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UNIVERSAL DESIGN FOR LEARNING (UDL)

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First defined by the Center for Applied Special Technology (CAST), UDL is a framework which promotes flexible instructional environments in order to accommodate a wide range of individual learning differences. The UDL educational framework encompasses all aspects of the teaching and learning process including instructional goals, methods, materials, and assessments. UDL is intended to increase access to the curriculum by reducing physical, cognitive, intellectual, and other barriers to learning.

UNDERSTANDING STUDENT DIVERSITY

Prior Knowledge

The prior exposure that learners have to academically relevant information which may be affected by:

- The exposure to formal learning and/or education
- The extent/type of life experiences
- Socio-economic issues
- Cultural issues

UNDERSTANDING STUDENT DIVERSITY

Language Issues

The extent that learners have language-related issues associated with their:

- Status as English Language Learners (ELLs)
- Specific receptive and/or expressive language difficulties
- Auditory processing difficulties
- Specific language disabilities

UNDERSTANDING STUDENT DIVERSITY

Learning Styles

The manner in which students tend to learn best. For example, do they learn best:

- Through experiential/hands-on experiences
- Visually or auditorily
- Through the use of technology
- Individually or in groups

KEY ASSUMPTIONS OF UDL & CCSS

- *All* students can access the standards regardless of their learning styles, language/cultural barriers, physical, mental or emotional challenges.
- Students will learn the standards in different *ways* and at different *rates*. Thus, instruction must be flexible.
- *All* students, regardless of their learning challenges, will work toward the same set of standards.
- Multiple pathways are needed to teach content and assess student progress.
- Students must be actively engaged in their own learning.
- Students' interests and motivation are critical to learning the standards.
- Teachers need to be facilitators by structuring *learning opportunities* for students.
- Technology and digitally-based formats can help to remove barriers to learning and expand access to the standards.

UDL INSTRUCTIONAL PRINCIPLES

Principle #1: *Multiple means of representation* is needed to provide learners various ways of acquiring information and knowledge

Principle #2: *Multiple means of expression* provides learners with alternatives regarding how they learn and how they demonstrate what they know

Principle #3: *Multiple means of engagement* taps into learners' interests to challenge and motivate them to learn

STRATEGIES TO PROVIDE MULTIPLE MEANS OF REPRESENTATION

- Provide a variety of different examples, illustrations and/or demonstrations to help explain a new idea, concept or task. Do not rely solely on only one type of explanation or illustration.
- Include visual and multi-modal input to students, rather than relying primarily on orally-presented information.
- Model learning whenever possible by demonstrating how a problem can be solved or a learning situation can be handled.
- Build upon and link new learning to students' prior knowledge.
Accurately identify what students *already know* about the subject matter being presented.
- Utilize a K-W-L approach with students to assess what they already *know* (K), *what* (W) they want to find out, and recall what they *learned* (L) as a means to address prior learning.
- Pre-teach vocabulary and important concepts.

- Utilize a range of strategies that increase students' comprehension of the material being presented
 - Use analogies and metaphors to assist students' comprehension
 - Use graphic organizers, concept maps and semantic maps as aids.
 - Use cross-curricular connections to tie together information in meaningful ways (e.g., linking math and science concepts, teaching literacy through the use of history)
- Provide structures and organizational tools to help students learn new tasks
 - Provide steps or sequences for learning complex tasks
 - Use scaffolding as a temporary assistive component until mastery is achieved
 - Provide prompts and cues to help students master complex tasks
 - Provide checklists, study guides and other resources for notetaking.
- Utilize a variety of technologies including interactive whiteboards, video streaming, and other computer and Internet-based software
 - Use software that provides students with interactive learning experiences
 - Use iPads™ or other tablet devices as an augmentative/alternative communication (AAC) devices.

STRATEGIES TO PROVIDE MULTIPLE MEANS OF EXPRESSION

- Allow students multiple options to demonstrate their learning (i.e., provide alternate means to increase learners' responses).
 - Allow students to use manipulatives, graphing paper and other types of “hands-on” materials to demonstrate what they know
 - Minimize barriers to learning by providing spellcheckers, grammar checkers, word prediction software, calculators, and other devices or tools.
 - Allow students to use word processors to complete assignments instead of paper & pencil
 - Encourage role playing, video interviews, performances and peer feedback.
 - Allow students to create portfolios and other ways to demonstrate their learning and growth

- Design and use formative assessments during instructional lessons and units to measure students' learning, to inform decision making and to adjust instructional input
- Utilize formative assessments for student pre-assessment, as well as for assessments “during” and “after” instruction
- Use formative common and benchmark assessments across a grade level or within a team teaching the same course of study
- Provide rubrics and exemplars so that students are clear as to what represents quality work.
- Provide opportunities for student self-assessment
- Provide ongoing constructive, but specific feedback

STRATEGIES TO PROVIDE MULTIPLE MEANS OF ENGAGEMENT

- Increase active student participation in the learning process by maximizing student-centered learning
 - Use station-learning or learning centers
 - Use project-based learning
 - Use cooperative learning structures
- Allow students to set their own goals and objectives
 - Offer students choices of assignments related to the content matter
 - Design authentic assignments using “real life” applications
 - Personalize assignments to students experiences and interests
 - Select assignments that are age and ability appropriate
- Allow students time for self-reflection
 - Invite student feedback on assignments and tasks
 - Ensure time for independent work

UDL AND THE ENGLISH LANGUAGE ARTS (ELA)

The ELA Standards are organized into four (4) strands: Reading, Writing, Speaking & Listening and Language. With a greater emphasis on higher-order thinking skills, there are six shifts evident in the ELA strands of the CCSS:

Shift #1: An increase in the proportion of *informational versus literacy text* as students move up in grade levels

Shift #2: A focus on the *knowledge of the disciplines* by including language and literacy skills in subjects such as Science, Math and Social Studies

Shift #3: An increase in the significance of the *complexity of text* where the text's readability must include: structure of the text, background knowledge, as well as what the reader is asked to do with the text

UDL AND THE ENGLISH LANGUAGE ARTS (ELA)

Shift #4: An emphasis on *text-based answers* requiring students to provide evidence to support their inferences and arguments

Shift #5: *Writing from sources* will be emphasized as students write to persuade, explain and/or convey experiences

Shift #6: A focus on *academic language* which includes: text level, paragraph level and word level in the content areas.

UDL BEST PRACTICES

- Use surveys or student interviews to assess students' life experiences and prior knowledge.
- Administer informal and/or formal pre-tests to determine students' baseline reading, writing or language levels before beginning new units of study
- Pre-teach the specific vocabulary and concepts that are critical to the understanding of the reading materials, particularly any information that might be unfamiliar to students.
- Ensure classroom libraries have a range of titles (and are *leveled*).
- Select a variety of both informational and literacy text (books, essays, stories, biographies, memoirs and other types of readings) that build upon students' varied interests and background experiences.

- **Sequence new ELA tasks** from simple to complex and clearly identify the steps involved for students to master those tasks
- **Use formative assessments** during ELA lessons and units to monitor students' progress as an integral part of the instructional process
- **Utilize character maps** or templates to identify the traits of characters.
- **Model reading** through teacher read-alouds emphasizing voice intonation and fluency
- **Utilize cooperative learning** as an integral part of classroom instruction and use flexible groupings to increase student-to-student interaction and support.
- **Vary writing assignments** so that students experience a variety in the *types* and *styles* of writing.

- **Allow for the use of word processing** for those students who have grapho-motor difficulties (instead of paper & pencil assignments)
- **Teach the use of graphic organizers** as a means to help students organize their thoughts, writing assignments and essays
- **Use mnemonics and acrostic sentences** as a means to help students remember complicated or multi-step procedures or tasks
- **Encourage students to write** (whenever possible) about their personal interests and hobbies.
- **Provide clear rubrics** with corresponding writing samples so that students are clear about the criteria to be used to assess their work
- **Create writing portfolios** by collecting samples of students' work that will demonstrate their progress over time

- **Teach listening skills**, especially to those students who have receptive language deficits or are English language learners (ELLs)
- **Teach proofreading skills** so students can self-check their writing
- **Encourage students to use expressive language** by working with partners or in small groups where they can share information with their peers
- **Allow students alternative approaches to demonstrate their learning** (e.g., creating a Powerpoint or short video instead of writing an essay)
- **Allow students to use iPads**TM with apps like *Proloquo2go* by Assistiveware, *Tap to Talk* by Assistyx and other augmentative/alternative communication (AAC) programs that help students who have communication disorders and/or may have Autism Spectrum Disorders (ASD).

UDL AND THE MATHEMATICS STANDARDS

- **Administer a pre-test** to assess what students already know about the math operation or content to be taught
- **Relate math to real life situations** to the maximum extent possible (i.e., architecture, measurement, personal finances, etc.)
- **Break math problems down into steps to be taught.** Teach math procedures such as computational skills, problem-solving skills, and statistical procedures as task analyses
- **Teach in sequence.** Begin with *concrete illustrations* (i.e., use manipulatives to count), then move to a *representational level* (i.e., using visual representations of objects), and then move to an *abstract level* (i.e., using numbers or symbols only)

- **Provide visual aids and other devices** to assist students in solving math problems (i.e., graph paper, calculators, etc.)
- **Create a math “study guide”** to help students master content and understand the use of mathematical symbols
- **Model or demonstrate** a math problem, computation or procedure so that students can directly observe the teacher “work through” the math task first
- **Utilize cooperative learning** as an integral part of classroom instruction and use flexible groupings to increase student-to-student interaction and support
- **Use formative assessment** as an integral part of the lesson or unit being taught to assess students’ comprehension, as well as to measure students’ progress

- **Address any anxiety associated with math.** Many students become highly anxious with math content and may need reassurance and support
- **Be aware of language issues** that may interfere with students' abilities to solve word problems. Pre-teach the necessary vocabulary or concepts
- **Use interactive math software** such as *Geometer's Sketchpad* and web sites such as www.funbrain.com, www.coolmath.com, and www.aplusmath.com
- **Use inquiry-based and project-based approaches** to engage students in investigating real world challenges
- **Collaborate with other grade level elementary teachers** (or secondary math subject-area teachers) to provide formative common and benchmark math assessments
- **Allow students to use iPads™** with apps like *WolframAlpha* and *Sketchpad Explore*.

FRAMEWORKS THAT SUPPORT UDL

- Differentiated Instruction (DI)
- Multiple Intelligences (MI)
- Cooperative Learning
- Brain-Compatible Learning
- Response to Intervention (RTI)
- Project-Based Learning

The image features a dark red background with a sunburst pattern of lines radiating from the center. A solid black horizontal band runs across the middle of the image, containing the text 'www.NPRINC.COM' in white, serif, all-caps font.

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