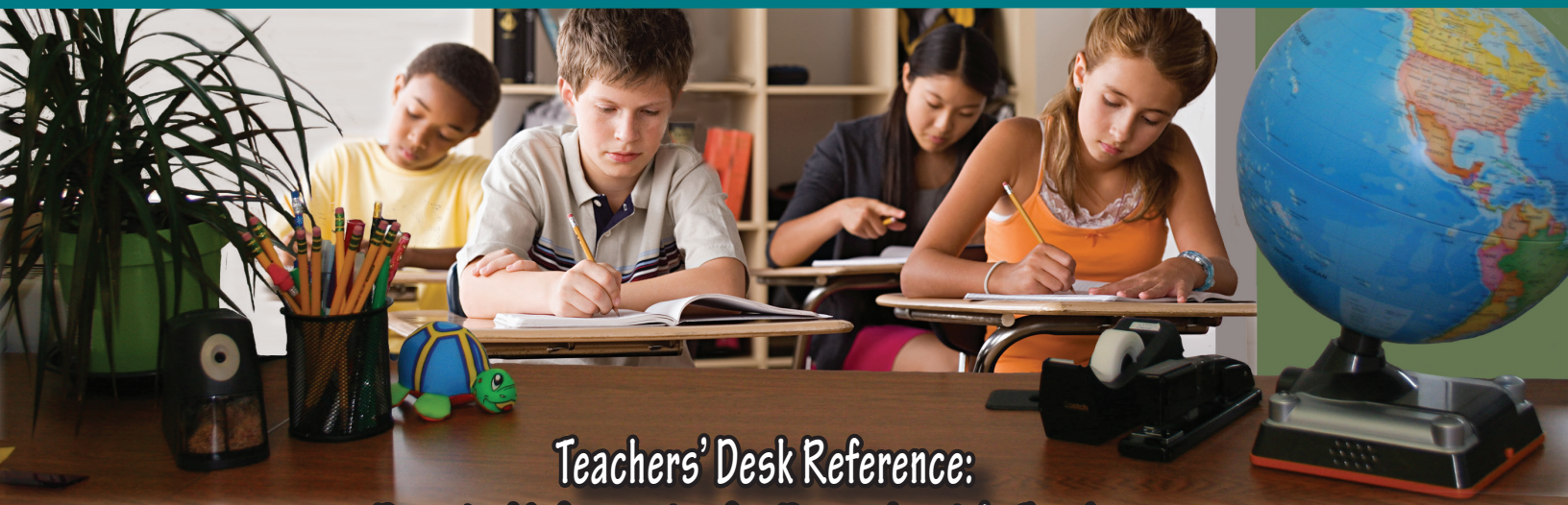

Universal Design for Learning

As a Pennsylvania educator, you are challenged to teach all learners to the Pennsylvania Common Core standards. These standards describe what students need to know and be able to do, and reflect the increasing complexity and sophistication that students are expected to achieve as they progress through school. A single classroom may include:

- Students who have various kinds of learning disabilities
- Students who struggle to learn due to intellectual disabilities
- Students with emotional or behavioral problems that may interfere with their concentration
- Students who are English Language Learners
- Students who may appear disinterested or unengaged
- Students with sensory or physical differences

How do you maintain the rigor of the standards with so much learner variability? Universal Design for Learning (UDL) provides a framework that allows you to reach and teach the broadest range of learners. A universally designed curriculum can give all of your students equal opportunities to learn.

The UDL Approach

Universal Design for Learning (UDL) is an approach to designing curriculum and learning experiences so that all students can be successful. It originated from the concept of Universal Design found in architecture. Universally-designed environments have features that minimize or remove barriers and allow access for all possible users. For example, ramps and curb-cuts are used by people pushing strollers or pulling luggage, those with temporary injuries, individuals who use wheelchairs or motorized scooters, and even some who may simply prefer ramps to steps.

A UDL approach to education assumes that students with varying needs will be actively engaged in learning, and that the curriculum, the goals, the instructional methods, the instructional materials, and the assessments address this diversity.

A UDL approach to education assumes that students with varying needs will be actively engaged in learning, and that the curriculum, the goals, the instructional methods, the instructional materials, and the assessments address this diversity. UDL draws on brain research and media technologies to respond to individual learner differences. However, universal does not mean "one size fits all." This approach is about providing flexibility and alternatives to teaching, learning, and assessment. Therefore:

- **Universal** means to include or cover all or a whole collectively or distributively, without limit or exception.
- **Design** means to devise for a specific function or end, that is, to begin with the end in mind.

To reach each and every student, teachers must customize their lessons using flexible tools, teaching methods, and assessments. This means building in flexibility at the beginning of planning by anticipating the needs of all students, rather than retrofitting to adapt and remove barriers that may have been unintentionally constructed.

UDL Principles and Guidelines

UDL principles, developed by the Center for Applied Special Technology (CAST)*, are based on the neuroscience of learner differences and research on effective instruction (see Figure 1). They call for varied and flexible ways to:

- Represent or access academic content (the "what" of learning),
- Plan and execute learning tasks, including expression (the "how" of learning), and
- Become and stay engaged in learning (the "why" of learning)

Using these principles, CAST has further developed practical UDL Guidelines (see Figure 2) to assist educators in designing curricular materials, methods, and assessments that address the needs of increasingly diverse learners.

UDL in the Classroom

Teachers need to provide options to their students when presenting information that addresses **what** we learn. This allows students to interact with content in flexible ways. This may include:

- Providing multiple examples
- Highlighting critical features
- Providing multiple media and formats
- Supporting background context

To address the **how** of learning, teachers need to provide options for action and expression. This allows students flexibility in demonstrating what they know or understand, such as:

- Providing flexible models of skilled performance
- Providing opportunities to practice with supports
- Providing ongoing, relevant feedback
- Offering flexible opportunities for demonstrating skill

Figure 1. Brain Networks

Recognition Networks The "What" of Learning	**Strategic Networks** The "How" of Learning	**Affective Networks** The "Why" of Learning
		
How we gather facts and categorize what we see, hear, and read. Identifying letters, words, or an author's style are recognition tasks.	Planning and performing tasks. How we organize and express our ideas. Writing an essay or solving a math problem are strategic tasks.	How learners get engaged and stay motivated. How they are challenged, excited, or interested. These are affective dimensions.
☑ **Present information and content in different ways**	☑ **Differentiate the ways that students can express what they know**	☑ **Stimulate interest and motivation for learning**

CAST. (2011). *Universal Design for Learning Guidelines version 2.0.* Wakefield, MA: David H. Rose, Ed.D.

* CAST (www.cast.org) is a nonprofit research and development organization that works to expand learning opportunities for all individuals, especially those with disabilities, through Universal Design for Learning.

Finally, teachers should provide options for engaging students to tap into **why** we learn. This includes giving options for stimulating student interest and motivation for learning, including:

- Offering choices of content and tools
- Offering adjustable levels of challenge
- Offering choices of rewards
- Offering choices of learning context

UDL and Technology

Digital technology is by nature flexible. Word processors allow fonts of varied sizes, colors, and styles (representation). Text-to-speech and audio are made for easy "talking text" for use in the context of reading (representation) or writing (expression). Digital video provides a flexible means for teachers to present content and for students to demonstrate what they know. Mobile technologies and web tools offer a wealth of options for engaging students in content creation, as well as for scaffolding reading, writing, and study skills. All of these tools can be used to engage students in learning in a manner that avoids the barriers that exist with traditional texts and pencil and paper tools.

However, the use of technology does not always mean UDL principles are being utilized. **Technology does not necessarily equal UDL**. Technology used in a "one-size-fits-all" manner can present students with barriers just as more traditional methods and materials do. UDL does not require technology, but it does require thoughtful, proactive planning. Multiple options for representation, action and expression, and engagement should be available to students by design. There are numerous ways to plan for engaging, rigorous, accessible lessons that do not utilize technology at all.

Figure 2. UDL Guidelines

To build in multiple means of:	Allow students to:	Some examples:
Representation	Interact with content in flexible ways	• Alternatives to auditory or visual information • Text to speech or interactive scaffolds • Means to activate background knowledge • Multiple entry points into a lesson
Action and Expression	Provide flexible options to show what they know	• Offer options in mode of physical response • Allow options of tools for composition or problem solving like spellcheckers, or calculators • Provide differentiated models or mentors
Engagement	Provide options to stimulate student interest and motivation for learning	• Provide choices in context, rewards, sequence or level of challenge. • Vary activities and sources of information to personalize, or make culturally or socially relevant. • Offer options for goal-setting or self-monitoring

Adapted from information found at National Center for UDL website. For more information go to www.udlcenter.org/aboutudl/udlguidelines.

UDL and Assistive Technology

The use of UDL can eliminate the need for time-consuming or costly adaptations to curricular materials after the fact, when a learner encounters barriers. Some students with disabilities will still require customized supports or specialized access technology, even in learning environments that implement UDL. For students with Individualized Education Programs (IEPs) or 504 plans, the need to use assistive devices should be discussed by the student's planning team. In some cases, students individualized needs may be met by UDL tools that are available to all students in a UDL environment, since many of the flexible tools that provide access for students with disabilities are tools that may be used by all. Some examples of tools for all are spellcheck, word prediction, text-to-speech, audio-books, and portable digital devices. However, it is important to remember that assistive technology may still be needed in a UDL environment.

Brain Research

Neuroscience shows us that each brain processes information differently. The way we learn is as different as our fingertips or our DNA, yet it also shows us the similarities. Research and practice in education, psychology, and neuroscience has shown that learning uses three brain networks: recognition, strategic, and affective.

Recognition Networks

Gathering facts. How we identify and categorize what we see, hear, and read. Identifying letters, words, or an author's style are recognition tasks—the "what" of learning.

Strategic Networks

Planning and performing tasks. How we organize and express our ideas. Writing an essay or solving a math problem are strategic tasks—the "how" of learning.

Affective Networks

How students are engaged and motivated. How they are challenged, excited, or interested. These are affective dimensions—the "why" of learning.

These recognition, strategic, and affective networks of the brain align with the three principles of UDL. When educators use the principles of UDL as a framework for designing curriculum and lessons to offer multiple, flexible options of representation, expression and engagement, student learning actively employs all networks. More importantly, the framework provides opportunities to meet the learning needs of diverse learners.

Commonwealth of Pennsylvania

Josh Shapiro, Governor

PaTTAN
Pennsylvania Training and Technical Assistance Network