**Working with Students with Vision Loss**

**Introduction**

For students who have some vision loss or who are blind, the classroom can present some major challenges. The classroom is a very visual environment—with textbooks, syllabi and handouts, whiteboards/overheads, PowerPoint slides, films, and information on the computer/Moodle. In order for students to have access to this information, Disability Resources encourages instructors to work closely with both the student and D.R. staff to prepare needed materials. This may include the preparation of alternate format materials (e.g. computer/digital audio versions of texts and handouts, Braille, or tactile diagrams) as well as coordinating assistive technology, notetakers and visual describers.

For students who are in science classes and labs, there may be additional considerations and strategies to keep in mind in order to provide an accessible learning environment.

Each student will be presented with unique challenges based on his/her specific vision loss. Some students may be blind while others may experience a range of vision issues. The following strategies can help guide instructors when working with students with vision loss in their classes. In addition to these strategies, the students themselves can share with you the kinds of strategies that work best for them.

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(Note: This information is adapted from the University of West Virginia: <http://www.as.wvu.edu/~scidis/vision.html> )

**General Classroom Tips/Communication**

The following tips will help a student with low vision, or a student who is blind, be aware of what's happening in the classroom:

* If a student with a vision loss is in class, routinely check the instructional environment to be sure it is accessible for the student.
* The student may want to sit away from glaring lights and towards the front for better visibility.
* When entering or leaving a room, identify yourself and be sure to mention when you are leaving. Address the student by name to gain his/her attention.
* It is not necessary to speak loudly to someone with a vision loss.
* When communicating with a student with a vision loss, always identify yourself and others who are present. Don't assume that a student who is blind will recognize you by your voice even though you have met before.
* If you are asked to guide a student who is blind, identify yourself, offer your services and, if accepted, offer your arm to the student's hand. Indicate when there's a need to step up or step down, whether the door is to their left or right, and warn of other possible hazards.
* Use descriptive words such as straight, forward, left, etc. in relation to the student's body orientation. Be specific in directions and avoid the use of vague terms with unusable information, such as "over there", "here", "this", etc.
* Describe, in detail, pertinent visual aspects of the learning activities.
* Describe and tactilely familiarize the student to the classroom, laboratory, equipment, supplies, materials, field sites, etc.
* Give verbal notice of room or schedule changes, special meetings, or assignments.
* Offer to read written information when appropriate.
* Let the student know if you need to move or leave or need to end a conversation.
* Do not pet or touch a guide dog. Guide dogs are working animals. For an individual who is blind, it can be hazardous if the dog is distracted.
* Be understanding of the slight noise made by a Braille notetaker.
* Also use an auditory or tactile signal where a visual signal is normally used.
* Be sensitive about questioning individuals about their blindness. This is personal information and boundaries should be respected.

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**Information Access for Students with Vision Loss**

Accessible descriptions will be necessary for pictures, graphics, displays, field sites and in situations where touch will not identify the items. Oral descriptions will also be needed for orientation and mobility in unfamiliar situations.

* Verbally describe any visual materials. If you are demonstrating how to use equipment, be sure to describe the equipment and what you are doing to operate it.
* Read overheads aloud and describe the content of slides (see note below about large print).
* If you are showing a videotape, describe the action. If videotapes are distributed as part of the course, any action or explanatory text that is crucial to understanding the context of the presentation should be narrated.
* If there are multiple speakers (such as a panel), have each speaker introduce him/herself. During Q & A, each speaker needs to re-identify him/herself prior to responding.
* Plan ahead to make handouts available in large print, digital, and/or Braille formats. We encourage you to work closely with Disability Resources staff. If this is not possible prior to instruction, note the various individuals' preferred formats and then make your materials available to them within a short time after class.
* Large Print: Students who have low vision may be able to see print if it is large enough. Prepare print information on white paper with sharp, black ink. The easiest font to read is generally Arial 12 pt. When students need larger font sizes (i.e. 14-18 point and up), the easiest way to provide this is to enlarge the font on the computer prior to printing the handout. In the case of documents that already exist in print form, you can use a copy machine to enlarge each page onto 11 x 17 paper, or you may ask Disability Resources to make the enlargements.

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**Guidelines for Health and Science Classes**

For students who have vision loss or who are blind, science classrooms and labs can present some major challenges because they are such visual environments. The following strategies will help to provide access to students in these environments:

* All colored objects used for identification related to a lesson or experiment should be labeled with a Braille label or other tactile code.
* Describe in detail all pertinent aspects of visual occurrences and visual media.
* Use an overhead projector, whiteboard, graphs, or slides as you would normally, but provide more detailed oral descriptions.
* Use a sighted visual describer or descriptive video when showing videos/DVDs.
* Where needed, have class handouts, directions and tests Brailled ahead of time. You’ll need to work closely with Disability Resources’ Alternate Format staff to prepare these.
* Modify instructions to allow for auditory/tactile presentation.
* Drawings or graphics can be converted into an embossed in tactile impression to supplement your instruction when needed. Again, work closely with D.R. staff.
* Whenever possible, use actual objects/3-D representations which provide tactile information.
* Work with the student to find an appropriate place to set up a desktop video magnifier or similar device for long range observations of the board or demonstrations.

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**Guidelines for Science Labs**

For students who have vision loss or who are blind, science labs can present some major challenges because they are such visual environments. The following strategies will help to provide access to students in these environments:

* Describe and tactilely/spatially familiarize the student with the lab and all equipment to be used.
* Label material, supplies, and equipment with regular print, large print, and/or Braille, as appropriate for the student.
* Assistance may be needed for converting certain laboratory materials from a visual to a tactile format. (You can work closely with Disability Resources on this.)
* Have the student with a vision loss do a trial run on the equipment before the activity.
* Allow more time for the laboratory activities.
* Always try to keep materials, supplies, and equipment in the same places.
* Leave doors all the way open or all the way closed; half opened doors or cupboards are dangerous. Don't rearrange furniture or personal belongings without letting the student know.
* Use a computer/video microscope eyepiece to magnify microscope images for students who have low vision.
* Use an overhead projector to show step-by-step instructions. Masking all the instructions except the one(s) that you want followed will help students with vision loss.
* Provide a means for the acquisition and/or recording of data in an appropriate mode for the student. This might be an audio recorder near an activity to record results and observations.
* Make equipment available that the student can access to interpret and understand the results of laboratory exercises (i.e. audible readout voltmeters, talking calculators and thermometers, magnifiers, etc.)
* Use a hot plate for heating instead of a Bunsen burner.
* Pair the student with a vision loss with a sighted student. Then have the sighted student describe the activities and outcomes as they are observed.
* Have a lab assistant available to assist students with vision loss. (Disability Resources may also assign an in-class aide.)
* For some projects that are highly visual, you may want to consider alternate activities/exercises (i.e. less visual) that can be completed with less difficulty for the student, but have the same or similar learning objectives.

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**Lab Testing**

* Present examinations in a form that will be unbiased to students with vision loss. Ask the student for the approach he/she finds to be most accessible.
* Allow the student to start a lab identification test early in order to have more time at various stations.
* Print tests with larger font size (i.e. 14-20 pt.) as needed.
* Make use of visual magnification, audio recorders, and offer oral testing as options for testing.

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**Field Experiences**

* Make all handouts, safety information, and assignments available in an appropriate form (e.g., regular print, large print, tactile form, Braille, or audio format).
* Use a sighted guide to assist the student and provide visual descriptions.
* Provide detailed description and narration of objects seen in science centers, museums, and/or field activities.
* Make arrangements for tactile examinations, such as plant/animal species collections. If touch is not normally permitted (say, in a museum) then contact the curator for tactile access to museum display items.
* Consider alternate activities/exercises that can be completed with less difficulty for the student, but have the same or similar learning objectives.

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