian schools supports the equitable access to learning by all students and opportunity for al students to pursue their educational goals. Adaptations can assist students with visual impairments to meet their individual educational goals and to develop their potential.

> All students should have equitable access to learning,
> opportunities for achievement, and the pursuit of excellence in
> all aspects of their educational programs.

In the Province of British Columbia, most students with visual impairments are placed in regular classrooms and follow the curriculum mandated by the Ministry of Education. In addition to their regular classroom teachers, students receive support from a Teacher of Students with Visual Impairments (TVI) and possible a Braille transcriber. The student's School Based Team, which includes classroom teachers and special teachers and support personnel, administration, and parents, is responsible for determining the necessary program adaptations and/or modifications and services for the student. These are outlined in the student's Individual Education Plan (IEP).

Classroom Considerations:

Due to the nature of visual impairments, it is important to understand that each eye condition and visual impairment is unique to the individual and that vision fluctuates dramatically depending upon many daily or sometimes hourly factors.

Environmental conditions such as lighting, lighting conditions, preferential seating, print size and quality are just a few examples that need to be taken into consideration. Stress, fatigue and general health also play a large part in how well someone may or may not see.

"One Size Fits All" does not hold true with students who are visually impaired. Two students with the same medical diagnosis can in fact actually visually function very differently. With a visual impairment, locating specific information takes longer, is more challenging and causes visual and physical fatigue. This results in the student often requiring additional time to complete tests and assignments. Due to restricted or no visual input, understanding of concepts can be limited, theoretical or completely missing. Continuous collaboration with the Teacher of Students with Visual Impairments (TVI) to develop an educational program and provide the necessary appropriate adaptations and skills is essential.

Sample of Section Format: Prescribed Learner Outcomes for K-7 Mathematics With Specific Adaptations for Students with Visual Impairments

The PLO/Adaptations section of this guide, Math section, are organized as follows:

Grade
Subject

Philosophy statements pertaining to adaptations for students with visual impairments.

A list of recommendations for strategies and adaptations that apply to all Mathematics topics and are applicable to all students with visual impairments. The lists are divided into two categories: 1) Braille readers and 2) low vision print readers.

Prescribed Learning Outcomes	**Specific Adaptations**
Curriculum Topic General Outcome: Statement	
Outcome	**Related Resources** The resources are primarily for braille reading students. Use with low vision students when appropriate.

Math Appendix A: MMM Braille Resources Chart

Math Appendix B: Additional Resources Chart

Sample of Section Format: Prescribed Learner Outcomes for K-7 Language Arts With Specific Adaptations for Students with Visual Impairments

The PLO/Adaptations section of this guide, Language Arts section, are organized as follows:

Grade
Subject

Philosophy statements pertaining to adaptations for students with visual impairments.

A list of recommendations for strategies and adaptations that apply to all Language Arts topics and are applicable to all students with visual impairments.

Prescribed Learning Outcomes	**Specific Adaptations**
Curriculum Topic General Outcome: Statement	
Outcome	**Recommendations for team members pertaining to outcome** May be divided into two sections for 1) braille readers or 2) low vision print readers

Glossary of Terminology:

Braille Notetaker
Braille Notetakers are braille writing devices used as portable personal organizers and notebooks.

Dual User
Reads and uses both braille and print materials.

Magnification Aids
Devices such as: hand-held magnifiers, bar magnifiers, magnifier domes, monoculars and sheet magnifiers.

NCR Paper (No Carbon Required)
Carbonless copy paper works in a fairly simple way. It consists of sheets of paper that are coated on the bottom and/or the top with micro-encapsulated dye or ink and/or reactive clay.

The back of the first sheet is coated with micro-encapsulated dye. The top of the middle sheet is coated with clay that quickly reacts with the dye to form a permanent mark. The back of the middle sheet is also coated with the dye. The lowermost sheet is coated on the top surface with the clay with no coating applied to the back-side.

When someone writes on the sheets, the pressure from the point of the writing instrument causes the micro-capsules to break and spill their dye. Since the capsules are so small, the print obtained is very accurate.

Perkins Brailler
The Perkins Brailler is a simple machine used to write braille. The Perkins Brailler is a "braille writer" with a key corresponding to each of the six dots of the braille code. By simultaneously pressing different combinations of the six keys, users can create any of the characters in the Braille code. In addition to these six keys, the Perkins Brailler has a space key, a backspace key, and a line space key. Like a manual typewriter, it has two side knobs to advance paper through the machine and a carriage return lever above the keys.

Raised-Line Paper
Right-Line Paper has a raised line superimposed on the printed line. This raised line stimulates proprioceptive feedback-the writer can feel the line. The printed line is green in order to distinguish it from pencil or pen marks. Raised-line paper is designed for children with learning disabilities, individuals with orthopedic disabilities, partial sight, and adult rehabilitation patients.

Screen Reader
A screen reader is a software application that attempts to identify and interpret what is being displayed on the screen with audio output.

Screen Magnification
A screen magnification is a software application that enlarges (often with audio output) what is being displayed on the computer screen.

Teacher of Students with Visual Impairments (TVI)
Responsibilities for a Teacher of Students with Visual Impairment include the following:
- teach braille, compensatory skills, use of optical aids, etc.
- provide adaptations and academic support for the curriculum K-12
- create an IEP that reflects the student's academic and expanded core curriculum needs
- work with parents, teachers, support workers and administration to ensure best programming possible for the student
- use the school and community resources to develop living skills, facilitate integration, and enhance recreation and leisure involvement
- complete assessments regarding functional vision and learning media
- be prepared to travel from school to school to work with the students
- provide in-services and information to school personnel about specific eye conditions and their impact on learning
- interpret medical reports

Video Magnification
Room viewers, CCTV, Flipper.

Visual Impairment
Someone who is classified as visually impaired is considered to have a significant vision loss. The current British Columbia mandate for students to receive services from a teacher of students with visual impairments (TVI) is:

- A visual acuity of 6/21 (20/70) or less in the better eye after correction
- A visual field of 20 degrees or less
- Any progressive eye disease with a prognosis of becoming one of the above in the next few years
- An uncorrectable visual problem or reduced visual stamina such that the student functions as if his/her visual acuity is limited to 6/21

Two students with the same medical diagnosis can function very differently in their learning environment.

References & Resources:

Braille Bookstore
http://www.braillebookstore.com
Over a thousand books in Braille available for all ages and interests

Making Math Meaningful Resource Kit
http://setbc.org/setbc/vision/making_math_meaningful.html
The MMM Braille Resource Kit Project was developed, in 2008, in response to frequent and ardent requests for resources to nurture the development of early mathematics concepts in young children who are blind or visually impaired. The MMM Braille Resource Kit includes research articles, resource and materials information, activity examples, and strategy suggestions that support the development of number sense in young children.

Ministry of Education: Mathematics K to 7 IRP: Prescribed Learning Outcomes
http://www.bced.gov.bc.ca/irp/mathk7/apannc.htm
http://www.bced.gov.bc.ca/irp/mathk72007.pdf
http://www.bced.gov.bc.ca/irp/ela_k7_2006.pdf
The prescribed learning outcomes set the learning standards for the provincial K-12 education system and form the prescribed curriculum for British Columbia. They are statements of what students are expected to know and do at the end of an indicated grade or course.

Provincial Resource Centre for the Visually Impaired (PRCVI)
http://www.prcvi.org
The Provincial Resource Centre for the Visually Impaired is a Ministry of Education Provincial Resource Program. The mission of the PRCVI is to provide leadership, information, training and consultation to support school districts' goals of equitable access and enhanced learning opportunities for students with visual impairments. The primary function of PRCVI is to provide British Columbia school districts and Group 1 & 2 Independent schools with alternate formats of provincially recommended learning resources and specialized equipment to support the educational needs of students with visual impairments.

Special Education Technology – BC (SET-BC)
http://www.setbc.org
SET-BC is a Ministry of Education Provincial Resource Program that provides assistive technology services to BC school districts. SET-BC loans technology and provides technical support, training and resources to meet the educational needs of students with physical disabilities, visual impairments, moderate to profound cognitive challenges, and autism spectrum disorders. Listen to SET-BC overview

[Supporting General Education Classroom Teachers of Braille-Reading Students (2009)](#)

UBC's Cay Holbrook has developed a learning module designed to help classroom teachers working with braille reading students. You will find both general and specific information to help you work with a student who reads braille in your classroom.

Tumble Books

http://www.tumblebooks.com
TumbleBookLibrary is an online collection of TumbleBooks, animated, talking picture books.

Additional Links

ESL Resource
http://www.esl-kids.com

Kidspiration
http://www.inspiration.com

University of Victoria "Let's Face It"
http://web.uvic.ca/~jtanaka/letsfaceit/

Software

Clicker 5 or Close Pro
http://www.cricksoft.com

Do-2-Learn's software 'Faceland'
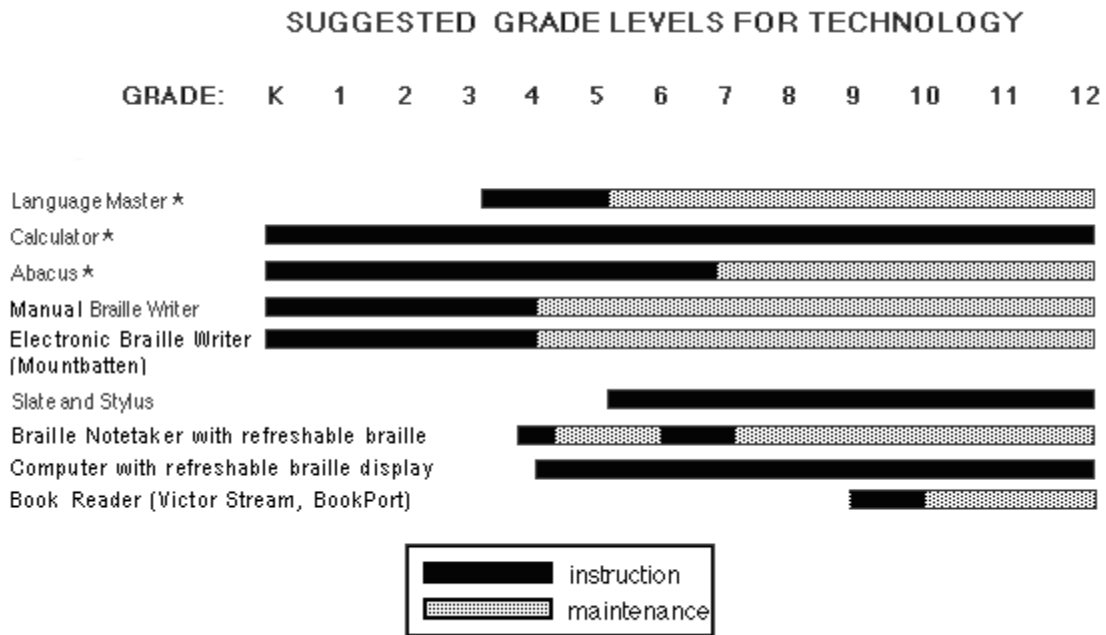 http://www.do2learn.com/

Kurzweil
http://www.kurzweiledu.com/

Assistive Technology for Students Who Use Braille

The chart below contains a graphic representation of suggested grade levels for instruction and maintenance of a variety of pieces of technology.

It should be noted that this chart is for general planning purposes only and is based on the "average" student developing technological skills to complement their mastery of regular curriculum goals.

SUGGESTED GRADE LEVELS FOR TECHNOLOGY

GRADE:	K	1	2	3	4	5	6	7	8	9	10	11	12

Language Master *
Calculator *
Abacus *
Manual Braille Writer
Electronic Braille Writer (Mountbatten)
Slate and Stylus
Braille Notetaker with refreshable braille
Computer with refreshable braille display
Book Reader (Victor Stream, BookPort)

Legend: ■ instruction   ▦ maintenance

* These may be stand-alone devices or included as part of the function of braille notetakers or computer technology.

The selection of technologies will depend upon many factors including the specific needs, motivation, and preferences of the individual student as well as the availability of the technology. The instructional time required to become competent with specific technologies will vary considerably from student to student.