

Teachers' Desk Reference: Practical Information for Pennsylvania's Teachers

Visual Impairment

As a classroom teacher you may never have worked with a student with a low incidence disability. For the first time, you may be faced with the challenge of ensuring that a student with a visual impairment is successfully engaged and making educational progress. Your collaboration as a member of the student's team is essential and is to ensure that the needs and goals of the student with a visual impairment are met. To aid in this endeavor, this Teachers' Desk Reference provides:

- An overview of visual impairment
- A description of the unique needs of students with visual impairments
- Information about the primary support services available for students with visual impairments
- An introduction to assistive technology

What is a Visual Impairment?

Visual impairment encompasses a wide spectrum of visual function ranging from moderate vision loss to blindness. Visual impairment is a collective term that includes individuals who are blind, have low vision,

or have neurological visual impairments such as cortical/cerebral visual impairment or other trauma to the brain's visual components. It is most often caused by a disease, disorder, syndrome, or brain injury. A visual impairment may progressively worsen, stabilize, or improve depending on the diagnosis. It most frequently impacts a student's ability to see visual detail at a distance or near (visual acuity). It also includes nonseeing or distorted areas within a student's visual area (visual field) that may result in significant visual instability during visual activities such as reading. It may also interfere with daily activities and safe mobility. Additional visual skills and factors affected by visual impairment may include the ability to see low contrast visual detail; tolerance of bright light and glare; the ability to adapt to changes in environmental illumination, stereovision, or depth perception; and, the ability to discern complex visual information. Visual deficits in these areas adversely impact a student's ability to learn and to perform daily activities, as well as affecting the student's orientation and mobility.

Different Definitions of Visual Impairment:

Individuals With Disabilities Education Act (IDEA)	World Health Organization (WHO)	National Eye Institute (NIH)	Social Security
Defines visual impairment including blindness as "an impairment in vision that, even with correction, adversely affects a child's educational performance. The term includes both partial sight and blindness. [§300.8(c)(13)]	Classifies visual impairment into distance (mild, moderate, severe, and blindness) and near.	Defines visual impairment as visual acuity of 20/40 or worse in the better-seeing eye with correction, excluding blindness. Whereas, blindness is defined as visual acuity of 20/200 or worse in the better-seeing eye with correction. Both low vision and blindness are included in the category "All Visual Impairment."	Visual acuity measured between 20/100 and 20/200, with the inability to read any of the letters on the 20/100 line, is determined to be statutory blindness based on a visual acuity of 20/200 or less. Visual field loss equal to or less than 20 degrees diameter. [2.00 (5b)]

Under the IDEA – and Chapter 14 and 711

The educational definition of a visual impairment, as outlined by IDEA, determines eligibility for special education services and the need for specially designed instruction to access the educational curriculum across multiple settings. Unlike medical definitions of visual impairment, the educational definition does not stipulate any diagnostic criteria measurements (e.g., visual acuity such as 20/70, visual field such as less than 20%) nor diagnosed eye condition. While it is best practice to ask for an eye report during the assessment for eligibility and reevaluation process, one cannot be required, nor can a visual acuity and/or visual field range be stipulated.

Unique Needs of Students With Visual Impairments

Students with visual impairments need time and specifically designed opportunities to learn concepts and skills. In contrast, their typically sighted peers have multiple opportunities to learn visually through

everyday observations (incidental learning). These observations teach direct and indirect concepts, as well as provide the knowledge and confidence to attempt tasks. Without specially designed instruction to address the knowledge and skills that emerge naturally for their typically sighted peers, students with visual impairments may have inconsistent and fragmented information that can impact their progression throughout school and life. Therefore, it is important for educational teams to fully assess the needs of students with visual impairments, address their educational needs, and plan for their long-term success.

Assessment

The current and future needs of a student with visual impairments must be addressed during the assessment process. Three essential assessments will guide the Teacher of Students with Visual Impairments (TVI) and the educational team in determining the services, accommodations, supports, and tools the student will need.

Essential Assessments

Assessment	Description
Functional Vision Assessment (FVA)	Determines the extent to which a student uses their vision for educational performance.
Learning Media Assessment (LMA)	Determines the best media/modes (e.g., braille, enlarged print, print with optical devices) for the student to access educational material. This includes assistive technology tools.
Expanded Core Curriculum (ECC) Assessment	Determines which functional skills the student with a visual impairment is missing and needs to learn in order to be successful in school, work, and life.

Additional Assessment Examples

Assessment	Description
Assistive Technology (AT) Assessment	Determines the best technology and AT tools and features the student needs to access information.
Orientation and Mobility (O&M) Assessment	Determine the student's ability to travel as safely, efficiently, and independently as possible in familiar and unfamiliar environments.

Expanded Core Curriculum (ECC) for Students with Visual Impairments

The ECC is used to address the academic and functional needs of students with visual impairments. As the Iowa Expanded Core Curriculum (ECC) Resource Guide states:

“The Expanded Core Curriculum (ECC) nine content areas are skill sets, **NOT** a parallel curriculum to the General Education Curriculum. There is only one curriculum and that is the

General Education Curriculum that all students are expected to learn prior to graduation. The ECC are skills that students with visual impairments are not able to learn incidentally and must obtain through quality instruction in order to demonstrate proficiency within each deficit area and achieve positive adult outcomes. The need for instruction is based on both a needs assessment (needs/priorities) and formal/informal assessments (valid and reliable). Not all students need instruction

Nine Areas of the ECC

1. Assistive Technology
2. Career Education
3. Compensatory or Functional Academic Skills, Including Communication Modes
4. Independent Living Skills
5. Orientation and Mobility
6. Recreation and Leisure Skills
7. Self-Determination
8. Sensory Efficiency Skills
9. Social Interaction Skills

in all nine content areas, and the needs and priorities may change on a yearly basis, or more, often depending on natural transitions or circumstances.”

Secondary Transition

Transition planning is a process that is necessary for all students. An effective transition plan assists students (and their families) as they plan for life after high school. The student’s interests, needs, and additional disabilities will help guide the transition process. Effective transition for students who are visually impaired will involve extensive collaboration among the school, various agencies, the student’s family, and the student who is visually impaired.

Transition services and a written transition plan are required for students who receive special education services. By law, transition planning must start at age 14 in Pennsylvania; however, for students who are visually impaired, it is essential to begin transition planning as early as possible, even as early as kindergarten!

Additional Disabilities

Students with visual impairments may also have additional disabilities. These disabilities vary greatly in their range and severity. The presence of additional disabilities can significantly impact students’ ability to learn about their environments, communicate with others, and participate independently in the classroom. The best practice is to collaborate as a team to provide consistent instruction and intervention across all environments for students with visual impairments who also have additional disabilities.

Primary Support Services Available for Students with Visual Impairments

Teachers of Students with Visual Impairments (TVIs) and Orientation and Mobility Specialists (O&M) are integral members of the educational team for students with visual impairments. These professionals are equipped with the knowledge and skills to provide specifically designed instruction in areas of the ECC. In addition, they provide accommodations, modifications, and support to the team.

Teacher of Students who are Visually Impaired (TVI)

TVIs are certified teachers with specialized training that addresses the diverse needs of children with visual impairments. TVIs work with a variety of age groups and within a variety of instructional settings. Students’ diverse needs may be addressed through individualized goals and instruction in the expanded core curriculum (ECC) areas. A sampling of TVIs’ roles and responsibilities includes:

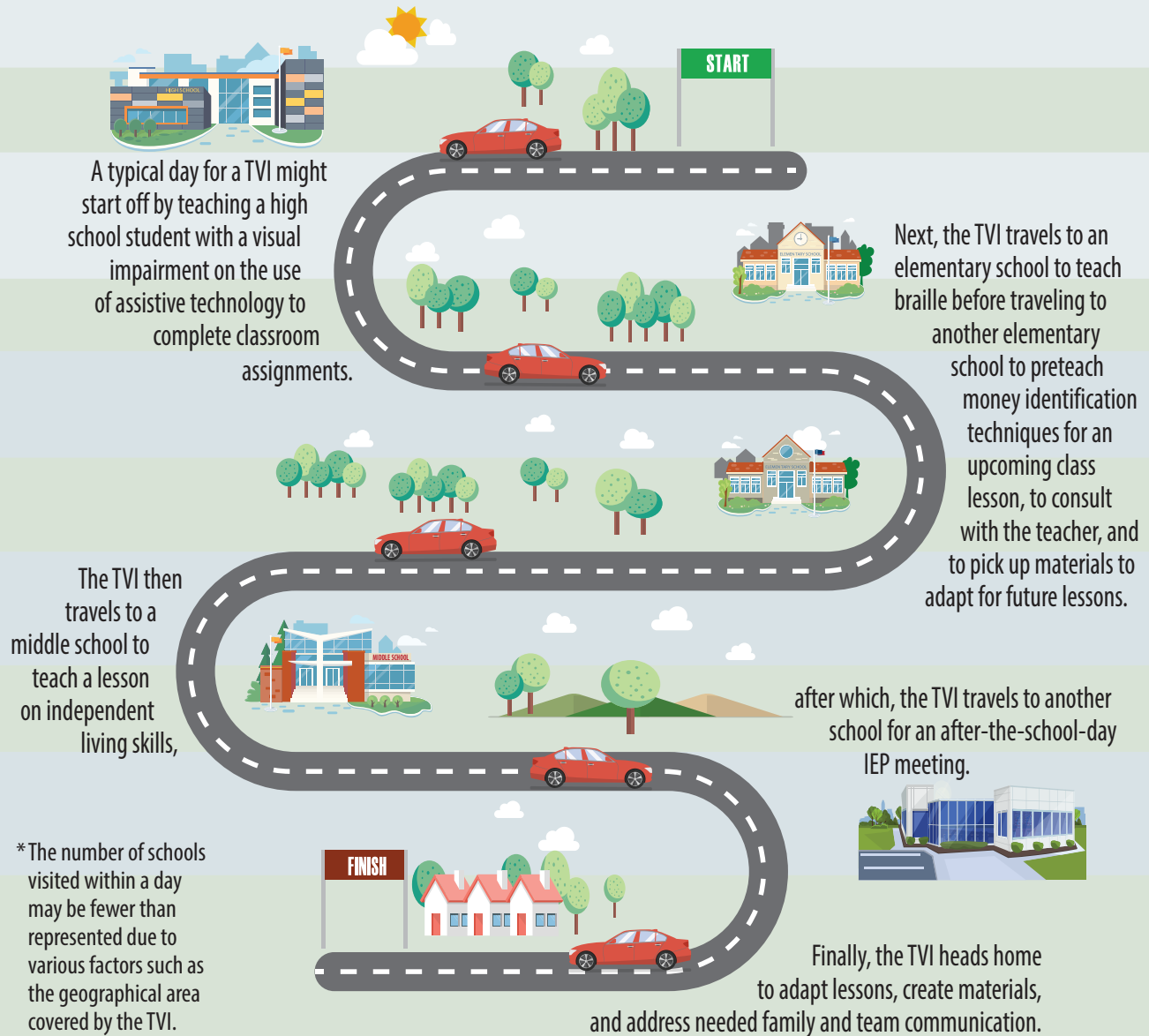
- Conducting essential assessments
- Providing direct instruction
- Addressing student’s basic core curriculum and ECC needs
- Consulting with staff, families, and students
- Providing trainings to staff, families, and students
- Preparing, acquiring, and adapting materials
- Translating medical information into educational practices
- Serving as liaison between the school, community organizations, and resources

Comparison of General Education Teacher and TVI Responsibilities

Areas	Responsibilities of the General Education Teacher	Responsibilities of the TVI
<p>Instruction</p>	<ul style="list-style-type: none"> Teaching the general education curriculum <p>Examples:</p> <ul style="list-style-type: none"> Teaching Pennsylvania grade-level standards Teaching social skills Assigning homework and grades Maintaining schedules/routines 	<ul style="list-style-type: none"> Conducting various specialized assessments to determine abilities and needs Directly teaching lessons on skills in the nine areas of the ECC <p>Examples:</p> <ul style="list-style-type: none"> Teaching a student with visual impairments to use technology such as low vision devices, computer, applications, or software programs Teaching the student contracted braille Teaching the student how to describe their visual impairment to others
<p>Materials</p>	<ul style="list-style-type: none"> Providing textbooks and other instructional materials to the TVI in a timely manner <p>Definition:</p> <ul style="list-style-type: none"> Timely manner is defined in Pennsylvania Chapter 14 as “at the same time as students without disabilities receive their textbooks and core related instruction materials.” For more information see the PaTTAN publication about Obtaining Accessible Instructional Materials (AIM). https://bit.ly/ObtainingAIM <p>*Note: TVIs may need a week or more to adapt materials; time may vary depending on the material. Discuss time needs with the TVI.</p>	<ul style="list-style-type: none"> Adapting, accommodating, and creating instructional materials for accessibility <p>Examples:</p> <ul style="list-style-type: none"> Overseeing the transition of textbooks, learning materials, and examinations into accessible mediums Creating braille, enlarging print, accessing audio, obtaining/adapting electronic formats Adapting lesson and materials to be meaningful to student Creating manipulatives for lessons
<p>Collaboration</p>	<ul style="list-style-type: none"> Collaborative teaming with the TVI through routine meetings and frequent communication <p>Examples:</p> <ul style="list-style-type: none"> Future lessons and materials Needed adaptations Student’s progress Educational and social needs 	<ul style="list-style-type: none"> Consulting and collaborating with general and special education teachers, related service professionals, families, and the educational team Directing paraprofessionals on how to provide support and reinforce lessons Presenting to educational teams, paraprofessionals, school personnel, and student’s peers on the impact of a visual impairment, as well as effective strategies for teaching and interacting Performing an array of administrative and record keeping duties <p>Examples:</p> <ul style="list-style-type: none"> Making referrals for additional services Managing the (vision only) IEP for the team Communicating with the family and team Monitoring progress, writing reports, and logging lesson notes
<p>Environment</p>	<ul style="list-style-type: none"> Establishing and maintaining a classroom organization system Creating a classroom climate that is comfortable for all students <p>Examples:</p> <ul style="list-style-type: none"> Dedicated spaces in the classroom that are consistent throughout the school year 	<ul style="list-style-type: none"> Analyzing classroom and school environment for access and safety <p>Examples:</p> <ul style="list-style-type: none"> Preferential seating Assistive technology solutions <p>*Note: If there are safety concerns, consider the input from an Orientation and Mobility Specialist</p>

Adapted from Family Connect: The Central Role of the Teacher of Students with Visual Impairments

A Typical Day in the Life of an Itinerant TVI



TVI Qualifications

A TVI in the Commonwealth of Pennsylvania must obtain a university degree/certificate in visual impairment and maintain a valid Visually Impaired PK-12 teaching certificate through the Pennsylvania Department of Education. In Pennsylvania, this qualification requires that all TVIs complete an accredited university program with a degree or certificate in visual impairment. The course load of these programs includes a focus on skills, knowledge, and interventions needed to provide educational services to children with visual impairments, including those with neurological visual impairments and multiple disabilities. The coursework includes a field teaching

experience and internships in educational settings under the supervision of a certified TVI and university supervisor. Upon program completion, TVIs must pass the associated Praxis Exams to receive a Level 1 certificate, and then obtain a Level 2 certificate within three years.

What is Orientation and Mobility (O&M)?

Orientation: Knowing where you are, where you want to go, and how to get there.

Mobility: The ability to travel to a destination as safely, efficiently, and independently as possible.

Orientation and Mobility (O&M) Specialist

An O&M specialist addresses the orientation and travel needs of students with visual impairments in a variety of settings including school, home and community. Commonly these supports are provided through an itinerant model with both direct and indirect services. Examples of an O&M specialist's roles and responsibilities include:

- Conducting functional vision, O&M, and environmental assessments
- Providing direct instruction
- Consulting with school staff, families, and students
- Preparing, acquiring, and adapting travel related tools and materials
- Teaching educational team members (including families) about the ways to support O&M skills throughout all environments
- Assessing and adapting environments
- Educating others within the school regarding effective implementation strategies and the impact of a visual impairment for safe independent travel

O&M Scope of Practice (Adapted from ACVREP's Certified O&M Specialist (COMS) Handbook)

Provide direct instruction and consultation for safe and independent travel in school, community, and home:

- Concept development including motor, sensory, positional, environmental, and mapping
- Indoor and school environments concept development and techniques for travel, such as classrooms, cafeteria, school buildings, bathroom, gymnasium/playground, ascending/descending school buses, coffee shops, restaurants, grocery stores, mall travel, and other common indoor places
- Indoor travel skills such as human guide, upper and lower protective, trailing, squaring-off, soliciting assistance, following directions, and search patterns
- Cane techniques such as constant contact, two-point-touch, touch-and-slide, as well as the building and use of adaptive mobility devices (AMD)

- Outdoor environments concept development and techniques for travel such as residential, small and large business districts, urban, and rural areas
- Outdoor travel concepts and skills, such as utilizing landmarks, compass directions, route planning, analysis and identification of intersections and traffic patterns, use of traffic control devices, techniques for crossing various types of streets/intersections, problem solving, use of public transportation
- Map skills including tactile, visual, and auditory maps
- Visual efficiency skills that utilize residual vision, such as environmental systematic scanning, trailing, and tracking
- Evaluation with sun filters for the reduction of glare
- Instructional use of low vision devices that aid in obtaining information while traveling (e.g., street sign names, environmental signage, address numbers, landmarks) or when negotiating common public places (e.g., business signage, aisle signage, hanging menus, previewing environment)
- Embedding the ECC into instruction, such as independent living skills (e.g., using money in functional settings), using assistive technology to aid travel (e.g., read signage, menus and maps, route travel, locate landmarks), practicing social skills (e.g., interact with the public and soliciting assistance) and utilizing sensory efficiency skills (e.g., orientation, environmental clues, travel).

O&M Eligibility

Students who might be eligible for O&M include:

- Students of all ages with visual impairments (e.g., blind, low vision, neurological visual impairment)
- Students with various degrees and types of vision loss including those with diagnosed progressive conditions whose vision has not yet deteriorated but will in the future

- Students with a visual impairment and various physical abilities
- Students with a visual impairment and additional disabilities
- Students who are familiar with a limited number of environments

Students who receive O&M are more likely to travel safely and as independently as possible around school environments, have better understanding of the general educational curriculum, and be more successful in post-secondary life.

A Typical Day in the Life of an Itinerant Certified Orientation and Mobility Specialist (COMS)



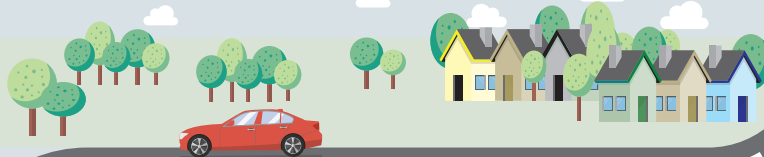
O&M occurs in the home, school, and community.

A typical day for a COMS might start by working with a kindergarten student with a visual impairment on body and positional concepts.



Next, the COMS travels to an elementary school to orient a new student to the building and her class's common travel schedule, followed by traveling to another elementary school to pick up a student to take into the community to teach residential concepts and street crossings.

The COMS then travels to a high school to work with a student on planning an all-day public transportation lesson later that week.



After which, the COMS travels to another school to instruct a student after the end of the school day on using a GPS device in the community.

*The number of schools visited within a day may vary due to factors such as the geographical area covered by the COMS.



Finally, after dropping the student at home and previewing community environments for future lessons, the COMS heads home to adapt lessons, create materials, and address needed family and team communication.

O&M Specialist Qualifications

In the Commonwealth of Pennsylvania, an O&M Specialist must obtain a university degree/certificate in O&M and maintain a valid Orientation and Mobility Specialist certification through one of two national organizations. The Academy for Certification of Vision Rehabilitation and Education Professionals (ACVREP) provides a certificate as a Certified Orientation and Mobility Specialists (COMS). ACVREP requires that all COMS complete an accredited university program with a degree or certificate in orientation and mobility. The course load of the two university programs in Pennsylvania includes a focus on skills, knowledge, and interventions needed to provide O&M services to children with visual impairments, including those with neurological visual impairments and multiple disabilities. O&M Specialists may also obtain certification as a National Orientation and Mobility Certificate (NOMC) through the National Blindness Professional Certification Board. Each of these national organizations require recertification every five years, with ongoing service and professional development requirements.

Assistive Technology

Assistive Technology (AT) is an equalizing tool for students with visual impairments. The use of AT does not provide the student with visual impairments with an unfair advantage, but provides equitable access like their sighted peers. The use of AT also increases a student's access and participation in the general education curriculum. It is important to note that AT does not have to be high tech; it is any adaptive device, tool, or technology that increases participation, achievement,

As an adult, how many electronic devices do you interact with in a typical day? Most people interact with multiple devices such as, a computer, a tablet, a smartphone, smart home, and more.

Students should not be limited to one device and should be provided with the same opportunity as their sighted peers.

and/or independence for the student with visual impairments.

Students with visual impairments will use technology in all aspects of their lives, just as their peers do. It is everywhere in our world today – from making everyday purchases (e.g., Apple Pay, Venmo, Paypal, credit cards), to planning a vacation (e.g., Travelocity, Airbnb, Uber). Technology is an embedded part of society and changes rapidly. Students with visual impairments need to know how to use everyday technology, as well as assistive technology, in order to successfully negotiate the world around them. It is important to know that not one AT tool will meet the needs of a student with a visual impairment, and that it will be necessary to learn multiple devices and technologies in combination. By teaching only one type of technology, you could potentially limit a student's career options. Also, some devices can fail in the moment, be discontinued, or have compatibility limitations that require other technology tools. Through a comprehensive assistive technology assessment, the TVI and educational team can determine which devices, tools, and technologies are needed for a student with a visual impairment. To ensure a good match, a trial period is recommended.

Assistive Technology (AT) Chart

Low Tech	High Tech
<ul style="list-style-type: none"> • Bold lined paper and/or bold marker • Slant board • Magnifiers • Monocular telescopes • Large print keyboard stickers • Task lighting • Long, white cane • Perkins Braille 	<ul style="list-style-type: none"> • Electronic magnifier • Computer, smartphone, and/or tablet • Screen magnification and/or reading software • Apps and/or extensions • Audio books • Graphing calculator with voice output • Braille notetaker • Refreshable braille display

Tips for Teachers

Communication	Environmental
<ul style="list-style-type: none"> • Always use names; identify yourself, address the student by name, and let the student know when you are leaving. • Avoid asking “guessing” questions (e.g., who am I; “do you know who this is”). • It’s okay to use words that reference sight (e.g. color, look, watching TV). • Avoid words and phrases like “here,” “there,” “over here/there.” • Provide precise verbal description (e.g. use names when calling on classmates, say what you write on the board or overheads). • Don’t gesture; use specific directions such as “the bag is on the table directly in front of you.” • Avoid asking whether a student can see something. 	<ul style="list-style-type: none"> • Lighting, lighting, lighting! The right lighting for tasks makes all the difference and will vary from task-to-task. • Create clear pathways within the classroom layout and describe any changes. • Keep materials in consistent locations. • Provide additional desk and shelving space for braille and enlarged print books. • Assist the student to be able to complete tasks independently; mistakes are ok. • Be alert to warn of any danger along a route. • If needed, use human-guide technique and/or prompt use of cane (consult COMS).
Instructional	Assistance
<ul style="list-style-type: none"> • Provide accessible materials to the student in advance whenever possible. • Multi-sensory lessons will provide a greater opportunity for understanding (e.g., tactual, auditory, visual, combination). • Allow extra time for exploration of materials and to complete tasks/ assignments. • Give clear instructions. • Appropriate seating is vital. Give the student preferential seating and factor the student’s stronger side of vision if there is a visual field deficit. • Contrast! Use high contrast for everything. • Maintain high expectations; examine your own beliefs about what a student with a visual impairment is able to do in your classroom and as a professional. 	<ul style="list-style-type: none"> • Ask the student if you may help (don’t just assume; “do with, not for”). • Give cues rather than help; keep stepping back. Instead of getting an object for the child, for example, give the child a chance to find it by describing its size, shape, and location. • The goal is for independent participation. Students must learn to do tasks for themselves, especially those that are repeated every day. (e.g., turning in homework, zipping-up coat). • Collaboratively team with your TVI and O&M Specialist! They are there to answer your questions and provide you with support (e.g., instructional considerations, classroom layout, school adaptations).



Additional Resources:

Visit the PaTTAN Blindness/Visual Impairment (<https://bit.ly/PaTTANbvi>) website to learn more about visual impairment. Educators and families can locate additional information about visual impairments, strategies and trainings at the following websites:

- American Foundation for the Blind (AFB) is a national nonprofit that champions access and equality, and stands at the forefront of new technologies and evidence-based advocacy. They address the most pressing needs of people with vision loss and their families, breaking down societal barriers and promoting broad systemic change. (www.afb.org)
- American Printing House for the Blind (APH) is a nonprofit organization creating accessible learning experiences through educational, workplace, and independent living products and services for people who are blind and visually impaired. (<https://www.aph.org/>)
- Association for Education and Rehabilitation of the Blind and Visually Impaired (AER) is the professional organization for TVIs and other practitioners in the field of blindness and visual impairments. (<https://aerbvi.org/>)
- Bureau of Blindness and Visual Impairment (BBVS) is Pennsylvania state agency under the Office of Vocational Rehabilitation. BBVS provides assistance to children with visual impairments to ensure they reach their maximum educational and vocational potential. (<https://bit.ly/BBVSpa>)
- Career Connect for Job Seekers Who Are Visually Impaired is an employment information service offered by the American Printing House for the Blind for job seekers who are blind or visually impaired. CareerConnect provides employment information, career exploration tools, and job seeking guidance for individuals with vision loss and the professionals who work with them. Educators and families may benefit from exploring the “For Teachers and Professionals” section of this site. (<https://aphcareerconnect.org/>)
- Center for Parent Information and Resources: Visual Impairment, Including Blindness is a “Hub” of information and products created for the network of Parent Centers serving families of children with disabilities. (<https://www.parentcenterhub.org/visualimpairment/>)
- Family Connect for Parents of Children With Visual Impairments is a service offered by the American Printing House for the Blind (APH) to give parents and other family members of children who are visually impaired, and professionals who work with them, a supportive place for sharing and finding resources on raising their children from birth to adulthood. This site provides many articles on visual impairment and needed services within the school setting. (<https://familyconnect.org/>)
- Pennsylvania Advisory Committee for the Education of Students who are Blind or Visually Impaired (PACES-BVI) advises the Pennsylvania Bureau of Special Education on matters impacting students with visual impairments. They consist of various subcommittees and produce materials for the commonwealth. (<https://bit.ly/PACEStdr>)
- The Perkins websites: eLearning, Paths to Literacy, Paths to Technology, Paths to Transition, and Accessible Science provides an array of articles, webinars, courses, and additional resources on visual impairment and educational strategies. (<https://www.perkinselearning.org/>, <https://www.pathstoliteracy.org/>, <https://www.perkinselearning.org/transition>, <https://www.perkinselearning.org/accessible-science>)
- Texas School for the Blind and Visually Impaired provides an array of online information, courses, videos and publications to the needs of students who are visually impaired. Although some information is Texas specific, much of it applies across the field nationally. (<https://www.tsbvi.edu/index.php>)

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Commonwealth of Pennsylvania

Tom Wolf, Governor

