

Strategies for Implementing UDL in Your Classroom.

ACHIEVEMENT FOR ALL!



**Presented by
Scott Marfilus, MA. ED.**

Assistive/Educational Technology Consultant
855 W. County Line Rd.
Bayside, WI 53217
414-379-7779 phone
414-351-5127 fax
marfilus@mac.com
www.scottmarfilus.com

Strategies for Implementing UDL in Your Classroom.

ACHIEVEMENT FOR ALL

<u>TABLE OF CONTENTS</u>	<u>Page</u>
KWL.....	1
Main Handout.....	2-10
Sample of Support Technology.....	11-12
Web Resources.....	12
Print Resources	12-13
Curriculum Barriers Activity.....	14
Possible Tools/Strategies to Explore.....	15
Lesson Plan Framework.....	16
UDL Features of CAST PAL Toolkit.....	17
Deriving UDL Solutions.....	18-22

KWL

K	What do you know about UDL? What can you describe about UDL? How have you seen UDL applied in an instructional setting?
W	What do you want to know about UDL? What do you want to know about UDL? What do you want to know about applying UDL in an instructional setting?
To be answered at end of day during reflection.	
L	What have you learned about UDL?

Achievement for All!

Strategies for Implementing UDL in Your Classroom.

Outcomes for the Session:

- Name the principles of UDL
- Recognize how the UDL principles dovetail with NIMAS and other instructional initiatives to increase the educational achievement and functional performance for struggling students with and without disabilities
- Discover how AT and UDL work together as complementary supports for involving every student in challenging activities that provide various levels of engagement, multiple means of acquiring information and knowledge, and a range of alternatives for demonstrating what has been learned
- Apply principles of UDL by participating in discussions, viewing demonstrations, and explore assistive technology tools

Your Work during this Session...

Think about Students with and without Disabilities in your Class, School, Caseload...

- What are some of the breakdowns in their learning?
- What approaches are being used now?
- What aspects of UDL and AT might remove those barriers?
- Where would be a good place to start?

Learning Preferences

Dunn and Dunn (1987) - auditory, visual, tactile, kinesthetic, noise and light, motivation, task structure

Kolb (1984) - accommodators, convergers, assimilators, or divergers

Gregorc's (1982) - concrete-random, concrete-sequential, abstract-random, abstract-sequential

McCarthy's (1990) 4Mat Model - Dynamic, Imaginative, Common Sense, Analytic

Exploring Potentials With Many Ways of Being Smart - Multiple Intelligence's

- | | | |
|-------------------------|-----------------------|------------------|
| 1. Logical-Mathematical | 4. Bodily kinesthetic | 7. Intrapersonal |
| 2. Linguistic | 5. Spatial | 8. Naturalist |
| 3. Musical | 6. Interpersonal | |

- Gifts and strengths are often overlooked
- Assessment process fails to identify strengths
- Moves from deficit-oriented, remediation model of service delivery to student-centered, resource-oriented and compensatory model.
- Use to develop activities for students
- Less emphasis on passive learning, more emphasis on alternative ways of learning including movement, manipulation of objects, music, social interactions

Do you know your learning style? Do you know your student's learning style?

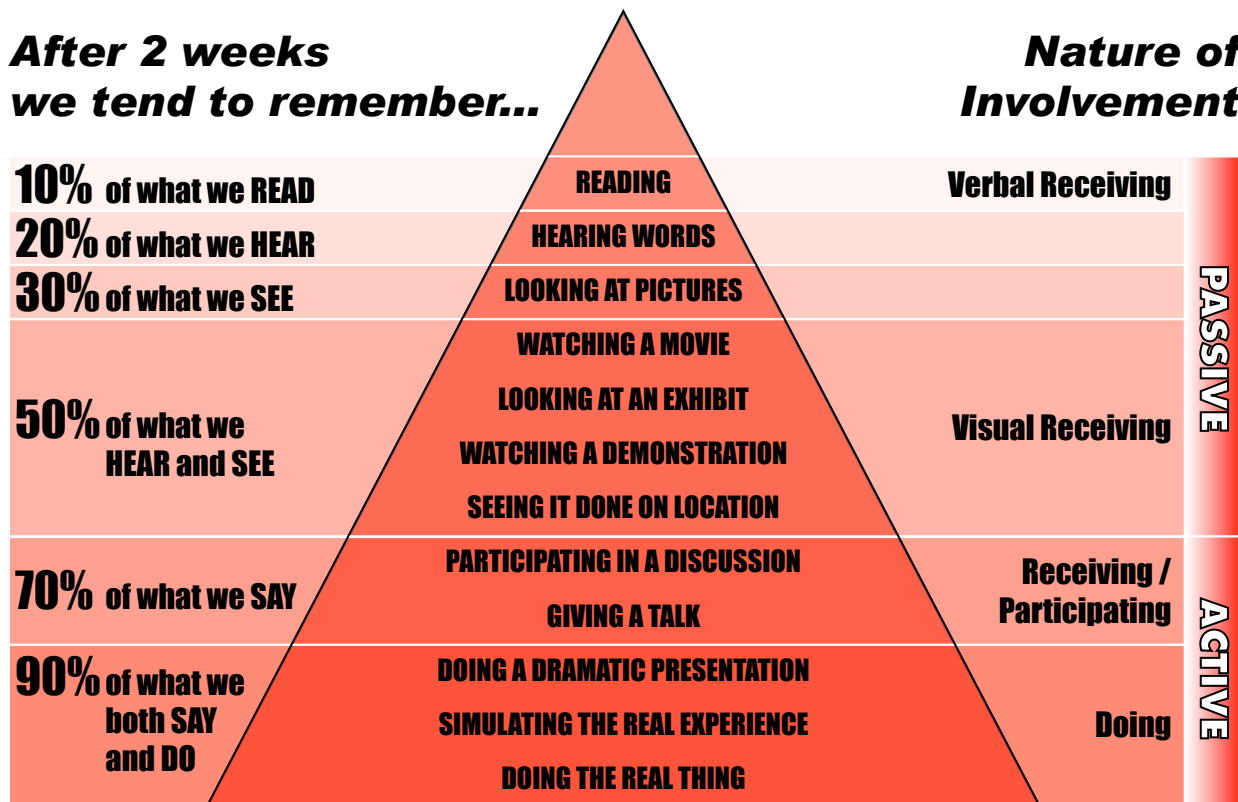
"WE LEARN... 10% of what we read
20% of what we hear
30% of what we see
50% of what we see and hear
70% of what we discuss
80% of what we experience
95% of what we TEACH to others."

- *William Glasser*

Cone of Learning - Edgar Dale

**After 2 weeks
we tend to remember...**

**Nature of
Involvement**



Edgar Dale, *Audio-Visual Methods in Technology*, Holt, Rinehart and Winston.

Education in the Digital Age

The Opportunity – New Brain Research on Individual Learning Differences and New Technologies for Teaching and Learning

The Challenge – Higher Standards and Greater Diversity

Universal Design

- Originated in the field of architecture
 - Automatic doors
 - Captions on TV
 - Wider doors
 - Ramps
 - Curb cuts
 - Easy Grip Tools
 - Accessible sinks
- Essential is that access features are built in and not added as an afterthought
- The design of instructional materials and activities that allow the learning goals to be achievable by children with broad differences in their abilities
 - To see, hear, speak, move, read, write, understand English, attend to information, organize, engage, and remember
- Achieved by means of a flexible curricular material
 - Alternatives are built into the design of materials, equipment, instruction, and activities
- Not added afterwards

Universal Design for Learning

Universal Design for Learning ...to select and use goals, methods, assessment and materials in a way that will minimize barriers and maximize flexibility so that curricula fully support every student's access, participation, and progress in essential facets of learning.

Assistive Technology Devices and Services ...to increase, maintain, or improve functional capabilities of individuals with disabilities.

Universal design is a philosophy for designing and delivering products and services that are usable by people with the widest possible range of functional capabilities, which include products and services that are directly accessible (without requiring assistive technologies) and products and services that are made useable with assistive technologies” (IDEA, Section 611, 16(E)).

UDL is an educational approach to teaching, learning, and assessment, drawing on new brain research and new media technologies to respond to individual learner difference. The principles of UDL have the potential to significantly increase the use of ALL technologies - “low”, “high”, “assistive”, “instructional”, “universally designed”

Goals Instruction Materials Instruction

Universal Design for Learning

- Essential 3 Principles of Universal Design for Learning
 - **Multiple means of representation** – Recognition Networks
Provides learners with various ways of acquiring information and knowledge
 - **Multiple means of expression** – Strategic Networks
Provides learners with alternatives for demonstrating what they know
 - **Multiple means of engagement** – Affective Networks
Taps into learners' interests, challenges them appropriately, and motivates them to learn

UDL: The “Intersection of Initiatives”

The concept of UDL is the intersection where all our initiatives - integrated units, multi-sensory teaching, multiple intelligences, differentiated instruction, use of computers in schools, performance-based assessment, and others come together.

Donna Palley, Special Education Coordinator

AT and UDL do not eliminate the need for instruction in skills pertinent to the tasks of learning and living. (educational, vocational, social, recreational, and others) THEY ENHANCE IT!

Instructional approaches which tend to accommodate a wide range of learners

(Deschenes, Ebeling, & Sprague)

- Cooperative learning structures
- Multi-dimensional student grouping
- Thematic, integrated approaches
- Multi-level instruction
- Applied learning stations
- Student presentations and projects
- Role playing, skits, and plays
- Peer supports
- Community volunteers
- Multimedia presentations
- Concrete experiential learning activities
- Community-referenced and community-based projects
- Short-term skill-based grouping
- Assignment menus and contracted grades
- Community-based instruction
- Portfolio or “authentic” assessment systems

Two Approaches Differentiated Instruction - Thousand, Villa & Nevin

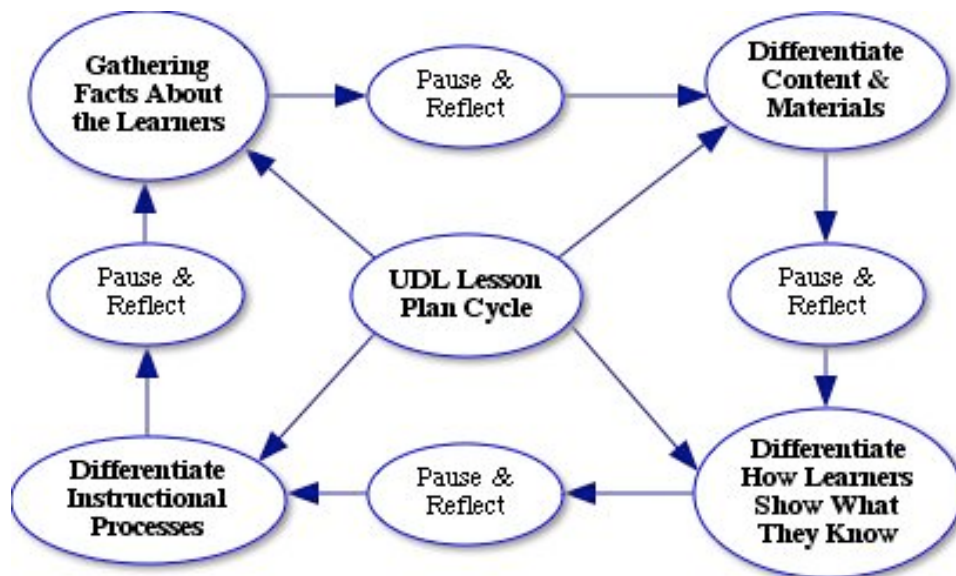
<i>Reactive Retrofit</i>	<i>Proactive Universal Design for Learning</i>
Content Demands Process Demands Product Demands Facts About the Learner(s) <i>Discover mismatches and use differentiated instruction to address any mismatches between facts about the learners and the content, process, and product demands of the classroom</i>	Gather Facts About the Learner(s) <i>Use differentiated instruction to design:</i> Content Demands Product Demands Process Demands

How Concepts of Universal Design Been Formulated for Education - University of Guelph, Teacher Support Services

1. Be accessible and fair
2. Provide flexibility in use, participation, and presentation
3. Be straightforward and consistent
4. Be explicitly presented and readily perceived
5. Provide a supportive learning environment
6. Minimize unnecessary physical effort or requirements
7. Ensure a learning space that accommodates both students and instructional methods

UDL in the Low-Tech Computer Classroom

UDL Lesson Plan Cycle - Thousand, Villa & Nevin



Multiple means of Representation – Recognition Network

Recognition networks are specialized to sense and assign meaning to patterns we see; they enable us to identify and understand information, ideas, and concepts. (CAST, 2003)

- Differentiate Content & Materials
 - Multilevel in difficulty and complexity
 - Varied in form
 - Multisensory
 - Degree of Content Mastery
 - Planning Pyramid** (Schumm, Vaughn & Harris 1997)
 - What all students will learn.
 - What most students will learn.
 - What a few students will learn.
- Information can be obtained in a variety of ways
 - Auditory, visual, motor
- Purpose is to reduce the perceptual/learning barriers and to adjust to the diverse ways in which students are able to recognize and understand information.
- The “what” of learning - identify and interpret patterns of sound, light, taste, smell, and touch
- Help identify “patterns”

Brain Research

- Different areas of the brain are active when
 - Passively viewing words, Listening to words, Speaking words, Generating verbs
- When burning glucose we are learning
 - Naive situations and Novel situations will keep burning glucose - practice behavior is at a bored thought

Implications

- ADD level of unarousal
- ADD and ADHD really respond to novel experiences
- ADD - faster rate of speech engages the reading process
- Autistic kids - novelty would send them in the wrong direction

Instructional Media

- Traditional Fixed Media: Speech, Text, Images
- Flexible Digital Media: Versatile, Transformable, Can Be Marked, Can be Networked
- Curriculum Material
 - When available in multiple formats takes advantage of multiple modalities text, graphics, sound, video

NIMAS - National Instructional Materials Accessibility Standard

- Technical standard used by publishers
- Applies to instructional materials published on or after 7/19/06
- Distribution through NIMAC
- Copyright protections are provided to publishers when submitting electronic files to the NIMAC and when a publisher may lack electronic rights but possess print rights.
- "Print instructional materials" includes printed textbooks and related printed core materials

Multiple means of Expression – Strategic Network

Strategic networks are specialized to generate and oversee mental and motor patterns. They enable us to plan, execute, and monitor actions and skills. (CAST, 2003)

- Differentiate How Learners Show What They Know
- Students can respond with their preferred means of output. Students could
 - write answer, speak an answer, design a graphic to answer a question, utilize minimal motor abilities to make a multiple choice response, prepare a written report, speech, PowerPoint presentation, video, demonstration, poem, or song
- Material accommodates different styles, preferences, strategic approaches and motor abilities of students
 - “the how of learning” - plan, execute, and monitor actions and skills
- Multiple Intelligences - How is this student smart?
- Assessment - Curriculum based, artifact collections, portfolios, multilevel, authentic, performance based
- Differentiate how products are graded

Multiple means of Engagement – Affective Network

Affective networks are specialized to evaluate patterns and assign them emotional significance; they enable us to engage with tasks and leaning and with the world around us. (CAST, 2003)

- Interest in learning is matched with the mode of presentation and response so that students are motivated.
 - Obtain a graphic in the middle of a reading passage
 - Longer words quickly defined
- Materials have the ability to learn or remember the individual student’s patterns and preferences and track their progress.
 - “the why of learning” – evaluate and set priorities
- Differentiate Instructional Processes

Engaging Students in Learning <i>Thousand, Villa & Nevin</i>				
<i>Instructional Formats</i>	<i>Instructional Arrangements</i>	<i>Instructional Strategies</i>	<i>Social and Physical Environments</i>	<i>Co-teaching Approaches</i>
<u>Considerations</u> Adapting lectures Activity-based experiential Simulations/role play Group investigation Discovery learning Computer/web-based self-directed Stations Integrated cross-curricular thematic unit/ lesson Service learning Community referenced	<u>Considerations</u> Cooperative learning structures Same or cross-age peer tutors Independent Whole group Other (Tutorial, teacher-directed small group)	<u>Considerations</u> Choose research-based strategies Use taxonomies Apply concepts from Multiple Intelligences Theory Integration of the arts	<u>Considerations</u> Room arranged Use of spaces outside of class Social norms Teach responsibility Positive behavior supports Environmental alterations	<u>Options</u> Supportive Parallel Complementary Team Teaching Students as co-teachers

Computer-Based Study Strategies

- CBSS are a set of tools and techniques for being successful in school

Computer-Based Study Strategies Outreach Project <http://cbss.uoregon.edu>

- **What is Studying?**
 - Independence
 - Accountability
 - Mastery
- **What is Effective studying?**
 - Active **MANIPULATION** of the material
 - Ability to **MONITOR** progress
 - Personally **RESPONSIBLE** and motivated

Educating the UDL Way - CAST

Curriculum Planning and Delivery

1. Set Goals
2. Analyze Status
3. Apply UDL
4. Teach UDL Lesson

Identify Curriculum Barriers

Materials and Methods	Student Qualities	Potential Barriers/Missed Opportunities

Lesson Planning

Lesson Plan Framework - www.scottmarfilius.com
Planning Pyramid (*Schumm, Vaughn & Harris 1997*)

Cast UDL Lesson Builder - <http://lessonbuilder.cast.org>

PATINS UDL Lesson Template - http://www.patinsproject.com/universal_design_for_learning_project.htm

D. Edyburn UDL Lesson Template - <http://www.uwm.edu/~edyburn/ud.html>

To support diverse recognition networks (Presentation/Content)	
<ul style="list-style-type: none"> • Provide multiple examples • Highlight critical features • Provide multiple media and formats • Support background context 	<ul style="list-style-type: none"> • Multiple versions of a story • Concept maps • Text readers, videos, images, audio • Links to additional resources

To support diverse strategic networks (Expression/Product)	
<ul style="list-style-type: none"> • Provide flexible models of skilled performance • Provide opportunities to practice with supports • Provide ongoing relevant feedback • Offer flexible opportunities for demonstrating skills 	<ul style="list-style-type: none"> • Multileveled examples • Talking word processors • Connect to peers • Use multimedia, presentation, concept mapping, draw programs

To support diverse affective networks (Engagement/Process)	
<ul style="list-style-type: none"> • Offer choices of context and tools • Offer adjustable levels of challenge • Offer choices of learning context • Offer choices of rewards 	<ul style="list-style-type: none"> • Selection of content, resource materials • Template to scaffold the process • Online, cooperative group, lecture • Type of feedback

UDL and the Learning Brain

- One must recognize information, ideas, and concepts
- One must be able to apply strategies to process the information
- One must be engaged

- Vygotsky

Assistive Technology and Instructional Technology – Complementary Supports

- Assistive Technology looks at the specific barriers a student may face in whatever environment they find themselves.
- Universal Design looks to make the learning environment as flexible and accommodating as possible.
- Both approaches strive to insure the access, participation & progress of students with disabilities.

In Summary

- Assistive Technology looks at the specific barriers a student may face in whatever environment they find themselves.
- Universal Design looks to make the learning environment as flexible and accommodating as possible.
- Both approaches strive to insure the access, participation and progress of students with disabilities and are most powerful when appropriately combined.
- Universal Design for Learning supports teachers' efforts to meet the challenge of diversity by providing flexible instructional materials, techniques, and strategies that help teachers differentiate instruction to meet these varied needs. It does this by providing options for
 - Presenting information and content in different ways (the "what" of learning)
 - Differentiating the ways that students can express what they know (the "how" of learning)
 - Stimulating interest and motivation for learning (the "why" of learning)
- A universally designed curriculum is designed from the outset to meet the needs of the greatest number of users, making costly, time-consuming, and after-the-fact changes to curriculum unnecessary.
- Flexible materials fulfill the promise of UDL in that they open doors and circumvent barriers for students with disabilities and also improve learning opportunities for all students.

***"All students can learn and succeed, but not on the same day in the same way."
-William G. Spady***

RESOURCES

Sample of Support Technologies

Audio	Visual	Digital	Physical
Cassette tape	Videotapes	Computer hardware	Word processors
Radio	Video discs	Productivity software	Word prediction
Music CD-ROMS	Overhead projector	Educational software	Digital recorders
Talking Books	Other projection device	Presentation software	Hand-held spellers/ dictionaries
Multimedia CDs	Models, Real objects	Graphic programs	Voice recognition
Recordings: Rhymes and reading	Boards (white, black, smart)	Streaming audio	Interactive whiteboards
Recordings: Musical Instruments	Cartoons and drawings	Streaming video	
Assistive listening devices	Document camera	Webcasts	
	Closed Captioning	Internet resources	
		Electronic Whiteboards	

Sample of Programs with UDL Features

- **Karaoke** - <http://www.midikaraoke.com/home/>
- **Intellitools Classroom Suite** – Intellitalk, IntelliPics, IntelliMathics - <http://www.intellitools.com>
- **SOLO, Co:Writer** - Don Johnston, Inc. <http://www.donjohnston.com>
- **ReadPlease** (for PC Only) - www.readplease.com
- **PowerTalk, ClipTalk** (PC Only) - <http://fullmeasure.co.uk/>
- **ClaroRead Plus, WordRead Plus, ScreenRuler** - <http://www.clarosoftware.com/>
- **Project Gutenberg** - <http://www.gutenberg.net>
- **Internet Public Library** - <http://www.ipl.org>
- **Page by Page Books** - <http://www.pagebypagebooks.com>
- **University of Virginia's E-Book Library** - <http://etext.lib.virginia.edu/ebooks/>
- **Kidsclick** - <http://www.kidsclick.org>
- **Lyrics Web Site** - <http://www.risa.co.uk/sla/>
- **Communicate in Print2, Communicate by Choice, Communicate Webwide, Communicate:SymWriter** - <http://www.widgit.com/>
- **Picture It, PixWriter** - Slater Software, Inc., [http:// www.slatersoftware.com](http://www.slatersoftware.com)
- **Boardmaker** - Mayer-Johnson, <http://www.mayer-johnson.com/>
- **Start-to-Finish** - Don Johnston, Inc., <http://www.donjohnston.com>
- **Magnetic Poetry**, Bookstores or teacher supply stores, <http://www.magneticpoetry.com/>
- **Neo**, <http://www.alphasmart.com>
- **Quickpad**, <http://www.quickpad.com/>
- **Laser PC 6**, <http://www.perfectsolutions.com>

- **The Writer, The Writer Fusion**, <http://www.keyboardinstructor.com/>
- **OnScreen Keyboards**
 - Built into the Windows 2000 and XP operating system under the accessibility menu
 - **Reach Keyboard** – Applied Human Factors, Inc., <http://www.ahf-net.com/>
- **Clicker 5, Word Bar, Find Out and Write About, Planet Wobble** -Crick Software - <http://www.cricksoft.com/>
- **Hollywood High** Software Express, <http://www.swexpress.com>
- **Highlighter Tape** – Office Supply Stores
- **Irlen Institute** - <http://irlen.com>, Book: Reading By The Colors (1991) Helen Irlen
- **ReadOn** - ReadOn Pty Ltd - <http://www.spectronicsinoz.com>
- **WYNN** - Scientific Freedom <http://www.freedomscientific.com/LSG/index.asp>
- **Kurzweil 3000** - Kurzweil Education Systems Inc. <http://www.kurzweiledu.com/>
- **TextHelp, Read and Write Gold**, <http://www.texthelp.com>
- **Thinking Reader** - <http://www.tomsnyder.com/>
- **Kidspiration, Inspiration, Inspiredata** - Inspiration Software, Inc., <http://www.inspiration.com>
- **Spark-Space** - <http://www.spark-space.com/>
- **Word Q, SpeakQ**, Quillsoft, <http://www.wordq.com>
- **WordTalk** - <http://wordtalk.org.uk>

Web Resources

- Accessible Book Collection** - <http://www.accessiblebookcollection.org/>
- Bookshare** - <http://www.bookshare.org>
- CAST UDL Book Builder** - <http://bookbuilder.cast.org/>
- CAST UDL Lesson Builder** - <http://lessonbuilder.cast.org/>
- Computer Based Study Strategies** - <http://cbss.uoregon.edu>
- Florida - Universal Access Stations** - <http://www.paec.org/fdlrstech/ua/ua.html>
- Multiple Intelligences Instrument** - <http://ldrc.ca/projects/miinventory/mitest.html>
- National Instructional Materials Accessibility Standard** - <http://NIMAS.cast.org>
- NIMAS FAQ** - <http://nimas.cast.org/about/faq/index.html>
- Teaching Every Student** - <http://www.cast.org/teachingeverystudent/>
- Teaching every child in the digital age.** (Book) www.cast.org/teachingeverystudent/ideas/tes
- Universally-Designed Assessments**, National Center for Educational Outcomes - <http://cehd.umn.edu/NCEO/TopicAreas/UnivDesign/UnivDesignTopic.htm>
- UDL Tools and Activities** - <http://www.cast.org/teachingeverystudent/tools/>

Print Resources

- Armstrong, T. (1987). *In Their Own Way: Discovering and Encouraging Your Child's Personal Learning Style*. New York: Tarcher/Putnam.
- Berres, M.S., Ferguson, D.L., Knoblock, P., & Woods, C. (Eds.). (1996). *Creating tomorrow's schools today: Stories of inclusion, change and renewal*. Teachers College Press: New York, NY.
- Bersani, H., Anctil, T., & Fried-Oken, M., (2001) *Me and my A.T.: High school students write about their assistive technology*. Eugene, Oregon. Northwest Media.
- Chapman, C., & King, R. (2003). *Differentiated Assessment Strategies for Reading in the Content Areas*. Corwin Press Inc.: Thousand Oaks, CA.

- Chapman, C., & King, R. (2003). *Differentiated Assessment Strategies for Writing in the Content Areas*. Corwin Press Inc.: Thousand Oaks, CA.
- Chapman, C., & King, R. (2005). *Differentiated Assessment Strategies: One Tool Doesn't Fit All*. Corwin Press Inc.: Thousand Oaks, CA.
- Cunningham, P., & Allington, R. (2006). *Classroom That Work: They Can All Read and Write*. Pearson: Allyn & Bacon: Upper Saddle River, NJ.
- Dolan, R. P., Hall, T. E., Banerjee, M., Chun, E., & Strangman, N. (2005). Applying principles of universal design to test delivery: The effect of computer-based read-aloud on test performance of high school students with learning disabilities. *Journal of Technology, Learning, and Assessment*, 3(7).
- Gardner, H. (2000). *Intelligence Reframed: Multiple Intelligences for the 21st Century*. New York: Basic.
- Heacox, D. (2002). *Differentiating Instruction in the Regular Classroom: How to Reach and Teach All Learners, Grades 3-12*. Free Spirit Publishing Inc.: Minneapolis, MN.
- Hitchcock, C., Meyer, A., Rose, D., & Jackson, R. (2002). Providing New Access to the General Curriculum: Universal Design for Learning. *TEACHING Exceptional Children*, v35 n2 p8-17 Nov-Dec 2002
- Karten, T.B. (2005). *Inclusion Strategies That Work!: Reserach-Based Methods for the Classroom*. Corwiin Press Inc.: Thousand Oaks, CA.
- Landers, M.F., & Weaver, H.R. (1997). *Inclusive education: A process, not a placement*. Watersun Publishing Company, Inc.: Swampscott, MA.
- Lee, C. , & Jackson, R., (1992). *Faking It* Boynton/Cook Publishers: Portsmouth, NH.
- McGregor, G., & Vogelsberg, R.T. (1998). *Inclusive schooling practices: Pedagogical and research foundations*. Paul H. Brooks Publishing Co.: Baltimore, MD.
- McMurdo, K., & Haynes, C., (2001). *Structured Writing: Using Inspiration to Teach Paragraph Development*.
- Pugach, M.C., & Johnson, L.J. (1995). *Collaborative practitioners, collaborative schools*. Love Publishing Company: Denver, CO.
- Pugach, M.C., & Warger, C.L. (Eds.). (1996). *Curriculum trends, special education, and reform: Refocusing the conversation*. Teachers College Press: New York, NY.
- Rose, D., Hasselbring, T. S., et al. (2005). *Assistive technology and Universal Design for Learning: Two sides of the same coin*. In D. Edyburn et al (Eds). *Handbook of special education technology research and practice*. Whitefish Bay, Knowledge by Design: 549-569.
- Rose, D.H., & Meyer, A. (2006). *A Practical Reader in Universal Design for Learning*. Cambridge, MA: Harvard Education Press.
- Rose, D.H., Meyer, A., & Hitchcock, C. (2005). *The Universally Designed Classroom: Accessible Curriculum and Digital Technologies*. Cambridge, MA: Harvard Education Press.
- Rose, D.H., & Meyer, A. (2002). *Teaching Every Student in the Digital Age: Universal Design for Learning*. Alexandria, VA: ASCD.
- Sage, D.D. (Ed.). *Inclusion in secondary schools: Bold initiatives challenging change*. National Professional Resources, Inc.: Port Chester, NY.
- Schumm, J.S., Vaughn, S., & Harris, J. (1997). "Pyramid Power for Collaborative Planning." *Teaching Exceptional Children*, 26(6), 62-66.
- Thousand, J.S., Villa, R.A., & Nevin, A.I. (2007). *Differentiating Instruction: Collaborative Planning and Teaching for Universally Designed Learning*. Corwin Press: Thousand Oaks, CA.
- Wang, M.C. (1992). *Adaptive education strategies: Building on diversity*. Paul H. Brooks Publishing Co.: Baltimore, MD.
- Winebrenner, S. (1996). *Teaching kids with learning difficulties in the regular classroom: Strategies and techniques every teacher can use to challenge & motivate struggling students*. Free Spirit Publishing: Minneapolis, MN.
- Young, K. (2003). *KidTips: Study Strategies for Students with Learning Differences*. IEP Resources, An Attainment Company: Verona, WI.

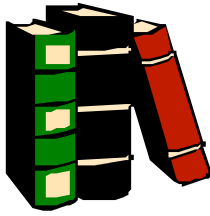
Curriculum Barriers

Materials and Methods	Student Qualities	Potential Barriers/Missed Opportunities

Name

Possible Tools/Strategies to Explore

Content and Materials <i>Multiple Means of Representation</i>	How Learners Show What They Know <i>Multiple Means of Expression</i>	Instructional Processes <i>Multiple Means of Engagement</i>



Lesson Plan Framework

Reason for Lesson

Authors:

Learning Standards

List what students will learn

ALL –

Most –

Some –

Teacher Resources

Possible Activities

Assessment –

Modifications – planning for academic diversity

UDL Features of the CAST PAL Toolkit Model

Gathering Evidence: Life Cycle of Plants

Gathering Evidence: Life Cycle of Plants	
UDL Teaching Method	Supportive Differentiated Instruction
Provide multiple examples.	In preparation for this lesson, the teacher created multiple examples of finding and identifying seeds. Additionally, the teacher provided several examples of finding appropriate texts to complete the assignment. Students have multiple examples of texts from which to find information about the life cycle of seeds. As another example, fast growing seeds were planted in the classroom, giving students the opportunity to observe the seed life cycle.
Highlight critical features.	Teacher provides critical information for the lesson through oral presentation and highlights critical features in written form, then monitors students to check their focus on important features of the lesson. Additionally, by having texts available in digital format, the teacher or students may literally highlight critical features of the text in preparation of lesson assignments.
Provide multiple media and formats.	The teacher located several (4-5) resources, in this case books of different reading difficulty, containing the same science constructs on seed life cycles. The books were then made available digitally as well as on audio tape for flexible accessibility. Thus, materials were available in a variety of media and formats.
Support background context.	Several levels of preparation were designed to support background context: <ul style="list-style-type: none"> • Before this assignment the teacher and students found seeds in a variety of vegetables and fruits. In this way, the concept of seeds was brought out of the abstract; students had experiences seeing and finding seeds from a range of plants. • Careful instruction was organized to teach students the concept of finding a book that is "just right," helping students to find a book that is challenging, yet not too difficult. This, helped keep students work and learn in their "zone of proximal development" when obtaining background information for the lesson.
Provide opportunities to practice with support.	<ul style="list-style-type: none"> • Students had the option to work in selected pairs as they search for answers to the science questions. • During guided practice and independent practice portions of each lesson, the teacher provides supports by checking and prompting.
Offer choices of content and tools.	The teacher organized the lesson at multiple points for choice of tools. <ul style="list-style-type: none"> • Choice of resource materials • Choice of access (text, digital, audio) • Choice of response style
Offer adjustable levels of challenge.	The teacher offers multiple texts, representing a range of difficulty levels, and different means to access these texts. This helps to ensure that researching the answers to science questions is appropriately challenging for each student. For example, if decoding were challenging, the student could use a simpler text and/or access the information via audio or digital read-aloud.
Offer choices of learning context	Throughout the lesson the teacher has organized several choices that help diversify the available learning contexts: <ul style="list-style-type: none"> • students can select from a variety of methods to respond to the science questions (written, scribed, recorded), • students can opt to work independently or with a partner during the assignment completion portion of the lesson, and • students can select the "right book" based on difficulty and/or interest.

Deriving UDL Solutions

Model Template

Grade: 3 **Teacher:** Mrs. G. **Subject:** Science **Standard:** 6.23—Plants lifecycle
Goal: *Research and present information on a flower.*

Materials & Methods	Potential Barriers/ Missed Opportunities	UDL Solutions
Printed textbook	<i>Kevin</i> —Difficulty seeing small text <i>Bill</i> —Doesn't tap his graphics skills <i>Brian</i> —Difficulty decoding/understanding word meaning	Electronic text with text-to-speech to read aloud CD-ROM or online encyclopedia; Web page with collections of images Spanish CD-ROM on flowers; link to Spanish Web site
Lecture/whole class presentation	<i>Jose</i> —Difficulty comprehending meaning <i>Helen</i> —Distracted, may miss info <i>Kiwa</i> —Distracted, may miss info	Provide Spanish/English key terms translations with text-to-speech Provide Inspiration concept map of key ideas; eText outline with text to speech that students can access
Library research	<i>Brian</i> —May have trouble keeping track. <i>Kiwa</i> —May not be able to abstract the project's important content.	Partially filled-in outlines; Web page with attached resources; collection of online resources, online or CD-ROM encyclopedia, linked to Inspiration outline of key project parts
Create written report	<i>Sarria</i> —Mechanics-based difficulty expressing her ideas <i>Jake</i> —Format doesn't tap artistic talent	Word processor with spell check; talking word processor Graphics program—Kid Pix
Flower drawing	<i>Phillip</i> —Drawing will be physically difficulty.	Word processing; selection of graphics to use in report
Oral report on flower	<i>Jorge</i> —Format doesn't tap musical talent <i>Brian</i> —May be intimidated	Provide option of live or recorded music as part of demonstration Pair Brian with James, who can support him while working
Independent project	<i>James</i> —Context won't draw on his leadership and collaboration skills. <i>Helen</i> —Could have difficulty working alone. <i>Elizabeth</i> —Deep knowledge of plants	Encourage James to support other students as they work Be sure to find aspect of project of particular interest to Helen and check in frequently. Support presentation with notes Pair Elizabeth with Jose to share her knowledge and enthusiasm

Examples of UDL Solutions

Recognition Networks

Multiple Examples

- Multiple versions of story, math process, content
 - Multimedia collections
 - Images
 - Sounds
 - Text
 - Video/animation
 - Concept maps
 - Links to online examples from Web page
 - Multimedia concept map with online/local links
 - Animation of text meaning (software, Web)
-
-

Multiple Media and Formats

- Multimedia glossary, online, CD-ROM or teacher-made
 - Alternative representations across media:
 - E-text with text-to-speech
 - Text and audio descriptions for still images
 - Spoken descriptions for video images
 - Tactile graphics
 - Voice recognition—convert to text
 - Image collections in concept maps
 - Text outline, highlighting key concepts
 - Digital photographs from field trips or home
 - Recorded, digitized sounds and stories
 - Adjustable font size, color, background color
 - Adjustable digital images (e.g., maps)
-
-

Highlight Critical Features

- Visual concept maps (Inspiration)
 - Multimedia templates (Hyperstudio, PowerPoint)
 - Color highlighting in word processing
 - Graphic highlighting (circles, arrows, boxes)
 - Links to animations showing key elements
 - Software offering different presentations
 - E-text outline, main points (with text-to-speech translation)
-
-

Support Background Knowledge

- Web pages with links to related information
 - Links to author information
 - Key vocabulary (image map, hyperlinks to words)
 - Translation to other languages (online tools)
 - Expansion of information—build multimedia collections
 - Online links to experts
 - Multimedia glossary, encyclopedia
-
-

Strategic Networks

20

Models of Skilled Performance

- Product models—finished versions of target skill
 - Process models—showing process steps
 - Collections of completed products (Web links/local)
 - Past student work
 - Work of experts
 - Teacher generated examples
 - Students in other settings
 - Multimedia collections—stories, facts, information
 - Online links to work of experts
-
-

Practice with Supports

- Talking word processor (e.g., Write Out Loud)
 - Templates to structure work as appropriate
 - Scaffolds, use depending on goal:
 - Spell check, grammar check
 - Built-in calculator
 - Clip media (all sorts), student projects
 - Text-to-speech for content reading
 - Graphic organizers (e.g., Inspiration)
 - Hyperstudio story or presentation template
 - Chapter-end answers partially structured
-
-

Ongoing Relevant Feedback

- Digital voice record, play back
 - Text-to-speech while writing
 - Links to online mentors
 - Links to peers/editors (e.g., www.stonesoup.com)
 - Digital portfolio—review and compare
 - Prompts to self-reflect, record reflections
 - Online publishing, local network or Internet
 - Digital graphing of progress
-
-

Demonstration of Skills

- Multimedia presentation tools (Hyperstudio, PowerPoint)
 - Web-capable graphic organizers (Inspiration)
 - Publishing software (Hyperstudio, Pagemaker)
 - Web site design tools (Home Page, Dreamweaver)
 - Multimedia recording, image digitizing, digital cameras
 - Media banks—images, sounds, animations, video
 - Digital recording
 - Draw tools
-
-

Affective Networks

Choice of Content and Tools

Selections of content for learning skills and strategies
Web sites with supplementary, related activities
Multimedia presentation and composition tools
Digital cameras, recording devices
Web page with content options and choices
Selection of stories/non fiction for learning to read
Tie activities to student’s deep subject interests

Adjustable Support and Challenge

Software/Web sites offering management systems
Optional scaffolds (– teacher/student discretion)
Templates supporting process
Templates supporting content
Choice of level, same activity or goal
Optional help (student or teacher discretion)

Choice of Rewards

Individualized feedback to support student needs
Explicit feedback specific to student progress
Minimal extrinsic “rewards” not tied to work
Build student self-monitoring
Feedback related to explicit student goals
Opportunities for demonstrations
Built-in structured peer feedback

Choice of Learning Context

“Web quest” designs, with varied structure
Software/Web sites, options for feedback and support
Flexible work groups—pairs, small groups, individual
Templates with optional structure and support
Earphones
Embedded hyperlinks, used at student option
Student choice of sources

Deriving UDL Solutions

Blank Template

Grade:

Teacher:

Subject:

Standard:

Goal:

Materials & Methods	Potential Barriers/ Missed Opportunities	UDL Solutions