Envision II

Vision Enhancement Program Using Near Magnification Devices

Students 10 and Younger

INSTRUCTION MANUAL

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Introduction

Produced by the American Printing House for the Blind, the ENVISION Program is an exciting array of materials that will have a significant impact on encouraging the provision of interdisciplinary low vision care for visually impaired children.

ENVISION is the first training program to address the complicated relationships between the assessment of vision in the classroom and the clinical examination. Students are best served in a low vision program that includes the input of teachers, parents, primary care eye doctors, and the clinical low vision specialist. As might be expected, getting a coordinated input from all these individuals/professionals is often a difficult task. This effort is made difficult because of the lack of an accepted standard of care for students with low vision. 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 professionally. The ENVISION Program can be a small but very significant part of this "envisioning" of a national model of low vision care for visually impaired children and young adults.

Low vision must be seen as a continuum of assessments from home to school to clinic. A functional assessment in the classroom, a mobility assessment in the hallways of the new school, a report from parents 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 child if coordinated into one plan of vision care. This team of people can be thought of as the "low vision specialist," not the individual experts who provide the independent assessments.

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 chalkboard (dry erase board), or getting around the school. Rather, the "team" concentrates on how effectively the student is using his 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.

While clinical assessments are very important in determining the child's potential to perform tasks visually, all those involved in the child's care must remember that all clinically measured visual potentials cannot be achieved in the non-clinical environment. Often, visually impaired children will achieve beyond those clinically measured visual potentials. Thus, continuous dialogue among team members and ongoing assessments are key to the successful **low vision service.**

The service actually begins in the pediatrician's or optometrist/ophthalmologist's office when the child is an infant, when the eye problem is first noticed. A referral to a pediatric ophthalmologist should result in appropriate medical care, which will help assure that future loss of vision is prevented.

If the child's vision meets the criteria, the pediatric ophthalmologist must refer the child for special services for the visually impaired in the local school system. In addition, the parents should be advised to contact a low vision clinician in the community or request this clinical assessment through the local school system. Parents and teachers should be made aware that there are two very different types of clinical examinations and that the child will need to be followed medically by an ophthalmologist and also by the low vision team, who track changes and needs in his 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 for the visually impaired (TVI) will have many responsibilities to the child in developing appropriate and efficient educational programming. Participating in the **low vision service team** means the TVI will often be the person who initiates and/or advocates for the clinical low vision assessment.

The TVI will prepare a low vision functional assessment for the low vision clinician once the clinical evaluation has been arranged. This low vision functional assessment will be a compilation of the functional assessments already provided by the school (educational, mobility, social, psychological), as well as the TVI's own observations. The purpose of the low vision functional assessment is to inform the low vision optometrist of the types of problems the student is having in the classroom and with other aspects of the educational program. The capabilities of the child to function visually and a list of tasks and activities with which the student is having difficulty must be included in the low vision functional assessment. The clinician will learn more about acuity from the listing of tasks the student can and cannot do than from the information provided by a visual acuity chart. The teacher's observation of the child's visual performance is indispensable to the clinical evaluation. The TVI reports information on visual functioning that cannot be measured in the clinical

setting, *again emphasizing the importance of the team approach.*

The low vision clinician is the next member of the team to interact on behalf of the child. The clinical evaluation is designed to provide insight into the child's visual capabilities as he works under ideal conditions. The clinical data will describe what components of the child's present environment (as described in the TVI'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* as to optical interventions that may allow the student to perform, or enhance efficiency in, various school 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 in the classroom 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

classroom 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 TVI. This evaluation of the prescriptive recommendation will include classroom training, instruction, and task experiences.

The low vision clinician must prepare for the TVI 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. The training can be:

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

With this additional training and experience in the classroom comes the opportunity for the prescriptive recommendation to be modified or even changed at some future clinical assessment.

The ENVISION Program will make its greatest contribution to the low vision service at this point. The clinician does not know enough about the classroom and educational priorities to make effective training recommendations for the teachers to follow up. The TVI is not experienced enough with optics to

be able to successfully integrate the prescriptive recommendation/device into the daily classroom experience for the child.

With the ENVISION training manual, the TVI (or orientation and mobility instructor, physical therapist, occupational therapist, or children's rehab counselor) will now have a more structured program to help initiate classroom-oriented optical aid training. The low vision clinician will have specific training protocols to recommend for the TVI to pursue at school. The ENVISION training program allows for better communication (teamwork) between teacher and clinician.

The training can be focused on teaching the child to better utilize his 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 student to the care and handling of optical devices while waiting for his prescription. Students 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 Using Distance and Near 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 rather than a stronger optical system being prescribed.
- For training purposes, the same magnified retinal image will be utilized with either approach.
- This material modification approach discourages the dispensing of optical systems out of the ENVISION Training Program and encourages the **low vision service, team approach** to vision care for the visually impaired student.
- The ENVISION Program also provides training materials and ideas for devices prescribed by the low vision clinician after the initial classroom 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 TVI 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 classroom 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 individuals 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 **child being served.**

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Preparation for Using ENVISION II

Access to information about the physical environment is just as important to a person with visual impairments as it is to a person with normal sight. 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 using the expertise from the ophthalmologists, optometrists, education professionals, and parents is used. This cooperation provides the student 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

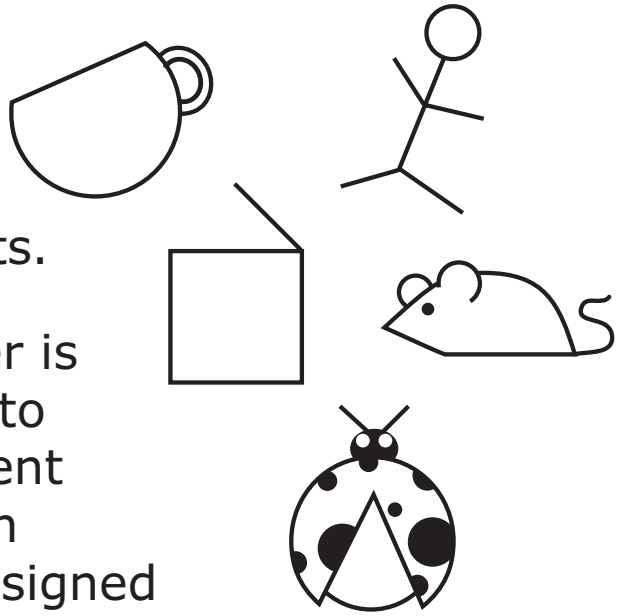
function expertly and confidently in an environment where near distance vision is important. Because magnifiers are available in a range of styles and powers, expert advice is needed to determine the correct magnifier for each student. The low vision clinician fills this need by administering a low vision 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 his face does the student hold his reading materials?" Basing her decision on the functional vision evaluation and the clinical exam, the clinician then prescribes, according to need, one or more magnifiers for the student, or she may determine no devices are needed.

"…an examination by the low vision clinician is necessary BEFORE implementation of Envision curricula and associated materials."

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, she 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 his examination. **The teacher must use the 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, each ENVISION II 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 his magnifier while he is still enthusiastic about receiving the devices.

Once the student receives the recommended magnifier from his clinician, that device should be

used for training, and the student should not be permitted to use the other devices from the array unless directed to do so by the clinician. It is very important that the student be trained in the efficient use of the prescribed devices in order to achieve the best outcome and to assure his continued use of the devices.

Unfortunately, some children will probably not receive a low vision evaluation from a clinic or qualified low vision clinician by the time that they are referred for training. In those instances, the teacher of the visually impaired can best serve the student by insisting upon 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 students across America. In some cities, the Rotary Club is helpful. In other towns and villages, the Moose Lodge or the Optimists Club can help. In almost every community, the resources exist to provide a low vision exam for a needy student.

"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 his continued use of the device."

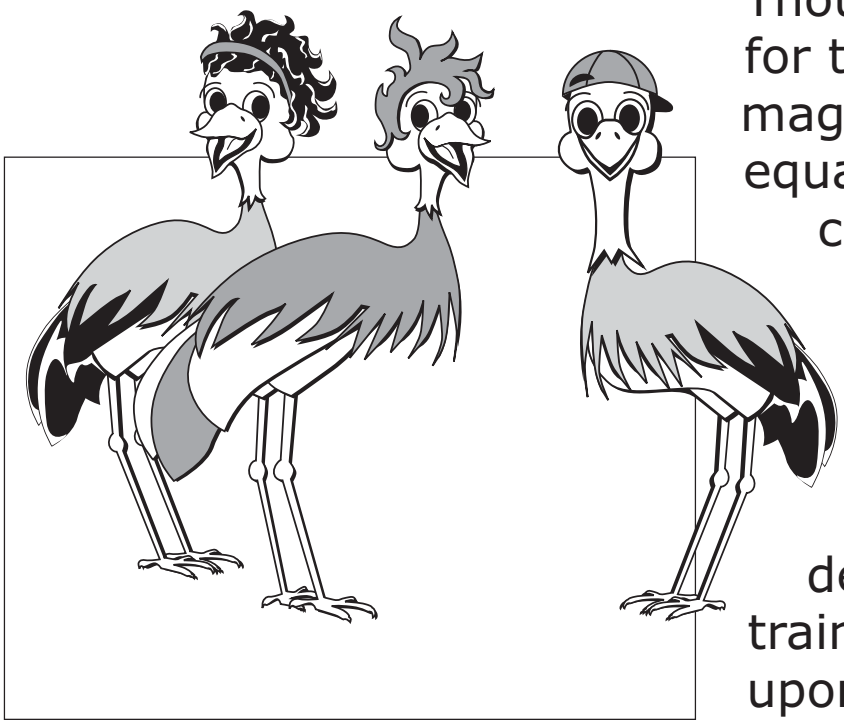
If success doesn't occur right away, the teacher should continue to work toward obtaining an evaluation from a qualified low vision clinician. Often the teacher of the visually impaired offers the best observation and recorded visual behaviors the clinician can obtain. If the teacher of the visually impaired establishes a good working relationship with the low vision clinician, obtaining a low vision exam for a needy student is a little easier because a dialogue with the clinician has already been opened. Remember, ophthalmologists and optometrists are committed to helping all people who need their services. Most of these fine professionals are willing to "work something out" if financing is an issue. Clinicians can often point out resources in the community, and the teacher can often facilitate the arrangement.

"Before introducing a magnifier to a student, it is important the teacher understand the child and the way his vision functions."

Before introducing a magnifier to a student, it is important the teacher understand the child and the way his vision functions. The creators of ENVISION II: Vision Enhancement Program Using Near Magnification Devices have included a "Student Information Sheet," which may be photocopied and

completed with help from the student's parents or the student himself. If used wisely, it will help the teacher ask the student and parents the best questions for obtaining a basic understanding of how the student uses his 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 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 child, ENVISION II: Vision Enhancement Program Using Near Magnification Devices is a structured, skill development and training program based upon the widely accepted theory that such a program should include instructor-directed tasks and reinforcement procedures that are built upon well-developed visual attending behaviors.

Students without well-developed attending behaviors may need some remediation before the introduction of magnifiers. Additionally, skills learned through the use of near magnification devices should reinforce visual attending, visual examining, and visually-guided motor behaviors (Hall and Bailey, 1989). Therefore, these curricula include high-interest activities and stories that help develop the aforementioned skills. The curricula also suggest methods for reinforcement of skills as they develop. Furthermore, as stated in the introduction, various levels of acuity can be involved in the training programs by the manipulation of the training devices and the print or object sizes. However, in most cases when an individual exhibits the need for greater magnification, the preferred solution is to manipulate the size of materials being viewed. If you are unable to consistently manipulate the size of materials, you might ultimately need to consult the low vision clinician about increasing the magnification 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."

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 student. These exercises have taken into account psychosocial factors related to the use of optical aids by young people.

The ENVISION II curricula includes two fixed-distance, dome magnifiers; two fixed-distance, stand magnifiers; and two variable-distance, hand-held magnifiers.

The fixed-distance, dome magnifiers are referred to as such because they 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. Similar to dome magnifiers are fixed-distance, stand magnifiers, which also are set directly upon the reading material.

APH has also included in ENVISION II variable-distance, hand-held magnifiers because there are several advantages to devices 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; and because they aren't placed directly on what is to be magnified, students can easily use them to magnify "fun" objects such as insects, flowers, fingers, animal fur, or whatever objects students find interesting.

At first, students may struggle with a variable-distance, hand-held magnifier's small field. Students might also fatigue quickly as a result of laboring to preserve correct focal distance. An APH GrandStand or some other 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 his back, neck, and arms. In some cases, a small cushion or gel wrist support may also help prevent arm fatigue. Because effective use of variable-distance, hand-held magnifiers requires a certain degree of synchronization among the eyes, hands, and head, they are not recommended for students with poor

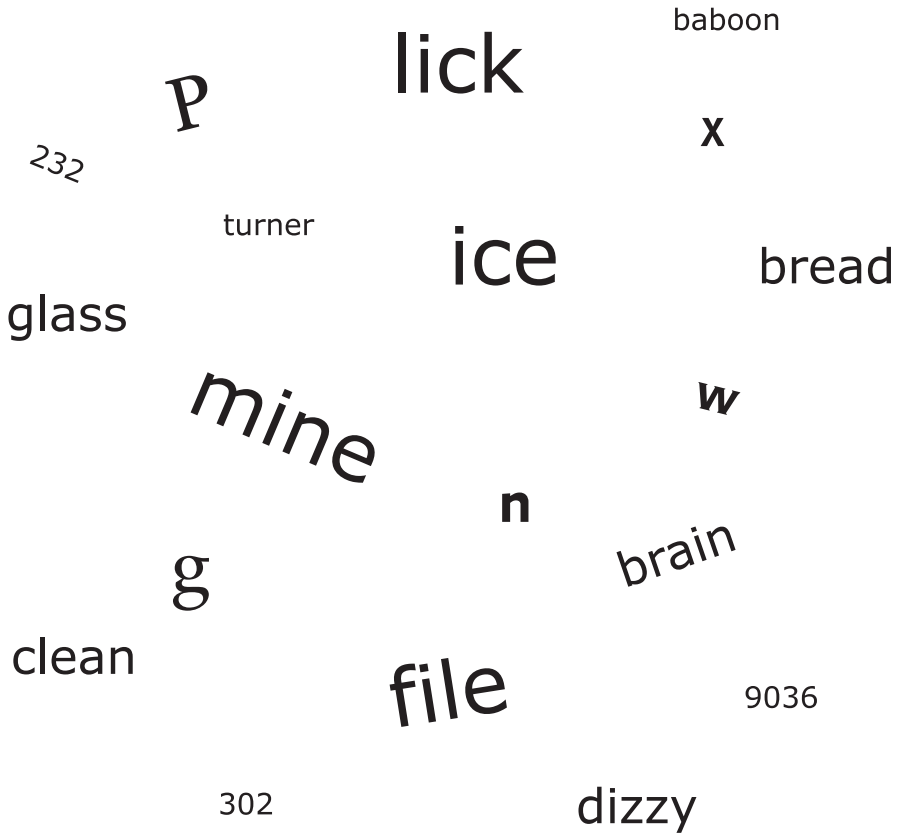
> "Dome magnifiers are a favorite reading tool for many students because they are easy to use."

eye-hand coordination. Regardless of what style of magnifier the student is using, if he complains of fatigue, the teacher should be sensitive to his needs and allow his entire visual system to relax and feel restored before continuing the exercises.

The importance of keeping magnifiers clean and free of scratches cannot be overstated. Dirty or scuffed lenses can severely hinder a student's view. Most magnifiers 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 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. The ENVISION II curricula direct the student to place the magnifier near the bottom middle of the page and scan straight up to the top of the page and then over to the top left corner. "Why not just have the student begin at the top left?"

one might ask. 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, he 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, even before he scans specifically for content orientation.



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 in arriving 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.
- Another measurement worth noting is the magnifier's *focal distance*, which is the distance between the magnifier's lens and the object being viewed, at the point where the object being viewed is in focus. 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 decreases. 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 teacher 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 suitable learning environment easier.

- When possible, the blue-white or cool-white fluorescent tubes commonly found in overhead fixtures should be replaced with pink or warm white fluorescent tubes. This reduces glare.

- Any lamps should contain 75 to 100 watt soft white, pink, or peach bulbs and be shaded to diffuse light and inhibit glare. Flexible-neck lamps are preferred, as are lamps controlled by dimmers or rheostats.

- 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 intensities of both incandescent and fluorescent light to determine under 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 his 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 motivation.

Other concerns include psychosocial factors involved in using any device that might cause the student to

feel different from his peers. Even a 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 her student to voice his concerns. Support from the teacher and other professionals within the school system can be invaluable to a student who is self-conscious about using his 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 stamp and 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 her partnership with the student during the training experience. Seeing a student successfully tackle the academic demands of school because he has access to needed visual information is one of the most rewarding experiences a teacher can have.

Common Terms & Definitions

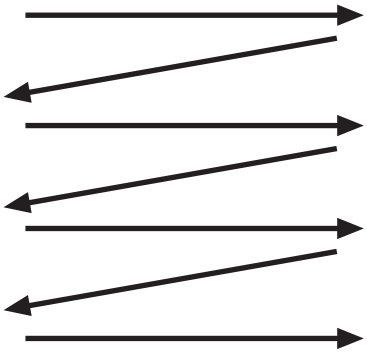
1. **Low Vision:** Denotes a measure of functional vision below 20/40 that cannot be fully rectified by ordinary corrective measures such as eyeglasses, contacts, or surgery.

2. **Magnifier:** An optical device that is usually prescribed by a low vision clinician and which relies on a lens or lenses to increase the clarity and size of an image.

3. **Focal Distance:** The distance between the magnifier's lens and the object being viewed, at the point where the object being viewed is in focus.

4. **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 specific object in real space.

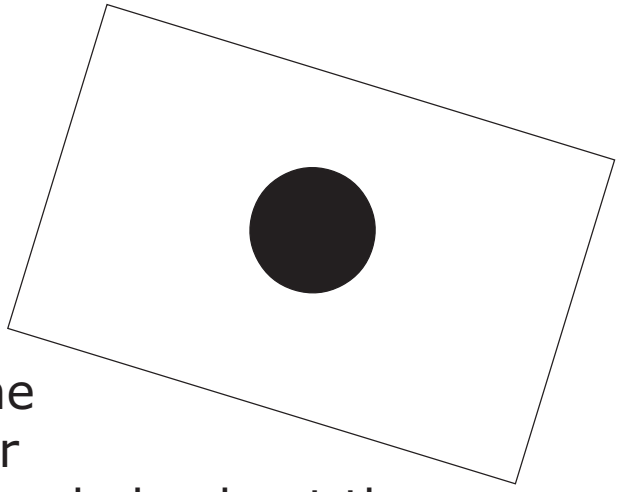
5. **Scanning:** Represents the technique of following from left to right a line of print; also used to describe the process of familiarizing oneself with the layout of a page. Often scanning will follow a bit of a zigzag pattern, as shown:



6. **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 magnification devices when the task calls for following lines that do not conform to the orderliness of straight, horizontal lines prevalent in text.

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

8. **Dominant Eye:** The eye that naturally sends the most visual information to the brain. Often, but not always, the dominant eye will be located 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 magnification devices.

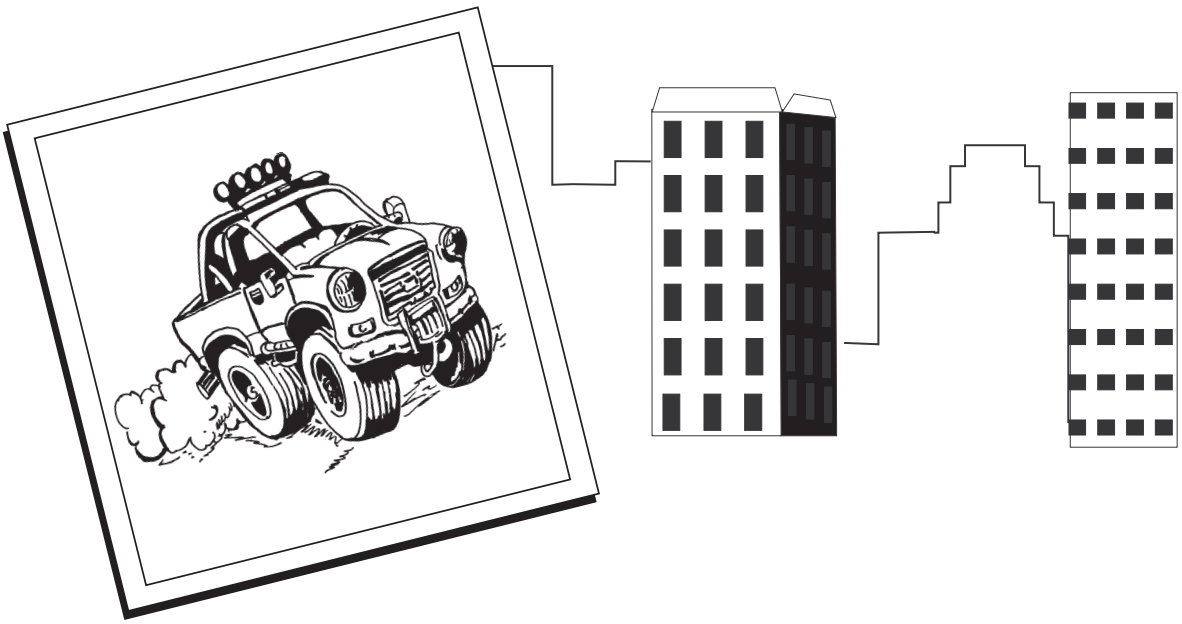


However, it is best to check with the low vision clinician to confirm which eye should be used with a prescribed device.

9. **Dominant Arm:** The arm with which one naturally performs most physical tasks. Unless your student's dominant arm is nonfunctional, he should find it easiest to use the hand of his dominant arm to manipulate the magnifier.

10. **Scotoma:** A "blind spot" in the visual field, frequently caused by damage to part of the retina.

11. **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 non-operative.



ENVISION II

Skills and Topics Presented in Envision II

Students 10 and Younger

Skill	Where Found
Basics:	
Cleaning	Preparation; Lessons 1.1, 1.4, 2.1, 2.4, 3.1, 3.4
Storage	Lessons 1.1, 2.1, 3.1
Retrieval	Lessons 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6
Set-up:	
Materials position	Preparation; Lessons 1.2, 1.3, 1.4, 1.5, 1.6, 2.2, 2.3, 2.4, 2.5, 2.6, 3.2, 3.3, 3.4, 3.5, 3.6
Use of reading stand	Preparation; Lessons 3.2, 3.5, 3.6
Task lighting	Preparation
Selected visual field/eye	Terms and Definitions
Hand selection	Terms and Definitions
Grip	Lessons 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6

Skill	Where Found
Setup (continued):	
Stabilization of hand and materials	Preparation; Lesson 3.2
Reading Concepts	
In focus	Things To Do; Lesson 1.1
Focal distance	Terms and Definitions;
Working distance	Preparation
Localization	Terms and Definitions; Lessons 1.2, 1.3, 1.5, 2.2, 2.5, 2.6, 3.2, 3.5, 3.6
Scanning	Terms and Definitions; Lessons 1.2, 1.3, 1.5, 1.6, 2.2, 2.3, 2.5, 2.6, 3.2, 3.3, 3.5, 3.6
Shifting to the next line	Lessons 1.2, 1.3, 1.5, 2.2, 2.5, 3.2, 3.5
Tracing	Terms and Definitions; Lessons 2.6, 3.3, 3.6
Content Interpretation	
Symbols/signs	Lesson 3.5
Illustrations	Lessons 1.2, 1.3, 1.5, 1.6, 2.2, 2.3, 2.5, 3.2, 3.6
Maps	Lessons 2.6, 3.3
Text	Lessons 1.5, 2.5, 3.5, 3.6

Use a Magnifer For...

1. Exploring the environment
2. Reading educational and recreational materials
3. Reading letters from friends and family
4. Reading labels on medicine, food items, and machinery
5. Viewing menus
6. Reading train and bus schedules
7. Checking travel itineraries
8. Reading song lists on CDs and audiocassettes
9. Verifying television listings and movie times
10. Reading game instructions
11. Identifying currency denominations
12. Analyzing maps
13. 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 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 his magnifier skills training.
2. Obtain and read your student's eye report.
3. Become familiar with near magnification devices and their proper use and handling.
4. Become familiar with your student who has a visual impairment and his strengths, weaknesses, and needs.
5. If your student has no concept of "in focus," you may demonstrate the concept to him by putting a bright picture of a familiar object on the overhead projector (Cowan & Shepler, 2000, pp. 146-147). Allow your student to adjust the machine to bring the image into focus. If clearer focus can be achieved after the student has tried, adjust it for him so that he may see the object when it is "in focus." If after several trials he still does not understand the concept, you may need to refer him back to the low vision optometrist for an explanation and recognition of the concept and for pre-training.
6. Complete the informal Student Information Sheet. (See page 43.)

ENVISION

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	

Chapter 1

Fixed-Distance, Dome Magnifiers

- Bright Field Paperweight
- Light Gathering Magnifier

Note: Always begin the ENVISION II curricula 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 chapter specific to magnifiers of that type before working through the remaining chapters.

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
- Emmy puppet
- Lens cleaning cloth

Exercise:

1. Prepare a clean, uncluttered workspace in which the student can investigate the magnifier and practice cleaning it.
2. Place the Emmy puppet on your hand and introduce Emmy to the student. Then use the puppet to read Emmy's adventure story entitled "Emmy and Her Spaceship" (page 49).
3. After reading the story, tell your student that you and Emmy are going to teach him how to use and clean his magnifier.

4. 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 the magnifier in the case when not in use.

5. Allow the student to remove the magnifier from its case. Show him 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.

6. Demonstrate to your student how he can use the magnifier to explore objects in his environment by holding the magnifier up to his eye with one hand while using his other hand to bring objects such as coins, CD cases, and maps into the focus of the magnifier. Explain that the object is "in focus" when it looks sharpest through the magnifier. If the student has not learned the concept of "in focus," use the exercise from #5 in "Things To Do Before Using ENVISION" (page 41).

7. Demonstrate how to clean the magnifier with the lens cleaning cloth by rubbing both sides of the lens. Explain to your student that he should use only special lens cleaning tissue or lens cleaning cloth since regular tissue and paper towels can scratch the lens. Return the magnifier to the

student and let him practice using the lens cleaning cloth to rub both sides of the lens. As the student cleans, sing the following song or have the puppet sing:

"Lens Cleaning Song"
(to the tune of Row, Row, Row Your Boat)

Rub, rub, rub your lens
With a cloth so soft.
Every time you get a smudge,
Clean your lenses off.

8. Allow the student to hold the magnifier and ask questions regarding its purpose or any other questions he has concerning the magnifier and caring for it. This time allows the student to familiarize himself 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.

Emmy and Her Spaceship

by Kris Scott

Emmy awoke abruptly from her nap. Wow! she thought, what a terrific dream. While sleeping, Emmy dreamt that she had departed from earth in a spaceship on a quest to visit the moon. Emmy was fascinated by the moon, which lit the night sky above her desert home, and she often spent hours looking at it through the telescope she had received for her birthday.

Emmy sat on the edge of her bed and smoothed the bright yellow feathers that decorated her head. Most emus have blue feathers on their heads, and at one time Emmy had been ashamed of her yellow feathers. But now she was proud of her yellow feathers because they were bright, just like the moon.

"Hey Emmy," called her older brothers, Ethan and Ernest, "we've got something for you." Usually when her brothers said that, it meant that they had collected a bunch of bugs from the front yard. Emmy walked into the kitchen and was surprised to find her brothers removing colorful boxes from a bag. "Here," Ethan said, handing Emmy one of the boxes. "We've just been to the hobby store and thought you might like this."

Emmy took the box and sat at the kitchen table. She removed a magnifier from her pocket and used it to investigate the box. "Wow, it's a spaceship model!" Emmy

blurted. Emmy had never built a model, but she figured that if her brothers could do it, she could too.

Emmy heard her brothers rip the packaging from their models and throw it in the trash. "Be careful, don't throw away the instructions," Emmy warned. But her brothers were already too busy putting their models together to pay much attention to her or the instructions.

Emmy carefully opened the box to her spaceship and removed the instruction booklet. Whoa! Emmy thought, this is going to take some reading. Emmy placed her magnifier at the bottom of the page and scanned the magnifier straight up to the top of the page and then over to the left until she found the first word of the first sentence. Emmy then used her magnifier to read the first line of text. When she finished the first line, she scanned back to the left on the same line so she could easily find the beginning word of the next line. Emmy continued reading in this manner until she had read every word of the instruction booklet. She then turned back to the first page and began assembling her spaceship.

After Emmy finished connecting each section of her model, she used her magnifier to inspect her work. Not bad at all, she thought. She turned toward her brothers, who were complaining that their models didn't look anything like they were supposed to. Emmy examined their

models through her magnifier. For once her brothers were right. Ernest's model looked more like a shoe than a boat; and Ethan's model looked like a squashed bug instead of a sports car. That's what happens when you don't read the instructions, Emmy thought.

Emmy bit her tongue to prevent herself from laughing. She didn't want to hurt her brothers' feelings after they had been nice enough to buy a model for her, so she grabbed her spaceship and headed toward her room, holding her model high in the air as if it were flying toward the moon.

Enhancement Opportunity: Have the Emmy puppet ask the student to show her how to hold the magnifier and to identify the top, bottom, and sides of the device. Have the puppet tell the student that the word "magnify" means to "make appear larger." Allow the student to look at his fingernails with the magnifier. Have Emmy ask if they look larger.

Allow the student make a puppet from a sock or other material to be Emmy's friend. Allow the student to communicate through the puppet those feelings he has about using a magnifier.

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
- Emmy puppet
- Lesson 1.2 Basic Use Exercise Sheets

Exercise:
1. Prepare a clean, uncluttered workspace in which your 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 them comfortably, without straining his back, neck, and arms.
3. Allow the student to remove the magnifier from its case. Ensure that he is holding the magnifier in a manner that prevents the lens from being smudged. If he is not, demonstrate again how he should do so by using the thumb and forefinger of

his 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 or lens cleaning tissue.

4. Place the Emmy puppet on your hand and have Emmy ask the student to look through the lens of the magnifier and locate the top left of the first Basic Use Exercise Sheet for Lesson 1.2. 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, have Emmy show him 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, have Emmy show him how to familiarize himself 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 has familiarized himself with the layout of the page, have Emmy ask him to locate the first image of the first row on the page and begin scanning from left to right the first row of objects on the page. As your student scans, have Emmy encourage him to describe what he sees so you can verify his responses.
7. When your student has completed scanning the first row of objects, use Emmy to show him how to scan back to the left on the same row before descending to the next row to be scanned. If needed, use hand-over-hand assistance to demonstrate.
8. Encourage your student to continue scanning the rows of images, describing aloud what he sees through the magnifier. Don't forget to verify his descriptions and confirm that he is scanning back to the left on the same row before descending to the next row. If needed, offer hand-over-hand assistance. Note: As your student looks through the magnifier, he might complain of simultaneously seeing two or three rows of images. The ENVISION II curricula were purposely designed to achieve this effect in order to train the student in maintaining concentration on the appropriate row, which should remain in the center of the magnification field.
9. As your student progresses, he will encounter drawings in which several details are exhibited.

Have Emmy tell him to examine the image by using the same technique he used to orient himself with the contents of the entire page, i.e., beginning at the top of the depiction 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 him to describe some of the particulars he sees. For example, if the image depicts Emmy smiling, and your student tells you he just sees Emmy's head, you might ask him to look at Emmy again and tell you what action(s) Emmy is performing. Ideally, after a few prompts, your student should begin to describe such details on his own.

10. Have Emmy encourage the student to continue exploring the objects on the page. Observe whether there is an increase, decrease, or no change in the pace at which the student is able to identify the images. Generally, the student may require more time to identify the words and images toward the end of the page, as they are smaller or more detailed. Further, as the student begins reading words, 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, he 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.

11. Should your student be unable to identify the contents of a particular row, ask him to try looking at the contents of the next two rows. If he is still unable to identify the images and complains that they are too small or blurry, the student may have reached his print size limit, or he may be fatigued. Repeat the exercise the next day. If the same results emerge, make a note of the problem and postpone the remainder of the exercise until you can speak to the student's low vision clinician about the difficulties he is experiencing.
12. When your student completes the exercise, congratulate him. If necessary, you may have Emmy ask the student to repeat the exercise. However, if the student seems fatigued or agitated, 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 his progress.

Lesson 1.3

Enrichment Exercise Using a Fixed-Distance, Dome Magnifier

Objective:
Student will continue to develop basic localizing and scanning techniques.

Materials:
- Magnifier, as recommended by the low vision clinician
- Emmy puppet
- Lesson 1.3 Enrichment Exercise Sheets

Exercise:
1. Ask the student to prepare a clean, uncluttered workspace in which to undertake the following exercise.
2. Place the Enrichment Exercise Sheets for Lesson 1.3 in a position that will allow the student to scan them comfortably, without straining his back, neck, and arms.
3. Allow your student to remove the magnifier from its case. Ensure that he is holding the magnifier in a manner that prevents the lens from being smudged. If he is not, demonstrate again how he should do so by using the thumb and forefinger of his 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 or lens cleaning tissue.

4. Place the Emmy puppet on your hand and instruct your student to look through the magnifier and locate the top left of the first Enrichment Exercise Sheet for Lesson 1.3. Tell your student that the technique for finding specific locations on a page is called "localization." If your student has difficulty locating the top left of the page, demonstrate again how to find the top left of the page 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 without assistance, have Emmy show him how to familiarize himself 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.
6. After your student has familiarized himself with the layout of the page, have Emmy ask him to locate the first row of images on the page and

investigate the images using the same technique he used to orient himself with the layout of the page, i.e., beginning at the top of the depiction and scanning from left to right and back to the left until the bottom of the image is in view. Ask your student to describe what he sees when observing the images.

7. As the student scans, verify his responses and observe his technique, affirming that he is using the technique above to view the images. Further, ensure that he scans the same row of images back to the left before descending to the next row. If necessary, you may use hand-over-hand assistance to help reinforce proper localizing and scanning techniques.

8. After your student completes his investigation of the images, you might have Emmy ask him to reexamine any images he found difficult to interpret. However, if your student seems fatigued or agitated, take a short break before asking him to try again. The process of learning to use a magnifier should not be rushed. Moreover, each lesson should end on a positive note, with the student feeling encouraged about his progress.

   Note: Always encourage the child to communicate his feelings about using the magnifier. The puppet is an excellent vehicle for this kind of communication.

Lesson 1.4

Introductory Review Using a Fixed-Distance, Dome Magnifier

Objective: Student will review proper handling and cleaning techniques for the recommended magnifier. Again, allow your student ample time to ask any questions concerning the magnifier and its usefulness.

Materials:

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

Review:

1. Ask the student to prepare a clean, uncluttered workspace in which to practice cleaning and handling the magnifier.
2. Place the Emmy puppet on your hand and read Emmy's adventure story entitled "Emmy Reads Out Loud" (page 63).
3. After reading the story, tell your student that you and Emmy would like to watch him clean his magnifier.
4. Ask your student to remove the magnifier from its case. Notice the way your student handles the magnifier. Is he holding the magnifier in a manner

that will prevent the lens from being smudged? If he is not, gently remind him that the best way to avoid smudging the lens is to use the thumb and forefinger of his dominant hand to grip the magnifier along its sides.

5. Tell your student to set down the magnifier. Notice whether he remembers to place his magnifier on the reading material. If your student has forgotten the importance of keeping the magnifier away from rough surfaces, remind him that rough surfaces could harm his magnifier and that he should place his magnifier only on the reading material.

6. Ask your student to show you how to clean the magnifier. Your student should clean the magnifier by rubbing the lens with a lens cleaning cloth or lens cleaning tissue. Ask your student why he should use only lens cleaning cloth or special lens cleaning tissue to clean the magnifier. If your student fails to tell you that the reason he should use special lens cleaning cloth or lens cleaning tissue is because other materials might scratch the lens, you should emphasize again that materials not specifically designed to clean lenses can damage them. If your student has forgotten how to clean the magnifier, take the device from the student and show him how to clean it by rubbing the lens with a lens cleaning cloth. When you are finished, return the magnifier to the student and let him practice using the lens

cleaning cloth to rub both sides of the lens. As the student cleans, sing the following song or have the puppet sing:

"Lens Cleaning Song"
(to the tune of Row, Row, Row Your Boat)

Rub, rub, rub your lens
With a cloth so soft.
Every time you get a smudge,
Clean your lenses off.

7. Finally, allow the student to hold the magnifier and ask any questions that may have occurred to him during the review.

   Note: If, when you and your student begin working within the two other chapters of this curriculum, you wish to skip the Introductory Exercise Lessons, which deal with the cleaning of the magnifier, do so only if your student has mastered the proper techniques for handling and cleaning the magnifier. Otherwise, work with your student through the lessons, continuing to use the magnifier prescribed by the low vision clinician.

ENVISION II

Emmy Reads Out Loud

by Kris Scott

"Now that we are all here, we will freshen our knowledge of animal science by reading aloud," said Emmy's teacher, Ms. Rufflewing. Animal science is the study of living creatures and life processes. Most of the class, including Emmy, groaned at Ms. Rufflewing's request. It wasn't that Emmy disliked reading or was a poor reader. She was a good reader, especially since she had been practicing with her magnifier, but she was still shy about reading in front of others. Emmy wished she could just read silently and look at the cool pictures in her book.

As Ms. Rufflewing instructed, Emmy opened her book to the first page. She was a little disappointed that there were no pictures on the page, so she did what all curious little emus do. She quickly sneaked a peek at the next few pages. "Ah ha!" she exclaimed. There were cool-looking pictures and diagrams on pages five and six. Gosh, she thought, it sure seemed like a lot of reading to get through before she could look at the pictures.

"Maggie, will you read the first page?" asked Ms. Rufflewing. Emmy looked over at Maggie, curious about how Maggie would read. Maggie sat up, straightened her long neck, and began reading. Maggie was a good reader, but she almost hit the student in front of her with her

beak every time she read a word. Emmy nearly laughed out loud when she saw that but caught herself before she let out one of her high-pitched emu giggles.

"Very good reading, Maggie," expressed Ms. Rufflewing.

"Oh boy," thought Emmy, "I wouldn't want to have to follow that performance."

Ms. Rufflewing looked around the room for the next reader, and Emmy ducked her head. "All right, Bobby, why don't you try reading a page."

Bobby was a very tall emu who spoke with a deep voice and read with a magnifier like Emmy's. Without delay, Bobby leaned over his book and focused on the words with his magnifier. Emmy had to admit that she was a bit surprised at how well Bobby read. He didn't miss one word, even though he read at a good speed. And he didn't have to perform any of that wild head bobbing like Maggie did to read well! Watching Bobby read so well with his magnifier made Emmy feel a little better about having to use her magnifier in front of her classmates.

Emmy looked down at her book and realized that there was just one more page to go before she could explore the pictures on the next few pages. Because of her growing impatience, and without even realizing it, Emmy began to bob and weave her head. Thinking that Emmy was excited about the opportunity to read aloud in class, Ms. Rufflewing said, "OK, Emmy, because you're so eager to read, go on and read the last page."

"GULP" was the sound that came from Emmy's mouth. She looked around nervously at all the little black emu eyes staring back at her. Emmy knew there was no escape. Self-consciously, she gripped her magnifier and bent over the page, allowing the words to focus within the field of the magnifier's lens. Emmy began reading, slowly at first, but she sped up after the first couple of sentences. As she concentrated on her reading, she forgot about her classmates, who were listening carefully. She found the passage interesting, as it explained how a tadpole was able to change into a big green frog.

Before she knew it, Emmy had read the whole page without making a single mistake. That wasn't so bad, she thought. She stopped and looked around. The rest of the students were all looking at their own books; they weren't staring at her like she thought they might be. None of them cared if Emmy used a magnifier! This helped put Emmy at ease.

In fact, Emmy was so excited about having read aloud, that she forgot all about the pictures in the book. "Good reading, Emmy," said Ms. Rufflewing. Emmy smiled and turned her attention back to her book. Emmy figured that she was going to like animal science a lot, and she was already looking forward to reading the rest of the chapter when she got home.

Lesson 1.5

Basic Use 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
- Emmy puppet
- Lesson 1.5 Basic Use Review Sheets

Review:
1. Ask the student to prepare a clean, uncluttered workspace in which to undertake the following review.
2. Instruct the student to place the Basic Use Review Sheets for Lesson 1.5 in a position that will allow him to scan them comfortably, without straining his back, neck, and arms.
3. Allow the student to remove the magnifier from its case. Is he holding the magnifier in a manner that prevents the lens from being smudged? If he is not, demonstrate again how he should do so by using the thumb and forefinger of his dominant

hand to grip the magnifier along its sides. If the lens is dirty, instruct the student to clean it with a lens cleaning cloth or lens cleaning tissue.

4. Place the Emmy puppet on your hand and have Emmy ask the student to look through the lens of the magnifier and locate the top left of the first Basic Use Review Sheet for Lesson 1.5. Remind 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, have Emmy show him 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 demonstrates the ability to locate the top left of the page, have Emmy ask him to show you the correct technique for discovering the layout of the page. If he fails to scan the page from top to bottom using a left-to-right and back-to-left zigzag pattern, review this method with him.
6. Now tell your student that you want him to begin scanning from left to right the first row of images on the page. As your student investigates the

images, have Emmy ask him to describe what he sees. Verify your student's answers.

7. After your student successfully scans and describes the first row of items, instruct him to scan the rest of the rows on the page, describing aloud what he sees through the magnifier. Verify your student's descriptions and notice whether he scans back to the left on the same row before descending to the next row to be scanned. If he fails to do this, remind him of the technique, and if needed, use hand-over-hand to demonstrate. If your student complains of simultaneously seeing two or three rows of images through his magnifier, remind him that the ENVISION II curricula were purposely designed to achieve this effect in order to help him practice maintaining focus on the appropriate line, which should always remain in the center of the magnification field.
8. When your student encounters images in which several details are exhibited, notice whether he remembers to orient himself with their contents by using a left-to-right and back-to-left zigzag pattern to scan the images from top to bottom. If he forgot the technique, allow him to review it and try scanning the images again.
9. On the third Basic Use Review Sheet for Lesson 1.5, your student will encounter text and images of various content, shape, and size. Notice whether

he remembers to orient himself with the contents of the page. If needed, review step #5 with him.

10. When your student comprehends the layout of the page, prompt him to read the passages aloud. As your student reads, ensure that he remembers to scan back to the left on the same line of text before descending to the next line to be read. When your student examines the accompanying images, notice whether he remembers to orient himself with their contents by using a left-to-right and back-to-left zigzag pattern to scan the images from top to bottom.
11. As your student reads the text and examines the images, ensure that he maintains his dominant eye directly over the magnifier's lens, moving his head and magnifier hand together instead of trying to follow the magnifier by simply turning his head. 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 the student may have reached his print size limit, or he 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.

12. When your student completes the review, congratulate him and, if needed, take a break before beginning the next review.

Enrichment Opportunity: With the student, take a few minutes to look at the Emmy the Emu character on the Lesson 1.5 Basic Use Review Sheets. Allow your student to use the magnifier to examine closely the pictures of Emmy. After the student has investigated the images, ask him questions about Emmy such as:

1. What color is Emmy?
2. What kind of character is she?
3. Does she seem busy or lazy?
4. What kinds of activities does she like to do?

Engage the Emmy puppet in looking at the same images through the magnifier. Briefly discuss the fact that Emmy has low vision too and is learning to use the magnifier just as the student is. Reinforce that the student and Emmy will learn together.

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
- Emmy puppet
- Lesson 1.6 Enrichment Review Sheet
- Washable crayon

Review:
In this exercise, the instructor will use Emmy to read "hints" describing objects Emmy must find. After reading each hint, the instructor should ask the student to use the recommended magnifier to help Emmy find the item depicted on the Enrichment Review Sheet. When the student finds the correct item, he is to place a mark beside it with the washable crayon.

1. Instruct the student to prepare a clean, uncluttered workspace in which to undertake the following review.
2. Ask the student to place the Review Sheet for Lesson 1.6 in a position that will allow him to scan it comfortably, without straining his back, neck, and arms.
3. Allow the student to remove the magnifier from its case. Ensure that he is handling the magnifier in a manner that prevents the lens from being smudged. If he is not, demonstrate how he should do so by using the thumb and forefinger of his dominant hand to grip the magnifier along its sides. If the lens is dirty, instruct the student to clean it with a lens cleaning cloth or lens cleaning tissue.
4. Tell your student to orient himself with the image on the Enrichment Review Sheet. Your student should remember how to orient himself 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 pages from top to bottom. If your student failed to remember this technique, gently remind him how to perform it.
5. Instruct your student to set the magnifier down. Notice whether he remembers to place the magnifier on the reading material. If he does not, gently remind him of the importance in keeping

the magnifier on the reading materials and away from surfaces that can damage the device.

6. Put the Emmy puppet on your hand, and allow Emmy to act as you read the following setting to your student. Then read the following bulleted hints one at a time. Allow the student enough time to scan the page, locate, and mark the correct item with a washable crayon before you read the next hint.

   It is Saturday, and Emmy is glad to be free from her school duties. But she still has a lot to do. Besides cleaning up from a party she hosted Friday evening, she must find some objects that she plans to use the rest of the weekend. Because Emmy is so busy and weekends are so short, she needs your help in finding a few things.

   - Kris can't find his lucky baseball cap. He *thinks* he left it at Emmy's, but he's not sure. He's been known to forget that it's on his head. Please help Emmy find it.
   - Cleaning makes Emmy tired, but hamburgers always energize her. Find a hamburger for Emmy!
   - Emmy's irresponsible brothers, Ernest and Ethan, lost their pet frog. Emmy doesn't think the frog has gone too far. What do you think?
   - Emmy wanted to read during the weekend. Ms. Rufflewing allowed Emmy to borrow some

wonderful books about trees. Emmy believes she left the books someplace in the living room. Help her find them!

- Sarah intends to let Emmy borrow some basketball shoes. Emmy found one but can't find the other. Help her out!
- Emmy's hula-hoop is missing. Where do you think it is?
- Ernest loves his skateboard, but he usually leaves it in an inconvenient spot. Help Emmy find the skateboard before somebody trips over it!

- Ethan needs his football for a weekend game. Have you seen his football?
- A kangaroo has been seen hopping around Emmy's house. Emmy would love to talk to a kangaroo, but she hasn't seen it yet. Have you seen this kangaroo?

7. After your student locates and marks all of the objects on the Enrichment Review Sheet, congratulate him and talk to him about the experience. Questions like "Do you feel okay about using the magnifier?" or "What was hard or easy about finding the objects?" can initiate a valuable dialogue in which you can deduce more specifics about the student's visual acuity. If it makes the student more comfortable, allow him to talk to the puppet. Make sure the puppet appears to be listening by nodding, pursing its beak, and answering appropriately.


Bonville Zoo
STOP

Chapter II

Fixed-Distance, Stand Magnifiers

- Precision Linen Tester
- Illuminated Stand Magnifier

Note: Always begin the ENVISION II curricula with the lesson specific to the magnifier prescribed to the student by the low vision clinician. For example, if your student was prescribed a fixed-distance, dome magnifier, ensure that the student completes the chapter specific to magnifiers of that type before working through the remaining chapters.

Lesson 2.1

Introductory Exercise Using a Fixed-Distance, Stand 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
- Emmy puppet
- Lens cleaning cloth

Exercise:
1. Prepare a clean, uncluttered workspace in which the student can investigate the magnifier and practice cleaning it.
2. Place the Emmy puppet on your hand and introduce Emmy to the student if you haven't done so already. Then use Emmy to read Emmy's third adventure story entitled "Emmy's Froggy Recess" (page 81).
3. After reading the story, tell your student that you and Emmy are going to teach him how to use and clean his magnifier.

4. Show your student how to remove the magnifier from the case. Explain that the magnifier should be placed only on 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 the magnifier in the case when not in use.
5. Allow the student to remove the magnifier from its case. Show your student how to handle the magnifier without touching and smudging the lens. Usually, a suitable method for handling a stand magnifier is to use the thumb and forefinger of the dominant hand to grip it by its frame.
6. If the magnifier contains a source of illumination, show your student how to activate the light. Show your student how he can use the magnifier to explore objects in his environment by holding the magnifier up to his eye with one hand while using his other hand to bring objects such as coins, CD cases, and maps into the focus of the magnifier. Explain that the object is "in focus" when it looks sharpest through the magnifier. If the student has not learned the concept of "in focus," use the exercise from #5 in "Things To Do Before Using ENVISION" (page 41).
7. If the magnifier requires batteries, explain this to the student. You may opt to show your student how to change the batteries or explain that if the light fails to work, he should ask an adult to check the batteries and replace them if needed.

8. Demonstrate how to clean the magnifier with the lens cleaning cloth by rubbing both sides of the lens. Explain to your student that he should use only special lens cleaning tissue or lens cleaning cloth since regular tissue and paper towels can scratch the lens. Return the magnifier to the student and let him practice using the lens cleaning cloth to rub both sides of the lens. As the student cleans, sing the following song or have the puppet sing:

   "Lens Cleaning Song"
   (to the tune of Row, Row, Row Your Boat)

   Rub, rub, rub your lens
   With a cloth so soft.
   Every time you get a smudge,
   Clean your lenses off.

9. Allow the student to hold the magnifier and ask questions regarding its purpose or any other questions he has concerning the magnifier and caring for it. This time allows the student to familiarize himself 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.

ENVISION II

Emmy's Froggy Recess

by Kris Scott

Emmy was amazed at the quickness with which her school days were passing. This morning, she had been busy reading a history lesson and winning third place in the school spelling bee. It was already time for lunch, and that meant recess was also getting close.

Emmy gobbled down her lunch so she could get to the playground in a hurry. When she arrived at the playground there were already some emus there. She recognized several from her classes. "Hey, Emmy," some of them yelled, "come over here and play kickball with us!" Emmy was very happy about the invitation, but she had other plans for recess. "I can't today, but I promise I'll play tomorrow," Emmy yelled back. With that, Emmy skipped over to a quieter section of the playground and pulled out her magnifier.

Since she had seen how clear and close the magnifier could make the words in her books look, she had been wondering if other things might look bigger through her magnifier. Emmy bent down and gathered a few grains of sand. "Wow!" she exclaimed as she focused on the sand. She could hardly believe how beautiful each grain of sand was. Some grains were dark brown with small dots on them, while others were tan with tiny black stripes. A few even resembled tiny blocks of glass. The range of shapes and

textures also surprised Emmy, who had assumed grains of sand to be perfectly round. Some, she saw now, were square, while others were shaped like triangles.

Beside herself with excitement, Emmy searched for other items to look at. To her left she saw some grass and picked a couple of blades from the batch. Under her magnifier the blades of grass looked unbelievably complex. The edges of the grass looked rough and sharp, as if lined with hundreds of tiny teeth. In the middle of the blades she could see tiny veins that ran the length of the grass. These veins must be the way water is sent from the ground to the grass, she marveled. What a wondrous discovery! Even something as seemingly plain as a blade of grass was a fairly complicated living thing.

To her right, Emmy detected a slight movement and kneeled to investigate. Through the lens of her magnifier she could clearly see the colorful markings of a frog. "Ah, what glorious colors," she said, referring to the stripes and dots of green, yellow, and brown that decorated the animal. Carefully, Emmy picked up the frog and laughed when she focused her magnifier on its funny little legs and feet, which wiggled in the air. Emmy put the frog back on the ground and followed its movements with her magnifier for a couple of minutes.

Emmy sat down and thought about what she had seen. She just couldn't believe things looked so different from what she imagined. Then, she got a terrific idea. She had always known her feathers were bright and colorful, but she had never been able to look really closely at them. But with her magnifier it would be possible, so she pulled out a green, a blue, and a yellow feather. She had always thought her feathers were just strands of colorful puff. She had no idea of the complex structures that combined to make a feather. Slowly, she observed how each feather was really made up of hundreds of tiny fibers. How cool!

Emmy was realizing she had much to learn about her world. But instead of feeling overwhelmed, she felt energized and curious. She knew that with the help of her magnifier she could learn about so many things. She also realized that learning could be fun. When the bell rang to signify the end of recess, Emmy got up and walked toward the classrooms. She wasn't sad about going back to class. After all, she could learn as easily as the next emu, and now she was determined to show everyone how smart she really was.

Enrichment Opportunity:

1. Allow the student to look at a real feather through the magnifier. Let him tell Emmy what he sees.
2. Allow the student to clean the lens of the magnifier. Show the student how the structure of the fixed-distance, stand magnifier differs from that of the fixed-distance, dome magnifiers and variable-distance, hand-held magnifiers.

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
- Emmy puppet
- 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 them comfortably, without straining his back, neck, and arms.
3. Allow your student to remove the magnifier from its case. Ensure that he is holding the magnifier in a manner that prevents the lens from being smudged. If he is not, demonstrate again how he should do so by using the thumb and forefinger of his dominant hand to grip the magnifier by its frame. If the lens of the magnifier is dirty, instruct

the student to clean the lens with a lens cleaning cloth or lens cleaning tissue.

4. Should the magnifier contain a source of illumination, instruct the student to activate the light. 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 II Exercise Sheets. If necessary, work with your student to situate the pages so that glare is reduced.

5. Place the Emmy puppet on your hand and have Emmy ask the student to look through the lens of the magnifier and locate the top left of the first Basic Use Exercise Sheet for Lesson 2.2. 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, have Emmy show him 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.

6. After your student can locate the top left of the page, have Emmy show him how to familiarize himself with the layout of the page by looking

through the lens of 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 has familiarized himself with the layout of the page, have Emmy ask him to locate the first image of the first row on the page and begin scanning from left to right the first row of objects on the page. As your student scans, have Emmy encourage him to describe what he sees so you can verify his responses.

8. When your student has successfully scanned and described the first row of objects, use Emmy to show him how to scan back to the left on the same row before descending to the next row to be scanned. If needed, use hand-over-hand assistance.

9. Encourage your student to continue scanning the images and describing aloud what he sees through the magnifier. Don't forget to verify his descriptions. Note: As your student scans, he might complain of simultaneously seeing two or three rows of images through his magnifier. The ENVISION II curricula were purposely designed to achieve this effect in order to train the student in maintaining concentration on the appropriate row, which should remain in the center of the magnification field.

10. As your student progresses, he will encounter drawings in which several details are exhibited. Have Emmy tell your student to examine the image by using the same technique he used to orient himself with the contents of the entire page, i.e., beginning at the top of the depiction 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 him to describe some of the particulars he sees. For example, if the image depicts Emmy smiling, and your student tells you he just sees Emmy's face, you might ask him to look at Emmy again and tell you what action(s) Emmy is performing. Ideally, after a few prompts, your student should begin to describe such details on his own.
11. Have Emmy encourage your student to continue scanning the objects on the page. Observe whether there is an increase, decrease, or no change in the pace at which the student is able to identify the images. Generally, the student may require more time to identify the words and images toward the end of the page, as they are smaller or more detailed. Further, as the student begins reading words, 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, he 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.

12. Should your student be unable to identify the contents of a particular row, ask him to try looking at the content of the next two rows. If he is still unable to identify the images and complains that they are too small or blurry, the student may have reached his print size limit, or he may be fatigued. Repeat the exercise the next day. If the same results emerge, make a note of the problem and postpone the remainder of the exercise until you can speak to the student's low vision clinician about the difficulties he is experiencing.
13. When your student completes the exercise, congratulate him. If necessary, you may have Emmy ask the student to repeat the exercise. However, if the student seems fatigued or agitated, take a short break before trying again. During the break, you might also ask your student what other objects he would like to view through the magnifier. The designs of several fixed-distance, stand magnifiers allow for fairly easy viewing of "neat stuff" that your student might enjoy investigating. Such objects might be insects, the grooves on a fingertip, bottle caps, and buttons.

Lesson 2.3

Enrichment Exercise Using a Fixed-Distance, Stand Magnifier

Objective:
Student will continue to develop basic localizing and scanning techniques.

Materials:
- Magnifier, as recommended by the low vision clinician
- Emmy puppet
- Lesson 2.3 Enrichment Exercise Sheet

Exercise:
1. Ask the student to prepare a clean, uncluttered workspace in which to undertake the following exercise.
2. Have the student place the Enrichment Exercise Sheet for Lesson 2.3 in a position that will allow him to scan it comfortably, without straining his back, neck, or arms.
3. Allow your student to remove the magnifier from its case. Ensure that he is holding the magnifier in a manner that prevents the lens from being smudged. If he is not, demonstrate again how he should do so by using the thumb and forefinger of his dominant hand to grip the magnifier by its

frame. If the lens of the magnifier is dirty, instruct the student to clean the lens with a lens cleaning cloth or lens cleaning tissue.

4. If your student's stand magnifier contains a source of illumination, ensure that your student has turned 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 II Exercise Sheets. If necessary, work with your student to situate the page so that glare is reduced.
5. Place the Emmy puppet on your hand and have Emmy tell your student that he is going to learn about the life cycle of a frog.
6. Ask your student to look through the lens of the magnifier and orient himself with the layout of the Lesson 2.3 Enrichment Exercise Sheet 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. Your student should remember how to locate the top of the page 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.

7. When your student is ready to continue, tell him that Emmy will ask him a few questions for which he will have to search the Enrichment Exercise Sheet for the correct answer.
8. Ask your student the bulleted questions below one at a time, allowing him enough time to find the correct answer and respond verbally before you read the next question:
    - What is Stage 1 of the frog's life cycle called? (Spawn, also Egg Cluster)
    - When a frog is a tadpole, it is at what stage of its life cycle? (Stage 3)
    - What might one find at Stage 5? (Froglet)
    - The animal at Stage 4 is called what? (Tadpole with legs)
    - What is Stage 2 of the frog's life cycle called? (Egg)
    - At what stage does the organism grow its four legs? (Stage 4)
    - At what stage of the frog's life cycle is a frog actually considered a frog? (Stage 6)

9. As your student scans the page for the answers, observe his technique. He should continue to use the left-to-right and back-to-left scanning method described in step #6.
10. After your student answers the questions correctly, congratulate him and take a break. During the break, talk to your student about some of the other objects he might enjoy investigating with his magnifier. For a fun extracurricular activity, you might set aside some time for the student to use the magnifier outside to explore plants, leaves, soil, roots, insects, etc.

Enrichment Opportunity:
For a fun diversion, allow the student to refer to the Lesson 2.3 Enrichment Exercise Sheet while he makes eggs, tadpoles, froglets, and adult frogs out of clay, paper mache, or other media. Then cut lily pads out of green paper to use as platforms to display the items.

Lesson 2.4

Introductory Review Using a Fixed-Distance, Stand Magnifier

Objective:
Student will review proper handling and cleaning techniques for the recommended magnifier. Allow your student ample time to ask questions concerning the magnifier and its usefulness.

Materials:
- Magnifier, as recommended by the low vision clinician
- Emmy puppet
- Lens cleaning cloth

Review:
1. Ask the student to prepare a clean, uncluttered workspace in which to practice cleaning and handling the magnifier.
2. Place the Emmy puppet on your hand and read Emmy's adventure story entitled "Emmy and the Mysterious Map" (page 97).
3. After reading the story, tell your student that you and Emmy would like to watch him clean his magnifier.
4. Ask your student to remove the magnifier from its case. Notice the way your student handles the

magnifier. Is he holding the magnifier in a manner that will prevent the lens from being smudged? If he is not, gently remind him that the best way to avoid smudging the lens is to use the thumb and forefinger of his dominant hand to grip the magnifier by its frame.

5. Tell your student that you want him to set down the magnifier. Notice whether he remembers to place the device on the reading material. If your student has forgotten the importance of keeping the magnifier away from rough surfaces, remind him that rough surfaces could damage his magnifier and that he should place his magnifier only on the reading material.

6. Ask your student to show you and Emmy how to clean the magnifier. Your student should clean the magnifier by rubbing the lens with a lens cleaning cloth or lens cleaning tissue. Ask your student why he should use only lens cleaning cloth or special lens cleaning tissue to clean the magnifier. If your student fails to tell you that the reason he should use special lens cleaning cloth or tissue is because other materials might scratch the lens, you should emphasize again that materials not specifically designed to clean lenses can damage them. If your student has forgotten how to clean the magnifier, take the device from the student and show him how to clean it by rubbing the lens with a lens cleaning cloth. When you are finished, return the magnifier to the student and let him

practice using the lens cleaning cloth to rub both sides of the lens. As the student cleans, sing the following song or have the puppet sing:

"Lens Cleaning Song"
(to the tune of Row, Row, Row Your Boat)

Rub, rub, rub your lens
With a cloth so soft.
Every time you get a smudge,
Clean your lenses off.

7. If the magnifier contains a source of illumination, ask the student if he remembers how to turn the light on. If he has forgotten, demonstrate how to activate the light.
8. Finally, allow the student to hold the magnifier and ask any questions that may have occurred to him during the review.

Note: If, when you and your student begin working within the two other chapters of this curriculum, you wish to skip the Introductory Exercise Lessons, which deal with the cleaning of the magnifier, do so only if your student has mastered the proper techniques for handling and cleaning the magnifier. Otherwise, work with your student through the lessons, continuing to use the magnifier prescribed by the low vision clinician.

ENVISION II

Emmy and the Mysterious Map

by Kris Scott

Emmy was very happy today. She'd had a good day at school, and it was Friday, which meant she could play all evening. Emmy and her new friends, Kris and Sarah, were planning to play soccer for a few hours before going to Sarah's house, where they would make cookies and spend the rest of the evening watching movies.

As the three fun-loving emus walked toward their neighborhood, Kris raised his head high into the air. "Hey you two," he said, "what's that noise?" Emmy and Sarah stopped walking and listened. At first Emmy heard nothing except the desert wind. She was about to tell Kris he had a few screws loose, but then she heard it, too. The noise was faint but quickly getting closer and louder, a strange hooting and hollering that seemed oddly familiar.

"Hey, let's hide and see who or what it is," Emmy said, scampering behind a nearby rock. Her friends followed, and there they all sat, waiting for the source of the sound to appear. As the sound got closer, Kris gulped and said, "What if it's Mean Gene and Chainsaw?" Sarah looked worried too, but Emmy remained calm. Mean Gene was a big, grumpy koala bear, and Chainsaw, his dog, was known for his bad breath. Though Mean Gene and Chainsaw were rumored to be horribly wicked, Emmy had experienced plenty of run-ins with them and had managed to outwit them every time.

As the three emus waited, the noises got closer and closer until the source of the whooping and hollering came to a rest on the other side of the rock behind which they were hiding. The three little emus listened carefully. "Can you believe we found it?" came a voice from the other side of the rock. "Yeah," another voice added, "it could make us rich; don't lose it."

Emmy's suspicions were correct. The two voices on the other side of the rock belonged to her two older brothers, Ethan and Ernest. She motioned for her two friends to stay quiet. Emmy hoped her brothers would continue their discussion; she wanted to know what they were up to.

"Well, let's go home and eat a snack; then we'll look," said Ernest.

"Good idea," replied Ethan. On the other side of the rock, Emmy wondered what her brothers were looking for.

After Emmy heard her brothers peddle away on their bikes, she motioned for her friends to follow her around to the other side of the rock where her brothers had been.

"Hey, look," Kris said, picking up a piece of paper. Emmy produced her magnifier and looked over the paper in Kris's hand.

"Wow!" gasped Emmy when she recognized the paper as a treasure map.

"Your brothers must have dropped that, Emmy," Sarah said.

"Well, what are we waiting for," Emmy exclaimed. "Let's go find the treasure."

Emmy used her magnifier to orient herself with the layout of the page. She found the top of the page and scanned from left to right, top to bottom. Then she found a path on the map and followed the path, keeping it within the center of the magnification field, until she found the "X" that marked the treasure spot.

It wasn't long before they found the real path that matched the one drawn on the map. The three walked along the path for a short while before Kris stopped abruptly and pointed to a large mound that glinted in the sunlight.

"Look, it's our treasure," declared Kris.

Emmy looked down at the map again. "Yup, it sure is," she confirmed.

The three emus ran to the mound and were astounded by all the cool stuff they found. From her readings, Emmy recognized the place as a "junk pile," a place where farmers often discarded their worn-out machines and equipment. Sarah was overjoyed at the basketball hoop she found; Kris had discovered a sprocket for his bike and wheels for his scooter. Emmy found a slightly used pogo stick and a box of interesting detective books.

Happy with their discoveries, the three emus helped each other carry their newly found treasures home. Emmy

looked forward to using her pogo stick, but she was especially excited about her new books. Emmy whistled as she walked and set her thoughts on trying to decide which book she should read first.

Enrichment Opportunity:

Help your student locate encyclopedias and nature books that contain photos or pictures of Australian wildlife, including emus and koalas. Allow the student to use the magnifier to study pictures and captions within the book. Have a conversation about the animals, their habitats, and their characteristics. Ask questions such as:

1. How is an emu different from an ostrich?
2. How is an emu different from a goose?
3. How is a koala different from a bear?
4. Is a koala really a bear?
5. What other animals live in Australia?

Lesson 2.5

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
- Emmy puppet
- Lesson 2.5 Basic Use Review Sheets

Review:
1. Instruct the student to prepare a clean, uncluttered workspace in which to undertake the following review.
2. Have the student place the Basic Use Review Sheets for Lesson 2.5 in a position that will allow him to scan them comfortably, without straining his back, neck, and arms.
3. Allow your student to remove the magnifier from its case. Is he holding the magnifier in a manner that prevents the lens from being smudged? If he is not, demonstrate again how he should do so by using the thumb and forefinger of his dominant hand to grip the magnifier by its frame. If the lens

is dirty, instruct the student to clean the lens with a lens cleaning cloth or lens cleaning tissue.

4. Should your student's stand magnifier contain a source of illumination, notice whether your student remembers to turn on the light. If he forgot, prompt him to activate the light. 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 II Review Sheets. If necessary, work with your student to situate the pages so that glare is reduced. Instruct your student not to touch the light source.

5. Place the Emmy puppet on your hand and have Emmy ask the student to look through the lens of the magnifier and locate the top left of the first Basic Use Review Sheet for Lesson 2.5. Remind your student that the technique of finding specific locations on a page is called "localization." If your student has forgotten how to find the top left of the page, have Emmy show him how by using the following effective technique:

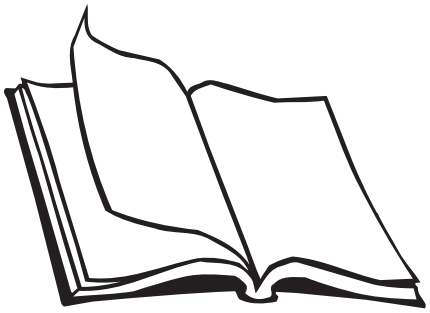
   - Begin with the magnifier positioned near the bottom middle of the page.
   - Scan straight up from the bottom middle to the top middle of the page.
   - Scan left from the top middle to the top left corner of the page.

6. When your student demonstrates the ability to locate the top left of the page, have Emmy ask him to show you the correct technique for discovering the layout of the page. If he fails to scan the page from top to bottom using a left-to-right and back-to-left zigzag pattern, review this method with him.
7. Now tell your student that you want him to begin scanning from left to right the first row of images on the page. As your student scans, have Emmy encourage him to describe what he sees. Verify your student's answer.
8. After your student successfully scans and describes the first row of items, instruct him to scan the rest of the rows on the page, describing aloud what he sees through the magnifier. Verify your student's descriptions and take notice of whether he scans back to the left on the same row before descending to the next row to be scanned. If he fails to do this, remind him of the technique, and if needed, use hand-over-hand to demonstrate.
9. When your student encounters images in which several details are exhibited, notice whether he remembers to orient himself with their contents by using a left-to-right and back-to-left zigzag pattern to scan the images from top to bottom. If he forgot the technique, allow him to review it and try scanning the images again.

10. On the third Basic Use Review Sheet for Lesson 2.5, your student will encounter text and images of various content, shape, and size. Notice whether he remembers to orient himself with the contents of the page. If needed, review step #6 with him.

11. When your student comprehends the layout of the page, prompt him to read the passages aloud. As your student reads, ensure that he remembers to scan back to the left on the same line of text before descending to the next line to be read. When your student examines the accompanying images, notice whether he remembers to orient himself with their contents by using a left-to-right and back-to-left zigzag pattern to scan the images from top to bottom.

12. As your student reads the text and examines the images, ensure that he maintains his dominant eye directly over the magnifier's lens, moving his head and magnifier hand together instead of trying to follow the magnifier by simply turning his head.



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 the student may have reached his print size limit, or he 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.

13. When your student completes the review, congratulate him and, if needed, take a break before beginning the next review.

Lesson 2.6

Enrichment Review Using a Fixed-Distance, Stand Magnifier

Objective:
Student will learn the concept of tracing while reviewing 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.

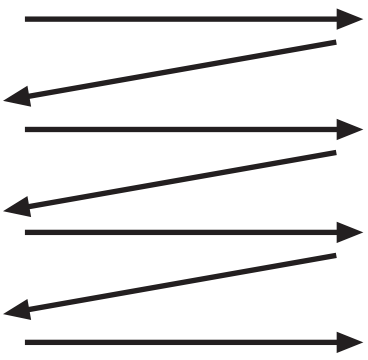
Materials:
- Magnifier, as recommended by the low vision clinician
- Emmy puppet
- Lesson 2.6 Enrichment Review Sheet

Review:
1. Instruct the student to prepare a clean, uncluttered workspace in which to undertake the following review.
2. Ask the student to place the Enrichment Review Sheet for Lesson 2.6 in a position that will allow him to scan it comfortably, without straining his back, neck, and arms.

3. Allow your student to remove the magnifier from its case. Is he handling the magnifier in a manner that prevents the lens from being smudged? If he is not, demonstrate again how he should do so by using the thumb and forefinger of his dominant hand to grip the magnifier by its frame. If the lens is dirty, instruct the student to clean the lens with a lens cleaning cloth or lens cleaning tissue.
4. If the magnifier contains a source of illumination, notice whether your student remembers to turn on the light. If he forgot, prompt him to activate the light. 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 II Review Sheets. If necessary, work with your student to situate the page so that glare is reduced.
5. Use Emmy to explain that the Enrichment Review Sheet contains some items that Emmy found during a recent walk along a dirt path. Tell your student that these items can be identified by the number that has been placed on or next to them.
6. Instruct your student to use his magnifier to orient himself with the design of the page. Your student should remember how to orient himself 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. If your student did not remember this

technique, gently remind him how to perform it. If your student has forgotten the technique for finding the top left of the page, have Emmy remind him 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.



7. After your student has oriented himself with the design of the page, ask him to locate the beginning of the dirt path. Remind your student that the technique of finding specific locations on a page is called "localization."
8. When your student demonstrates the ability to locate the beginning of the dirt path, have Emmy instruct your student to use his magnifier to trace the path, naming and describing only those items that are identified by numbers.
9. As your student traces the path, confirm his

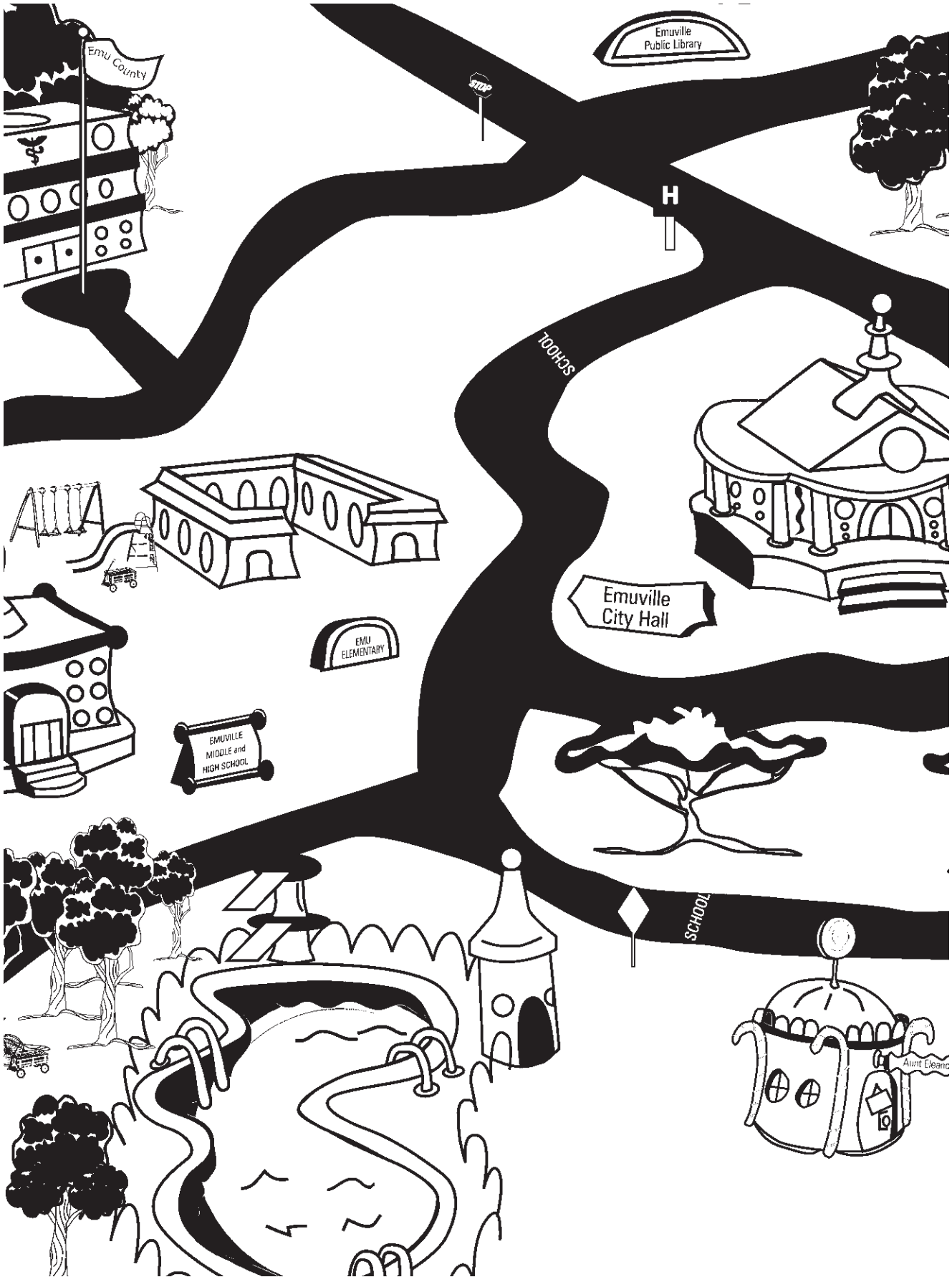
findings and check his technique. Initially, this review might seem tricky for him, so if he becomes frustrated or fatigued, take a short break and encourage him to try again after a few minutes.

10. When your student has found all of the correct items, you might encourage him to read the answer sheet so that he may confirm for himself the correct answers.

    Answers:

    1. soccer ball
    2. cat
    3. spark plug
    4. water cooler
    5. basketball shoe
    6. watering can

11. For reinforcement, have the student repeat the exercise, starting at the end point and tracing back to the beginning. Reversing the exercise should help develop skills needed for tracing in several planes.


Emu County
Emuville
Public Library
STOP
H
SCHOOL
Emuville
City Hall
EMU
ELEMENTARY
EMUVILLE
MIDDLE and
HIGH SCHOOL
SCHOOL

Chapter III

Variable-Distance, Hand-Held Magnifiers

LED Illuminated Hand Magnifiers

Note: Always begin the ENVISION II curricula with the lesson specific to the magnifier prescribed to your student by the low vision clinician. For example, if your student was prescribed a fixed-distance, stand magnifier, ensure that the student completes the chapter specific to magnifiers of that type before working through the remaining chapters.

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 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
- Emmy puppet
- Lens cleaning cloth

Exercise:
1. Prepare a clean, uncluttered workspace in which the student can investigate the magnifier and practice cleaning it.
2. Place the Emmy puppet on your hand and introduce Emmy to the student. Then use the puppet to read Emmy's adventure story entitled "Emmy's Search and Rescue" (p. 115).
3. After reading the story, tell your student that you and Emmy are going to teach him how to use and clean the magnifier.

4. Show your student how to remove the magnifier from the case. Explain that the magnifier should be placed only on the reading materials and should never be set upon rough or hard surfaces, which can scratch the lens. Return the magnifier to its case and emphasize the importance of storing the magnifier in the case when not in use.
5. Allow the student to remove the magnifier from its case. Show him 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 it by its handle.
6. If the magnifier contains a source of illumination, show your student how to activate the light. Instruct him not to touch the light source. You might also show your student how he can explore objects in his environment by holding the magnifier up to his eye with his dominant hand while using his other hand to bring objects such as coins, CD cases, and maps into the focus of the magnifier. Explain to your student that the object is "in focus" when it looks sharpest through the magnifier. If the student has not learned the concept of "in focus," use the exercise from #5 in "Things To Do Before Using ENVISION" (p. 41).
7. If the magnifier requires batteries, explain this to the student. You may opt to show your student how to change the batteries or explain that if the

light fails to work, he should ask an adult to check the batteries and replace them if needed.

8. Demonstrate how to clean the magnifier with the lens cleaning cloth by rubbing both sides of the lens. Explain to your student that he should use only special lens cleaning tissue or lens cleaning cloth since regular tissue and paper towels can scratch the lens. Return the magnifier to the student and let him practice using the lens cleaning cloth to rub both sides of the lens. As the student cleans, sing the following song or have the puppet sing:

   "Lens Cleaning Song"
   (to the tune of Row, Row, Row Your Boat)

   Rub, rub, rub your lens
   With a cloth so soft.
   Every time you get a smudge,
   Clean your lenses off.

9. Allow the student to hold the magnifier and ask questions regarding its purpose or any other questions he has concerning the magnifier and caring for it. This time allows the student to familiarize himself 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.

ENVISION II

Emmy's Search and Rescue

by Kris Scott

Emmy closed her book and looked toward her window, where sunlight was shining into her room. A good day for a walk, she thought, getting up from her table and stretching. Emmy put a couple of magnifiers in her backpack, threw the pack over her shoulder and walked out the front door. The sun warmed her face, and the sweet smell from her mother's flowers filled her nostrils.

Emmy walked until she approached the outskirts of her town, Emuville. There, she stopped and used her magnifier to inspect a lizard sunning itself on a rock. Emmy was thinking about how weird the lizard looked when she heard a terrible roaring sound coming straight toward her.

Before she could run, her path of escape was blocked by a big truck. "Now I've got ya, you silly ostrich," said a gruff voice from inside the truck. Emmy knew at once the voice was that of Mean Gene, the cantankerous koala bear. His evil canine companion, Chainsaw, was already out of the truck and barking at Emmy. Most emus were terrified of Mean Gene and Chainsaw, but right now, Emmy was furious. She had never been called an ostrich; she was an emu. Couldn't Mean Gene see the difference?

"OK, ostrich, hand over that magnifier," commanded Mean Gene as he held a large sack in front of Emmy. Emmy

looked around for her two brothers, Ethan and Ernest, but of course, they were nowhere to be found. Reluctantly, Emmy dropped her magnifier in the sack. Mean Gene and Chainsaw laughed, jumped back in the truck and roared away, leaving her standing in a cloud of dust.

Now Emmy was an emu, but she wasn't dumb, and she had only given Mean Gene one of her magnifiers. Quickly Emmy fetched her backpack and pulled another magnifier from it. She wasn't going to let some koala bear push her around, so she bent down and used her other magnifier to follow the tracks the truck had left behind.

Emmy had been following the tracks for about an hour and was in such a state of concentration that she bumped her head on something hard. "Hey watch it," she heard a voice call out. Emmy jumped in surprise then focused her magnifier on a turtle. "My name is Fred," stated the turtle. "What's that you're looking through?" "I'm Emmy, and this is my magnifier," the emu replied. "It helps me read and see lots of other neat stuff. Here, take a look." Fred took the magnifier and looked through it. "Wow, this is great. With this I could find all the worms I could eat," exclaimed the turtle. "I love to eat worms…and banana peels too."

Emmy told Fred about Mean Gene taking one of her magnifiers and asked the turtle if he had seen the koala drive by. "Sure have," confirmed Fred. "I'll take you right to him." Fred gave a sharp whistle, and two other turtles appeared. "Meet Debbie and Larry," Fred said, motioning

to the other turtles, "but you can just call us the Turtle Triplets. Now, follow us."

Emmy and the turtles soon arrived at the edge of Mean Gene's lawn. She looked around with her monocular and saw no sign of Mean Gene, but she did notice Chainsaw asleep by the front porch. "All right, troops," commanded Fred, "remember the plan. Emmy, you run into Gene's house when we make a bunch of noise across the yard. Let's go!"

Emmy waited as Debbie and Larry crept toward Chainsaw. Meanwhile, Fred positioned himself right outside Gene's front door.

Emmy couldn't believe how fast it all happened. She watched Larry chomp down on Chainsaw's tail while Debbie snapped at his nose. Hearing Chainsaw's yelp, Gene ran out the front door and fell over Fred, who had planted his shell right in Gene's path. Seeing Gene fall in a mud pit, Emmy bolted into his house, grabbed her magnifier from the kitchen table, and ran away from the house with Fred right behind her. When they saw that the mission had been accomplished, Debbie and Larry released their grip on Chainsaw, who darted into the house like a scared puppy.

Safely away from Mean Gene's house, Emmy thanked the Turtle Triplets for their help and then began her journey home. She was tired, but she also felt happy about fooling Mean Gene, though she knew that stubborn koala would soon be back, causing more problems for the town of Emuville.

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
- Emmy puppet
- Lesson 3.2 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 3.2 in a position that will allow the student to scan them comfortably, without straining his back, neck, and arms. Posture is particularly important when using a variable-distance, hand-held magnifier since the student must maintain focal distance to improve visual acuity. An APH GrandStand or other similar reading easel may help to increase your student's reading stamina.
3. Allow your student to remove the magnifier from its case. Ensure that he is holding the magnifier in

a manner that prevents the lens from being smudged. If he is not, demonstrate again how he should do so by using the thumb and forefinger of his dominant hand to grip the magnifier by its handle.

4. Should the magnifier contain a source of illumination, instruct the student to activate the light. 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 II Exercise Sheets. If necessary, work with your student to situate the pages so that glare is reduced.

5. Use the first few images on the first Basic Use Exercise Sheet for Lesson 3.2 to show the student how to find the correct focal distance with a variable-distance, hand-held magnifier by using the following effective method:

   - Locate with your finger the image to be seen.
   - 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 this on yourself or with the puppet.
- Demonstrate how, in order to maintain a perpendicular line of sight, the student must always position his dominant eye directly above the lens. That is, the student should not try to read by simply turning his head to follow the magnifier, as this common but incorrect technique is often the cause of students' inability to maintain focus.

6. Give your student the magnifier and ask him to find the focal distance. If he appears to be struggling, use hand-over-hand assistance. Before continuing, make sure he understands the concept of focal distance and knows how to find it on his own. If needed, continue to practice finding the focal distance. You might also allow the student to review the focus exercise from #5 in "Things To Do Before Using ENVISION" (p. 41).
7. If your student is able to find the focal distance on his own, allow Emmy to instruct him in looking through the lens of magnifier and finding the top left of the first Lesson 3.2 Basic Use Exercise Sheet 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.

Remind your student that the technique of finding specific locations on a page is called "localization."

8. After your student can locate the top left of the page, have Emmy show him how to familiarize himself 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."
9. After your student has familiarized himself with the layout of the page, have Emmy ask him to locate the first image of the first row on the page and begin scanning from left to right the first row of objects on the page. As your student scans, have Emmy encourage him to describe what he sees so you can verify his responses.
10. When your student has successfully scanned and identified the first row of images, use Emmy to show him how to scan back to the left on the same row before descending to the next row. If needed, use hand-over-hand assistance.
11. Encourage your student to continue scanning the rows of images while describing what he sees. Don't forget to verify his descriptions. Note: As

your student scans, he might complain of simultaneously seeing two or three rows of images through his magnifier. The ENVISION II 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.

12. As your student progresses, he will encounter drawings in which several details are exhibited. Have Emmy tell your student to examine the images using the same technique he used to orient himself with the contents of the entire page, i.e., beginning at the top of the depiction 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 him to describe some of the particulars he sees. For example, if the image depicts Emmy smiling, and your student tells you he just sees Emmy's head, you might ask him to look at Emmy again and tell you what action(s) Emmy is performing. Ideally, after a few prompts, your student should begin to describe such details on his own.

13. As your student scans, observe his technique and determine whether he is having difficulty. If he is struggling, be sure to ask him what is wrong. If his answer lacks specificity, guide him with questions such as "Are the images too blurry?" or "Are you getting tired?" Difficulty in reading with

the magnifier may be the result of several factors. If he complains of blurriness, he may be having trouble maintaining focal distance. To determine whether this is the case, you might try the following exercise:

- Use hand-over-hand to help him find the correct focal distance;
- Help him maintain focal distance by continuing hand-over-hand while he reads or scans;
- As he reads, ask him whether your hand being over his helps to make the words less blurry.

If he affirms that hand-over-hand helps alleviate blurriness, then fatigue might be inhibiting him from maintaining correct focal distance while reading alone. If fatigue seems to be a problem, try bracing his arms or wrists or add support under his arms with a gel wrist support, cushion, or other appropriate device. A reading stand may also help reduce fatigue.

If your student complains of distortion, make sure he is holding the magnifier parallel to the reading material, that he is looking through the center of the magnifier, and that his head and arm are moving as one while he reads. Again, it is important that he look straight down through the lens of the magnifier. If he continues to complain of distortion, show him how to decrease the working distance by moving his eye closer to the magnifier.

14. If your student seems to be grasping the techniques needed for reading with the variable-distance, hand-held magnifier, have Emmy encourage him to continue scanning the page. Observe whether there is an increase, decrease, or no change in the pace at which your student is able to identify the images on the page. Generally, the student may require more time to identify the words and images toward the end of the page, as they are smaller or more detailed. Be aware of any shapes, words, or numbers that consistently cause difficulty for him, as they may help indicate specific types of visual impairments for which there may be particular corrective techniques. If the student is failing to read parts of words, he 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.
15. Should your student be unable to identify the contents of a particular row, ask him to try scanning the next two rows. If he is still unable to identify the images and complains that they are too small or blurry, the student may have reached his print size limit, or he may be fatigued. Repeat

the exercise the next day. If the same results emerge, make a note of the problem and postpone the exercise until you can speak to the student's low vision clinician about the difficulties he is experiencing.

16. When your student completes the exercise, congratulate him. If necessary, you may have Emmy ask the student to repeat the exercise. However, if the student seems fatigued or agitated, take a short break before trying again. During the break, you might also ask your student what other objects he would like to view through the magnifier. The designs of variable-distance, hand-held magnifiers allow for fairly easy viewing of "cool stuff" your student might enjoy investigating. Such objects might be insects, the grooves on a fingertip, stamps, and coins.

Enrichment Opportunity:
Collect an assortment of stamps, coins, buttons, bottle caps, leaves, or other small, interesting items. Allow the student to examine the items. Then ask the student to use the magnifier to sort the items. For example, ask him to put all stamps with flags in one area of his desk and those with faces in another. Be sure to give him verbal feedback on this exercise. You may also want to reward your student with a stamp or coin.

Lesson 3.3

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

Objective:
Student will reinforce basic localizing, focal, scanning, and tracing 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
- Emmy puppet
- Lesson 3.3 Enrichment Exercise Sheet
- Washable crayon

Exercise:
1. Ask the student to prepare a clean, uncluttered workspace in which to undertake the following exercise.
2. Instruct the student to place the Enrichment Exercise Sheet for Lesson 3.3 in a position that will allow him to scan and trace it comfortably, without straining his back, neck, and arms.

3. Allow your student to remove the magnifier from its case. Ensure that he is holding the magnifier in a manner that prevents the lens from being smudged. If he is not, demonstrate again how he should do so by using the thumb and forefinger of his 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 or lens cleaning tissue.
4. Should the magnifier contain a source of illumination, instruct the student to activate the light. 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 II Exercise Sheets. If necessary, work with your student to situate the page so that glare is reduced.
5. Explain to your student that he will be asked to use his magnifier to locate specific items on the map and that he is to mark those items with the washable crayon.
6. Ask your student to use his magnifier to orient himself to the design of the page by beginning at the top left of the page and scanning in a left-to-right and back-to-left zigzag pattern until he reaches the bottom of the page.
7. Set the Emmy puppet on your hand, and read the following setting (p. 128) to your student. Then read the bulleted hints one at a time. Allow the

student enough time to find and mark the correct item before you read the next hint.

8. As your student searches for the appropriate locations, observe his technique, ensuring that he uses the systematic left-to-right and back-to-left scanning technique to successfully navigate the map. Your student may also practice his tracing techniques by following the streets to different parts of the map.

9. If your student is having difficulty finding the appropriate locations, use hand-over-hand to help him scan and trace for a few of the objectives. Remember, the activity should ultimately be enjoyable for your student, so if he becomes fatigued or agitated, take a short break. Further, if your student finds it difficult to consistently maintain focal distance, allow him to practice finding the focal distance by using other Basic Use Exercise Sheets or by looking at interesting items such as coins, stamps, and photographs.

   Read: *Emmy needs to warn all the emus in town that Mean Gene is on the loose. She needs to find the most popular places in town so she can quickly warn all emus to hide their magnifiers in case Mean Gene decides to visit Emuville.*

   - Emmy will visit this place first. Her mom, dad, and brothers are here, as are her toys and her cozy bed. Hint: Emmy's house is the only one with a yellow chimney.

- This is where Emmy's mom would take her and her brothers if they ever became very sick. [Emu County General Hospital]
- Emmy and the rest of the emus love visiting this place because inside are great-tasting sweets and sodas. [Aunt Eleanor's candy shop]
- Emmy needs to warn all the other emu students, who, like Emmy, spend most of their day learning to read and write in these two places. [Emu Elementary and Emu Middle and High School]
- Emmy decides she must warn all the animals, so she must stop by this place, where several different kinds of animals can be seen sleeping, eating, and playing. [Emuville Zoo]
- Emus love to watch the game played on this field, so this is a crowded spot Emmy needs to visit. Hint: Emmy's brother Ethan usually plays goalie when he is here. [soccer field]
- This spot is the favorite for many emus during the hot summers, when nothing feels better than a dip in a pool of cool water. [swimming pool]
- This place is located in the center of town, and is a meeting place for emus who want to propose laws and town policies. [Emuville City Hall]

- Emus love to travel by train, so Emmy needs to visit this place next. [Emunion Station]
- Several emus call this place their favorite spot. Here emus can read all day and check out books and magazines. [Emuville Public Library]

10. After your student locates and marks all of the appropriate objects on the Enrichment Exercise Sheet, congratulate him. Talk to him about other places that might be popular spots for emus. Talk to your student about popular spots he likes to visit. Ask him how he liked using the variable-distance, hand-held magnifier. (Do not be alarmed if your student cannot see all of the details within the map. Remember, the map was created for a broad range of students who use a wide range of magnifying lenses.)

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 www.esri.com.

Lesson 3.4

Introductory Review Using a Variable-Distance, Hand-Held Magnifier

Objective:
Student will review proper handling and cleaning techniques for the recommended magnifier. Allow your student ample time to ask questions concerning the magnifier and its usefulness.

Materials:

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

Review:

1. Ask the student to prepare a clean, uncluttered workspace in which to practice cleaning and handling the magnifier.
2. Place the Emmy puppet on your hand and read Emmy's adventure story entitled "Emmy the Comic Maker" (p. 134).
3. After reading the story, tell your student that you and Emmy would like to watch him clean his magnifier.

4. Ask your student to remove the magnifier from its case. Notice the way your student handles the magnifier. Is he holding the magnifier in a manner that will prevent the lens from being smudged? If he is not, gently remind him that the best way to avoid smudging the lens is to use the thumb and forefinger of his dominant hand to grip the magnifier by its handle.
5. Instruct your student to set down the magnifier. Notice whether he remembers to place the device on the reading material. If your student has forgotten the importance of keeping the magnifier away from rough surfaces, remind him that rough surfaces could harm his magnifier and that he should place his magnifier only on the reading material.
6. Ask your student to show you and Emmy how to clean the magnifier. Your student should clean the magnifier by rubbing the viewing areas with a lens cleaning cloth or lens cleaning tissue. Ask your student why he should use only lens cleaning cloth or special lens cleaning tissue to clean the magnifier. If your student fails to tell you that the reason he should use special lens cleaning cloth or tissue is because other materials might scratch the lens, you should emphasize again that materials not specifically designed to clean lenses can damage them. If your student has forgotten how to clean the magnifier, take the device from the student and show him how to clean it by

rubbing the lens with a lens cleaning cloth. When you are finished, return the magnifier to the student and let him practice using the lens cleaning cloth to rub both sides of the lens. As the student cleans, sing the following song or have the puppet sing:

"Lens Cleaning Song"
(to the tune of Row, Row, Row Your Boat)

Rub, rub, rub your lens
With a cloth so soft.
Every time you get a smudge,
Clean your lenses off.

7. Finally allow the student to hold the magnifier and ask any questions that may have occurred to him during the review. Moreover, if the magnifier contains a source of illumination, ask the student if he remembers how to turn the light on. If he has forgotten, demonstrate how to activate the light.

   Note: If, when you and your student begin working within the two other chapters of this curriculum, you wish to skip the Introductory Exercise Lessons, which deal with the cleaning of the magnifier, do so only if your student has mastered the proper techniques for handling and cleaning the magnifier. Otherwise, work with your student through the lessons, continuing to use the magnifier prescribed by the low vision clinician.

Emmy the Comic Maker

by Kris Scott

Emmy smiled when she noticed that her English teacher, Mr. Beaker, was about to begin class. Mr. Beaker was a good teacher, and he always assigned projects that kept the emus interested.

"Well class," Mr. Beaker announced, "I think it's time we began a school newspaper." All the little emus around Emmy began whispering in excitement, and Emmy sat up in her chair, very interested in this idea of a school newspaper. "Each of you," continued Mr. Beaker, "will have a special job related to the creation of this paper."

Mr. Beaker then began assigning all the students their tasks for creating the first ever *Emu Elementary Journal*. As the emus around her were picked for the jobs of reporters, printers, artists, and editors, Emmy wondered anxiously what her job would be. "And, Emmy, you will be the writer and artist for the newspaper's comic strip," declared Mr. Beaker. The bottom of Emmy's beak dropped so far it almost hit the top of her desk.

Wow, Emmy thought. Creating a comic strip sounded like a lot of fun, but she didn't know the first thing about comics. She thought she better learn fast, for she wanted to maintain her good grade in Mr. Beaker's class.

When class ended that day, Emmy rushed to the school library and found some books about newspapers and animations. Emmy pulled her magnifier from her satchel and began scanning the books for helpful information.

"Hey, Emmy," called Emmy's best friend, Sarah, who sat beside Emmy. "I hear you'll be making a comic for the school newspaper." "That's right," Emmy agreed. "But I have no idea how to make a comic strip. I never read comics. My brothers Ernest and Ethan ought to be the ones doing this; they read comics all the time."

Emmy looked back down at her book for a second before she got an idea. "Sarah, that's it!" she exclaimed. "My brothers have lots of comic books lying around; I'll go home and study some of them."

When Emmy arrived home, she and Sarah borrowed several comic books from Ethan and Ernest. Emmy grabbed her magnifier and began studying the dialogue, colors, characters, and the layout of the page. At each section of the comic, Emmy found the top of the drawing and scanned from left to right and back to the left until she reached the bottom of the image. Emmy was careful to scan in a systematic manner so she would not overlook any words or important details.

After an hour, Emmy stopped reading. "Well, Sarah, I think I understand enough about this comic strip stuff to start making my own. I'm just not sure about the types of characters I should draw and write about." Emmy and

Sarah sat quietly, thinking hard about the kinds of characters Emmy could include in her comic. Finally, Emmy jumped from her seat. "I've got it," she yelled. "I'll make a comic strip about that cantankerous koala bear Mean Gene, and how he tries to fool us emus with all kinds of trickery."

Emmy arrived early at school the next day to begin drawing her comic strip. She unpacked her magnifier, several comics, and her coloring pencils. Then she placed some paper in the tray of a closed-circuit television, an electronic device that could magnify and display on a little television screen words and pictures that Emmy wrote and drew on her paper. Emmy began drawing, slowly at first, but the more she drew the faster she became until it seemed like the characters created themselves. When Emmy finished the first few sections of the comic, she removed the paper from the device and used her magnifier to inspect her work more closely. Emmy was happy with what she had done, so she continued unveiling a story in which she and her friends would get the best of Mean Gene.

When Mr. Beaker looked over the first draft of the school newspaper, he was delighted with the results, especially Emmy's comic strip. The students, too, seemed to enjoy Emmy's work. She had already heard from several students who were eager to read the comic that would appear in the next issue. Emmy was also looking forward to producing her next comic, in which she would play a part in saving Emuville from Mean Gene's trickery. Emmy's imagination was moving at 80 miles per hour. I've got the best newspaper job of all, she decided.

Lesson 3.5

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
- Emmy puppet
- Lesson 3.5 Basic Use Review Sheets

Review:
1. Instruct the student to prepare a clean, uncluttered workspace in which to undertake the following review.
2. Have the student place the Basic Use Review Sheets for Lesson 3.5 in a position that will allow him to scan them comfortably, without straining his back, neck, and arms. Again, because posture is particularly important when using a variable-distance, hand-held magnifier, you might wish to use an APH GrandStand or other similar reading easel to help increase your student's reading stamina.
3. Ask your student to remove the magnifier from

its case. Is he is holding the magnifier in a manner that prevents the lens from being smudged? If he is not, demonstrate again how he should do so by using the thumb and forefinger of his dominant hand to grip the magnifier by its handle. If the lens is dirty, instruct the student to clean the lens with a lens cleaning cloth or lens cleaning tissue.

4. Should the magnifier contain a source of illumination, notice whether your student remembers to turn the light on. If he forgot, show him again how to activate the light. 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 II Review Sheets. If necessary, work with your student to situate the pages so that glare is reduced.

5. Instruct your student to look through the lens of the magnifier and find the first image in the first row and use this image to demonstrate the proper procedure for finding the focal distance. Remind your student that the technique of finding specific locations on a page is called "localization." Your student should be able to find the first image of the first row 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.

If your student forgot the technique above, review it with him until he demonstrates the ability to locate the top left of the page.

6. When your student has located the first item in the first row, ensure that he finds the focal distance by:
   - Locating with his finger the image to be seen.
   - Laying the magnifier near his finger and flat on the page.
   - Positioning his dominant eye directly over the magnifier's lens.
   - Slowly lifting the magnifier away from the page until focus is achieved.
   - Moving eye toward or away from the lens to increase or decrease the field of view. (This is how one finds the "working distance.")

   If needed, review any of the above steps with your student.
7. After your student can locate the top left of the page and has demonstrated his ability to find the

focal distance, have Emmy ask him to demonstrate the technique for familiarizing himself with the layout of the page. Does your student look through the magnifier and scan the page from top to bottom using a left-to-right and back-to-left zigzag pattern? If he fails to display this method, review it with him.

8. When your student has familiarized himself with the layout of the page, have Emmy ask him to locate again the first image of the first row on the page and begin scanning the contents of the first row. As your student scans, ask him to describe what he sees so you can verify his responses.

9. When your student has successfully scanned and described the first row of images, instruct him to scan the rest of the rows on the page, describing aloud what he sees through the magnifier. As your student scans, verify his descriptions and notice whether he scans back to the left on the same row before descending to the next row to be scanned. Ensure that he continues to use this technique when he reads the contents of Row 4. If he fails to do this, remind him of the technique, and if needed, use hand-over-hand to demonstrate. Before moving to the second Basic Use Review Sheet for Lesson 3.5, talk to your student about what concepts the images on the page represent.

10. On the second Basic Use Review Sheet for Lesson 3.5, your student will encounter written passages and images of various content, shape, and size. Notice whether he remembers to orient himself with the contents of the page. If needed, review step #7 with him.
11. After your student comprehends the layout of the page, prompt him to read the passages aloud. As your student reads, ensure that he remembers to scan the same line of text back to the left before descending to the next line to be read. When your student examines the accompanying images, notice whether he remembers to orient himself with their contents by using a left-to-right and back-to-left zigzag pattern to scan the images from top to bottom. If he forgot the technique, allow him to review it and try scanning the images again.
12. As your student reads the text and examines the images, ensure that he is holding the magnifier parallel to the page and that his dominant eye remains directly above the lens of the magnifier. If needed, demonstrate how, in order to maintain a perpendicular line of sight when scanning, he must always keep his dominant eye directly over the magnifier's lens, moving his head and magnifier hand together instead of trying to follow the magnifier by simply turning his head. **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 the student may have reached his print size limit, or he 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.

13. When your student completes the review, congratulate him and, if needed, take a break before beginning the next review.

Lesson 3.6

Enrichment 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
- Emmy comic book

Review:
1. Instruct the student to prepare a clean, uncluttered workspace in which to undertake the following review.
2. Have the student place the Emmy comic book in a position that will allow him to scan its pages comfortably, without straining his back, neck, and arms. Again, because posture is particularly important when using a variable-distance, hand-held magnifier, you might wish to use an APH GrandStand or other similar reading easel to help increase your student's reading stamina.
3. Allow your student to remove the magnifier from its case. Ensure that he is holding the magnifier in a manner that prevents the lens from being

smudged. If he is not, demonstrate again how he should do so by using the thumb and forefinger of his dominant hand to grip the magnifier by its handle.

4. Should the magnifier contain a source of illumination, notice whether your student remembers to turn the light on. If he forgot, show him again how to activate the magnifier's light. 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 comic book's pages. If necessary, work with your student to situate the comic book so that glare is reduced.
5. Place the Emmy puppet on your hand and have Emmy ask the student to open the comic book and locate the top left of the first page. Remind your student that the technique of finding specific locations on a page is called "localization." Your student should be able to find the first image of the first row 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.

If your student forgot the technique above, review it with him until he demonstrates the ability to locate the top left of the page.

6. When your student demonstrates the ability to locate the top left of the first page, have Emmy ask him to show you the correct technique for discovering the layout of the page. If he fails to scan the page from top to bottom using a left-to-right and back-to-left zigzag pattern, review this method with him. To perform this method successfully while using a variable-distance, hand-held magnifier, your student must also be capable of finding and maintaining the correct focal distance. If your student does not remember how to find the correct focal distance, review the following procedure with him:

   - Locate with a finger the image to be seen.
   - Lay the magnifier near the 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 the eye toward or away from the lens to increase or decrease the field of view. (This is how one finds the "working distance.")

7. After your student is familiar with the design of the page, ask him to find the first action/dialogue box of the comic strip and describe aloud the contents of the box, as well as read aloud any words contained within the box.
8. Monitor your student closely, confirming the objects and words your student sees through the magnifier. Encourage your student to continue scanning the contents of the action/dialogue boxes, using the same scanning techniques described in the preceding lessons, but using such techniques within each frame of the comic book. Inspect your student's ability to maintain correct focal distance. If needed you may use hand-over-hand to reinforce the concept of focal distance.
10. If your student exhibits good stamina, encourage him to continue scanning until he completes the comic book. However, if your student displays signs of fatigue, allow him to take a break when needed. If your student is unable to work through the entire comic book in one setting, set smaller goals for him, e.g., one or two pages per setting. Don't forget to congratulate your student when he achieves the goal. Ask him to tell you about his favorite comic book characters.

Lesson 3.7 (Teacher Only)

Reporting Back to the Clinician

Objective:
To provide the clinician with the results of the student's near magnification device training.

Materials:
Form "Using Prescriptively Recommended Optical Devices"

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 she be able to make an informed final prescription.

The form, "Using Prescriptively Recommended Optical Devices," (page 149) is 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, fill out the form and send it in to the clinician with as much information as you can provide. Be sure to include information not asked for on the form if you think it important to the clinician's final recommendation. Extra forms are provided in the Materials Packet.

Upon receipt of the form, the clinician will make a final prescription using the information you have provided. For this reason, your information must be clear, concise, and accurate. The student will be the beneficiary of your accuracy by having the best near magnification devices possible for his access to visual information in his world.

The American Printing House for the Blind thanks you for your devotion to your student by providing excellent training and for using ENVISION II: Vision Enhancement Program Using Near Magnification Devices.

ENVISION II

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 Interpretation			
Symbols/Signs			
Illustrations			
Maps			
Text			
Independent Use			
Educational			
Leisure			

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)
Magnifier chosen to read each font size				

Length of Training Time _____
Curriculum Used _____
_____
_____

Comments _____
_____
_____
_____

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