
Envision
Training Program
Vision Enhancement
Program Using Near and
Distance Magnification
Optical Devices
Guidebook

Envision Training Program

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Table of Contents

Introduction.....10

SECTION 1: MAGNIFIERS 37

Lesson 1.1
Introductory Exercise Using a Fixed-Distance, Dome Magnifier 37

Lesson 1.2
Basic Use Exercise
Using a Fixed-Distance, Dome Magnifier 39

Lesson 1.3
Enrichment Exercise
Using a Fixed-Distance, Dome Magnifier 42

Lesson 1.4
Enrichment Exercise
Using a Fixed-Distance, Dome Magnifier 44

Lesson 1.5
Enrichment Exercise
Using a Fixed-Distance, Dome Magnifier 45

Lesson 1.6
Enrichment Review
Using a Fixed-Distance, Dome Magnifier 47

Lesson 2.1
Introductory Exercise
Using a Fixed-Distance, Stand Magnifier 50

Lesson 2.2
Basic Use Exercise
Using a Fixed-Distance, Stand Magnifier 52

Lesson 2.3
Enrichment Exercise
Using a Fixed-Distance, Stand Magnifier 55

Lesson 2.4
Enrichment Exercise
Using a Fixed-Distance, Stand Magnifier 57

Lesson 2.5
Enrichment Exercise
Using a Fixed-Distance, Stand Magnifier 59

Lesson 2.6
Basic Use Review
Using a Fixed-Distance, Stand Magnifier 60

Lesson 2.7
Enrichment Exercise
Using a Fixed-Distance, Stand Magnifier 62

Lesson 2.8
Enrichment Exercise
Using a Fixed-Distance, Stand Magnifier 63

Lesson 2.9
Enrichment Review
Using a Fixed-Distance, Stand Magnifier 64

Lesson 3.1
Introductory Exercise
Using a Variable-Distance, Hand-Held Magnifier 66

Lesson 3.2
Basic Use Exercise
Using a Variable-Distance, Hand-Held Magnifier 68

Lesson 3.3
Enrichment Exercise
Using a Variable-Distance, Hand-Held Magnifier 73

Lesson 3.4
Basic Use Review
Using a Variable-Distance, Hand-Held Magnifier 76

Lesson 3.5
Enrichment Exercise
Using a Variable-Distance, Hand-Held Magnifier 77

Lesson 3.6
Enrichment Exercise
Using a Variable-Distance, Hand-Held Magnifier 79

Lesson 3.7
Enrichment Exercise
Using a Variable-Distance, Hand-Held Magnifier 80

Lesson 3.8
Enrichment Exercise
Using a Variable-Distance, Hand-Held Magnifier 81

Lesson 3.9
Enrichment Exercise
Using a Variable-Distance, Hand-Held Magnifier 82

Lesson 3.10
Enrichment Exercise
Using a Variable-Distance, Hand-Held Magnifier 83

Lesson 3.11
Enrichment Exercise
Using a Variable-Distance, Hand-Held Magnifier 85

Lesson 3.12
Enrichment Review
Using a Variable-Distance, Hand-Held Magnifier 86

SECTION 2: TELESCOPES 91

Lesson 1.1
Caring for the Monocular 106

Lesson 1.2
Learning to Focus 108

Lesson 1.3
Practicing Medium Distance Tasks 110

Lesson 1.4
Viewing Targets from a Distance 112

Lesson 1.5
Tracing with the Monocular 114

Lesson 1.6
Tracing Lines and Cards 116

Lesson 1.7
Learning to Scan 117

Lesson 1.8
Learning to Scan 119

Lesson 1.9
Preparation for Reading Continuous Text 120

Lesson 1.10
Varying Distance in Horizontal Scanning 123

Lesson 1.11
Finding Details 125

Lesson 1.12
Finding People **126**

Lesson 1.13
Tracking Moving Objects **128**

Lesson 1.14
Working in the Classroom **131**

Lesson 1.15
Self-Advocacy **132**

Lesson 2.1
Finding Stationary Targets at Varied Distances **134**

Lesson 2.2
Reading Signs and Signals **136**

Lesson 2.3
Viewing Moving Targets: Tracking **138**

Lesson 2.4
Using a Monocular to Shop **140**

Lesson 2.5
Using a Monocular for Leisure Activities **142**

Lesson 2.6 (Teacher Only)
Reporting back to the Clinician **145**

Resources **154**

References **154**

Introduction

Produced by the American Printing House for the Blind, the ENVISION Training Program has been updated to include a versatile array of optical aids and materials that will teach the use of near and distance magnification devices. The contents of the guidebook have been revised to support instruction of individuals, of all ages, with low vision. For the purposes of this guidebook the participants of the ENVISION program will be referred to as "students" throughout this manual. Instructors can use the included magnifiers and telescopes [1-08563-00] or only use the reading materials of this kit with previously prescribed optical aids [1-08562-00]. Materials are combined into one kit and include low powered magnification devices for ease of use for beginner learners. Materials have been consolidated for a better user experience and come with a protective case for portability of optical devices.

The kit consists of a Guidebook with two sections (Section 1: Magnifiers and Section 2: Telescopes) for instructors to use when training children or adults with visual impairments in the classroom, home, or workplace on the techniques to use fixed-focus dome, fixed-distance stand, and variable-distance hand-held style magnifiers, as well as slide and turn focus style telescopes. The kit also includes a binder of activity cards, provided for the instructor, consisting of sample reading materials for near and distance tasks. A student information sheet and progress monitoring sheet is included to use as a checklist of completed tasks to provide means of data collection for the instructor. Refer to the forms included in this guidebook: "Informal Student Information Sheet", "Using Prescriptively Recommended Optical Devices Skill Performance Checklist

for Near Magnification Devices" and "Using Prescriptively Recommended Optical Devices Skill Performance Checklist for Monocular Telescopes".

This kit is for Teachers of the Visually Impaired (TVI), Orientation and Mobility Specialists (COMS), Vision Rehabilitation Therapists (CVRT), Low Vision specialists (CLVT), Low Vision Optometrists/ Ophthalmologists, Vision Rehabilitation Counselors (CRC), and any other professionals working with low vision individuals.

ENVISION is a training program used to teach children and adults new to vision loss how to use a magnifier and telescope.

The kit has been revised with updated optical devices which were selected based on feedback from low vision adult consumers, teachers of the visually impaired, transition age students 14–21, low vision specialists, and low vision optometrists through observation, questionnaires, focus groups, and surveys. The most effective devices that meet the needs of the low vision population were selected, and practical lessons were added to use as examples for instruction. Use of a student's own materials will enhance training and should also be used during instruction. The included activities are relevant instructional materials on the student's grade level or can be used in a vision rehabilitation training environment. Instructors should use the student's own classroom activities or workplace materials to expand training techniques.

The success of any vision care program is directly related to the quality of the professionals providing the services, and the **low vision service** is no different. Having a model or an accepted standard of care will make it easier to develop this positive working relationship. Everyone involved will have a better idea of what is expected during the ENVISION Program.

Low vision must be seen as a continuum of assessments from

home to school to work to clinic. A functional assessment in the classroom, a mobility assessment in the home, school, or in a new environment, a report from family members about visual functioning at home, or a clinical examination in the doctor's office are all important features of a low vision service. However, each represents only a piece of the program. Such information will be much more effective in helping the participant if coordinated into one plan of vision care.

The goal of the team is not to provide the student with devices that might aid in the performance of tasks such as reading small print, viewing movies, seeing writing on the board, or getting around the school. Rather, the "team" concentrates on how effectively the student uses their vision. Individual providers often use the accomplishment of a specific task as the hallmark of a successful educational intervention for a visually impaired student, and a milestone in the student's road to optimum visual performance. The team must measure and measure again the student's capabilities and then provide the resources (devices, prescriptions, training, materials, etc.) that will allow that student to achieve clinically-measured potentials in vision.

The service often begins in the optometrist's office when the ocular condition is first recognized. A referral to an ophthalmologist, retina specialist, or low vision physician should result in appropriate medical care, which will help assure that future loss of vision is prevented. If the participant's vision meets the criteria, the ophthalmologist should refer the child or adult to special services for the visually impaired in the local school system or provide resources for nearby vision rehabilitation services. In addition, the family should be advised to contact a low vision specialist in the community or request this clinical assessment through the local school system. Parents, family

members, and teachers should be educated on the members of the low vision team and their role. The ophthalmologist will continue to monitor the ocular health; the low vision optometrist will assess for appropriate glasses and magnification; the teacher of the visually impaired and rehabilitation specialists will monitor function and provide training on low vision devices. The low vision team will monitor changes and needs in the individual's vision. In this manner, the ophthalmologist becomes a very important part of the **low vision service** and an ongoing, active member of the team.

The Teacher of the Visually Impaired (TVI), Orientation and Mobility (O&M) Specialist, and other service providers will help the student in developing appropriate and efficient educational and employment programming. Participating in the **low vision service team** means the TVI and/or other service provider will often be the person who initiates and advocates for the clinical low vision assessment.

The low vision clinician is the next member of the team to interact on behalf of the individual. The clinical evaluation is designed to provide insight into visual capabilities. The clinical data will describe what components of the participant's present environment (as described in the TVI's or other vision provider's low vision functional assessment) will enhance the visual potential, and identify which components will most adversely affect visual performance. Based on the clinical data, the low vision clinician makes *prescriptive recommendations* for optical interventions that may allow the individual to perform, or to enhance efficiency in various tasks and activities.

The term "prescriptive recommendation" is an outgrowth of the team approach. If the device or glasses are "prescribed," there exists the assumption that a final decision has been made. This

makes it difficult to evaluate the use of the device for the specified educational goals. "How do we tell the clinician this device doesn't work?" can be a stressful issue among team members.

Fortunately, "prescriptive recommendation" implies that the device be evaluated under real life conditions, stresses, and distractions. Since it is only a recommendation, the potential for a relaxed discussion about its success or failure in the environment is enhanced. The team effort will be much more effective if the device is recommended and "becomes" a prescription based on the clinical data and the functional information provided by the vision professionals. This evaluation of the prescriptive recommendation will include classroom training, home evaluations, workplace instruction, and task experiences.

It is best practice for the low vision clinician to prepare a clinical low vision report that outlines the clinical data obtained. The report will also suggest how much training with the device will be needed before attempting to use it for specific tasks in the classroom, home, or work environment.

The training can be:

- Generic in nature with the goal of developing visual skills with magnification.
- Specific task-oriented training with the prescriptive recommendation.

This additional training and experience in the learning environment is an opportunity for the prescriptive recommendation to be modified or even changed at some future clinical assessment.

With the ENVISION guidebook, the TVI (orientation and mobility instructor, vision rehabilitation therapist, low vision occupational

therapist, rehabilitation counselor, or other service provider) will now have a more structured program to help initiate classroom-oriented optical aid training. The low vision clinician will recommend specific training protocols for the service provider to pursue at school or other training environments.

The ENVISION training program allows for better communication (teamwork) between teacher and clinician. The training can be focused on teaching the student to better utilize their present vision by using some of the basic optical devices provided in the training program's optical array. Further, the ENVISION Program can be used to introduce the participant to the care and handling of optical devices while waiting for their prescription.

Participants will sometimes need to be given experience with one of the basic optical devices provided in the ENVISION Training Program so that a prescriptive device may be recommended at a later date. All of these post-examination instructional goals can be reached in a collaborative manner using the ENVISION Training Program for Using Near and Distance Magnification Optical Devices.

- All levels of acuity can be involved in the training programs by the manipulation of the training devices and the print or object sizes.
- The ENVISION Program is designed to provide training materials that will provide experience with an actual optical system but not provide the student with a permanent optical device.
- As the need for greater magnification is realized for a particular individual, the size of the materials is modified or a stronger optical system is prescribed.

- This material modification approach discourages the dispensing of optical systems out of the ENVISION kit and encourages the **low vision service team approach** to ensure vision care for the visually impaired participant.
- The ENVISION Program also provides training materials and ideas for devices prescribed by the low vision clinician after the initial training/assessment activities. These training activities, designed for use mainly after the dispensing of a specific device in the clinic, are usually directed at developing better **visual efficiency** with the optical system.
- This post-dispensing training gives the service provider and low vision clinician an opportunity to discover and solve additional problems that may require modifications to the prescribed device. Further, such training may identify tasks that cannot be addressed with the new prescription, and which will require further evaluation of both task and prescription in the training environment and clinic. As noted above, it is important for the Low Vision Service Team to communicate easily with one another. This communication is made easier when all professionals remain focused on the student being served, not on their individual contributions and decisions. It should be obvious that in the most successful low vision service, the captain of the team is the person being served.

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Preparation for Using ENVISION

Access to information about the physical environment is just as important to a person with visual impairments as it is to a sighted person. Today, many strategies exist for providing access to the environment for persons with visual impairments. Most professionals agree that the student is best served when a multi-disciplinary approach is used with the expertise from the ophthalmologists, optometrists, education professionals, family members, and parents. This cooperation provides the child or adult trainee with a better chance of receiving the appropriate optical devices and the right training in the use of each.

Low vision devices such as variable-distance and fixed-distance magnifiers are the best recognized tools used by persons with low vision who wish to function expertly and confidently in an environment where near distance vision is important.

Because magnifiers are available in a range of styles and powers, expert evaluation is needed to determine the correct magnifier for each student. The low vision clinician fills this need by administering a low vision exam to each student for whom it is appropriate. Under the best of circumstances, the low vision exam occurs after the teacher of the visually impaired has provided the clinician with useful information in the form of a functional vision assessment. The clinician makes good use of information such as "How far from their face does the student hold the reading materials?"

Based on the functional vision evaluation and the clinical exam, the clinician then makes a decision and prescribes, according to need, one or more magnifiers for the student, or determines that no devices are needed. Whatever the outcome, it cannot be overemphasized that an examination by the low vision clinician

is necessary BEFORE implementation of ENVISION curricula and associated materials. Once the teacher has the low vision clinician's recommendation, they will find it easy to match the student with the correct magnifier from the array. The array is provided for use during training if the student did not receive a magnifier immediately after their examination. The teacher must use a magnifier of the same power as the one recommended by the clinician unless the clinician specifies otherwise. In addition, the teacher should loan the magnifier to the student only for the duration of the training session. After the lesson, the device should be returned to the case for use during other training sessions and by other students. Because acquiring a magnifier is only the beginning of access to the environment by the student with visual impairments, the ENVISION curriculum is designed to help the vision teacher or other practitioner fill the training need. It is intended to be used immediately after the student receives a prescriptive recommendation for a near magnification device, or immediately upon the student's receipt of the device. This valuable time can be used to help the student become proficient in developing skills necessary for the use of a magnifier while still enthusiastic about receiving the devices.

It is very important the student be trained in the efficient use of the prescribed devices in order to achieve the best outcome and to assure continued use of the device.

Unfortunately, some participants will not receive a low vision evaluation from a clinic or qualified low vision specialist by the time that they are referred for training. In those instances, the service provider can best serve the student by insisting on a low vision exam. If the school district refuses or if funding is a barrier, an evaluation can often be arranged using resources outside the school. The Lions Club has provided low vision exams

and needed spectacles, telescopes, and magnifiers for many children and adults across America. In some cities and towns, the Rotary Club, the Moose Lodge, or the Optimists Club can help. In almost every community, the resources exist to provide a low vision exam for a student in need.

Before introducing a magnifier, it is important the teacher understand the student's needs and the way their vision functions.

The ENVISION Program Using Near Magnification Devices includes a "Skills Performance Checklist" which may be photocopied and completed with help from the student's parents, a family member, or the student themselves. If used wisely, it will help the teacher ask the student, parents, and family the best questions for obtaining a basic understanding of how the student uses their vision.

The best sources of more detailed information are the teacher's functional vision assessment and the eye report issued by the student's low vision clinician. It is wise to request a copy of the eye report from the student's parent or have the parent/family member sign a release allowing the teacher to receive a copy directly from the low vision professional.

Though no single model for teaching the use of magnifiers can work equally well with every participant, ENVISION is a training program that includes instructor-directed tasks and reinforcement procedures that are built upon well-developed visual attending behaviors. Therefore, the lessons include suggested high-interest activities and real-world examples that help develop the necessary skills to be successful. The curricula also suggest methods for reinforcement of skills as they develop. Various levels of acuity can be involved in the training programs by the manipulation of the training devices and the print sizes. However, if the largest of the printed exercises is not adequate, the teacher should consult with the clinician about increasing the magnifying power of the prescribed device.

It is essential that the lessons used in training the student be relevant to the student's life and experience. When such activities are applied, skills are more likely to be exercised even after training is concluded (Corn, 1980). Every effort has been made to provide basic skills training and to develop enrichment exercises that are not only relevant but also fun and interesting for the participant. These exercises have taken into account psychosocial factors related to the use of optical aids by young people, transition age youth, and adults with low vision.

The ENVISION kit includes one fixed-distance, dome magnifier; four illuminated variable-distance, hand-held magnifiers; two stands for fixed-distance, option; one slide focus telescope and two turn focus telescopes. The variety of styles and strength of magnification provides a versatile array of magnification options for both distance and near reading tasks.

The strength of magnifiers and telescopes included in the kit:

- 3x (8 DIOPTER) illuminated hand-held magnifier with stand and 3 snap-on filters
- 3.5x (10 DIOPTER) illuminated hand-held magnifier
- 4x (12 DIOPTER) illuminated hand-held magnifier
- 4x Dome magnifier
- 5x (20 DIOPTER) illuminated hand-held magnifier with stand
- 4x12 telescope
- 6x8 telescope
- 8x25 telescope



The hand-held magnifiers included in the kit feature bright LED illumination. LED (light emitting diode) illumination provides an alternative light source preferred by many individuals with low vision due to its distinctly whiter spectrum, to better see color and detail, and longer useful life. In addition to the bulbs offering nearly unlimited life (50,000 hours), the batteries last 5 times as long as when used with incandescent bulbs. The hand-held magnifiers can be powered on and off using the slider switch located on the handle. Each magnifier is battery powered. Two stands are included to turn the use of the hand-held magnifiers into stand magnifiers with appropriate fixed-distance magnification. The 3x (8D) magnifier comes with 3 different illumination options to soften the color of the light. Three small snap-on filters are included to place over the LED light source. Choose between yellow, amber, and gray for variable lighting options. The student can choose to use the

LED light for extra illumination or keep the light off in well illuminated environments. This magnifier also has a battery compartment that uses high quality springs that make changing the batteries easier (2 AA batteries are included). It also includes a slip-on protective case.

Fixed-distance, dome magnifiers are referred to as such because the devices lie flat on the page and are curved along the top like a dome. Dome magnifiers are a favorite reading tool for many students because they are easy to use. Since the devices rest directly on the page, students need not worry about maintaining the correct focal distance, as is the case with variable-distance, hand-held magnifiers. Moreover, because the devices are constructed almost entirely of glass, they concentrate available light, effectively illuminating the reading material. The ENVISION kit has conveniently included a 4x dome magnifier.



Similar to dome magnifiers are fixed-distance, stand magnifiers, which also are set directly upon the reading material.

The kit includes a slide style telescope and turn focus telescope. The slide-focus telescope can be used one handed allowing the other hand to be free to use a white cane, dog guide, or other mobility device. The simple slide-focus mechanism can be used with one hand to easily adjust focus. Its unique, rectangular Keplerian design provides a panoramic field of view. The telescope's outside is rubber coated for protection and durability. The turn-focus style telescope is focused by turning the focus adjustment ring to make distinct objects clear. Telescopes should not be used while walking. One should first locate the direction in which to look for an object, stop in a safe spot for viewing, then focus the telescope to see the distant object clearly.



Another type of optical device that are commonly used are spectacle-mounted telescopes. These bioptic devices allow one's hands to be free for tasks. As these devices can be used for near, intermediate, and distance viewing, a low vision specialist should be consulted for expert evaluation on the strength and style of optics that best meets the needs of the student. These devices are prescribed by the clinician. As such, a wearable device has not been included in the ENVISION Kit. Learning the use of a hand-held telescope will assist in the transition to a wearable. You can find more information about wearable telescopes at Ocutech, ocutech.com.

APH has included in ENVISION variable distance, hand-held magnifiers because there are several advantages to magnifiers of this type. They are relatively inexpensive and come in a variety of strengths and styles. For the most part, they are easy to obtain and carry, may be used successfully with other corrective lenses, and can be used discreetly. Many of them are extremely durable. Since they aren't placed directly on what is to be magnified, students can easily use them to magnify text on irregular shaped objects and surfaces they may find around the home, classroom, workplace, or out in the community; such as hygiene products, cooking directions, food labels, thermostats, price tags, and medicine bottle labels.



At first, students may struggle with the variable distance, hand-held magnifier's small field. Students might also fatigue quickly as a result of laboring to preserve correct focal distance. A reading stand is especially beneficial to an untrained student because such a device helps alleviate fatigue by enhancing postural comfort, thereby making the proper focal distance easier to maintain. When a reading stand is used, it should be adjusted so the student can read from the top of the page to the bottom without straining their back, neck, and arms. In some cases, a small cushion or gel wrist support also helps prevent arm fatigue. Variable distance, hand-held magnifiers are not recommended for students with poor eye-hand coordination because they require a certain degree of synchronization among the eyes, hands, and head for effective use.

The importance of keeping magnifiers and telescopes clean and free of scratches cannot be overstated. Dirty or scuffed lenses can severely hinder a student's view. Most optical aids can be cleaned adequately by blowing off the larger dust particles and wiping the lenses with a clean, soft cotton cloth or optical tissue. The teacher and student should avoid using paper towels or regular tissue, as they contain tiny wooden fibers that can scratch the lens. On some magnifiers, mild, film-free soap and water may be used to remove stubborn smudges. For best results, the teacher and student should always check the manufacturer's cleaning suggestions, if such literature is included with the magnifier.

The importance of maintaining proper working condition of the magnifier and telescope is but one reason for the specific instructions within the curricula regarding the suggested steps a student should perform to find the most common starting point (usually the top left) on a page of reading material for distance and near tasks.

The ENVISION training program comes with an activities binder with distance and near activity cards. The lessons in the guidebook correspond to the activity cards in the binder. The magnifier lessons are grouped together and the telescope lessons are grouped together. Simply find the lesson number in the guidebook and match it with the lesson number in the activities binder. The instructor can pull the appropriate activities from the binder to instruct the student. These practice reading materials have been included to help instruct and teach the proper techniques for using distance and near optical devices.

The ENVISION curricula directs the student to place the magnifier near the bottom middle of the page, scan straight up to the top of the page, and then over to the top left corner.

One might ask, "Why not just have the student begin at the top left?" First, the procedure described above helps protect the magnifier. If the student systematically scans from the bottom of the page to the top left, the possibility of the magnifier being damaged is lessened because the magnifier remains upon a smooth, safe reading surface during the search. Conversely, if an inexperienced student tries to find a starting point directly, without an orderly approach, they might repeatedly set the magnifier down and scoot it along, not upon the reading material but on a desktop, floor, or some other surface capable of damaging the lens. Second, the suggested approach helps orient the student to the height and width of the page and provides an extra opportunity for the student to see what is on the page. The same technique for systematically scanning the environment is used with telescope movements from left to right.

Magnification Power and Focal Distance

- The magnification power of a magnifier is usually labeled in "x" notations, e.g., 1.8x, 4x, 6x. One convention used to arrive at this power designation is to divide the dioptric power of the lens by the number 4. Using this convention, a 32-diopter lens, for example, would be said to magnify an object eight times (8x). However, not all manufacturers use the same labeling convention, so a 4x magnifier from one company is not necessarily the same as a 4x magnifier from a different manufacturer. This is why some low vision specialists may prescribe a lens in terms of diopters.
- Another measurement worth noting is the magnifier's *focal distance*, which is the distance between the magnifier's lens and the object being viewed. This is different than the *working distance*, which, in this text,

is defined as the distance between the eye of the user and the lens of the magnifier. To use a variable-distance, hand-held magnifier effectively, the student must hold it at the correct focal distance.

- It is also helpful to remember that as the working distance increases, the field of view through the magnifier decreases. Conversely, when the correct focal distance is held constant and the working distance decreases, the field of view increases and distortion of the object being viewed is clear and in focus. Thus, as the power of the magnifier increases, the student will find it necessary to hold the magnifier closer to the eye in order to maintain a workable field of view.
- Procedures for finding and maintaining *focal distance* will be introduced in the exercises designed for use with variable-distance, hand-held magnifiers. When introducing students to near magnification devices, the instructor must ensure that the environment be well suited for reading. Each student is unique and has preferences regarding illumination and reading position, though there is some general information that will make preparing a good learning environment easier.
- When possible, the blue-white or cool-white fluorescent or LED lighting commonly found in overhead fixtures should be replaced with warm-white color temperature in the 2700 kelvin range. This color temperature reduces glare and eye fatigue.
- Any lamps should contain 75 to 100 watt equivalent soft-white LED bulbs. LED bulbs use lumens to determine the brightness of light. Remember the higher the lumens,

the brighter the bulb. LED lighting should be adjusted to diffuse light and inhibit glare. Flexible-neck lamps are preferred, as are lamps controlled by dimmers or adjustable brightness levels.

- To ensure the light shines away from the student's eyes and onto the reading materials, the lighting source should be positioned near the shoulder, on the same side of the body as the eye being used.
- To avoid shadows during writing exercises, the teacher should position the light source to the front of the writing materials, opposite the student's writing hand.
- For best results, the teacher should instruct the student to perform some short reading tasks under various lighting intensities to determine at which light the student reads best and/or is most comfortable.
- Chairs, tables, and reading stands should be positioned so the student can bring the materials within focal distance and read comfortably without straining their back, neck, and arms.
- Items that might distract the visual attention of the student should be kept to a minimum, and reading surfaces should be as glare-free as possible.
- Ultimately, all exercises should be positive experiences that build confidence and sustain your student's motivation. Other concerns, especially among teens, include psychosocial factors involved in using any device that might cause the student to feel different from their peers. Even the most well-adjusted, confident student will probably suffer some teasing. Some students will

become reluctant to use their magnifier after being teased. In such cases, the instructor should allow the student to voice their concerns. Support from the teacher and other professionals within the school system can be invaluable to a student who is self-conscious about using a magnifier. Including the student's classmates in activities and discussions that make instruction and activities in optics look attractive can also help other students warm to a student who uses a magnifier. Such activities might include gardening, coin collecting, the study of biology and chemistry, and discussions regarding professions in which magnification devices play an important role, such as watchmaker, archeologist, and Indy car builder.

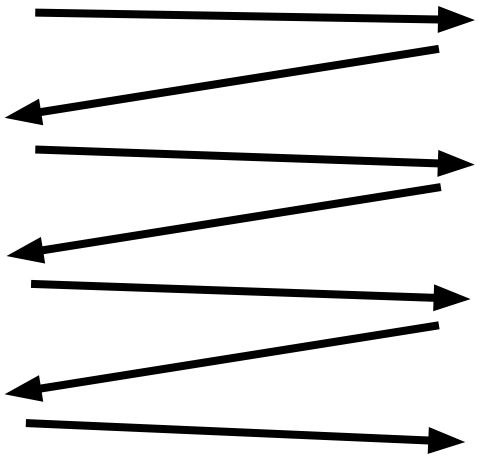
Ultimately, the teacher should enjoy their partnership with the student during the training experience. Ensuring a student is successfully tackling the academic demands of school because of access to needed visual information is one of the most important roles a teacher can have.

Common Terms & Definitions

1. **Low Vision:** Denotes a measure of functional vision below 20/40 that cannot be fully rectified by ordinary corrective measures such as eyeglasses, contacts, or surgery.
2. **Magnifier:** An optical device that is usually prescribed by a low vision specialist, which relies on a lens or lenses to increase the size of an image.
3. **Telescope:** An optical device that uses a combination of lenses and prisms to enlarge distant objects using angular magnification. The same principle is used with ordinary sports binoculars.

4. **Diopter:** Refers to the optical power (or strength) of the magnifying lens. It is the strength of the magnifying lens measured at one meter. A 20 diopter (20 D) measurement is approximately equal to 5x power magnification. A rough formula to convert from magnification power to diopters is to multiply the magnification power by 4.
5. **Focal Distance:** The distance from the magnifying lens to the object behind the lens when the object is in focus. The stronger the optical power of the magnifying lens, the closer the required focal distance is to the reading material.
6. **Field of View:** The area of magnification you see through the lens. The larger the diameter of the lens (or lens area for rectangular or square lenses) the larger the field of view.
7. **Lens Size:** As the lens size increases, the amount of curvature in the lens decreases, resulting in lower magnification power of the lens. As the lens size decreases, the amount of curvature in the lens increases, resulting in higher magnification power of the lens and a smaller field of view. This is why higher magnification lenses are generally smaller in size than lower magnification lenses.
8. **Localization:** A term often affiliated with the training of distance devices, it denotes the ability to use an optical device to locate the position of a specific object in real space.

9. **Scanning:** Represents the technique of following a line of print from left to right; also used to describe the process of familiarizing oneself with the layout of a page. Often, scanning will follow a bit of a zigzag pattern, as shown:



10. **Tracing:** A term used to denote the following of stationary lines in the environment. Though tracing is a term used primarily for training with distance devices, it is an appropriate term for near distance devices when the task calls for following lines that do not conform to the orderliness of straight, horizontal lines prevalent in text.

11. **Visual Field:** Measured in degrees from the fixation point, it represents what a person sees centrally and peripherally when looking straight ahead.

12. **Dominant Eye:** The eye that naturally sends more visual information to the brain. Often, but not always, the dominant eye will be on the same side of the body as the dominant hand. To find your student's dominant eye, cut a hole about the size of a quarter in a piece of paper or an index card. Have your student look through the hole at a close target. Then have the student close one eye and then the other. The eye that sees the target and not the index card when the other eye is closed is your student's dominant eye. In most cases, your student will use his dominant eye when relying on near and distance magnification devices. However, it is best to check with the low vision clinician to confirm which eye should be used with a prescribed device.

13. **Dominant Arm:** The arm with which one naturally performs most physical tasks. Unless your student's dominant arm is damaged, they should find it easiest to use the hand of their dominant arm to manipulate a magnifier and telescope.
14. **Scotoma:** A "blind spot" in the visual field, frequently caused by damage to the retina.
15. **Eccentric Viewing:** A technique used whereby part of the retina that is not usually used for sharp vision is utilized when a section of or all of the macula (the part of the retina that provides the greatest visual clarity) has become ineffective. Eccentric viewing training consists of visual techniques that are used by vision specialists to strengthen the eyes and establish the best point of vision for individuals with visual field loss, to see faces, watch television, or move safely in their environments.

Skills and Topics Presented in the ENVISION Training

Reading Concepts

In focus Things To Do Lessons 1.1, 3.1

Focal distance Terms and Definitions Lessons 3.2, 3.4–3.11

Working distance Preparation Lessons 3.2, 3.4, 3.6–3.10

Localization Terms and Definitions Lessons 1.2, 1.3, 2.2

Scanning Terms and Definitions Lessons 1.2, 1.3, 2.2, 3.2

Shifting to the next line Lessons 1.2, 1.5, 1.6, 2.2, 2.6, 2.9, 3.2, 3.4

Tracing Terms and Definitions Lessons 2.3, 2.7, 3.3

Content Interpretation

Symbols/signs Lesson 3.4

Illustrations Lessons 1.2–1.4, 2.2, 2.3, 2.6, 2.9, 3.2, 3.11

Maps Lessons 3.3, 3.12

Text Lessons 1.5, 1.6, 2.2, 2.4–2.9, 3.2–3.11

Use a Magnifier for…

1. Exploring the environment
2. Reading educational and recreational materials
3. Reading a thermostat
4. Reading a medicine bottle label, hygiene products, food items, cooking directions, and price tags
5. Reading menus
6. Reading train and bus schedules
7. Checking travel itineraries
8. Reading a clothing label
9. Reading game instructions
10. Identifying currency denominations
11. Analyzing maps
12. Examining photographs

Things You Should Know Before Using ENVISION

1. The eye for which the device was prescribed
2. Your student's dominant hand

3. Your student's tolerance for glare
4. What's in your student's eye report
5. What's "in focus" and "out of focus" to your student may not be exactly the same for you, but it should be close to the same "in focus" point
6. How to include near magnification device training in your student's IEP
7. The power of the magnifier recommended by the low vision clinician
8. The features and capabilities of the optical devices you will be using as tools
9. How the student performs without the device
10. If the student should be wearing prescription spectacles while using the device
11. The best lighting to use during training

Things To Do Before Using ENVISION

1. Ask the parents of young children or ask adult participants to sign a release form that allows you to talk freely with your student's school staff, certified O & M specialist, and eye care professionals. Then, talk with them about how you may help the student in their optical device skills training.
2. Obtain and read your student's eye report.
3. Become familiar with distance and near magnification devices and their proper use and handling.
4. Become familiar with your student who has a visual impairment and their strengths, weaknesses, and needs.

SECTION 1: MAGNIFIERS

Fixed-Distance, Dome Magnifiers

- Light Gathering Magnifier

Note: Always begin the ENVISION training with the lesson specific to the magnifier prescribed to your student by the low vision clinician. For example, if your student was prescribed a variable-distance, hand-held magnifier, ensure that the student completes the lessons specific to magnifiers of that type before working through the remaining sections.

Lesson 1.1
Introductory Exercise Using a Fixed-Distance, Dome Magnifier

Objective:

Student will become familiar with the recommended magnifier and learn how to clean it. The instructor should allow the student time to touch the magnifier and ask questions regarding its function, construction, etc.

Materials:

- Magnifier, as recommended by the low vision clinician
- Lens cleaning cloth

Exercise:

1. Prepare a clean, uncluttered workspace in which the student can investigate the magnifier and practice cleaning it.
2. Show your student how to remove the magnifier from its case. Explain that the magnifier should be placed only on the reading materials and should never be set upon rough and hard surfaces, which can scratch the lens. Return the magnifier to its case and emphasize the importance of storing it in the case when not in use.
3. Allow the student to remove the magnifier from its case. Show the student how to handle the magnifier without touching and smudging the lens. Usually, a suitable method for handling a dome magnifier is to use the thumb and forefinger of the dominant hand to grip it along its sides. Demonstrate to your student how to use the magnifier to explore objects in the environment by holding the magnifier up to their eye with one hand while using the other hand to bring reading materials into the focus of the magnifier. Explain that the object is "in focus" when it looks sharpest through the magnifier.
4. Demonstrate how to clean the magnifier with the lens cleaning cloth by rubbing both sides of the lens. Explain to your student that only a special lens cleaning tissue or lens cleaning cloth should be used since regular tissue and paper towels can scratch the lens. Return the magnifier and let the student practice using the lens cleaning cloth to rub both sides of the lens.
5. Allow your student to hold the magnifier and ask questions regarding its purpose or any other questions concerning

the magnifier and caring for it. This time allows the student to familiarize themselves with the weight, size, and shape of the device. Before moving to the next exercise, ensure that the student has had adequate time to explore the look and feel of the magnifier. After the student has had time to perform an initial investigation of the magnifier, you might choose to open a dialogue concerning any apprehension they may have about using the device. You might start by asking the student how they feel about using the magnifier. The student's answer might be similar to the following: "Well, I might use the magnifier at home, but I will probably not use it as much in school." Try responding to the answer with a question such as "You must have a lot of reading to do in class. How will you get it done if you don't use the magnifier very often in class?" Ideally, your goal is to dispel your student's fears by leading to a positive conclusion regarding those distressing scenarios. Students who use optical devices are often reassured when they realize that other students are usually concerned about themselves and pay little attention to who is using a magnification device.

Lesson 1.2
Basic Use Exercise
Using a Fixed-Distance, Dome Magnifier

Objective:

Student will become familiar with basic localizing and scanning techniques.

Materials:

- Magnifier, as recommended by the low vision clinician
- Lesson 1.2 Basic Use Exercise Sheets

Exercise:

1. Prepare a clean, uncluttered workspace in which the student can undertake the following exercise.
2. Place the Basic Use Exercise Sheets for Lesson 1.2 in a position that will allow the student to scan it comfortably without straining their back, neck, and arms.
3. Instruct your student to remove the magnifier from its case. Ensure that your student is holding the magnifier in a manner that prevents the lens from being smudged. If not, demonstrate again how they should do so by using the thumb and forefinger of their dominant hand to grip the magnifier along its sides. If the lens of the magnifier is dirty, instruct the student to clean the lens with a lens cleaning cloth.
4. Instruct your student to look through the lens of the magnifier and locate the top left of the page. Tell your student that the technique of finding specific locations on a page is called "localization." If your student has difficulty locating the top left of the page, show how by using the following effective technique:
   - Begin with the magnifier positioned near the bottom middle of the page.
   - Scan straight up from the bottom middle to the top middle of the page.
   - Scan left from the top middle to the top left corner of the page.
5. When your student can locate the top left of the page, show them how to familiarize themselves with the layout of the page by looking through the magnifier and using

a left-to-right and back-to-left zigzag pattern to scan the page from top to bottom. Explain that this movement is called "scanning."

6. After your student is familiarized with the layout of the page, ask them to locate the first image of the first row on the page and begin scanning the first row of objects from left to right. As your student scans, ask them to describe what they see so you can verify the responses.
7. When your student has completed scanning the first row of objects, show how to scan back to the left on the same row before descending to the next row to be scanned.
8. Encourage your student to continue scanning the contents of the page. Don't forget to verify the descriptions and confirm that the student is scanning back to the left on the same row before descending to the next row.
   Note: Depending on the power and viewing area of the magnifier, your student might report simultaneously seeing two or three rows of images as they scan. The ENVISION curricula were purposely designed to achieve this effect in order to train the student in maintaining concentration on the appropriate line, which should remain in the center of the magnification field.
9. Toward the end of the lesson, the student will encounter drawings in which several details are exhibited. Instruct your student to examine the image by using the same technique used to orient themselves with the contents of the entire page, i.e., beginning at the top of the picture and scanning from left to right and back to the left until the bottom of the image is in view. When your student begins scanning the more detailed images, prompt

them to describe some of the particulars they see. For example, if the image depicts a shoe and your student reports seeing a "shoe," you might prompt them to look more closely at the image and describe the type of shoe. Ideally, after a few prompts, your student should begin to describe such details on their own.

10. If your student complains that items on the page look too small or blurry, they may have reached their print size limit, or they may be fatigued. Repeat the exercise the next day. If the same results emerge, larger print or higher magnification may need to be recommended.

11. When your student completes the exercise, congratulate them. If necessary, you might ask them to re-scan any rows of images they found difficult to interpret. However, if the student seems fatigued or agitated, allow them to take a short break before trying again. Remember, such a learning process should not be rushed. Moreover, each lesson should end on a positive note, with the student feeling encouraged about their progress.

Lesson 1.3
Enrichment Exercise
Using a Fixed-Distance, Dome Magnifier

Objective:

Student will develop basic localizing and scanning techniques.

Materials:

- Magnifier, as recommended by the low vision clinician
- Lesson 1.3 Enrichment Exercise Sheet (Seek-n'-find)

- Washable crayon or photocopy the activity page and allow the student to mark on the page with their preferred writing utensil.

Exercise:

1. Prepare a clean, uncluttered workspace in which the student can undertake the following exercise.
2. Place the Enrichment Exercise Sheet for Lesson 1.3 in a position that will allow the student to scan it comfortably.
3. Ask the student to look through the lens of the magnifier and locate the top left of the Enrichment Exercise Sheet. Tell your student that the technique of finding specific locations on a page is called "localization."
4. When your student can locate the top left of the page, show them how to familiarize themselves with the layout of the page by looking through the magnifier and using a left-to-right and back-to-left zigzag pattern to scan the page from top to bottom. Explain that this movement is called "scanning."
5. Now, explain to your student that the magnifier should be used to locate and label certain items that are on the page. Be sure to tell the student that several items are hidden or may not be where one might expect to find them.
6. Read to your student one-at-a-time the following items, and allow adequate time to find and circle the appropriate item:

   Oil Filter

   Frog

   Spring

   Tennis racquet

Toys in the toolbox

Bird's nest

Spark plugs

Pecan pie

Steering wheel

Clock

Truck muffler

Lizard

7. When your student has located and circled each of the items, congratulate them and speak with them about what they found difficult or easy about the exercise.
8. Lastly, use a tissue to remove markings from the exercise sheet.

Lesson 1.4
Enrichment Exercise
Using a Fixed-Distance, Dome Magnifier

Objective:

Student will develop localizing and scanning techniques.

Materials:

- Magnifier, as recommended by the low vision clinician
- Lesson 1.4 Enrichment Exercise Sheet (Dot-to-dot)
- Washable crayon or photocopy the activity page and allow the student to mark on the page with their preferred writing utensil.

Exercise:

1. Ask the student to place the Enrichment Exercise Sheet for Lesson 1.4 in a position that will allow them to scan the page comfortably; use a reading stand or lap desk for height adjustment.
2. Tell the student to lay the magnifier flat on the page and locate the top left of the page. Use the magnifier to scan the page from left to right. The student will notice the larger numbers are on the left side of the page. Ask the student, "Where do you think the picture begins?"
3. Instruct the student to find the number one on the page by using the learned scanning techniques.
4. Using the magnifier and crayon follow the numbered sequence dots to complete the picture.

Lesson 1.5
Enrichment Exercise
Using a Fixed-Distance, Dome Magnifier

Objective:

Student will develop localizing and scanning techniques.

Materials:

- Magnifier, as recommended by the low vision clinician
- Lesson 1.5 Enrichment Exercise Sheet (Kids Menu)
- Washable crayon or photocopy the activity page and allow the student to mark on the page with their preferred writing utensil.

Exercise:

1. Ask the student to prepare a clean, uncluttered workspace in which to undertake the following exercise.
2. Ask the student to place the Enrichment Exercise Sheet for Lesson 1.5 in a position that will allow them to scan the page comfortably; use a reading stand or lap desk for height adjustment.
3. Tell the student this is a menu you may receive at a restaurant. Instruct the student to use their magnifier to scan the menu to find their favorite food. Ask them what they would order from the menu if they were at the restaurant.
4. Instruct the student to lay the magnifier flat on the page and use a zig-zag pattern to scan the menu. Ask if they notice any fun activities on the menu they could work on while they wait for their food to arrive.
5. Use a washable crayon or photocopy the activity page. Have the student complete the fun activities. Discuss how the magnifier can help identify games and puzzles on the page that may have been overlooked without using a magnification device.
6. Ask the student "What is the most expensive food item on the menu? What is the least expensive?" Discuss how to find prices on a menu.
7. Make sure the student scans from left to right, then scans back to the left on the same line before dropping down to the next line.

Enrichment Activity: Dessert

Ask the student what dessert they would order from the menu. For the next lesson with the student, bring in the dessert of their choice. Continue to practice using the magnifier to identify near reading activity cards.

Lesson 1.6
Enrichment Review
Using a Fixed-Distance, Dome Magnifier

Objective:

Student will review basic localizing and scanning techniques.

Materials:

- Magnifier, as recommended by the low vision clinician
- Lesson 1.6 Enrichment Review Sheets (Itinerary)
- Washable crayon or photocopy the activity page and allow the student to mark on the page with their preferred writing utensil.

Review:

1. Tell your student that they will be using the magnifier to answer questions about a travel itinerary. Tell your student to imagine they are going on a vacation with a group of friends and will be following a schedule that helps them find destinations on their exciting adventure. Explain to your student that they will read a question regarding travel activities and then search the itinerary sheets for the correct answer. As your student works, you can use the questions and answers on the following pages to follow along.

2. After your student is familiarized with the design of the pages, encourage them to read the first question and search the itinerary for the answer.
3. When your student reads the question and searches the itinerary, watch their technique. Ensure that they begin scanning on the left side of the page, and when needed, scan back to the left on the same line of text before descending to the next line to be scanned.
4. Encourage your student to continue answering the questions by using the magnifier to examine the itinerary. Remember, be patient with your student as this is a challenging exercise. If your student becomes tired or frustrated, don't force them to continue. Instead, allow them to take a break before continuing. You might also assist the student in finding a few of the answers until you are certain they are familiar with the design of the itinerary.

Questions:

1. In what city will you begin your vacation?
2. How many cities will you visit before you tour Trier?
3. Where will you eat breakfast in Berlin?
4. In what city do you plan on boarding a train?
5. When you visit Cologne, what time will you plan to tour historic breweries?
6. On what date will you be planning to photograph lakes?
7. In Cologne, you will take a cruise on what famous river?
8. In Dresden, what time does the acting out of the medieval battle begin?

9. What time are you planning on retiring to bed on May 9th?
10. On what date do you plan to learn how to ski?
11. In what city will you find ancient Roman drainage systems?
12. In what two cities do you plan on riding a bicycle?
13. While in Trier, you are planning a picnic at what time?
14. In what city will you watch an orchestra?
15. What time will you eat lunch at the Stone Wall Café?
16. In Dresden, you are planning on dancing at what kind of club?
17. After Dresden, you are planning to visit what city?
18. On what date will you be dining at the Piper's Plate?
19. At what time does your train leave for the Alps?
20. On May 3rd, where are you planning to eat breakfast?
21. In what city will you find several Gothic churches?
22. In Frankfurt, what time are you planning to eat dinner?
23. In how many cities are you planning to visit a museum?
24. On what date will you be in Berlin?
25. Where are you planning on renting a moped?

Answers:

1. Berlin
2. Three
3. Gabbi's Bratwurst Hut
4. Munich
5. 3:00 – 6:15 p.m.
6. May 13
7. The Rhine
8. 3:30 p.m.
9. 11:15 p.m.
10. May 13
11. Trier
12. Cologne and Frankfurt
13. 2:30 p.m.
14. Berlin
15. 1:30 p.m.
16. Jazz
17. Cologne
18. May 3
19. 8:30 a.m.
20. Strudel King
21. Trier
22. 8:00 p.m.
23. Two
24. May 1
25. Trier and Frankfurt

Fixed-Distance, Stand Magnifiers

- LED Magnifier with Stand

Lesson 2.1
Introductory Exercise
Using a Fixed-Distance, Stand Magnifier

Objective:

Student will become familiar with the magnifier and learn how to clean it, use the stand, LED light and filters, and replace the batteries. The instructor should allow the student time to touch the magnifier and ask questions regarding its function, construction, accessories etc. Assist the student in evaluating each stand and determine which stand to use with which magnifier for the proper focal distance for each magnification level. Also, allow the student to investigate how to turn the LED light on/off, which filter they prefer, and how to change the batteries.

Materials:

- Magnifier, as recommended by the low vision clinician
- Stand with correct focal distance
- Lens cleaning cloth
- Batteries
- Snap-on filters (yellow, amber, gray) to place over the LED light source

Exercise:

1. Allow the student to remove the magnifier from the case.
2. Let the student practice using the lens cleaning cloth to rub both sides of the lens.
3. Let the student hold the magnifier and try activating the light and looking at different objects. Instruct the student to turn the light on and off. Ask "In what setting would it be appropriate to use the LED light?" Discuss with the student questions or comments they have regarding the purpose of the magnifier and caring for it. This time allows the student to familiarize themselves with the weight, size, and shape of the device.
4. Instruct the student to place the snap-on filters (yellow, amber, gray) onto the LED light source of the magnifier. Allow the student time to evaluate each color and determine which option works best.
5. Let the student hold both stands and allow them time to place each magnifier in the correct stand.
6. Assist the student to find where the batteries are replaced. If needed, demonstrate how to remove and insert the

batteries. Before moving to the next exercise, ensure that the student has had adequate time to explore the magnifier.

Lesson 2.2
Basic Use Exercise
Using a Fixed-Distance, Stand Magnifier

Objective:

Student will become familiar with basic localizing and scanning techniques.

Materials:

- Magnifier, as recommended by the low vision clinician
- Stand with correct focal distance
- Lesson 2.2 Basic Use Exercise Sheets

Exercise:

1. Prepare a clean, uncluttered workspace in which the student can undertake the following exercise.
2. Place the Basic Use Exercise Sheets for Lesson 2.2 in a position that will allow the student to scan it comfortably.
3. Instruct your student to place the magnifier in the stand. Confirm that they are grasping the magnifier in a manner that prevents the lens from being smudged. If not, demonstrate again how they should do so by using the thumb and forefinger of their dominant hand to grip the magnifier by its handle. If the lens of the magnifier is dirty, instruct the student to clean the lens with a lens cleaning cloth.

4. Should the magnifier have a source of illumination, instruct the student to turn the light on. If your student's magnifier is illuminated, there exists the possibility that the light may contribute to a minimal amount of glare on some of the ENVISION Exercise Sheets. If necessary, work with your student to situate the page so that glare is reduced.
5. Ask the student to look through the lens of the magnifier and locate the top left of the Basic Use Exercise Sheet. Tell your student that the technique of finding specific locations on a page is called "localization."
6. When your student can locate the top left of the page, show them how to familiarize themselves with the layout of the page by looking through the magnifier and using a left-to-right and back-to-left zigzag pattern to scan the page from top to bottom. Explain that this movement is called "scanning."
7. After your student is familiarized with the layout of the page, ask them to locate the first image of the first row on the page and begin scanning the first row of objects from left to right. As your student scans, ask them to describe what they see so you can verify the responses.
8. When your student has completed scanning the first row of objects, show how to scan back to the left on the same row before descending to the next row to be scanned.
9. Encourage your student to continue scanning the contents of the page. Don't forget to verify the descriptions and confirm that the student is scanning back to the left on the same row before descending to the next row.
   Note: Depending on the power and viewing area of the magnifier, your student might report simultaneously

seeing two or three rows of images as they scan. The ENVISION curricula were purposely designed to achieve this effect in order to train the student in maintaining concentration on the appropriate line, which should remain in the center of the magnification field.

10. As your student identifies objects and reads words and numbers, pay particular attention to what types of reading errors are made so appropriate adjustments can be arranged. If the student is failing to read parts of words, they may have a field loss. To deal with this possibility, make sure that the student continues scanning with the magnifier across the entire line of text and into the margin. This ensures that the student has scanned all text and isn't just guessing at the ends of words. If "skipping" continues to be a problem, refer the student back to the low vision clinician to evaluate vision changes.

11. Toward the end of the lesson, the student will encounter drawings in which several details are exhibited. Instruct your student to examine the image by using the same technique used to orient themselves with the contents of the entire page, i.e., beginning at the top of the picture and scanning from left to right and back to the left until the bottom of the image is in view. When your student begins scanning the more detailed images, prompt them to describe some of the particulars they see. For example, if the image depicts several birds in a tree, and your student reports seeing "a tree," you might prompt them to look more closely at the image by asking them to find, describe, and count the objects in the tree. Ideally, after a few prompts, your student should begin to describe such details on their own.

12. If your student is unable to read the words or numbers of a particular line, ask them to try scanning the next line. If they are still unable to identify the text and complain that items on the page look too small or blurry, the student may have reached their print size limit, or they may be fatigued. Repeat the exercise the next day. If the same results emerge, larger print or higher magnification may need to be recommended.
13. When your student completes the exercise, congratulate them. If necessary, you might ask them to re-scan any rows of images they found difficult to interpret. However, if the student seems fatigued or agitated, allow them to take a short break before trying again. Remember, such a learning process should not be rushed. Moreover, each lesson should end on a positive note, with the student feeling encouraged about their progress.

Lesson 2.3
Enrichment Exercise
Using a Fixed-Distance, Stand Magnifier

Objective:

Student will learn the concept of tracing while reinforcing basic localizing and scanning techniques.

Note: "Tracing" is a term used to denote the visual following of stationary lines in the environment. Though tracing is a term used primarily for training with distance devices, it seems an appropriate term for near magnification devices when the task calls for following lines that are not related to text.

Materials:

- Magnifier, as recommended by the low vision clinician
- Stand with correct focal distance
- Lesson 2.3 Enrichment Exercise Sheets
- Washable crayon or photocopy the activity page and allow the student to mark on the page with their preferred writing utensil.

Exercise:

1. Tell your student to use the magnifier and washable crayon to find their way through two mazes.
2. Instruct your student to place the Lesson 2.3 Enrichment Exercise Sheet entitled "Moped Maze" in a position that will allow them to scan it, trace it, and write on it. Verify that the Enrichment Exercise Sheet has been positioned so your student can view it and write on it comfortably.
3. Place the magnifier in the stand. Should the magnifier have a source of illumination, instruct the student to turn the light on if needed.
4. Instruct your student to look through the lens of the magnifier and locate the top left of the maze.
5. Instruct your student to locate the starting point of the maze. Tell your student to begin at the point where the boy stands and use the magnifier and washable crayon to trace and mark the correct path to the end.
6. Closely monitor your student's progress through the maze, ensuring that they are able to trace the same path on which they begin, i.e., confirm that your student is not crossing over into other pathways within the labyrinth. If

your student shows signs of fatigue or frustration, allow them to rest a short while before continuing.

7. When your student solves the maze by marking the correct path to the moped, congratulate them and take a short break. When the student is ready to continue the exercise, repeat the steps above with the more challenging maze, labeled "Castle Maze."
8. After the student has solved both mazes, use a moist tissue to remove markings from both Enrichment Sheets.
9. The next day, the exercise should be repeated, starting at the end of the maze and working toward the starting point. By this reversal, the student is able to trace in many directions.

Lesson 2.4
Enrichment Exercise
Using a Fixed-Distance, Stand Magnifier

Objective:

Student will learn the concept of tracing while reinforcing basic localizing and scanning techniques.

Materials:

- Magnifier, as recommended by the low vision clinician
- Stand with correct focal distance
- Lesson 2.4 Enrichment Exercise Sheet (word puzzle)
- Washable crayon or photocopy the activity page and allow the student to mark on the page with their preferred writing utensil.

Exercise:

1. Ask the student to prepare a clean, uncluttered workspace in which to undertake the following exercise.
2. Ask the student to place the Enrichment Exercise Sheet for Lesson 2.4 in a position that will allow them to scan the page comfortably. Use a reading stand or lap desk for height adjustment.
3. Read the directions. Have the student complete the word puzzle.
4. Instruct the student to use the magnifier in the stand to scan the puzzle. The base of the stand should rest on the page. Discuss the technique of using a stand magnifier to identify letters in the puzzle. Discuss dominant or better seeing eye to use with a magnifier, especially for higher power magnification. The magnifier should be held a specific distance from the eye. Have the student use a writing utensil to circle each word.
5. Instruct the student to use one hand to grip the handle, using the thumb and forefinger to slide the magnifier along the page while using the other to circle the entire word. This will take practice and time to adjust to as the student will only be able to see part of the magnified page instead of the entire puzzle at once.
6. Allow the student adequate time. If they become frustrated or fatigued, allow them to complete the exercise at your next visit.

Lesson 2.5
Enrichment Exercise
Using a Fixed-Distance, Stand Magnifier

Objective:

Student will learn the concept of tracing while reinforcing basic localizing and scanning techniques.

Materials:

- Magnifier, as recommended by the low vision clinician
- Stand with correct focal distance
- Lesson 2.5 Enrichment Exercise Sheet (Sudoku)
- Washable crayon or photocopy the activity page and allow the student to mark on the page with their preferred writing utensil.

Exercise:

1. Ask the student to place the Enrichment Exercise Sheet for Lesson 2.5 in a position that will allow them to scan the page comfortably. Use a reading stand or lap desk for height adjustment.
2. Tell the student to use the magnifier to scan the grid to identify the correct number for each blank square.
3. Read the directions. Have the student complete the Sudoku puzzle.
4. Instruct the student to use the magnifier in the stand to scan the puzzle. The base of the stand should rest on the page. Discuss dominant or better seeing eye to use with a magnifier, especially for higher power magnification.

The magnifier should be held a specific distance from the eye. Have the student use a writing utensil to enter each number in the correct space.

5. Instruct the student to use one hand to grip the handle, using the thumb and forefinger to slide the magnifier along the page while using the other to write each number. This will take practice and time to adjust to as the student will only be able to see part of the magnified page instead of the entire puzzle at once.
6. Allow the student adequate time. If they become frustrated or fatigued, allow them to complete the exercise at your next visit.

Lesson 2.6
Basic Use Review
Using a Fixed-Distance, Stand Magnifier

Objective:

Student will review basic localizing and scanning techniques.

Materials:

- Magnifier, as recommended by the low vision clinician
- Stand with correct focal distance
- Lesson 2.6 Basic Use Review Sheets

Review:

1. Instruct the student to place the Basic Use Review Sheets for Lesson 2.6 in a position that will allow for comfortable scanning.
2. Place the magnifier in the stand.

3. Tell your student that you want them to scan the first row of images on the page and describe what they see through the magnifier. Ensure that your student uses the scanning technique.
4. After your student has successfully scanned the first row of items, instruct them to scan the rest of the rows on the page, describing aloud what they see through the magnifier. As your student scans, verify the descriptions and notice whether they scan back to the left on the same row before descending to the next row to be scanned. Practice maintaining focus on the appropriate line, which should always remain in the center of the magnification field.
5. When your student encounters images in which several details are exhibited, notice whether they remember to orient themselves with their contents by using a left-to-right and back-to-left zigzag pattern to scan the images from top to bottom. If the student forgot the technique, allow them to review it and try scanning the images again.
6. On the second Basic Use Review Sheet for Lesson 2.6, your student will encounter text and images of various content, shape, and size. Notice whether they remember to orient themselves with the contents of the page.
7. As your student reads the text and examines the images, ensure that they maintain their dominant eye directly over the magnifier's lens, moving their head and magnifier hand together instead of trying to follow the magnifier by simply turning their head or eyes. **Note:** If your student can read the larger print but is unable to read one or both of the smaller font sizes, then this may be an indicator

that your student may have reached their print size limit, or may be fatigued. Repeat the exercise the next day. If the same results emerge, you may need to explain the situation to the low vision clinician and talk about the possibility of increasing the magnification power of the prescribed device.

Lesson 2.7
Enrichment Exercise
Using a Fixed-Distance, Stand Magnifier

Objective:

Student will learn the concept of tracing while reinforcing basic localizing and scanning techniques.

Materials:

- Magnifier, as recommended by the low vision clinician
- Stand with correct focal distance
- Lesson 2.7 Enrichment Exercise Sheets (Select the following near reading activity cards: bank statement, credit card, and receipt.)

Exercise:

1. Ask the student to place the Enrichment Exercise Sheets for Lesson 2.7 in a position that will allow them to scan the page comfortably. Use a reading stand or lap desk for height adjustment.
2. Explain to the student each activity card and how to identify these reading materials. Allow the student to practice locating the top left of the page.
3. Instruct the student to use the magnifier in the stand

to scan continuous lines of text. The base of the stand should rest on the page. Discuss dominant or better seeing eye to use with a magnifier, especially for higher power magnification. The magnifier should be held a specific distance from the eye.

4. The reader can see where lines begin and end without a magnifier. Use the finger as a cue to find the beginning of the line.
5. Reposition the page so that the beginning of the line is directly in front. While continuing to look at the beginning of the line, the magnifier is positioned in front of the eye. To scan successive lines of text, use a retrace scanning technique.
6. Discuss the important numbers to identify on a credit card. Use the magnifier to find these numbers. Use the magnifier to find the totals on a receipt. Use the magnifier to find the balance on a bank statement.

Lesson 2.8
Enrichment Exercise
Using a Fixed-Distance, Stand Magnifier

Objective:

Student will learn the concept of tracing while reinforcing basic localizing and scanning techniques.

Materials:

- Magnifier, as recommended by the low vision clinician
- Stand with correct focal distance
- Lesson 2.8 Enrichment Exercise Sheet (Cooking Directions)

Exercise:

1. Ask the student to place the Enrichment Exercise Sheet for Lesson 2.8 in a position that will allow them to scan the page comfortably. Use a reading stand or lap desk for height adjustment.
2. Let the student know these are cooking directions that you may find on the back of a food item.
3. Tell the student to use the magnifier to scan the page to locate the ingredients and cook time. Discuss where cooking directions can typically be found on packaging of different products.
4. Have the student read the cooking directions. Ask the student, "What might one be cooking based on the directions?"

Enrichment Activity: Food labels

Bring in different food items (e.g., box, bag, can). Discuss how the use of a hand-held magnifier could make it easier to read cooking directions on irregular shaped food items.

Lesson 2.9
Enrichment Review
Using a Fixed-Distance, Stand Magnifier

Objective:

Student will review basic localizing and scanning techniques.

Materials:

- Magnifier, as recommended by the low vision clinician
- Stand with correct focal distance

- Lesson 2.9 Enrichment Review Sheets
- Washable crayon or photocopy the activity page and allow the student to mark on the page with their preferred writing utensil.

Review:

1. Instruct the student to place the Enrichment Review Sheets for Lesson 2.9 in a position that will allow for comfortable scanning.
2. Explain to your student that they will use the magnifier to read the numbered descriptions of castle components and then locate with the magnifier the correspondingly numbered sections of the castle.
3. Place the magnifier in the stand. After you explain the objective of the exercise to your student, instruct them to look through the lens of the magnifier, and demonstrate the proper method for finding the top left of either Enrichment Review Sheets.
4. After your student has demonstrated the proper procedure for locating the top left of the page, encourage them to familiarize themselves with both Enrichment Review Sheets (definitions and castle illustration). Ensure that your student investigates the page layouts by looking through the magnifier and using a left-to-right and back-to-left zigzag pattern to scan the pages from top to bottom. If necessary, review the technique with them, using hand-under-hand.
5. When your student is familiar with the shape and area of the castle, ask them to use the magnifier to read the first definition and search the castle for the object described.

Tell them to use the washable crayon to circle the item when they have found it.

6. As your student works, watch their technique, ensuring that they are scanning the page of definitions and the depiction of the castle in a systematic zigzag pattern. If needed, help your student read a couple of definitions and find the corresponding items.
7. Encourage your student and confirm answers as they work.
8. After your student has completed the exercise, prompt them to clean with a damp tissue any markings from the Enrichment Review Sheets.

Enhancement Opportunity:

You may want to allow your student to search the library or Internet for information about real castles that still exist today. You might also allow them to listen to the audiobook, Robin Hood, or other medieval period stories, or have a friend read a story from this time period to the student.

Variable-Distance, Hand-Held Magnifiers

LED Illuminated Hand-Held Magnifiers

Lesson 3.1
Introductory Exercise
Using a Variable-Distance, Hand-Held Magnifier

Objective:

Student will become familiar with the recommended magnifier and learn how to use it. The instructor should allow the student

time to touch the magnifier and ask questions regarding its function, construction, and use.

Materials:

- Magnifier, as recommended by the low vision clinician
- Lens cleaning cloth

Exercise:

1. Allow the student to remove the magnifier from its case. Show how to hold the magnifier without touching and smudging the lens. Usually a suitable method for holding a variable-distance, hand-held magnifier is to use the thumb and forefinger of the dominant hand to grip the device by its handle.
2. If the magnifier contains a source of illumination, show your student how to turn on and off the light. Instruct them not to touch the light source. You might also show your student how to explore objects in the environment by holding the magnifier up to their eye with one hand while using the other hand to bring objects into the magnifier's focus. Explain that the object is "in focus" when it looks sharpest through the magnifier.
3. Demonstrate how to clean the magnifier with the lens cleaning cloth by rubbing both sides of the lens. Explain to your student that only special lens cleaning tissue or lens cleaning cloth should be used since regular tissue and paper towels can scratch the lens.
4. Allow your student to hold the magnifier and ask questions regarding its purpose or any other questions concerning the magnifier and caring for it. Let the student activate the magnifier's light and try looking at

different objects in the environment. This time allows the student to familiarize themselves with the weight, size, and shape of the device. Before moving to the next exercise, ensure that the student has had adequate time to explore the magnifier.

Lesson 3.2
Basic Use Exercise
Using a Variable-Distance, Hand-Held Magnifier

Objective:

Student will become familiar with basic localizing, focal, and scanning techniques.

Materials:

- Magnifier, as recommended by the low vision clinician
- Lesson 3.2 Basic Use Exercise Sheets

Exercise:

1. Place the Basic Use Exercise Sheets for Lesson 3.2 in a position that will allow the student to scan it comfortably. Posture is particularly important when using a variable-distance, hand-held magnifier since the student must maintain focal distance to improve visual acuity. A reading stand may help to increase your student's reading stamina.
2. Allow your student to remove the magnifier from its case. Ensure that they are holding the magnifier in a manner that prevents the lens from being smudged, by gripping the magnifier by its handle.

3. Should the magnifier have a source of illumination, instruct the student to turn the light on if needed. If your student's magnifier is illuminated, there exists the possibility that the light will eventually not turn on due to the batteries needing to be changed.
   Note: Reference Lesson 2.1 for instruction on changing batteries, using a stand, and filters.
4. Use the first words or numbers on the Basic Use Exercise Sheet to show the student how to find the correct focal distance with a hand-held magnifier by using the following effective method:
   - Locate the image to be seen with your finger.
   - Lay the magnifier near your finger and flat on the page.
   - Position the dominant eye directly over the magnifier's lens.
   - Slowly lift the magnifier away from the page until focus is achieved.
   - Move eye toward or away from the lens to increase or decrease the field of view. (This is how one finds the "working distance.")
   - Emphasize the importance of holding the lens parallel to the page. Then inform the student that the lens should also be parallel to the eye so the user's line of sight is perpendicular to the lens.
   - Demonstrate how, in order to maintain a perpendicular line of sight, the student must always position their dominant eye directly above the lens. That is, the student should not try to read by simply moving their arm and turning their head to follow the magnifier, as

this common but incorrect technique is often the cause of students' inability to maintain focus.

5. Give your student the magnifier and ask them to find the focal distance. If they appear to be struggling, use hand-under-hand assistance. Before continuing, make sure your student understands the concept of focal distance and knows how to find it on their own. If needed, continue to practice finding the focal distance.
6. If your student is able to find the focal distance on their own, instruct them to find the top left of the Lesson 3.2 Basic Use Exercise Sheet by using the localization technique.
7. After your student can locate the top left of the page, show them how to familiarize themselves with the layout of the page by looking through the magnifier and using a zigzag pattern to scan the page from top to bottom. Explain that this movement is called "scanning."
8. After your student is familiarized with the layout of the page, ask them to locate the first word on the first row of the page and begin scanning from left to right the first row of items.
9. As your student reads words and numbers, pay particular attention to what types of reading errors are made so appropriate adjustments can be arranged. If the student is failing to read parts of words, they may have a field loss. To deal with this possibility, make sure that the student continues scanning with the magnifier across the entire line of text and into the margin. This ensures that the student has scanned all text and isn't just guessing at the ends of words. If "skipping" continues to be a problem,

refer the student back to the low vision clinician for eccentric viewing exercises.

10. Toward the end of the lesson, the student will encounter drawings in which several details are exhibited. Instruct your student to examine the image by using the same scanning technique. When your student begins scanning the more detailed images, prompt them to describe some of the details they see.
11. As your student scans, observe their technique and determine whether they are having difficulty. If they are struggling, be sure to ask what is wrong. If the answer lacks specificity, guide the student with questions such as "Are the images too blurry?" or "Are you getting tired?" Difficulty in reading with the magnifier might be the result of several factors. If they complain of blurriness, they may be having trouble maintaining focal distance. To determine whether this is the case, you might try the following exercise:
    - Ask your student if you can use hand-over-hand to help them find the correct focal distance.
    - Help them maintain focal distance by continuing hand-over-hand while reading.
    - As they read, ask whether your hand being over theirs helps to make the words less blurry.

If the student affirms that hand-over-hand helps alleviate blurriness, then fatigue might be inhibiting them from maintaining correct focal distance when they read alone. If fatigue seems to be a problem, place a gel wrist support, or other appropriate device, under their arm for support. If another ailment is the

problem, such as hand tremor, try using the stand with the handheld magnifier instead. A reading stand may also help reduce fatigue. If your student complains about distortion, make sure they are holding the magnifier parallel to the reading material, that they are looking through the center of the magnifier, and that their head and arm are moving as one while reading. Again, it is important that they look straight down through the magnifier's lens. If your student continues to complain of distortion, show them how to decrease the working distance by moving their eye closer to the magnifier.

1. If your student is still unable to identify the images and complains that they are too small or blurry, your student may have reached their print size limit, or may be fatigued. Repeat the exercise the next day, when your student is fresh. If the same results emerge, make a note of the problem to speak to the student's low vision clinician about the difficulties they are experiencing.
2. When your student has completed the exercise, congratulate them. Ask your student what other objects they might use a handheld magnifier to view in the classroom, work setting, home, for leisure use, or for daily living. The designs of variable-distance, hand-held magnifiers allow for fairly easy viewing of different shaped objects and ease of use for viewing medicine bottles, price tags, and menus.

Lesson 3.3
Enrichment Exercise
Using a Variable-Distance, Hand-Held Magnifier

Objective:

Student will learn the concept of tracing while reviewing basic localizing, focal, and scanning techniques. **Note:** "Tracing" is a term used to denote the visual following of stationary lines in the environment. Though tracing is a term used primarily for training with distance devices, it seems an appropriate term for near magnification devices when the task calls for following lines that are not related to text.

Materials:

- Magnifier, as recommended by the low vision clinician
- Lesson 3.3 Enrichment Exercise Sheets
- Washable crayon or photocopy the activity page and allow the student to mark on the page with their preferred writing utensil.

Exercise:

1. Instruct your student to place the Enrichment Exercise Sheets next to each other in a position that will allow the student to scan and trace them comfortably.
2. Explain to your student that they will use the magnifier to read a set of questions and descriptions concerning specific geographic locations. Tell them that they will have to find the correct answer to the questions by searching the map with the magnifier. Clarify that some questions can be

answered verbally, while others will require them to mark an appropriate location on the map.

3. After explaining the objective, encourage your student to look through the lens of the magnifier and locate the top of each of the first two Enrichment Review Sheets. (At this point, don't allow your student to look at the answer page.)
4. When your student is familiar with the outline of the map, ask them to use their magnifier to read the first description. After they have read the first description, prompt them to search the map for the correct location. Instruct them to use the washable crayon to circle the answer when it is found.
5. As your student searches the map, observe their technique, ensuring that they use the scanning technique to investigate the map. Your student may also practice tracing techniques by following country borders and rivers.
6. Encourage your student to continue working until they have discovered all of the appropriate locations. If your student becomes tired or frustrated before finding all the items, allow them to take a short break before continuing the exercise. At this point, as an option, you may allow the student to search the answer sheet in order to verify answers.
7. After your student has completed the exercise, allow them to use a moist tissue to wipe markings from the Enrichment Sheets.

Activity and Answers:

1. Find and circle Count Squirrelly's haunted castle.

2. The city of Munich is south of what forest? [Bohemian Forest]
3. Find and circle the ship that is traveling on the Rhine River, one of Germany's main rivers.
4. What large body of water is just north of Count Squirrelly's haunted castle? [North Sea]
5. What two cities sit closest to the Rhine River? [Cologne and Bonn]
6. Find and circle the castle located in Heidelberg.
7. Use the scale to discover approximately how many miles separate Berlin and Dresden. [100 miles]
8. The Weser River helps feed what large body of water? [North Sea]
9. What city lies just north of the renowned Black Forest? [Stuttgart]
10. Find and circle Gabbi's Bratwurst Hut.
11. What river lies closest to Munich? [Isar River]
12. Approximately how many miles separate Frankfurt and Heidelberg? [50 miles]
13. Find and circle the western-most city on the map. [Trier]
14. Berlin is closest to what sea? [Baltic Sea]
15. What river lies between the Ems River and the Elbe River? [Weser River]
16. Find and circle the shop called Muster's Moped Madness.

Lesson 3.4
Basic Use Review
Using a Variable-Distance, Hand-Held Magnifier

Objective:

Student will review basic localizing, focal, and scanning techniques.

Materials:

- Magnifier, as recommended by the low vision clinician
- Lesson 3.4 Basic Use Review Sheets

Review:

1. Ask the student to place the Basic Use Review Sheets for Lesson 3.4 in a position that will allow for comfortable scanning.
2. Instruct your student to look through the lens of the magnifier and use the first image in the first row to show you how to find the focal distance.
3. When your student has located the first item in the first row, ensure that they exhibit the proper technique for finding the focal distance by using the effective method previously explained.
4. After your student has successfully scanned the first row of images, instruct them to scan the rest of the rows on the page, describing aloud what they see through the magnifier.
5. When your student encounters the images in which

several details are exhibited, notice whether they remember to orient the magnifier correctly. Ask your student to describe the details of each image.

6. On the second Basic Use Review Sheet for Lesson 3.4, your student will encounter text passages and images of various content, shape, and size. Notice whether your student remembers to orient themselves with the contents of the page.
7. As your student reads the text and examines the images, ensure that they are holding the magnifier parallel to the page and that their dominant eye remains directly above the lens of the magnifier.
8. When your student completes the review, congratulate them. If necessary, allow your student to take a break before working on the next review.

Lesson 3.5
Enrichment Exercise
Using a Variable-Distance, Hand-Held Magnifier

Objective:

Student will learn the concept of tracing while reviewing basic localizing, focal, and scanning techniques.

Materials:

- Magnifier, as recommended by the low vision clinician
- Lesson 3.5 Enrichment Exercise Sheets (Take-out menu)

Exercise:

1. Instruct the student to place the Enrichment Exercise Sheets next to each other in a position that will allow the student to scan and trace them comfortably. Use a reading stand or lap desk for height adjustment.
2. Explain to the student that they will use the Hand-held magnifier to read a menu.
3. Allow the student adequate time to practice getting the correct focal distance so the words are clear and in focus. The closer the student holds the magnifier lens to their eye, the larger the field of view.
4. Ask the student the following questions:
    - What is the name of the restaurant on the menu?
    - What type of food do they serve?
    - Do they deliver?
    - How much does the Mushu Pork cost?
    - What is the most expensive item on the menu?
    - Ask the student what they would order?

Enrichment Activity: Working Lunch

Have the student bring in a take-out menu of their choice. Using their magnifier, have the student call and order their own lunch over the phone. The student will practice using their magnifier to locate a phone number to place a call, locate prices and food items from a menu, and identify the card number to place their order over the phone.

Lesson 3.6
Enrichment Exercise
Using a Variable-Distance, Hand-Held Magnifier

Objective:

Student will learn the concept of tracing while reviewing basic localizing, focal, and scanning techniques.

Materials:

- Magnifier, as recommended by the low vision clinician
- Lesson 3.6 Enrichment Exercise Sheet (Medicine)

Exercise:

1. Tell the student that they will use the magnifier to read medicine products.
2. Allow the student adequate time to practice getting the correct focal distance so the words are clear and in focus. If the student is struggling to get the text in focus, demonstrate how to grip the hand-held magnifier using the thumb and forefinger of the dominant hand to hold the handle and turn the LED light on. Position the light from the side to decrease reflection off of the lens.
3. Instruct the student to bring the activity card up to the magnifier as to not strain their neck, back, or arms.
4. Hold the activity card with one hand while using the other to adjust the magnifier. One simple technique that can be used is laying the magnifier flat on the page and slowly lifting the magnifier off the page until the letters are in

focus. The closer the student holds the magnifier lens to their eye, the larger the field of view.

Note: if the student is struggling to read the fine print of the medicine type and dose, the strength of the magnifier may need to be increased. For safety reasons, it is important that the student can identify and administer their own medications.

Lesson 3.7
Enrichment Exercise
Using a Variable-Distance, Hand-Held Magnifier

Objective:

Student will learn the concept of tracing while reviewing basic localizing, focal, and scanning techniques.

Materials:

- Magnifier, as recommended by the low vision clinician
- Lesson 3.7 Enrichment Exercise Sheet (Hygiene)

Exercise:

1. Tell the student that they will use the magnifier to read hygiene products.
2. Allow the student adequate time to practice getting the correct focal distance so the words are clear and in focus. If the student is struggling to get the text in focus, demonstrate how to grip the hand-held magnifier using the thumb and forefinger of the dominant hand to hold the handle and turn the LED light on. Position the light from the side to decrease reflection off of the lens.

3. Instruct the student to bring the activity card up to the magnifier as to not strain their neck, back or arms.
4. Hold the activity card with one hand while using the other to adjust the magnifier. One simple technique that can be used is laying the magnifier flat on the page and slowly lifting the magnifier off the page until the letters are in focus. The closer the student holds the magnifier lens to their eye, the larger the field of view.

Enrichment Activity: Have the student practice reading labels on real objects. Let the student bring in hygiene products that they use on a daily basis, or bring in sample products. Discuss how they can use their magnifier at the store to find makeup, shaving cream, lotions, and other items they would like to identify.

Lesson 3.8
Enrichment Exercise
Using a Variable-Distance, Hand-Held Magnifier

Objective:

Student will learn the concept of tracing while reviewing basic localizing, focal, and scanning techniques.

Materials:

- Magnifier, as recommended by the low vision clinician
- Lesson 3.8 Enrichment Exercise Sheet (Nutrition Facts)

Exercise:

1. Tell the student that they will use the magnifier to read nutrition facts.

2. Allow the student adequate time to practice getting the correct focal distance so the words are clear and in focus. If the student is struggling to get the text in focus, demonstrate how to grip the hand-held magnifier using the thumb and forefinger of the dominant hand to hold the handle and turn the LED light on. Position the light from the side to decrease reflection off of the lens.
3. Instruct the student to bring the activity card up to the magnifier as to not strain their neck, back, or arms.
4. Hold the activity card with one hand while using the other to adjust the magnifier. One simple technique that can be used is laying the magnifier flat on the page and slowly lifting the magnifier off the page until the letters are in focus. The closer the student holds the magnifier lens to their eye, the larger the field of view.
5. Have the student use the magnifier to identify serving size, calories, protein, fiber, calcium, and if there is any added sugar.
6. Discuss where to locate nutrition facts on food items and the importance of checking sodium and sugar levels and the number of calories. Also, if you have a food allergy it is important to check ingredients.

Lesson 3.9
Enrichment Exercise
Using a Variable-Distance, Hand-Held Magnifier

Objective:

Student will learn the concept of tracing while reviewing basic localizing, focal, and scanning techniques.

Materials:

- Magnifier, as recommended by the low vision clinician
- Lesson 3.9 Enrichment Exercise Sheet (Thermostat)

Exercise:

1. Tell the student that they will use the magnifier to read a thermostat.
2. Allow the student adequate time to practice getting the correct focal distance.
3. Instruct the student to bring the activity card up to the magnifier as to not strain their neck, back, or arms.
4. Hold the activity card with one hand while using the other to adjust the magnifier.
5. Instruct the student to use the magnifier to find the temperature.
6. Discuss other uses of thermometers and how using a magnification device will help read the small numbers.

Lesson 3.10
Enrichment Exercise
Using a Variable-Distance, Hand-Held Magnifier

Objective:

Student will learn the concept of tracing while reviewing basic localizing, focal, and scanning techniques.

Materials:

- Magnifier, as recommended by the low vision clinician

- Lesson 3.10 Enrichment Exercise Sheets (Select the following near reading activity cards: clothing label, coupon, and price tag.)

Exercise:

1. Explain each activity card. Tell the student that they will use the magnifier to read a clothing label, coupon, and price tag.
2. Allow the student adequate time to practice getting the correct focal distance so the words are clear and in focus. If the student is struggling to get the text in focus, demonstrate how to grip the hand-held magnifier using the thumb and forefinger of the dominant hand to hold the handle and turn the LED light on. Position the light from the side to decrease reflection off of the lens.
3. Instruct the student to bring the activity card up to the magnifier as to not strain their neck, back, or arms. Let the student examine the clothing label activity card. Discuss the importance of reading clothing labels for clothing care. To maintain ones wardrobe, it is important to know if a clothing item can be machine washed in certain temperatures or tumble dried. Next, let the student look at the coupon activity card. Discuss the use of coupons, where you can find them, and the information on them. Discuss how typically the percentage off is in larger text and the circumstance in which you can use the coupon is in smaller text. It helps to have a magnifier handy to read the fine print. Finally, show the student the price tag activity card. The size of prices varies from store to store. Typically, they are very small. Discuss other places prices can be placed on items in stores.

4. Hold the activity card with one hand while using the other to adjust the magnifier. One simple technique that can be used is laying the magnifier flat on the page and slowly lifting the magnifier off the page until the letters are in focus. The closer the student holds the magnifier lens to their eye, the larger the field of view.

Lesson 3.11
Enrichment Exercise
Using a Variable-Distance, Hand-Held Magnifier

Objective:

Student will learn the concept of tracing while reviewing basic localizing, focal, and scanning techniques.

Materials:

- Magnifier, as recommended by the low vision clinician
- Lesson 3.11 Enrichment Exercise Sheets (Select the following near reading activity cards: playing cards and business cards.)

Exercise:

1. Tell the student that they will use the magnifier to read playing cards and business cards.
2. Allow the student adequate time to practice getting the correct focal distance.
3. Instruct the student to bring the activity card up to the magnifier as to not strain their neck, back, or arms.

4. Hold the activity card with one hand while using the other to adjust the magnifier.
5. Let the student examine the playing cards. Discuss some card games they may be familiar with or interested in. Use the magnifier to identify each card. Discuss how using a card holder may make it easier to use a magnifier while playing a card game.
6. Show the student the business cards. Discuss when and where one might get a business card. Use the magnifier to identify the person or place, title, phone numbers, and locations.

Lesson 3.12
Enrichment Review
Using a Variable-Distance, Hand-Held Magnifier

Objective:

Student will review basic localizing, focal, scanning, and tracing techniques.

Materials:

- Magnifier, as recommended by the low vision clinician
- Lesson 3.12 Enrichment Review Sheets
- Washable crayon or photocopy the activity page and allow the student to mark on the page with their preferred writing utensil.

Review:

1. Instruct the student to place the Enrichment Review Sheets next to each other in a position that will allow the student to scan and trace them comfortably.
2. Explain to your student that they will be using the magnifier to read a set of questions and descriptions concerning specific locations or destinations on a map. Tell the student to find the correct answer by using their magnifier to search the map. Clarify that some questions can be answered verbally, while others will require the student to mark with a washable crayon an appropriate location or object.
3. When your student is familiar with the layout of the map and question sheet, encourage them to read each question and then use their magnifier to find the corresponding answer. Some questions ask that your student mark or circle a specific location. For these instances, ensure that your student successfully denotes these locations. Your student may also practice tracing techniques by following the roads and rivers to different parts of the map.
4. Encourage your student to continue working through the review until they have discovered all of the appropriate locations and can answer the questions correctly.
5. Congratulate your student, and allow them to use a moist cloth to clean any crayon marks off the Review Sheets.

Activities and Answers:

1. What sea is located northwest of Germany? [North Sea]
2. Poland is located above what country? [Czech Republic]

3. Find and place a check mark by the Danube River.
4. Luxembourg touches the borders of what three countries? [Belgium, France, and Germany]
5. Use the scale to find the approximate length of the road that runs from Stuttgart to Munich. [130-150]
6. Touching the northernmost tip of Germany is what country? [Denmark]
7. Is Hanover closer to Magdeburg or Düsseldorf? [Magdeburg]
8. Is the Elbe River closer to Switzerland or Denmark? [Denmark]
9. What city has the northernmost airport? [Hamburg]
10. What body of water is to the north of Poland? [Baltic Sea]
11. How many sections of roadway depicted meet at Nuernberg? [6]
12. Find and circle the following cities: Kiel, Bremen, and Wurzburg.
13. What city depicted is closest to France? [Saarbrücken]
14. Locate, circle, and count the airports represented on the map. [13]
15. What body of water would you cross if you traveled by car from Rostock to Hanover? [Elbe River]

Note: Should you need to create large print maps or atlases for your student who has low vision, you might obtain a copy of ArcView GIS. Produced by ESRI, ArcView GIS is a popular

and powerful mapping and geographic software application that allows users to create high quality maps that can be modified to serve a student's visual needs. To find out if you qualify for educational or federal government discounts on ArcView GIS, contact ESRI Telebusiness at 1-800-447-9778. You may also visit ESRI on the Web at esri.com.

SECTION 2: TELESCOPES

Most professionals agree that the student is best served when a multi-disciplinary approach using the expertise from the ophthalmologists, optometrists, education professionals, parents, and family is used. This cooperation provides the student with a better chance of receiving the appropriate optical devices and the right training for each.

Telescopes, particularly monocular telescopes, are the best recognized tools used by persons with low vision who strive to function expertly and confidently in an environment where distance vision is important.

Monocular telescopes are available in a range of sizes and powers. Most are designed to help the individual better view objects that are too far away to be seen clearly. Because monocular telescopes are available in specific powers and fields of view, expert advice is needed to determine the correct telescope for each student. The low vision clinician fills this need by administering a low vision exam to each student for whom it is appropriate, and by recommending telescopes.

Preparation for Using Telescopes

As you go through the ENVISION curricula you will notice that the term monocular and telescope are used interchangeably; this is because a monocular is a modified telescope which uses a series of lenses and sometimes prisms to magnify distant objects.

Therefore, a monocular is a specific telescope. Many strategies exist today for providing access to the environment for persons with visual impairments. Under the best of circumstances, the low vision exam takes place after the teacher of the visually impaired has provided the clinician with useful information in the form of a functional vision assessment. The clinician makes good use of information such as "How close must the student sit to the board?" and "How far from their face does the student hold their books?"

The following are good examples of functional vision assessments: APH's, *Functional Vision and Learning Media Assessment for Students who are Pre-Academic or Academic and Visually Impaired in Grades K-12* (FVLMA) by LaRhea Sanford and Rebecca Burnett, and *Functional Vision Assessment and Interventions from Essentials of Early Intervention for Children with Multiple and Visual Disabilities* by Irene Topor, Deborah Chen, Editor. Either of these, when used with a functional low vision report, will provide good information to the low vision clinician.

Basing their decision on the functional vision evaluation and the clinical exam, the clinician then prescribes one or more monocular telescopes for the student according to need, or they may determine no devices are needed. Whatever the outcome, it cannot be overemphasized that an examination by the low vision clinician is necessary BEFORE implementation of ENVISION curricula and associated materials.

Once the teacher has the low vision clinician's recommendation, it will be easy to match the student with the correct telescope from the array. The array is provided for use during training if the student did not receive their telescope immediately after the examination. The teacher must use the telescope of the

same power as the one recommended by the clinician, unless the clinician specifies otherwise. (Sometimes the clinician will recommend some preliminary training on the 4x telescope prior to training with an 8x or higher power telescope.) Acquiring a monocular telescope is only the beginning of access to the distant environment by the student with visual impairments. The ENVISION Program Using Distance Devices is designed to help the vision teacher, orientation and mobility specialist, or other vision rehabilitation service provider fill the training need. It is intended to be used immediately after the student receives a prescriptive recommendation for a distance device or immediately upon the receipt of the device. This valuable time can be used to help the student become proficient in developing skills necessary for the use of the monocular telescope while still enthusiastic about receiving the device. Once the student receives the recommended monocular telescope from the clinician, it is very important that the student be trained in the efficient use of the prescribed device(s) in order to achieve the best outcome and to assure the continued use and success of the device.

Unfortunately, some children and even adults will probably not receive a low vision evaluation from a clinic or qualified optometrist by the time they are referred for training. In those instances, the teacher can best serve the student by insisting upon a low vision exam.

Before introducing a monocular telescope to a student, it is important the teacher understand the way the student's vision functions.

Before attempting training in the use of the monocular telescope for outdoor activities, the instructor should introduce it indoors in

a controlled environment. It is most helpful to the student if the purpose of the monocular is explained during the introduction.

During this preliminary training, the student will learn the concept of "alignment" and "in focus." Follow the listed procedure below:

1. The instructor should introduce the telescope in an indoor, controlled environment.
2. An introduction to the purpose and care of the device should be provided.
3. Alignment
    a. If the student sees a crescent view or darkness through the telescope, it may be misaligned. Also, if the student has a blind spot or visual field defect, it may take some time and training to achieve alignment.
4. Focus and Fixation
    b. Teach the student the concept of "in focus." The teacher originally focuses the monocular for a beginning learner while looking at a target. When the student then looks at the target through the monocular, they may need to turn the focusing adjustment ring slightly clockwise or counterclockwise to bring the image into clear focus for their eye.
    c. One should expect more movement of the focusing ring when the distance from the target changes. For close objects, the focusing ring is turned clockwise so the monocular is lengthened; for more distant objects, the focusing ring is turned counterclockwise to shorten the monocular.

5. Localization/Spotting

    d. Without the telescope, have the student look in the direction of where a sign or board may be and then bring the telescope up to the eye and focus the telescope. Spot objects at different distances and of different sizes. Move from indoor to outdoor objects.

6. Tracking

    e. Have the student track a moving object or person through the telescope.

7. Tracing and Scanning

    f. Have the student follow or trace (e.g. base boards, curbs, door frames, sign posts) or find objects in a room. Make sure the scanning pattern is organized. Scanning example: If a student is looking for a pedestrian signal they would: scan up and down (vertical) looking for the curb, scan left and right (horizontal) to locate the bottom of the pole, and then (vertical) up the pole.

8. Special considerations: Balance

    g. If balance is a concern, start tasks in a seated position with elbows supported, then, seated with elbows unsupported, and then, in a standing position with elbows close to the body for support.

    h. Keep in mind that the student may be working with physical therapy for balance issues. Reach out to other team members, as available, for any safety recommendations.

Telescopes consist of multiple lenses that work together to provide angular magnification.



For example, a simple Galilean telescope might consist of an objective lens that is +20.00 D in power and an ocular lens that is -40.00 in power. The resultant magnification of this combination of lenses, separated by an appropriate tube length, would be 2x (40 divided by 20). So, the first number on a telescope indicates the magnifying power. The greater the number, the larger the image appears when viewed through the monocular telescope. As the magnification increases, the area that can be seen at one time becomes proportionately smaller. When the image is too large to fit into the limited field of the telescope, the observer must then do more scanning in order to view the entire object. The second number indicates the diameter of the objective, or front lens of the telescope. It is measured in millimeters and "indicates how much light enters the telescope and how bright the image will be. The larger the number, the brighter the image

and the greater the likelihood that the student will be able to use the system in less-illuminated environments. It does suggest (but not always) that the field of view will be larger" (R. T. Jose, personal communication, March 2002). A monocular may have a high power, thus limiting the field, but also have a larger diameter, increasing the field of view and image brightness. When an object is farther away, more of it can be seen. Conversely, when the object is closer, less of it can be seen. If the student needs to wear glasses while using the monocular, their field may be decreased because the monocular is held away from the eye by their spectacles. This increases the vertex distance, the space between the corrective lens and cornea.

When the student has become proficient in the use of the monocular telescope indoors, they may begin working outside. Training should take place on campus, in the student's yard, or in other familiar territory. If the teacher is not a certified orientation and mobility specialist (COMS), they should arrange for one to accompany the student on lessons whenever training extends beyond these protected areas. Frequently, fatigue will be a factor when the monocular telescope is used by the student. It is tiring for the arms to hold a monocular up to one's eye for several minutes. It may be helpful for the student to rest their elbow on a surface such as a table or desk if the viewing task is very lengthy. If such a surface is not available, it is also possible to create a support by asking the student to fold their non-dominant arm across their chest so they can rest the elbow of their dominant arm on the fist of the other hand. However, when fatigue occurs, the teacher should be sensitive to the student's needs and allow their entire visual system to relax and feel restored before continuing the exercises.

One further concern is holding the monocular steady in order to

keep the target consistently in view. This is particularly important with the use of a stronger monocular, since very small hand movement is exaggerated by the telescope, making the image appear to jump around. Using both hands to hold the monocular, finding a way to support the elbow of the dominant hand, and bracing the fingers of the dominant hand firmly against the forehead are all useful techniques for accomplishing this goal.

Other issues, especially among teens, include psychosocial factors involved with using any device that might cause the student to feel different from their peers. Allow students expressing concern to talk about their feelings and anxieties of using a low vision device. Talk through different scenarios and discuss coping mechanisms.

When the student completes training, and either becomes proficient in the use of the monocular telescope or shows significant problems during use, it is time for the teacher of the visually impaired to fill out the form "Using Prescriptively Recommended Optical Devices: Skill Performance Checklist for Monocular Telescopes," and send it to the educational team and/or low vision clinician.

Finally, the teacher should enjoy their partnership with the student during the training experience. Watching a student move gracefully and safely through their environment because they have adequate access to needed visual information is one of the most rewarding experiences an instructor can have.

What To Expect From A Monocular Telescope

The following chart shows how a monocular telescope can significantly improve the viewing of distant images for the student with a vision impairment. The left column lists common visual acuities among students with low vision. The second column lists

the distance at which the student must stand to read the 20/40 line on the eye chart. The third column lists the distance at which the student must stand to read the 20/20 line on the eye chart. The fourth column lists the distance at which the student must stand to read the 20/40 line on the eye chart with a 2.8x telescope.

Entering Acuity	20/40 Distance	20/20 Distance	20/40 with 2.8x
20/40	20 ft	10 ft	56 ft
20/60	13 ft	6 ft	36 ft
20/80	10 ft	5 ft	28 ft
20/100	8 ft	4 ft	22 ft
20/120	6 ft	3 ft	16 ft

The second chart gives the same information but compares the distances with those of a student with lesser acuities who is reading the 20/40 line with a 4x telescope.

Entering Acuity	20/40 Distance	20/20 Distance	20/40 with 4x
20/100	8 ft	4 ft	32 ft
20/120	6 ft	3 ft	24 ft
20/160	5 ft	2.5 ft	20 ft
20/200	4 ft	2 ft	16 ft
20/240	3 ft	1.5 ft	12 ft
20/280	2.5 ft	1.25 ft	10 ft

Benefits Of Using A Monocular

1. In the classroom, the student may use a monocular to view the board from their seat and avoid having to walk up to it. This will make copying easier.
2. The student can read materials from a distance. This comes in handy in a store, during a sports activity, or on a field trip.
3. By using a monocular, the student can identify people at a distance. This helps them feel more confident in social situations.
4. The monocular is small and portable, and can easily fit in a pocket or purse. It promotes more efficient and independent outside travel.
5. The monocular can be used so the person with low vision can participate in leisure or spectator activities such as bowling and football games.
6. The monocular gives the proficient user a sense of freedom when they know they have access to the distant visual environment.

Things You Should Know Before Using ENVISION

1. The eye for which the device was prescribed
2. Your student's dominant hand and dominant eye
3. Your student's tolerance for glare
4. The correct viewing end of the monocular telescope
5. The correct distance for your student to view the board

6. What's in your student's eye report
7. What's "in focus" and "out of focus" to your student may not be exactly the same for you, but it should be close to the same "in focus" point
8. How to include monocular telescope training in your student's IEP, 504 plan, transition goals, or WIOA plan for adult services
9. Safety issues concerning use of monocular telescopes
10. The power of the monocular telescope recommended by the low vision clinician
11. The features and capabilities of the optical devices you will be using as tools
12. If the student should be wearing prescription spectacles while using the device
13. The best lighting to use during training

Things To Do Before Using ENVISION

1. Have the parents of young children or adult participants sign a release form that allows you to talk freely with your student's school staff, certified O & M specialist, and eye care professionals. Then, talk with them about how you may help the student with monocular skills training.
2. Obtain and read your student's eye report.
3. Become familiar with monocular telescopes and their proper use and handling.
4. Become familiar with your student who has a visual impairment and their strengths, weaknesses, and needs.

Pre-Monocular Activities for Teacher and Student

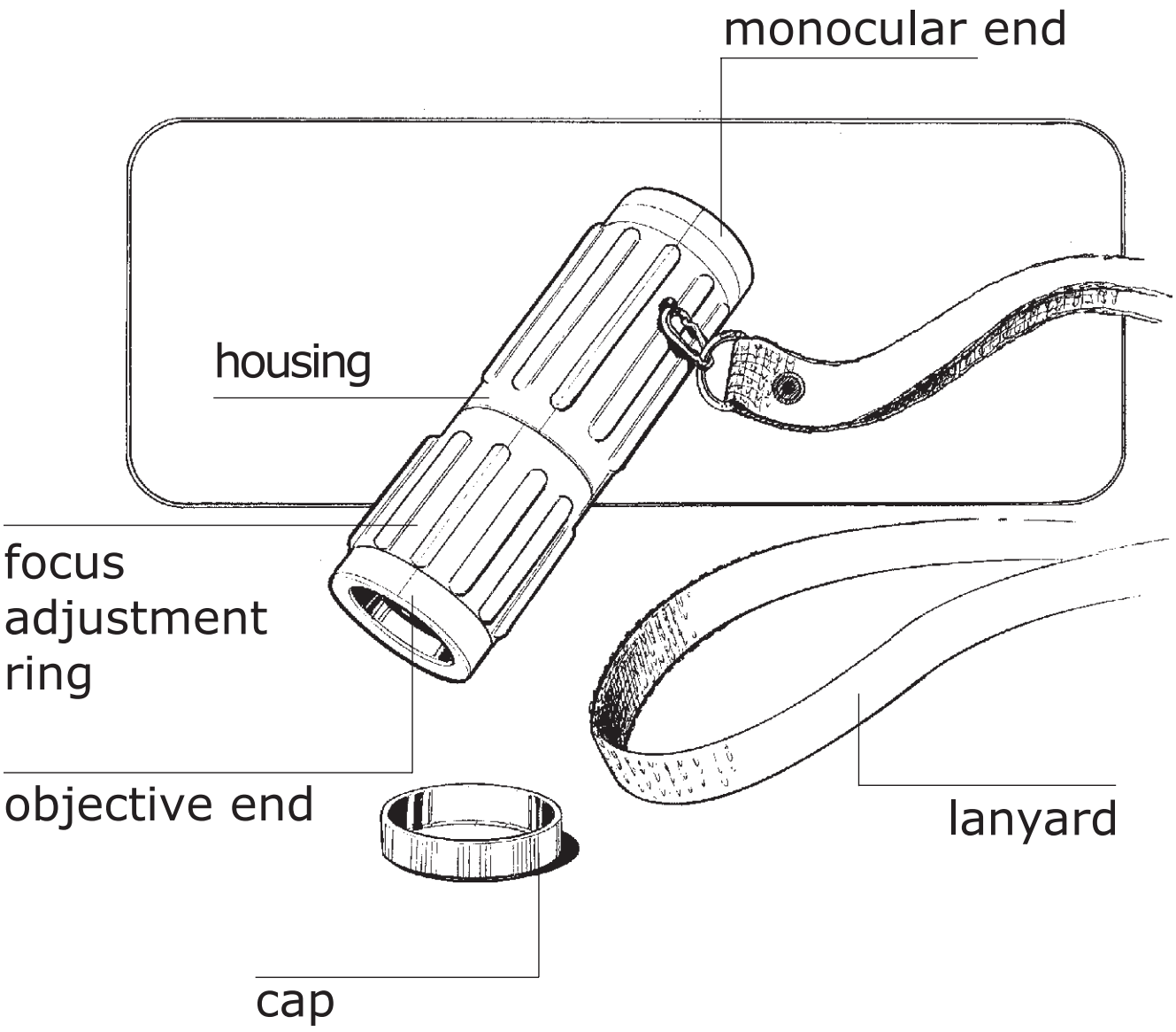
For students who have no prior experience with a monocular telescope.

1. Give your student a cardboard tube. Explain that the monocular telescope is shaped like the tube. Allow your student to look through the tube to see light at the far end. Explain that a monocular telescope is like a tube that magnifies things in the distance. It has special lenses somewhat like an astronomer's telescope.
2. Help your student identify their dominant eye and dominant hand. Start out holding the tube to the dominant eye with the dominant hand. The student should be allowed to switch hands if it is more comfortable.
3. Show your student how to hold the tube correctly, that is, level, with their head upright and their hand wrapped securely but lightly around the tube. Let the student practice. Make sure they sit or stand with their back straight.
4. Talk to your student about the responsibility of using a monocular. Talk about the issues of storage, care, and cleaning.

Parts of the Monocular

Parts Identification

Housing	Focus Adjustment Ring
Ocular Lens	Cap
Objective Lens	Lanyard
Barrel	Cleaning Cloth



Cleaning Lesson 1.1

Storage Lesson 1.1

Retrieval Lessons 1.1, 1.2

Readiness Lessons 1.1, 1.2

Identify Dominant Eye Pre-Monocular Activities

Identify Hand to Use Pre-Monocular Activities

How to Grip Telescope Lesson 1.2

Positioning Telescope Lesson 1.2

Stabilizing Telescope Lesson 1.2

Skills and Topics Presented in ENVISION Section 2: Telescopes

Localization Without Telescope

Spotting Lessons 1.2, 1.3

Concepts to Learn

In Focus Things to Do Lessons 1.2, 1.3

Multiple Planes Lesson 1.5

Spotting

Without Telescope Lessons 1.2, 1.3, 1.13

With Telescope Lessons 1.2, 1.3, 1.4, 1.13

Using Colors Lessons 1.13, 2.2, 2.3

Focusing

Under 20 feet Lessons 1.2, 1.3, 1.6, 1.9, 1.10, 1.13

Over 20 feet Lessons 1.3, 1.4, 1.9, 1.10, 1.12, 1.13, 2.1, 2.2

Single Plane Lessons 1.3, 1.4, 1.9, 1.10, 1.12

Multiple Planes Lessons 1.5–1.8, 1.10, 1.11

Tracing

Moving Left to Right Lessons 1.5, 1.6

Short lines Lessons 1.5, 1.6

Long Lines Lessons 1.5, 1.6

Wavy Lines Lessons 1.5, 1.6

Convoluted Lines Lesson 1.5

Scanning

Moving Left to Right Lessons 1.7–1.10

Using Zigzag Technique Lessons 1.8–1.10

Identification

Symbols Lessons 1.4, 1.6, 1.10

Pictures Lessons 1.2–1.10

Numbers Lessons 1.3, 1.6–1.9, 1.13

Street Signs Lessons 1.3–1.9, 2.1, 2.2

Words on whiteboard Lessons 1.5, 1.9

People Lesson 1.12

Objects Lessons 1.10, 1.11, 1.13

Tracking

Moving People Lessons 1.12, 2.3

Moving Objects Lessons 1.13, 2.3

Multiple Planes Lesson 1.12

Leisure Use

Indoor Events Lessons 2.3–2.5

Outdoor Events Lessons 2.3, 2.5

Television Lesson 2.5

Movies Lesson 2.5

Independent Use

Indoor Lessons 1.14, 2.4, 2.5

Outdoor Lesson 2.5

Self-Advocacy Lesson 1.15

ENVISION: Telescopes Indoor Skills

Vision Enhancement Program

Using Distance Devices

Lesson 1.1
Caring for the Monocular

Objective:

The student will demonstrate proper care and storage of a monocular.

Materials:

Monocular, as recommended by a low vision clinician.

Procedures:

1. Show the student the objective lens, the ocular lens, housing, and focusing ring of the monocular.
2. Demonstrate to the student:
   - the monocular can be kept in the carrying case

between uses or when the student is using it to work at their desk

- if the student requests it, the neck strap may be worn to prevent dropping and breakage

3. Tell the student that in order to keep the lens as clean as possible:
   - the lens should not be touched
   - the monocular should not be handled with dirty hands
4. Show the student how to gently wipe the lenses with a clean, soft cloth when the lenses become smudged. Do not use a paper towel; it could scratch the lenses.
5. Ask the student to correctly demonstrate cleaning of the lenses.
6. Explain to the student that the monocular should always be stored in the case to prevent accidental scratching of the lens when not in use. The lens cap should always be on the monocular when not in use.
7. Show the student how to easily retrieve the monocular by keeping it in the same place. If the device is worn on a lanyard, the student simply grasps the barrel between the palm and fingers and brings the telescope to their eye.
8. Allow the student to ask questions about the function and purpose of the telescope. Provide simple, yet informative answers.

Lesson 1.2
Learning to Focus

Objective:

The student will become familiar with the concept of a monocular telescope and will learn to hold the telescope, focus properly on a near target, and describe the target.

Materials:

- 4x monocular, or monocular of power recommended by a low vision clinician
- Object cards: flag, black & white star, triangle

Procedures:

1. Explain that a monocular telescope can be used to see objects and read information in the distance.
2. Show the student how to carefully take the monocular telescope out of its case by grasping it firmly. Show them the neck strap and explain how it is important to use the lanyard to prevent dropping the monocular telescope.
3. Show the student the ocular lens, housing, and focus adjustment ring on the monocular. Demonstrate how, for near viewing, the focus adjustment ring end of the telescope is gently turned with the thumb and forefinger of the selected hand to extend the telescope. For distance viewing, the focus adjustment ring is turned to shorten the telescope.
4. Before giving the monocular telescope to the student for the first time, adjust it as closely as possible for the target so the student will have minimal adjustment when first beginning to use it.

5. Demonstrate to the student how they can hold the monocular telescope to their dominant eye and turn the focus adjustment ring while looking through the monocular. Show the student the "ocular" or viewing end of the telescope and demonstrate how to grip the telescope by wrapping fingers and thumb around it. Show them how to press the flesh of their index finger and thumb against the orbit to block out light.
6. The student should now locate the object to be viewed without the monocular telescope, if they can. Choose something familiar like the clock or your face. At a distance of 10 ft, ask the student to now bring the monocular telescope to their eye and attempt to focus on the target while looking through the monocular. They should turn the focus adjustment ring and stabilize the monocular with their free hand.
7. The student should now turn the focus ring until the target becomes as clear as possible. Help the student with hand-over-hand assistance if needed. Allow the student to stabilize the telescope by leaning on their elbow or holding their arms tightly against their chest.
8. Place an object card on the whiteboard tray or other stable viewing surface. Make sure the student is sitting at least 10 ft from the card. Ask them to first look at the picture card with their eyes and maintain the card in their field of vision. Then tell the student to bring the monocular telescope up to their eye. Give them a moment to focus the monocular. Ask them if they can identify the picture. Any description of the object card will do. If they cannot identify the picture, try the black and white star card. If they are having trouble identifying the card, it

may be because it is not in focus or they are not directing the monocular telescope in line with the card. Check the focus and direction until they can spot the card. Repeat this exercise until the student can identify all three object cards. Be sure to praise their success. Then mix up the cards and repeat the exercise. Make sure the student puts the telescope down between cards. Repeat the exercise at a distance of 15 ft.

9. Inform your student that in this instance "monocular" means "with one eye" and indicates a telescope used with one eye. Often, a monocular telescope is simply called a "monocular."
   Important: Try to have the student sitting close enough to the target so they can easily focus on it and read or describe it. If the distance you have tried seems too far away for the student to have success, move them closer until success is achieved. Then try moving them backward to the 15 ft distance and repeat the exercise.

Lesson 1.3
Practicing Medium Distance Tasks

Objective:

The student will learn to position and perform medium-distance (15 to 25 ft) tasks with recommended indoor monoculars.

Materials:

- Monocular, as recommended by a low vision clinician
- Object cards and signs: flag, maple leaf, triangle, stop sign, 783, 932, 538, 892

Procedures:

1. Ask the student to sit in their usual place in the classroom. Place the following number cards at various spots around the room.
   783, 932, 538, 892
   Try to make sure each card is about the same distance from the student and that all are at the same height. Place the following object cards on the whiteboard. (Make sure each card is approximately the same height and distance from the student.)
   Flag, maple leaf, triangle, stop sign
2. Check to make sure the student is focusing the monocular properly and first spotting the card without the monocular before bringing the monocular up to their eye. Point out the object card if needed for initial location. Ask the student to adjust the focus on the monocular until the object card is as clear as possible. When the student has located the card and properly focused the telescope, ask them to put the telescope down.
3. Now ask the student to visually locate the next card before bringing the monocular to their eye. The student may then identify the object. They need not know the exact name of the object as long as they are able to describe it. Repeat for each card, putting the telescope down between cards.
4. Ask the student to follow the same procedure for the number cards. If the student misses a card, say nothing.
5. Scramble the same cards and repeat the exercise. Make note of any cards which the student misses twice in a row.
6. Congratulate the student upon their successes. Then take any cards the student missed twice and line them up

on a wall. Move the student 5 ft closer to the wall than they were previously. Ask them to again locate the cards visually, employ and focus the monocular, and then put it down. If the student has missed many of the cards at the first distance but identifies them at the closer distance, their monocular may have been out of focus or not strong enough. Repeat the exercise, moving the cards closer. Repeat again for distances of 15, 20, and 25 ft. If the student continues to have difficulty and the monocular is focused, a referral back to the low vision clinician may be appropriate.

Lesson 1.4
Viewing Targets from a Distance

Objective:

The student will view cards at distances of 20, 30, and 40 ft. The student will be able to adjust their monocular telescope for several distances and describe what they see.

Materials:

- Monocular, as recommended by a low vision clinician
- Cards from the activities binder:
  - Black and white triangle
  - Blue and white wheelchair
  - Blue and white stairs
  - Street name sign

Procedures:

1. Ask the student to stand 20 ft from you and focus the monocular using the triangle card as the object of focus.

Be sure to place the card at eye level. Allow the student to support their arms, if needed, to stabilize the monocular.

2. Check to make sure the student has the monocular focused. Then show the cards one at a time and ask the student to describe them. Accept any description which is appropriate for the content of the card.
3. If the student has trouble seeing the cards, check to make sure the monocular is focused properly. Check to be certain they are first looking at the card and then bringing the monocular to their eye. If the student is following procedures and focusing properly, using the focus ring or gently turning the ocular, and still cannot see the cards with the monocular, move 5 ft closer. If they still cannot see the cards, make sure your student understands "in focus" (see Things To Do Before Using ENVISION). If there is still a problem, consult the clinician.
4. If the student has no problem describing the objects on the cards, move back 5 ft, add new cards, and ask the student to describe the cards again. Repeat this process up to 30 ft of distance between you and the student. (You may have to go out in the hall to achieve this distance.) You may want to have another student hold the cards for your student. Walkie-talkies can be used to communicate with one another. These make the activity lots of fun.
5. Once you have achieved the 30 ft distance with the student identifying all cards, gather a new group of cards. Any or all of the cards from the set are appropriate for this exercise. If you do not achieve the 30 ft distance, it could be because of the limitations of the monocular telescope. Allow the student to stop at the upper limit of the distance viewing they are able to achieve.

6. If your student's telescope is powerful enough, show the cards to the student from the 40 ft distance. If they can describe the objects, you will know they have good use of their monocular in various ranges of distance.

Lesson 1.5
Tracing with the Monocular

Objective:

Student will systematically trace lines of target words and pictures from left to right.

Materials:

- Monocular, as recommended by a low vision clinician for best viewing of the board from the student's seat
- Several street names, numbers, or object cards from the activities binder.
- Several additional lines of words written across the board (additional letters or pictures for younger students)

Procedures:

1. Beginning at the top left corner of the board, tack or otherwise place the cards across the board in at least two straight lines (letters or pictures for younger students). Ask the student to focus their monocular on the board.
2. Say to the student, "Look at the top left corner of the board and read the word," (or identify letter or picture). Draw a bold, black line connecting the cards. If a younger student is not sure where "top left" is, help them find the first picture or letter.

3. Then say to the student "Can you read the rest of the line?" or "Tell me what the next picture is." If needed, help the student move from the top left to top right.
4. Once the student reads the last one on the first line, tell them to follow the edge of the bottom of the line they have read back to the beginning. Tell them to drop their view down a tiny bit to locate the beginning of the second line. Say to the student, "Beginning from the left, read the second line (or identify the letter or picture)."
5. Ask the student to continue reading the subsequent lines, always following the lower edge back to find the next line.
6. Praise the student as they continue tracing forward with the monocular, then backward on the same line before dropping down to read words on the second line, third line, and subsequent lines from left to right.
7. Rearrange the positions of the words, letters, or pictures vertically, and ask the student to read the lines again beginning with the top left and moving downward.
8. Repeat steps 6 and 7, substituting short, boldly-written words on the whiteboard, until you are certain the student can trace words written boldly on the board at the distance from their seat to the whiteboard.
9. With chalk, draw a wide, meandering line in the hall or on the sidewalk. Make sure the line crosses over itself two or three times. Write a bold word at the end of the line. Ask the student to focus the telescope on the beginning of the line and then slowly, visually follow the line to its end. Ask the student to read the word at the end of the line.

Lesson 1.6
Tracing Lines and Cards

Objective:

The student will systematically trace targets from left to right.

Materials:

- Monocular, as recommended by a low vision clinician
- Object cards from materials kit: 12-pointed star, Street light, blue & white restroom sign, arrow, no smoking
- Number cards from materials kit: 3258, 96, 4172, 260, 1699, 3008, 783, 417, 932, 38, 71, 606, 90

Procedures:

1. Draw a continuous, heavy, curvy line on the whiteboard starting on the left and finishing on the right. Ask the student to stand about 20 ft from the board and use the monocular to follow the line from beginning to end. This is called tracing.
2. Have the selected object cards lined-up one after another across the top of the board. Ask the student to focus the telescope on the top left of the board.
3. Say to the student, "Look at the picture in the top left corner of the board. Now use your monocular to identify the picture." If a student is not sure where "top-left" is, help them find the first picture.
4. Ask the student to identify the pictures in the rest of the line.
5. Set up the number cards in two rows, with the larger cards in the top row. Tell the student to read the line of big numbers cards (3258, 4172, 260, 1699, 3008)

beginning from the left.

6. Ask the student to read the smaller number cards (96, 783, 417, 932, 38, 71, 606, 90) beginning at the left.
7. Change the positions of the numbers and pictures. Ask the student to read the top line again beginning at the left.
8. Now tell the student to move from the right (end of the top line), back to the left again, then drop down to find the beginning of the second line. Repeat this procedure for each line of number cards and object cards.
9. Carefully observe as your student continues tracing with the monocular and reads numbers on the second line, third line, and subsequent lines from left to right, then left again in a zigzag motion.
10. Record the student's performance in your notes. Keep track of any object cards or number cards which they continuously fail to identify. In a subsequent activity at a closer distance, see if they can identify the cards.

Enrichment Activity: Make three rows of canned vegetables by stacking cans on one another. Have the student identify the kind of vegetables in the can by looking at the labels with the recommended monocular from a distance of 10 to 20 ft. Make sure they practice the left to right movement. If the student identifies the cans, give them a reward.

Lesson 1.7
Learning to Scan

Objective:

The student will scan for specific target words, numbers, or pictures.

Materials:

- Monocular, as recommended by a low vision clinician for best viewing of the board
- Cards from the activities binder:
  - Wall clock
  - Street name cards
  - Number cards
  - Weather Forecast

Procedures:

1. Ask the student to focus the monocular on the board. Say, "Using your monocular, look at the top left, and move to the right to find the word, numbers, or picture in the order they appear." Ask the student to remember to move in a systematic pattern.
2. Ask the student to describe each target when they have found it.
3. Make games of this exercise by telling the student to, "Find the first word (picture) which is used to ____," or asking, "What is the next word (picture) after ____? What is the first word on line two? What is the next word on line three?" Explain that this activity is called "scanning." Reinforce your student as they find the correct objects, cards, or words.

Lesson 1.8
Learning to Scan

Objective:

The student will scan for specific target words, letters, or pictures.

Materials:

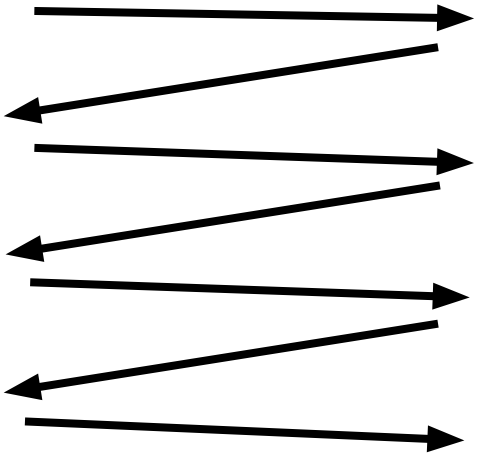
- Monocular, as recommended by a low vision clinician
- Object cards: your choice
- Number cards: your choice
- Street name cards: your choice

Procedures:

1. Randomly place the object, number, and street name cards on the board.
2. Ask the student to focus the monocular on the upper left corner, then scan, beginning at a point designated as the top left, moving their head, telescope, and hand together as a unit slowly to the right. Tell the student to identify the first object, number, or word they come upon. When they reach the far right side, ask them to drop down slightly and move back to the left to scan the lower cards.
3. Make sure you have given the student a way to indicate when they find the target word, letter, or picture. Explain that this activity is called "scanning." Ask them to keep scanning to find as many objects, numbers, or words as they can.
4. Now ask the student to find specific objects, numbers, or words within the frame of the board. "Find the picture

which has a star with five points. Find the number which ends in six." Do this until the student has located and identified all the cards. Repeat this activity for several days in a row.

Enrichment Activity: Take the student to the school trophy case, bulletin board, or other display area. Ask the student to scan the display while telling you what they see as they look from left to right. Make sure they practice dropping down to the next row as taught in the lesson. The scanning pattern should look like this:



Scanning takes much practice. Be aware of any opportunities for your student to practice their scanning skills while they are in your class.

Lesson 1.9
Preparation for Reading Continuous Text

Objective:

The student will use the monocular to read lines of continuous text and to find details of specific targets.

Materials:

- Monocular, as recommended by a low vision clinician
  - Menu board sign
  - Clock
  - Weather Forecast
  - Street sign
  - Number cards

Procedures:

1. Ask the student to stand in the center of the room and focus on the classroom clock. Ask them to tell you the time. If your student cannot tell time, ask what numbers the clock hands point to.
2. Introduce the weekly weather forecast sign and Food Menu sign from the activity binder. Explain that the weather forecast card is an example of what can be viewed on television news or the weather channel. Explain that the menu board is an example of a sign that might be posted behind the counter of a fast food restaurant, cafeteria, or coffee shop to place your order. Some restaurants may have food specials for the day posted as well. People order food by looking at the sign posted in the distance.
3. Now put the Food Menu card on a wall or the whiteboard at about 2 ft intervals. Ask the student to locate the card, then scan from the left until they find the first food item. Ask them to identify each price as they find it. Once the student has identified the food and prices, place the weekly weather forecast card on the board and repeat the exercise. If the student cannot read the food items or weather temperatures on the cards, allow them to move closer.
4. Use several of the street name and number cards from the activity binder. Place them across the whiteboard in two rows. Place the cards 2 to 3 ft apart horizontally and about 1.5 to 2 ft apart vertically. Ask your student to stand about 20 ft away and scan the area from left to right until they locate the cards. Ask the student to read the names and numbers to you. If they cannot, you might want to make

sure the focus is correct. If they still cannot read the text, you may consider moving the student closer or farther away from the wall where the cards are mounted. If these strategies do not help, your student may have trouble focusing or locating and may need to review previous lessons. If the problem is ongoing, you may wish to refer the student back to the low vision clinician. The telescope may be functioning at its upper distance limit.

5. Repeat the exercises at a distance of 15 ft and again at 25 ft. This will allow the student to practice refocusing the monocular.
6. Write several lines of continuous bold text on the clean whiteboard. Ask your student to scan the board from left to right until they locate the text. Ask your student to read the text to you. Make sure your student scans left to right, returning to the left to scan again. Their head and monocular should travel in a subtle zigzag motion.

Note: If, when using the monocular, your student can read the cards from the activity binder but cannot read continuous text on the board, you may need to write heavier or bolder text.

Enrichment Activity: Send your student to the library, media center, or another classroom in which there is a large bulletin board display. It should be a display with which you are already familiar. Ask your student to study the bulletin board with the monocular, moving from left to right to left as they study. When your student returns, have them tell you about the contents of the bulletin board, or let them draw a representation of it, if they are able.

Lesson 1.10
Varying Distance in Horizontal Scanning

Objective:

The student will systematically scan at various distances and describe details in the classroom.

Materials:

- Monocular, as recommended by a low vision clinician
- Object cards in various locations in the classroom
  - Airport departure sign
  - Wi-Fi sign
  - Warning no swimming sign

Procedures:

1. Introduce the departure sign, Wi-Fi sign, and no swimming sign. Describe where to find these signs: airport, bus or train stations, coffee shops, hospitals, on the beach or other swimming areas. Explain that the departure sign is one you might see at an airport terminal to help travelers locate their flight destination, times, and gate numbers for departure. The Wi-Fi sign helps people know where they can access Wi-Fi to use on their phones, laptops, or other electronic devices. The no swimming sign helps people identify if it is safe to swim in the area.
2. Hang object cards on the wall. Ask the student to scan from left to right, at the top of the classroom wall, in a horizontal line; then move to the beginning of the next line by traveling back, right to left, in a slight downward

diagonal line. The student should then continue scanning horizontally again from left to right.

3. Instruct the student to repeat this zigzag motion going from the top to the bottom of the wall until they identify the object cards. Have the student describe the details of each card.
4. Ask the student to describe other items on the wall as they see them.
5. Repeat the exercise for each card on the wall. Make sure the distances from the student to each wall vary by at least 5 ft. This is most easily achieved by moving the student.
6. To view other objects in the classroom, ask the student to scan systematically from left to right in a horizontal pattern across the floor.
7. Remind the student to adjust the focus as needed if the distance of objects differs.
8. Have the student continue scanning horizontally left to right, zigzag back again right to left, and then left to the right, moving from distant to near.
9. Move the student to the window. Identify an object like a tree or car that is less than 15 ft away. Ask them to spot the item, bring up their telescope, and focus it on the object. Identify another object that is 40 ft away. Ask the student to spot and focus on the second object. Now ask the student to practice by alternating looking at the first and second objects and focusing each time. If all goes well, the student should be able to scan between distances easily.

Enrichment Activity: Take the student to the library, media center, or some other area on campus where there are likely to be interesting posters, photographs, wall hangings, and sculptures on the walls. Using the monocular, ask the student to scan the walls in the recommended manner and report to you what they see. You may ask them to create an object or poster which would fit in with the scheme they have described.

Lesson 1.11
Finding Details

Objective:

Student will scan to find details on specific targets.

Materials:

- Monocular, as recommended by a low vision clinician
- Materials in various locations in the classroom
- Eight object cards of your choice

Procedures:

1. Ask the student to use the monocular telescope to answer questions which require attention to detail, such as, "What time is it?" "What is the title of the book on the shelf?" or "What does the poster on the back wall say?"
2. If students are in the room, you may ask, "How many blondes are in the class?" "How many are wearing blue shirts?"
3. Place the selected cards at various heights and distances around the room. Ask the student to use the scanning technique to scan the room to find the object cards. Once they locate each card, ask them to describe what is on the

card. As long as the student gives a suitable description in their own words, it does not matter if their word choice matches yours. If they get all the cards correct, congratulate them, then shuffle or add to the cards and ask them to stand 5 ft farther away from the cards. Repeat the activity. If the student performs poorly when standing farther away, allow them to move closer. Repeat the exercise to end on a positive.

Lesson 1.12
Finding People

Objective:

The student will find a familiar person among a group of people.

Materials:

- Monocular, as recommended by a low vision clinician
- Group of familiar seated students, friends, or family

Procedures:

1. **Seated People** - Begin by taking the student to a setting where there is a group of people with whom they are comfortable (perhaps the cafeteria or library). The group may be students, parents, or the student's family. The situation should be one in which the student is comfortable with others seeing them use the monocular.
2. Ask the student to stand 20 to 25 ft away from the seated people. As the student faces the people, ask them to focus on the person who is on their left.
3. When the student is able to demonstrate that they can identify something about the person (such as, the lady

with the yellow hat), ask the student to slowly move their head and the monocular to the right.

4. Remember, the student should hold the monocular close to their eye and stabilize it with their dominant hand while continually adjusting the focus. The amount of adjustment should be minimal at the suggested distances.
5. Ask the student to continue focusing on the people until reaching the last person on the right. After scanning the room, ask the student to trace back to the left and describe the characteristics of somebody they know. If they don't know anybody in the room, have them trace back to the left and describe the characteristics of the first person they spot.
6. **Moving People** – In a group of people who are moving, (an auditorium, on the playground, or at the bus stop) ask the student, who is in a stationary position, to quickly scan the group beginning on the left and moving to the right.
7. Again, the student should hold the monocular close to their eye and stabilize it with their dominant hand while adjusting the focus, when needed, with their non-dominant hand. The amount of adjustment should involve minimal movement left or right.
8. Ask the student to identify any familiar person.
9. Then ask the student to scan the group and find a particular person. Say to the student, "Can you find Charles?" Remember to reinforce left to right movement during the scanning process.

10. Verbally reinforce the student if they identify someone by using the monocular.
11. The student may need to scan from the left to the right, and then to the left again in a zigzag pattern several times before finding the particular person. Be patient with your student.

Note: Not all students are comfortable using their monoculars in front of other students, especially if they are just learning. Be sensitive to your student's feelings and try to arrange practice situations which are comfortable for the student. In some instances, you may need to teach the student's parent or sibling how to do the scanning exercise and allow them to coach the student at home until the student is more comfortable in a public place. If your student has trouble identifying people at about the 20 to 25 ft distance, the telescope may not be powerful enough for the exercise. If scanning groups of people in the indoor environment is important to your student's daily functioning, confer with the low vision clinician about the need for an additional, more powerful telescope.

Lesson 1.13
Tracking Moving Objects

Objective:

The student will learn and apply monocular skills in tracking objects and people as they move.

Materials:

- Monocular, as recommended by a low vision clinician
- Large, brightly-colored ball at least 8" in diameter
- Bus number sign

Procedures:

1. Hold the large, brightly-colored ball at arm's length from you, at eye level with the student. Stand about 15 to 20 ft from the student and ask them to locate the ball visually, then bring the monocular up to their eye to spot the ball. Once the ball is in their view and the monocular is properly focused say, "Now I am going to move the ball to your right." Take five slow steps to the student's right. "Now I am going to move the ball to your left." Take five slow steps to the student's left. Check to see that the student is following the ball with the telescope.
2. Tell the student to locate the ball without the monocular and then focus upon it with the monocular. Now tell the student, "I am going to move the ball slowly from the left side of the room to the right. I want you to move your head slowly, holding the monocular steady, and watch the ball as it crosses the room. Please tell me to stop if you should lose sight of the ball with your monocular." Repeat this exercise three times. If the student loses track of the ball, stop while the student locates the ball again and focuses on it through the monocular. Then move again until the student can track the ball across the room.
3. Repeat the exercise above, but this time have the student stand in the center of the room and follow the ball as you make a complete lap around the room. Make sure you stay the same distance from the student at all times. Repeat the exercise three times. Be sure to always begin on the student's left, moving to their right.
4. Introduce the bus number object card from the activity binder. Have the student describe what they see on the card. Ask the student, "What is the location and bus

number?" If the student struggles to locate the details, help describe where this information can typically be located on a bus. On the front and side of city buses there are digital displays of text that tell the destination and route number of where the bus is going.

5. Standing a little to the student's left and about 20 ft away, ask them to locate the card and bring it into focus with the monocular. Have the student read the bus information. Tell the student that you are going to move toward them for five steps. Ask the student to keep the monocular focused upon the card and move their head as needed to keep the card in view. Slowly take five steps toward the student. Ask the student to tell you to stop if they should lose sight of the card from their field of view. Give them time to relocate the card and, if necessary, refocus before moving again. Next, tell the student that you will take five steps backward. Ask them to keep the monocular focused upon the card and move their head as needed to keep the card in view, and refocus if necessary. Have the student read the card each time they refocus the monocular. Repeat this exercise three times. Remember to give the student time to adjust focus.
6. Repeat this exercise at 30 and 40 ft. If the student struggles to read the bus number, they may have reached the upper magnification limit. Make a note of the distance the student could read the card and notify the O&M specialist and low vision clinician that they may need a higher powered telescope for outdoor use.

Lesson 1.14
Working in the Classroom

Objective:

The student will apply monocular skills in the regular classroom.

Materials:

Monocular, as recommended by a low vision clinician

Procedures:

1. Ask the student to use the monocular to scan the board in order to locate and copy homework assignments in their notebook or daily planner.
2. Ask the student to use the monocular to locate the whiteboard listings of materials to be covered each day in class.
3. Ask the student to follow along as the regular classroom teacher writes on the board.
4. Ask the student to use the monocular to copy teachers' notes from the board into their own notebook.
5. Ask the student to keep a log for a week, writing down the occasions on which they use a monocular.
6. Make sure the student feels comfortable enough to ask for assistance if necessary. Repeat this activity every day for five consecutive days. Reward the student.

Lesson 1.15
Self-Advocacy

Objective:

The student will learn to advocate for themselves in order to develop confidence and ensure access to information in the visual environment.

Procedures:

1. In a quiet room, place two chairs facing one another. Use the chairs to sit across from your student. Once seated, tell your student, "I'd like for you and me to have a little fun role-playing." Explain that role-playing is when one takes upon themselves the role of another. Explain that you are going to be "the student" and your student is going to be "the teacher."
2. In your role as "the student," show your student first the inappropriate behavior which students occasionally exhibit toward teachers instead of using proper advocacy skills. You might want to flop in your chair and say something comparable to "I hate this class. Math is no fun. Teachers need to get a life instead of hanging around crowded classrooms telling kids what to do. Why don't you do something to help me out?" Ask if your approach is working. Does your approach make your student feel like helping you? Does your approach make them want to tell you to just go away? Explore those feelings briefly with your student.
3. Now model the appropriate behavior for your student. "Teacher, I am having trouble in your class." Give the student as "the teacher" a chance to ask you what may

be the matter. You may want to answer something similar to, "I think it might be that it's difficult for me to find the assignments/lessons on the board. Did you realize that you move them around each day?" Again give your student as "the teacher" a chance to respond.

4. As "the student," tell "your teacher" how difficult it is for you when you have to search for the assignments each day, how it requires extra energy you would rather use on your schoolwork. Tell "your teacher" that you'd like their cooperation in meeting your needs. Clearly identify "the need" as you model good advocacy skills. Clearly ask for help in "getting the need met." Speak politely, calmly, and clearly to "your teacher" as you model these important skills. Give "the teacher" a chance to respond in a positive way to your request.
5. Switch roles. Give the student a chance to play themselves. Listen and give good and sincere responses to their request in order to build confidence.
6. Discuss your role-play. Talk about any tricky spots. Show your student that teachers are teachers because they want to "help" and teach young people, and when properly approached, most teachers are happy to meet the needs of a student.
7. Teach your student the meaning of the old adage: "You can catch more flies with honey than with vinegar." It has many applications for people who are asking for help or services.

Safety Issues for Outdoor Activities

1. The following activities should take place primarily out-of-doors. If you stay in a sheltered environment, such

as the school grounds or the student's yard, you may be able to help the student. However for any activity which requires crossing streets or off-campus travel, the student should work with the certified O & M specialist. Be sure the student is quick and proficient in using the monocular to read traffic signs and signals before attempting to cross streets. While the student is standing at the intersection, they should use the monocular to read the traffic signals and determine when it is appropriate to cross the street. The student should then quickly check again without the monocular to be sure that it is safe to cross.

2. The student should never walk or attempt to cross a street while using the monocular. **The monocular distorts distances and perspective because it makes things look closer and restricts field.**

Lesson 2.1
Finding Stationary Targets at Varied Distances

Objective:

Student will focus on and describe small stationary targets at various distances.

Material:

Monoculars, as recommended by a low vision clinician for outdoor use

Procedures:

Note: *A certified O & M specialist should accompany you on outdoor lessons if street crossing or off campus travel is involved.*

1. Begin working at a distance that is comfortable for the teacher to read details of signs or objects with the naked eye. Take an assortment of cards from the Materials Tote outside. Hold them up while the student identifies them from distances of 15 to 30 ft. This exercise will help get the student ready to view things in the environment.
2. Ask the student to locate a specific target such as a car in the school parking lot. Ask the student to "Find the blue car in the first row."
3. Ask the student to use the monocular to identify colors and attributes of other cars they see. Ask the student to read license plates to you. Make sure the telescope is strong enough for the small target and greater distances.
4. If the student is unable to read with the monocular telescope the license numbers that you or their fellow classmates who have typical vision can read, allow the student to try refocusing. You may want to check to see if they are spotting the car appropriately before bringing the monocular to their eye. If all these factors seem to be right and they still are not able to identify the car or the license plate, you might check to see if the monocular is focused, or that it is the appropriate telescope for the distance.
5. Ask the student to read cards from the Materials Tote, and signs and license numbers of various sizes at various distances. You or a student may hold the items for your student. Make sure to hold them still and at a constant height.

Enrichment Exercise: Take a trip outside on the school grounds or to the school's conservatory, greenhouse, or flower display. Allow the student to take their time while using the

monocular to identify the various trees or flowers and their colors. Ask the student to identify various leaf shapes and canopy shapes. You can use words such as "umbrella-shaped, cup-shaped, weeping, grass-like," to describe leaves and branches. You can use words such as "dangling, flat, cup-shaped, spiky" to describe flowers and leaves. When the student returns, ask them to build a replica of one of the trees or bushes out of clay, paper mâché, or some other sculpting material. You may want to make it an activity for the entire class.

Lesson 2.2
Reading Signs and Signals

Objective:

The student will read signs and traffic signals off campus at various distances.

Materials:

Monoculars, as recommended by a low vision clinician for intermediate and long distance

Note: *Please engage the services of a certified O & M specialist when performing items 2–4 of this exercise.*

Procedures:

1. Travel outdoors on campus with the student to an area they know well. Settle at a distance from a street sign or other sign which will allow the student to spot the sign easily with the naked eye. Then, using the monoculars that the clinician has recommended for intermediate and long distances, say to the student, for example: "Find the pole on the corner. With your monocular, trace upward to read the name of the street on the street sign near the

top of the pole." If street signs are unavailable, use the ones from the card packet.

2. Repeat the exercise again after positioning the student about 30 ft from a traffic signal. Ask the student to find the traffic signal. Offer help if needed. Ask the student to tell you what color the light is. If the student is color blind, teach them how to identify what color the light is by its position. Top is green, bottom is red, and yellow is in the middle. Ask the student to tell you when the traffic light changes and what color it changes to.
3. Practice at different intersections until the student can quickly and easily locate and read street signs, bus stop signs, and traffic signals and can quickly tell when the traffic signals change.
4. In a residential area, ask the student to focus on a house on the street. Ask them to locate and read the house number. Then ask the student if they know how to locate particular houses by their numbers. If the student does not, show how even numbers are on one side of the street and odd numbers are on the other. Show how street numbers move from smaller to larger. Ask the student to identify numbers on each side of the street.

Enrichment Activity: You may perform this activity at your school building, or the student's parents or a certified O & M specialist may take the student to the Capitol building, a historic district in town, the Courthouse, or some other interesting site. Ask the student to view the site with the monocular. Ask questions such as:

- What is the address?

- What style is the architecture?
- How many trees are there?
- Does it have steps?
- Does it have bushes and flowers?
- What color is the roof?
- What is the main material the building is made of?
- Are there plaques, statues, fountains, or other items of interest on or around the building?
- Can you tell if the building is old or new?
- What is the building used for?
- Are there any new additions to the original building? How can you tell?
- Where is the front entrance?

Lesson 2.3
Viewing Moving Targets: Tracking

Objective:

The student will focus on and describe moving vehicular targets.

Materials:

Monocular, as recommended by a low vision clinician

Note: *Please engage the services of a certified O & M specialist when performing items 4 and 5.*

Procedures:

1. Position the student in a safe place outdoors. Wear a brightly-colored hat or carry a colorful ball. Ask the student

to use the monocular to watch your head (or the ball) as you walk away and then close, and left, then right. Walk in a circle, then in a zigzag pattern. Make sure the student is following you with the monocular. If they have trouble, simplify the exercise until they develop a little skill.

2. From a stationary position on the school's sidewalk or driveway, ask the student to spot a car as it is moving toward them. Ask the student to spot another as it moves past and then away.
3. Practice spotting, then tracking moving targets by asking the student to describe the color or make of each car as it moves away.
4. When the student can easily spot, track, and describe cars as they move away, ask the student to read the destination sign or number on a school bus as the bus is moving toward them.
5. At an intersection, ask the student to track and alternately describe traffic moving in parallel and then perpendicular directions. The descriptions of traffic should comprise simple sentences such as, "There goes a silver truck." Repeat this lesson several times to allow the student sufficient practice at developing tracking skills.

Enrichment Activity (Outdoors): The certified O & M specialist or the student's parents may take the student to a go-cart racetrack. They may ask the student to listen as a cart approaches, then view the carts as they approach their position and then as they move away. Ask the student to describe the carts on the track if they are different. Ask if the student can count the carts on the track and name their colors. When the student returns from the activity, encourage them to tell you about it.

For an indoor enrichment activity, take the student to a school play, sporting event, graduation, or other activity. Have them sit or stand in an inconspicuous spot. Ask the student to describe people as they move toward them. (This is easy at a school play.) Ask them to describe their clothing or hair. Ask the student to follow their movements as they move away too.

Lesson 2.4
Using a Monocular to Shop

Objective:

The student will apply skills using a monocular to shop.

Materials:

- Monocular(s), as recommended by a low vision clinician
- Menu board
- A little spending money

Note: *If you are not a certified O & M specialist, you may ask one to accompany you on this exercise. The entire exercise is indoors, so use judgement based upon your student's indoor travel expertise and the availability of the student's parents for the exercise.*

Procedures:

1. Practice reading the menu board distance card included.
2. Accompany your student to the student bookstore, student concession stand, cafeteria, or local cafe. Or, if you prefer, you might ask the student and their parents to meet you inside a local department store, mall, or grocery store. From about 20 ft inside the store, ask the student to locate the entrance with the monocular. Ask them to trace

the edge of the front door.

3. Now, ask your student to turn around and scan for directories, aisle content signs, or other signs hanging from the ceiling or posted on the aisles. Ask them to describe the signs as they find them.
4. Once the student finds the sign for the aisle they want to travel down, accompany them down the aisle and ask them to use the monocular to locate and read, while still at least 10 ft away, where the item or items they wish to purchase are stored. Repeat this for each item the student wishes to purchase.
5. Ask the student to scan to locate the checkout stations. As the student approaches the checkout stations, ask them to stop and scan the queues with the monocular to find the shortest one. Give praise as they accomplish these steps in shopping.
6. Accompany the student through the checkout line to the exit of the building. Present them with a card or other little memento of the successful shopping trip in which they used the monocular effectively.

Enrichment Activity: *(It is strongly recommended that a certified O & M specialist accompany you during this activity.)*

After the student has familiarized themselves with the mall, take another trip to the mall with the student and a friend of their choice. Allow the student to show their friend the landmarks they have discovered. Allow the student to show their friend the sights and the stores they enjoy. Allow them to go into a store and make a purchase after locating desirable products by using good indoor monocular scanning techniques.

Lesson 2.5

Using a Monocular for Leisure Activities

Objective:

Student will use a monocular for leisure activities.

Materials:

Monocular, as recommended by a low vision clinician. The clinician may recommend for these activities a telescope that is stronger than the one recommended for indoor use.

Note: *If you are not a certified O & M specialist, you should ask one to accompany you on any activity to take place off the school grounds.*

Procedures:

1. **Archery:** Ask the student to wear the telescope on a neck strap. After locating the target visually, ask the student to shoot the arrow at the target. Obey all safety rules. Show the student how to use the telescope to locate the arrow and determine its landing place on the target. Ask the student to keep track of their own score. (It helps to have the telescope pre-focused for this activity.)
2. **Fast foods:** Point out to the student where the overhead menus are and how they are usually arranged in categories. Ask the student to use the monocular, find a category, and read several items and prices in that category.
3. **Airport:** Point out to the student the airline schedule and note that it is categorized into arrivals and departures. Ask the student to check the departure time and gate for a flight to a city which sounds appealing. Ask the student

to locate the gate. Ask the student to scan and find other important signs such as restrooms, exits, and gates. This may be a good time to teach the student how to handle inquiries about the monocular by airport personnel.

4. **Zoo (Enclosed Space):** If the area is an enclosed space, ask the student to scan the area from left to right and find an animal. (You may need to help the student initially in locating the animal.) Ask the student to watch the animal and describe what it is doing and what it looks like.

5. **Zoo (Open Space):** If the animal is in an open area such as a large pasture or field, tell the student to find the far side of the field, that is, the horizon line. Tell the student to use the horizon as a guide and to keep the horizon line in the upper half of their view. Ask them to scan horizontally left to right, then down, and back again horizontally right to left. Ask the student to describe what they see.

6. **Concert:** Ask the student to scan left to right, front to back. Point out to the student the various instruments and sections. Ask the student to watch the director and follow when they point to a particular section. Explain to the student that when the director points to a section, that section plays. Ask the student to see if they can find the section that is playing and to watch various sections or players.

7. **Sports Stadium (baseball, football, basketball, track):** Ask the student to scan the field and to describe the activity that they see. (Because of their limited visual field, the student may have a difficult time following fast moving activity.) Ask the student to spot a particular

player/number and to follow that player. Ask the student to describe what the player is doing. (This activity often requires a stronger and bigger telescope.)

8. **Movies, Television, Theater:** From a relaxed sitting position, ask the student to focus on the television, movie screen, or stage. Ask the student to describe a scene or a person's costume to you. Have the student read subtitles from a movie, read the weather forecast, or read sports scores on the television.

9. **Scenic Views, Nature, Ocean:** Point out a view of particular interest. Have the student describe what they see and what feeling it brings. Ask the student to locate the horizon line. Tell the student to use the horizon as a guide and to keep the horizon line in the upper quadrant of their view. Ask the student to scan horizontally left to right, then down, and back again horizontally right to left. As appropriate, with the monocular, ask the student to track and describe a boat on the water, surfers in the ocean, flags or signs on the beach that determine ocean safety, hikers on a nature trail, or a beautiful scene in a park or neighborhood. Encourage independent use of the monocular.

Enrichment Activity: Meet the student and their parents at an event or place of their choice. Allow the student to exercise their skills while enjoying the event or place. Guide them when they need help or when they forget to use the monocular in an appropriate situation. Praise their success. These kinds of activities that include parents or family members, build relationships in which the family are more likely to support the use of optical devices.

Lesson 2.6 (Teacher Only)
Reporting back to the Clinician

Objective:

To provide the clinician with the results of training with the monocular telescopes.

Materials:

Form: Using Prescriptively Recommended Optical Devices Skill Performance Checklist for Monocular Telescopes

Form: Informal Student Information Sheet

The clinician who provided the prescriptive recommendation of the optical devices for your student is very interested in knowing the results of the training you have provided. Only by having access to feedback from you will the clinician be able to make an informed final prescription.

The forms, "Using Prescriptively Recommended Optical Devices Skill Performance Checklist for Monocular Devices," and "Informal Student Information Sheet" are provided so that you may have a quick and handy way to report back to the clinician the proficiency your student has achieved as a result of training. For best results, photocopy and fill out each form and send it in to the clinician with as much information as you can provide, including the distance at which the student performed the skill. Be sure to include information not asked for on the form, if you think it important to the clinician's final recommendation.

Using Prescriptively Recommended Optical Devices Skill Performance Checklist for Near Magnification Devices

After training, fill out this form and send to clinician

Student name _____ Date _____

Optical Device _____

Teacher's Name _____ Signature _____

SKILL	STUDENT DOES	STUDENT DOESN'T DO	COMMENTS
Basics			
Cleaning			
Storage			
Retrieval			
Set-up			
Materials Position			
Use of Reading Stand			
Task Lighting			
Selected Visual Field/Eye			
Hand Selection			
Grip			
Stabilization of Hand and Materials			

Prescriptively Recommended Optical Devices continued

SKILL	STUDENT DOES	STUDENT DOESN'T DO	COMMENTS
Reading Concepts			
In Focus			
Focal Distance			
Working Distance			
Localization			
Scanning			
Shifting to the next line			
Tracing			
Content Intrepretation			
Symbols/Signs			
Illustrations			
Maps			
Text			
Independent Use			
Educational			
Leasure			

Prescriptively Recommended Optical Devices continued

	8 pt. (1 M)	12 pt. (1.5 M)	16 pt. (2 M)	20 pt. (2.5 M)
Font size chosen to read				
	8 pt. (1 M)	**12 pt. (1.5 M)**	**16 pt. (2 M)**	**20 pt. (2.5 M)**
Smallest font size student could read				
	8 pt. (1 M)	**12 pt. (1.5 M)**	**16 pt. (2 M)**	**20 pt. (2.5 M)**
Magnifer chosen to read each font size				

Length of Training Time _____ Comments _____

Curriculum Used _____ _____

_____ _____

_____ _____

Using Prescriptively Recommended Optical Devices
Skill Performance Checklist for Monocular Telescopes

After training, fill out this form and send to clinician

Student name _____ Date _____

Optical Device _____

Teacher's Name _____ Signature _____

BASIC KNOWLEDGE	CAN DO	NEEDS ASSISTANCE	DOESN'T DO	NOTATIONS & DISTANCES
Identification				
Ocular Lens				
Objective Lens				
Barrel				
Adjustment Ring				
Lanyard				
Cleaning				
Storage				
Retrieval				
Readiness				
Identify Dominant Eye				
Choice of Hand				
Grip				
Positioning on Face				
Stabilization				

Prescriptively Recommended Optical Devices continued

BASIC KNOWLEDGE	CAN DO	NEEDS ASSISTANCE	DOESN'T DO	NOTATIONS & DISTANCES
Localization without Telescope				
Spotting				
Scanning				
Concepts				
In Focus				
Out-of-Focus				
Multiple Planes				
Infinity				
Spotting				
Without Telescope				
With Telescope				
Uses Auditory Cues				
Using Focus				
Under 20 feet				
Over 20 feet				
Single Plane				
Multiple Planes				
Tracing				
Left-to-Right				
Short Lines				
Long Lines				
Wavy Lines				
Convoluted Lines				

Prescriptively Recommended Optical Devices continued

BASIC KNOWLEDGE	CAN DO	NEEDS ASSISTANCE	DOESN'T DO	NOTATIONS & DISTANCES
Scanning				
Left-to-Right				
Uses Zigzag Technique				
Identification				
Symbols				
Pictures				
Numbers				
Street Signs				
Words on Chalkboard				
People				
Objects				
Tracking				
Moving People				
Moving Objects				
Single Plane				
Multiple Planes				
Leisure Use				
Television				
Outdoor Events				
Indoor Events				
Movies				
Independent Use				
Frequently				
Infrequently				
Never				

Length of Training Time_____Comments _____

Curriculum Used _____

_____

Informal Student Information Sheet

Student name _____ Date _____

Grade Level _____ Teacher _____

Diagnosis, if known _____

TO BE ASSESSED	RESULTS	COMMENTS	RESOURCES	SUGGESTIONS
Presence of Eye Report			Student File	Ask parents to provide
Presence of IEP			Student File	Discuss with parents
Assess Distance Vision			Student File, Eye Report Vision Teacher Student Parents Personal Observation	
Assess Near Vision			Student File, Eye Report Vision Teacher Student Parent Personal Observation	

Informal Student Information Sheet

TO BE ASSESSED	RESULTS	COMMENTS	RESOURCES	SUGGESTIONS
Assess Peripheral Visual Fields			Student File, Eye Report Vision Teacher Student Parent Personal Observation	
Learning Style Visual Audial Kinesthetic			Student File, Eye Report Parent Student	
Optical Devices Needed			Student File, Eye Report Parent Student	
Lighting Modifications, Colors, and Filters			Student File, IEP Parent Student	
Effective Use of Contrasts			Student File, Eye Report Student File, IEP Student	
Preferred Formats Regular Print Large Print (size) Braille Speech Electronic			Student Parent Vision Teacher Past Teacher	
Need for Rest			Student File, Eye Report Student File, IEP Student Parent	

Resources

- Eschenbach eschenbach.com/eye-and-eye-sight/what-is-low-vision.asp
- Optelec shoplowvision.com/collections/illuminated-magnifiers
- Ocutech ocutech.com

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The Kit

1. 6X Club M Slide Focus Telescope Eschenbach
2. 4X Dome Magnobrite Optelec
3. 3.5X 10D Eschenbach Magno
4. 5X 20D Eschenbach Magno
5. 4X 12D Power Mag 70MM Optelec
6. 8x 25D Adventure M Telescope Eschenbach
7. Stand for 3X 8D Mobilux Eschenbach
8. 4X 12D Lighthouse Telescope Optelec
9. Stand for 5X 20D Eschenbach
10. 3X (8 DIOPTER) Mobilux Eschenbach

1



2



3



4



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6



7



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10



Envision Training Program

Vision Enhancement Program Using Near and Distance Magnification Optical Devices

Guidebook

Catalog Number 61-856-001

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