Modules Addressing Special Education and Teacher Education (MAST)

Facilitator's Guide

Universal Design for Learning: Elementary Lesson Planning

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This document is available in alternative formats upon request.

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Facilitator's Guide

Universal Design for Learning:
Elementary Lesson Planning

This Facilitator's Guide is designed to provide additional information and extension activities that may be helpful to people involved in course instruction or professional development related to the education of students receiving special education supports.

This guide is based on the accompanying module available at http://mast.ecu.edu. All or parts of the module can be used to supplement a course, workshop, or presentation. Information provided in this guide is designed to support you as the facilitator of a one-hour session. It stresses important points made in the module as well as provides questions/activities to extend thinking and application of the topics. Each facilitator's guide includes:

- Preparation Suggestions and Materials
- Session Agenda
- Session Guide and Key Talking Points
- Focus and Reflection Questions
- Application and Extension Activities
- Self-Assessment
- Session Evaluation Form
- References and Resources
- Web Resources
- Handouts

Preparation Suggestions and Materials

Participant Handouts

- Power Point presentation slides
- Session Evaluation

Supplies

- Power Point presentation slides

Technology

- Computer, LCD or overhead projector, screen
- Microphone and speakers (depending on size of the group)
- High speed internet access (URLs for specific content and activities are included in this guide.)

Additional materials for optional suggested activities

- Copies of the Pre-planning Guide and Lesson Plan worksheet, both found at end of this Guide.

❖ **Session Agenda**

- ► Introduction (5 minutes)
- ► Session Goals and Objectives (1 minute)
- ► Four Components in UDL Curricular Design (13 minutes)
- ► UDL Lesson Plan- Academic, Social and Physical Barriers (7 minutes)
- ► UDL Lesson Plan- Preplanning Guide (5 minutes)
- ► UDL Lesson Plan- Advance Organizer (3 minutes)
- ► UDL Lesson Plan- Lesson Opening (4 minutes)
- ► UDL Lesson Plan- Teacher Input (6 minutes)
- ► UDL Lesson Plan- Guided Practice (5 minutes)
- ► UDL Lesson Plan- Independent Practice (4 minutes)
- ► UDL Lesson Plan- Closure (3 minutes)
- ► Summary (1 minute)
- ► Evaluation (3 minutes)

The suggested time allotments for the session's agenda items are estimates of the minimal time required to present the content. Group discussion and the suggested activities will likely require additional time. Facilitators are encouraged to consider the needs of their particular audience as they plan the delivery and schedule for the lesson.

In addition to the agenda items, this Facilitator's Guide includes optional Focus and Reflection Questions, Application and Extension Activities, as well as a link to an online Self-Assessment. As time allows, these additional resources may be incorporated into the session.

❖ Session Guide and Key Talking Points

► Introduction (5 minutes)

▸ Presentation Guide

The Problem: "He who fails to plan, plans to fail" (a proverb)

Listen to the audio at http://mast.ecu.edu/modules/udl_elp/lib/media/slides01/SlideShow.html. The transcript follows.

"Ms. Gimble, a 4th grade teacher, sits down to plan a science lesson for next week with her co-teacher, Mr. Clark, a special educator. They are addressing science and math standards that deal with solving authentic problems using systems of measurement, including maps, grids, and technology tools. Ms. Gimble and Mr. Clark are using a UDL lesson planning template to guide their planning. They will consider student barriers to learning and use this information to infuse multiple means of representing content, increasing engagement, and allowing for expression within their lesson. Brainstorming technology tools and other materials and resources they can incorporate will be the 'fun' part. They also want to look at their space and be sure they maximize its use. Ms. Gimble and Mr. Clark wonder how they ever taught in isolation before with a 'one size fits all' lesson planning format."

Listen to audio at
http://mast.ecu.edu/modules/udl_elp/lib/media/slides02/SlideShow.html . The transcript follows.

"Just as in planning a road trip, teachers first need to know where they are going. What is the desired destination? What is the budget? Once these things are determined, different routes to reach the desired goal can be considered. The number of travelers and their needs must be considered as well as the means of transportation. How much time is needed to reach the destination safely and realistically? There might be some detours or barriers. What are they? If there are two drivers, who will drive and who will navigate? How will expenses be handled? If children are going, how will they be entertained and fed? Perhaps someone who uses a wheelchair is joining the group. The better the plan is up front, the more enjoyable the trip will likely be. The odds of reaching one's destination safely, on time, and in a good mood definitely increases!"

UDL Lesson Plan Template

Instructor: _____
Subject: _____ Grade._____

Lesson Objective/s:
Assessment/s:
State Standards Correlation:
Materials/Resources:
Preplanning Activities:

Lesson Element	Procedure for Teacher	Potential Barriers for Learning:	UDL Multiple Means of... Representation Engagement Expression
Lesson Opening			
Teacher Input			
Guided Practice			
Independent Practice			
Closure			

Listen to audio about the lesson plan template available at http://mast.ecu.edu/modules/udl_elp/lib/media/audioNarrator3.mp3 . A copy of the lesson plan template can be found at end of this Guide. The transcript follows.

"A UDL lesson planning format can help teachers consider flexible options for a diverse group of students from the start. Taking the broad goals from the standards, teachers can develop accessible learning objectives for each one of their students. UDL lesson planning asks teachers to consider learning barriers from the start. Once identified, multiple means of representation, engagement, and expression can be considered. This kind of purposeful brainstorming will help teachers make every minute of instruction and learning count."

►Session Goals and Objectives (1 minute)

- **Presentation Guide**

The goal of this module is to demonstrate how teachers at the elementary school level can plan effectively for all learners using a UDL lesson plan format.

At the completion of the module participants will be able to:

1. Identify the four UDL curricular components in academic learning.
2. Identify multiple ways to address learner academic, social and/or physical barriers using UDL principles.
3. Distinguish between the terms accommodation and modification when considering adaptations.
4. Recognize expanded traditional lesson plans to increase their effectiveness with diverse learners, including pyramid planning.

► Four Components in UDL Curricular Design (13 minutes)

- **Presentation Guide**

The Four Components in UDL Curricular Design

The four components of UDL curricular design are 1) goals, 2) assessment, 3) methods, and 4) materials and resources. Ms. Gimble and Mr. Clark will help us take a closer look at each one of these important components.

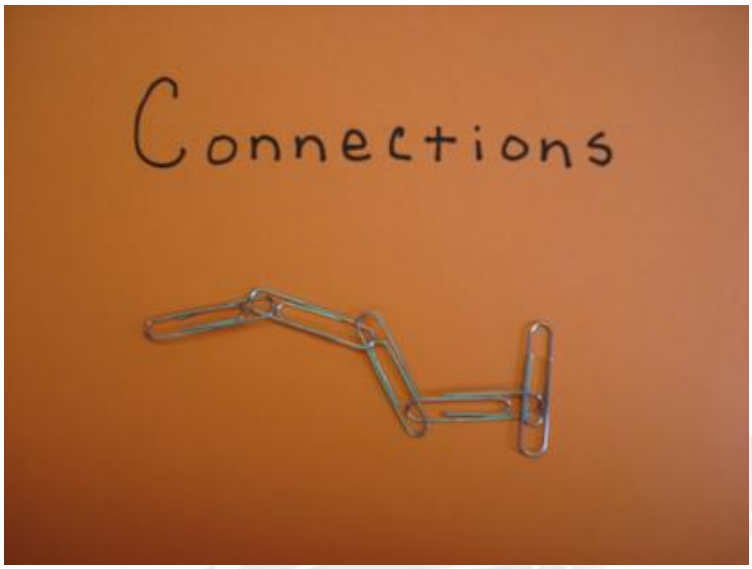
Component 1: Goals

Listen to the audio at
http://mast.ecu.edu/modules/udl_elp/lib/media/audio/Gimble/Audio1-Gimble1.mp3 .

What's the Big Idea?

"A big idea is a concept, theme, or issue that gives meaning and connection to discrete facts and skills."

Source: Wiggins & McTighe, 2005.



Source: National Committee on Science Education

Standard Course of Study Objectives	
Objectives	**Description**
Science	• To determine the movement of an object by following and measuring its position over time.
Math	• To solve authentic problems using appropriate technology; to review coordinate grids

Source: North Carolina Department of Public Instruction, 2010

Listen to the audio of Mr. Clark at
http://mast.ecu.edu/modules/udl_elp/lib/media/audio/Clark/Clark_1.mp3
The transcript follows.

"When Ms. Gimble and I plan our units, the next thing we do is write learning objectives that support our goals or big ideas. We need these objectives to be accessible to all. We consciously try to use verbs such as "identify, summarize, express, or select" instead of "write, speak, or spell" so the greatest number of students can participate. Some of our students, for example, need to listen to digital recordings of the textbook and other print media we use because they struggle with decoding. If our goal is comprehension of a science concept, we can't let a single reading skill barrier hold them back. We just make sure the students get help with those specific skills at another time during the day. We also have some students who struggle writing with paper and pencil. However, given a copy of the notes, a word processor, or a recording device, they can keep right up with their groups when we are working in class."

Component 2: Assessment

Listen to the audio of Ms. Gimble at
http://mast.ecu.edu/modules/udl_elp/lib/media/audio/Gimble/Gimble_2.mp3 .
The transcript follows.

"Assessment is another important component of UDL curricular design**.** Mr. Clark and I find that if we link our assessments to our learning objectives 'up front', we have a better chance of making every minute count for teaching and learning. You just can't separate objectives and assessment—assessment informs instruction. It tells us what we need to adjust, what to practice more, and what our students have mastered so we can move forward. Our students also know what is expected of them from the start. This motivates them…and we need to do all we can to keep this group motivated!"

Linking Objectives to Assessment	
Lesson Objectives (Standards-based)	**Assessment**
To tell or show how to use a Global Positioning System	iPod recording with video or demonstration with teacher checklist
To express how people a GPS system can help people	Oral/ written explanation, demonstration or drawing with teacher checklist/rubric

Listen to the audio of Mr. Clark available at http://mast.ecu.edu/modules/udl_elp/lib/media/audio/Clark/Clark_2.mp3 The transcript follows.

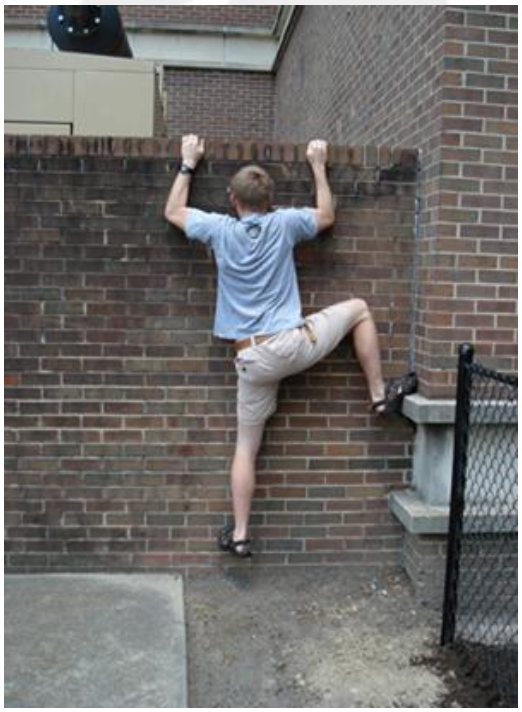
"Here is an example from our lesson on GPS system. As you can see, we have two lesson objectives: 1) To tell or show how to use a Global Positioning System and 2) To express how people can benefit GPS from system use. We have worded the assessments to allow for multiple means of expression. This way, students can express what they know in multiple ways. Possible assessments for the first objective will include things like demonstrations, oral or written responses in the form of reports, posters, songs or raps. If students choose oral or performance options, Ms. Gimble will use a simple checklist or rubric to record the accuracy of content knowledge while I monitor and facilitate."

Now think about the verbs you use when you write your objectives. Terms such as **determine**, **solve**, **summarize**, and **justify** allow greater flexibility than words such as 'write', 'speak', or 'draw'. You want to build in flexible access from the beginning.

Verbs that Increase Accessibility

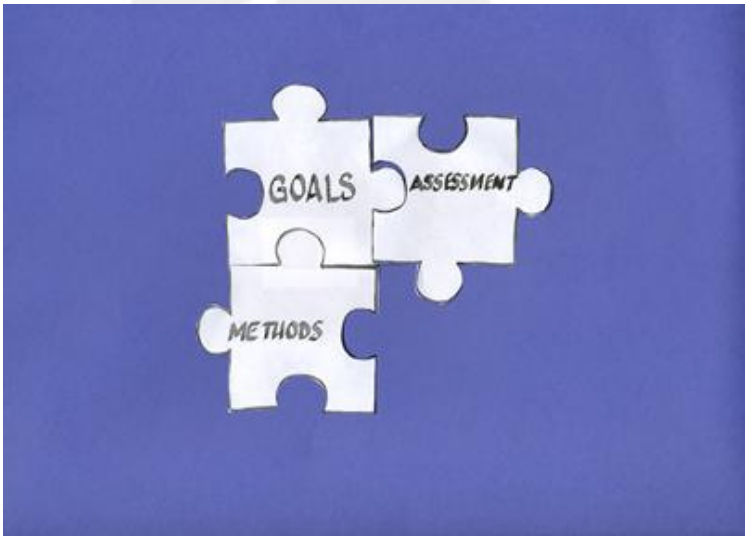
Do say:	Don't say:
To identify….	To write…
To summarize ….	To speak….
To Express…..	To spell

Learner Considerations



Last, but certainly not least, we think about the potential learning barriers for our learners. We think about IEPs, BIPs, Section 504 information (Rehabilitation Act, 1973), assessment data we have, and our own observations and knowledge of each student. We also consider multiple intelligences, learning preferences, and student interests.

Component 3: Methods



Evidence-based methods

We use the procedures of a direct instruction lesson in planning. We know it will provide the structure we need for all learners and also allow for extensions for students who can work more independently or need more supports as well. When considering methods, we always look for evidenced-based methods that best support our learner needs. We also considered the multiple intelligences and learning preferences of our students. The 3 principles of UDL-multiple means of representation, engagement, and expression (refer back to the UDL module for a review) are now applied while planning the actual lesson.

Some of the methods or practices we use most often include using advance organizers, graphic organizers, modeling, thinking aloud, learning strategies instruction,

manipulative/multisensory strategies, cooperative learning, and self-monitoring strategies. We also use peer buddies or tutors. Some of our students also benefit from cueing and prompting systems. These are strategies, of course, that all teachers use-not just elementary teachers. Look at the following examples:

Examples of Evidence-Based Methods with links to examples

- Advance organizers

http://mast.ecu.edu/modules/udl_elp/lib/images/advance_organizer.JPG

- Graphic organizers

http://mast.ecu.edu/modules/udl_elp/lib/images/Graphic_Org.JPG

- Modeling

http://mast.ecu.edu/modules/udl_elp/lib/images/modeling.jpg

- Mnemonics

Example: Mnemonic for Cardinal directions-
http://mast.ecu.edu/modules/udl_elp/lib/images/cardinal.jpg
http://www.k8accesscenter.org/training_resources/Mnemonics.asp

- Songs/Raps for Memory

http://mast.ecu.edu/modules/udl_elp/lib/media/easternkids.html

- Think Aloud
http://mast.ecu.edu/modules/udl_elp/lib/documents/Thinking_Aloud.pdf
http://www.teachervision.fen.com/skill-builder/problem-solving/48546.html

- Learning strategies instruction

http://iris.peabody.vanderbilt.edu/srs/chalcycle.htm

- Manipulative strategies

http://mast.ecu.edu/modules/udl_elp/lib/images/manipulative_strategies.JPG

- Cooperative Learning/Peer Tutoring

http://mast.ecu.edu/modules/udl_elp/lib/images/Cooperative_Learning.JPG

- Self-Monitoring Strategies

http://mast.ecu.edu/modules/udl_elp/lib/documents/Am_I_Working.pdf

- Cues & Prompts

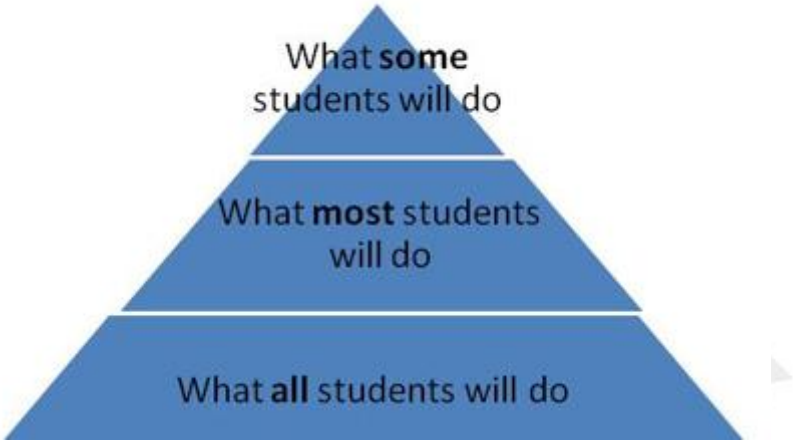
http://mast.ecu.edu/modules/udl_elp/lib/images/prompt.jpg

Co-Teaching Methods

Listen to the audio of Ms. Gimble talking about co-teaching at http://mast.ecu.edu/modules/udl_elp/lib/media/audio/Gimble/Gimble_4.mp3 . The transcript follows.

"We also think ahead about ways we can co-teach. We usually plan our lessons a week ahead of time and divide up the preparation tasks. For science, we often use station teaching. We split the group in half or in thirds and they rotate through. Sometimes one of us will work on vocabulary, another person on an experiment or research. This way, we can easily differentiate instruction within groups since we have a wide range of learners. Mr. Clark thinks of great 'hands on' tools to make learning concrete. I like to write songs and raps with the students. Our teaching styles complement each other. Maybe one of the best things about co-teaching is that you can plan, assess, and brainstorm solutions together. If you can't schedule to co-teach, I would highly recommend at least co-planning with a special educator—especially one who knows your students!"

Pyramid Planning



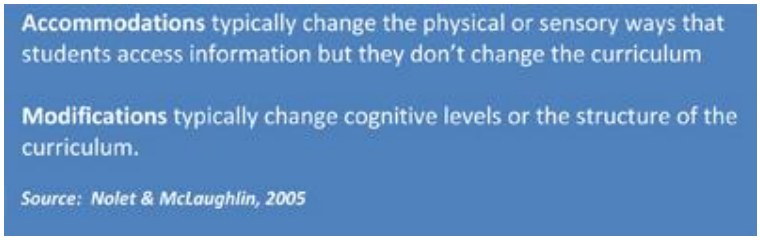
Source: Schumm , Vaughn & Leavell, 1994.

When planning a unit or lesson, **pyramid planning** can help you think about how to differentiate instruction for your students. It is often helpful to sketch a pyramid out along with your lesson plan as we will show you on our example in this module. First, think about what **all** students will accomplish. These thoughts will go at the base of the pyramid since it is the broadest section. In science class, for example, you may decide to have some premade science experiments that all students can try that reinforce basic concepts being taught about plant parts and functions. Some students may quickly move on while others may need to continue working at this level for a variety of reasons. For example, some may need to gain proficiency with vocabulary; others may need to build their confidence with the subject/content/materials, while others may need to solidify knowledge of prerequisite skills. It is important to note here that higher level thinking skills can and should be incorporated at all levels. A student with autism, for example, might create a digital storyboard for the class on plant parts and functions.

At the second level, think about what **most** students will be asked to do. The teacher might suggest a topic for further exploration at this stage. For example, students might be asked to investigate other types of plants and compare/contrast their findings to the plants that were studied by the whole group. Students are working at a middle to high level of learning but having the task generated for them helps them to get started and not waste valuable time wondering where to begin.

At the top level, think about what a **few** students will do. These students likely need extensions for even greater challenge. These students may create his or her own experiment related to the topic and determine how data will be collected, displayed, analyzed, and evaluated.

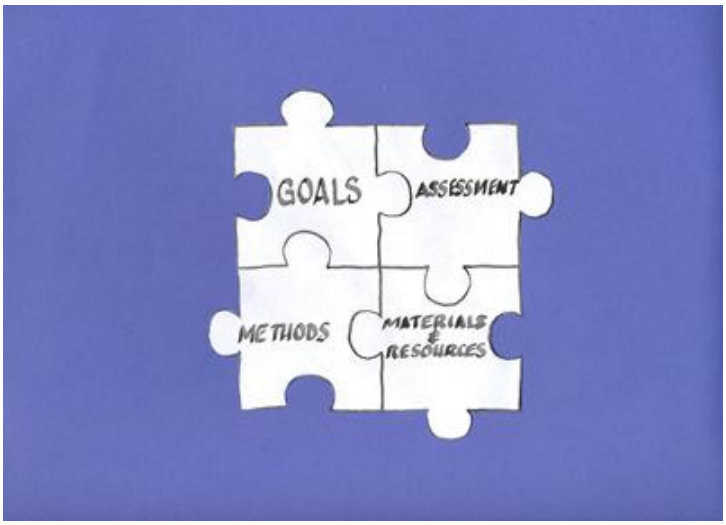
Accommodations and Modifications



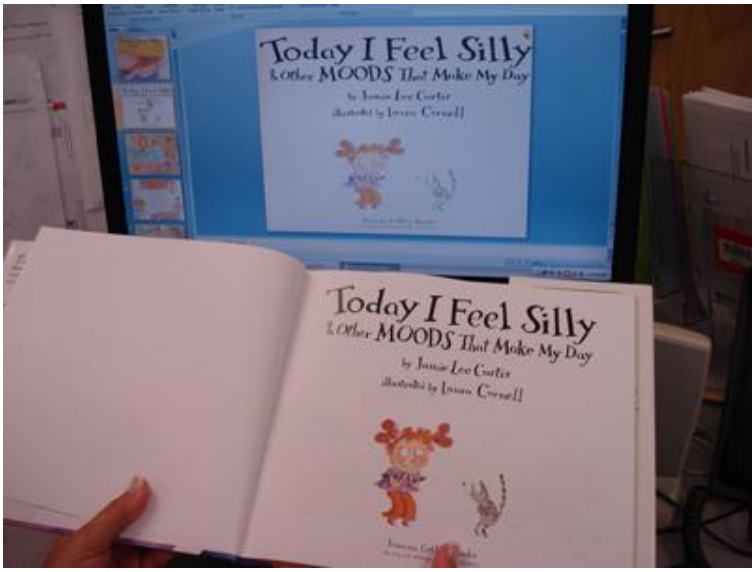
When planning for adaptations, it will be important to differentiate between **accommodations** and **modifications**. *Accommodations* generally change the physical or sensory ways that students access information but they don't change the curriculum. For example, a student with a hearing impairment may be seated in the front of the room or a student who is visually impaired may access an audio recording a lecture for review. Modifications, on the other hand, typically change the cognitive level or structure of the curriculum (Nolet & McLaughlin, 2005). Students can be working on the same topic but some may be working on only one type of problem while others are working on multiple types of problems. Perhaps there are adjustments for reading levels. Some students who have reading disabilities, for example, may access print at a lower reading level or have text read aloud. It will be important to only use modifications when absolutely necessary because they may change the expectations of the curricular goals for students. On the flip side, for students who require modifications to participate in the general curriculum, they allow them to have access to the same big ideas and topics as everyone else.

Universal Design for Learning helps us plan for flexibility in offering choices for adaptations from the start. Once again, the better teachers know their students and the curriculum, the better they can plan for their needs and capitalize on their strengths. In addition, the more collaborative they are with other faculty/staff/community partners, the options continue to multiply.

Component 4: Materials and Resources



Gone are the days that a single textbook is the sole resource in a classroom. With today's digital media and technology tools, the possibilities are great. We are always surprised by what in included with our textbooks from the publisher. There are CDs with digital text and some comes in different languages. Some publishers now include leveled readings/texts on the same big idea. Ideas for making extensions and remediating specific skills are included.



We are also finding that other students can sometimes help with materials. Some enjoy making Power Point book summaries that help others. An example of a Power Point

book is available at
http://mast.ecu.edu/modules/udl_elp/lib/media/slides12/SlideShow.html

Some of our parents are great about making recorded texts for us. Some community members help with needed translations.

High-Tech	Low-Tech
Digital text, eBooks, WebQuests, videos with closed caption, electronic translations	Textbooks, print materials, dictionaries, translators
Multimedia presentation, podcast	Speech, lecture, interview
Graphing calculators, Geometer's Sketchpad, Excel spreadsheets	Graph paper, geoboards/rubber bands, pegboards
Virtual manipulatives, GPS devices, talking rulers	Tiles, geoboards, base ten blocks, compasses, braille measuring tools
Virtual simulations	Role play, demonstration
Word processing, note-taking pen, audio recording, MP3 player/iPod	Folded paper, notebooks
Classroom response system, electronic games for review	Response cards, scavenger hunt review

Remember technology tools and collaborative teaching can increase the flexibility of UDL environments as teachers make adjustments to meet the needs of diverse learners. You may want to revisit the Introductory UDL module at http://mast.ecu.edu/modules/udl_intro for examples of low- and high-tech materials.

- **Activity Suggestion**

In pairs (to the extent possible, pair general and special educators together), have participants draft a lesson around a big idea for a curricular area with which they are most familiar.

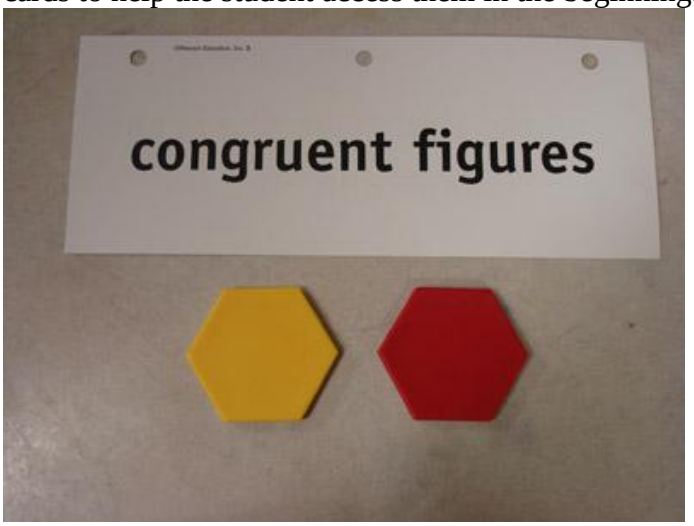
Ideas for each of the four components (goals, assessment, method and materials/resources) should be reflected. Encourage participants to focus on realistic goals and approaches, consistent with the resources they typically have available. Once lessons are drafted, participants can report to the larger group for feedback.

► UDL Lesson Plan- Academic, Social and Physical Barriers (7 minutes)

- **Presentation Guide**

In planning an UDL lesson, think about the learning barriers students in your classroom may present in accessing the curriculum so you can brainstorm solutions right away. Think about three aspects of learning as you do this: 1) academic, 2) physical or sensory, and 3) social/emotional.

An example of an academic barrier might be students who lack background knowledge or vocabulary. Some solutions might be having a 'mini-lesson' in a small group, an interactive computer program or video to review some of that information. Vocabulary could be pre-taught. Pictures, symbols, and definitions could be added to charts/word cards to help the student access them in the beginning.



Some students have physical/sensory needs. A student with attention deficit may benefit from having a cushion on his/her seat, alternate seating, or from using a fidget object.

A student with a hearing impairment will likely benefit from having the closed caption feature added to videos.

A social/emotional barrier might be having students who are disruptive in the classroom. Pre-planning solutions might include using contingency management plans or contracts to shape behavior in addition to having a structured classroom management plan.

When you offer options for learning in this way you not only help the students who specifically need an adaptation for access but you really end up having multiple options that help a lot more students. More details will be provided later in this session.

► **UDL Lesson Plan- Preplanning Guide (5 minutes)**

- **Presentation Guide**

In this section, Ms. Gimble and I will walk you through the UDL lesson planning process that we use based on the background information we have just provided. Before Ms. Gimble and I actually show you one of our lesson plans, however, here is a UDL preplanning template, available at http://mast.ecu.edu/modules/udl_elp/lib/documents/12_UDL_preplanning_template.pdf and at the end of this Guide, that can provide you with a quick overview of your lesson and individual student needs. It can be used to help you initially map out your topic, lesson activities with assessment, technology/resources needs, lesson extensions, and grouping procedures. Using initials for student names helps keep this information confidential. Be sure to keep this sheet in a safe place.

Planning Universally Designed Instruction
(Pre-Planning Guide)

Teacher(s): _____ Grades: _____ Period: _____ Subject: _____ Collaborators: _____ Setting: _____ # of Students: _____	**Students Needing Extra Supports** Adaptations/Modifications: (add student initials): IEPs _____ Section 504 _____ BIPs _____ Language _____ Other needs/challenges:	**Students Needing Enrichment** Extensions/Challenges (add student initials: _____ _____ Notes: _____ _____

Topic: _____
Standard Course of Study Goals/Objectives:
_____
_____
Broad IEP Goals (Where Applicable): _____
Unit Goals and Essential Questions for All Students: _____
_____

Lesson Objectives: Some: _____

Most: _____

All: _____

Brainstorm Activities

Multiple Means of **Representation:** _____
_____
Multiple Means of **Engagement:** _____
_____
Multiple Means of **Expression:** _____
_____

Source(s) for digital/scaffolded text for this unit:
_____
_____
Computer lab needs/schedule _____
Other space requirements: _____
Other Materials/Resources needed:
_____
Paraprofessionals: _____ Community Resources: _____
Grouping Students: Large group: _____
Small group: _____
Individual: _____

Source: Adapted from P. Hubbard, *Reducing Barriers to Learning Through a Universally Designed Classroom*, poster session presented at the 2008 CEC Convention and Expo, Boston, MA (2008, April).

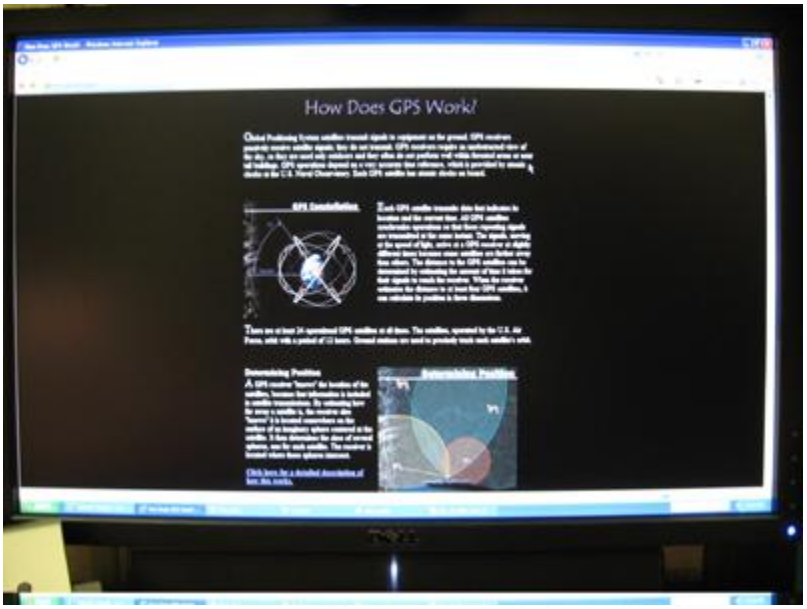
We will be demonstrating how we use a UDL lesson planning template as we plan our lesson on teaching our students how to use GPS systems using coordinate grids. You will see how we brainstorm possible learning barriers and pair these with possible UDL solutions. We won't be able to talk about all the details on each slide but you will be able to view them as we go along and download our complete sample plan at the end of this section. There is also a blank template for your own use in the resources section.

Let's begin by looking at some of the pre-planning activities for our GPS lesson. The more planning we do 'up front', the better the lesson. Mr. Smith, our paraprofessional, and our intern divide up these tasks. We already have a lot of this done since it has been part of our larger unit on systems. We had to practice ourselves with the GPS tools to really get a good idea of what we needed. As you can see by our materials, we needed to make the concept as concrete as possible.

These are the materials we will need to gather:

- **Materials and Resources for GPS Unit**

MATERIALS:	RESOURCES:
Handheld compasses, GPS units (12), colored tape, 3 satellite models, colored yarn, clip boards, bucket with waypoints, vocabulary cards, materials for satellite construction (boxes, foil, jar lids, sticks, etc.), clipboards, Cache surprise (sharks teeth, 'gems')	Video Streaming Websites WebQuests for research On-line print and media resources Links to mnemonic/song/rap on-line (www.songsforteaching.com)



http://www.nasm.si.edu/gps/work.html

Pre-Planning Activities:

- ✓ **Locate print materials, WebQuest, CD Rom, video clips, and songs/mnemonics about GPS, satellites, and cardinal directions**
- ✓ **Prepare Power Point**
- ✓ **Prepare new vocabulary words and add symbolic representation/example/visualization (if there is a co-teacher, pre-teach vocabulary before class begins); prepare labels**
- ✓ **Prepare class advance organizer**
- ✓ **Prepare KWL and data collection charts.**
- ✓ **Have self-monitoring sheets/cards ready for students who need them.**
- ✓ **Prepare large floor grid (colored tape)**
- ✓ **Prepare route for outside activity and 'cache' to locate**
- ✓ **Preset GPS waypoints**
- ✓ **Prepare checklist for assessment**
- ✓ **Determine how students will be paired or grouped**

We have some students who struggle with vocabulary. Some are just learning English, some lack the background knowledge, and some are challenged with word retrieval. We try to identify and pre-teach as much vocabulary as possible before the lesson even begins. The vocabulary will be presented visually and auditorily using text, definitions, and pictures/symbols. Students are encouraged to keep vocabulary cards on a ring for easy access. Students will also have access to songs that include these terms and definitions. Sometimes we even train some 'experts' to help us with technology tasks or other specific needs we anticipate.

For students who struggle with organizing their thinking, we always provide an **advance organizer**, agenda, or outline to set the plan for the day. Mr. Clark usually prepares these and posts them in the classroom. Some of our students have self-monitoring sheets so we get those ready. Mr. Clark and I talk frequently about how we will group students. We try to mix these groupings up a bit depending on skill levels, language, interests, strengths and needs, and personalities. I know it must sound like a lot but once you do the bulk of

the work up front, it runs pretty smoothly and isn't any more time consuming than teaching in isolation. In fact, we think our lessons are much better using the given time.

►UDL Lesson Plan- Advance Organizer (3 minutes)

- **Presentation Guide**

Advance Organizer

1.	Unpack your book bag
2.	Review vocabulary
3.	Watch video
4.	View Power Pt.
5.	Find waypoints
6.	Begin research/building satellites
7.	Find waypoints outside and record data
8.	Record homework in planner

Ms. Gimble always has her content planned out so when we meet we are ready to brainstorm adaptations and divide up responsibilities. I help her 'translate' the big ideas and skills for these diverse learners. We are fortunate to have a paraprofessional and intern who plan and teach with us. Sometimes we can have four different stations going! We would like to walk you through our actual plan with the UDL adaptations we've been brainstorming. You can see how we take the learner needs and consider UDL applications in this planning stage.

►**UDL Lesson Plan- Lesson Opening (4 minutes)**

- **Presentation Guide**

Lesson Opening

Lesson Opening	Possible Learning Barriers	UDL Solutions Representation Engagement
Begin with music or song Review finding directions on a map, vocabulary	Attention/Motivation Understanding English Memory	Play clip of hiking, space travel or other related music Review major concept(s), vocabulary. (Pre teach vocabulary if possible and have students add them to card rings). Refer to posted mnemonic: "Never Eat Shredded Wheat" in the room for NESW)
Set up expectations for today's work State objective and review advance organizer	Organization Behavior Motivation	Post and review objective and advance organizer for the day
Ask students what they know about GPS systems and their uses. Record on KWL chart.	Language Making connections to real life	Ask if any of them have ever been lost Allow wait time before responding; share with partner before responding to group Record student responses on KWL chart. Post in room.

Listen to the audio of Ms. Gimble talking about the lesson opening at http://mast.ecu.edu/modules/udl_elp/lib/media/audio/Gimble/Gimble8.mp3 . The transcript follows.

"In the **lesson opening**, we will play some music to signal the beginning of the lesson. We'll find an upbeat song about hiking or maybe outer space. We will quickly review the previous lesson about cardinal directions, review our mnemonic ("Never Eat Shredded Wheat" for NESW), and review vocabulary. This information will also be posted in the room with pictures and symbols added. This practice actually seems to help everyone—including those students who struggle with language. We will state our objective, expectations, and review the advance organizer with them. These will all be posted as visual reminders. This helps everyone focus and also lets our students know they are going to be part of a very cool investigation today! Next, we will ask the students what they know about finding their way and locating points on a grid for some quick assessment, to activate prior learning, and to help them organize or map out their thoughts. Mr. Clark will

begin to fill in a large graphic organizer, a KWL chart (Ogle, 1986), as they share responses. Notice on the plan, that we will allow wait time and time to talk over responses with a partner before sharing with the whole group."

KWL Chart

K – What I **Know**	**W** – What I **Want** to Know	**L**- What I Want to Learn

►**UDL Lesson Plan- Teacher Input (6 minutes)**

- **Teacher Input**

Procedure for Teacher	Potential Barriers for Learning:	UDL Multiple Means of… **Representation** **Engagement** **Expression**
✓ Introduce the problem for today's lesson: ✓ Hiker is lost, Compass is broken, cloudy day. Mr. Longitude and Ms. Latitude come along with a GPS and use their coordinates to help her find her way.	Making connections Attention Motivation Language processing Hearing Comprehension Memory	Role play lost hiker and add 'anchors' for longitude and latitude. Show short video and Power Pt. presentation on cardinal directions and GPS. Add closed caption.
✓ Show video clip on GPS ✓ Review locating points on a map grid using longitude and latitude	Low vision	Project large grid on and practice using cardinal directions; include a map to help them make the connection
✓ Tell students there are buried treasures (caches) on the school property they can find using a GPS ✓ Move half students to hall. Demonstrate finding points on large taped floor grid using satellites and yarn suspended from ceiling.	Need movement Attention Motivation Language, Comprehension	Call on some students to locate points on the interactive whiteboard. Share plan to take them outdoors and add an element of surprise Work with a peer who can help translate, use words in context. Add pictures/symbols as needed.
✓ The other ½ will research satellites, GPS, review vocabulary if needed. Switch groups after 20 minutes.	Need greater challenge	Research satellites, GPS systems, WebQuest, plan for satellite construction design. Students may plan to create their own multimedia presentations. Some could plan this using a storyboard format. Encourage students to think of their own related research question.
	Need more review	Work on cardinal directions with handheld compass, review vocabulary, compass, GPS in small group.

Listen to the audio of the teacher describing teacher input for the GPS lesson at http://mast.ecu.edu/modules/udl_elp/lib/media/audio/Clark/Clark_8.mp3 . The transcript follows.

"We will use an 'anchor' to begin the **teacher input** part of the lesson. Anchored instruction goes hand in hand with UDL as it uses a real life problem to set the context for learning. Ms. Smith, our intern, will dress in hiking clothes and pretend she is lost in the woods. Two parent volunteers will represent "Mr. Longitude" and "Mrs. Latitude" They'll show up and try to help her find her way.
Then we'll project a short, upbeat video clip on GPS systems and a Power Point presentation on cardinal directions and locating points on a map grid. We will activate the closed caption feature with the video for our students with hearing difficulties. This also helps some of our students with reading. We'll use the electronic whiteboard so students can come up and demonstrate with us. These students really need to move! This excerpt from our lesson plan shows you how we consider possible learning barriers and apply possible UDL solutions. It helps us to color code the UDL elements so we can be sure we are covering all of our bases."

Listen to the audio about the floor grid activity at
http://mast.ecu.edu/modules/udl_elp/lib/media/audio/Gimble/Gimble9.mp3
The transcript follows.

"Then we will all go to the hallway and stand around the large floor grid

we have made on the tiles with colored masking tape. Mr. Clark and I will demonstrate how to locate points on a grid. We will pull coordinate points for latitude and longitude from a bucket and walk on those points until we meet. Then we will gently pull strings of yarn we will have attached to satellites suspended from the ceiling to mark our waypoint. We will model, think aloud, and use the lesson vocabulary frequently."

►**UDL Lesson Plan- Guided Practice (5 minutes)**

- **Presentation Guide**

Guided Practice

Guided Practice	Possible Learning Barriers	UDL Solutions Representation Expression Engagement
✓Groups practice finding waypoints and switch with partner	Comprehension Language	Provide concrete, multisensory practice Encourage partners to 'think aloud' as they are working
✓Trade large groups	Transition	Use a timer or music from lesson opening
✓Try GPS outdoors with partner. Use present waypoints on soccer field to practice.	Disruptive behavior	Review rules for outside work. Must stay with peer. Teachers, volunteers will have assigned groups.
	Memory	Provide cards with GPS use directions for student use (add pictures/symbols if needed); students can also take vocabulary cards on ring and attach to belt loop.

Listen to the audio about Guided Practice at http://mast.ecu.edu/modules/udl_elp/lib/media/audio/Clark/Clark_9.mp3 . The transcript follows.

"In **Guided Practice,** we'll divide our class in half. I will work with one group on finding waypoints on the large grid in the hallway with cards, tape and string and then outdoors with the actual GPS and preset points. This type of scaffolded, hands on instruction helps make the concept concrete. Meanwhile, the other group will have opportunities to work on vocabulary and review background knowledge as needed with Ms. Gimble. They will also have opportunities to create their own research questions, plan multimedia presentations and design satellites.

"Mr. Clark (continued) We will trade groups after 30 minutes. During my activity, I will encourage partners to 'think aloud' and use the vocabulary. They can keep their word cards on a ring on a belt loop or in a pocket, along with the GPS directions for quick referral. We will carefully pair students. For example, we need to be sure our student with low vision has a partner who likes to talk and give lots of detail about what is happening.

This person will also need to help his buddy be aware of rocks and other possible pitfalls when outdoors to prevent falls. We often pair our ELL student with another student who has been in the country longer and knows the same language. We have another student we pair with a student who can be extremely disruptive. Thanks to training he has had in peer mediation and coaching, along with a great personality match, this works very effectively. One nonverbal student prefers to work alone. He enjoys taking pictures so he can use a digital camera to record the project for use in a future multimedia show."

Satellite

► **UDL Lesson Plan- Independent Practice (4 minutes)**

- **Presentation Guide**

Independent Practice

Independent Practice	Possible Learning Barriers	UDL Solutions Representation Engagement
Teams go outside and mark 3 waypoints within given boundaries on their data collection sheet. Hide their cache. Come back to start and trade GPS with another team. Try to find their cache. Then give teams waypoints for buried treasure. Teams must: 1. Work together to determine waypoints. 2. Complete data sheet to turn in 3. Tell, show or record on iPod how to use a GPS	Comprehension Language Need more challenge Behavior Writing/language Self-confidence	Strategically pair students who are ready to mark their own waypoints with those who need more practice. Review procedures for team work Students may use self-monitoring checklist if needed. Record data on clip board as a team Adults circulate, ask questions, provide needed prompts/cues, give feedback , and praise efforts

Listen to the audio about independent practice at http://mast.ecu.edu/modules/udl_elp/lib/media/audio/Gimble/Gimble_10.mp3 The transcript follows.

"For **Independent Practice,** all teams will go outdoors, work in groups of 3, mark 3 waypoints within given boundaries on their GPS and record them on their data sheets. They will hide their 'cache'. They will trade their GPS with another team and try to find each others' caches. We will go over rules and procedures before we begin.

Our groupings might change for this activity because we want to be sure we have an 'expert' in each group who can explain and demonstrate as needed with students who are still trying to comprehend. Sometimes our 'experts' are the students who challenge us the most! Adults will circulate and provide feedback, praise their efforts, and give cues and prompts as needed. This helps build confidence in our students. A lot of them think they can't do tasks they perceive as too difficult. It will also keep them on task."

GPS in hand

Recording

Cache

► **UDL Lesson Plan- Closure (3 minutes)**

- **Presentation Guide**

Closure

Closure	Learning Barriers	UDL Solutions Representation Expression Engagement
✓Whole class discussion. Finish filling in KWL chart. ✓Questions: •What are the cardinal directions? •What is a GPS system and what does it do? •What would happen if we tried to use the GPS indoors? •How do you find a waypoint on a grid? •How does a GPS system receive its signals? •How precise are the signal locations we received on the trail? •In what other situation might it be helpful for you to have a GPS tool?	Responding Orally Memory Some students blurt out answers; some need time to formulate responses Organization Staying on task Making connections Self-Confidence	Build in wait time for responses; allow students to practice their response with their neighbor before responding to whole group. Record student responses on iPod for assessment. Some students may be allowed to draw or point to their responses or use their vocabulary card rings as response cards Asking questions Thinking aloud Relating learning to real life Write key words from responses on KWL chart. Praising students for their findings and their ideas
✓Tomorrow we will work on planning your presentations and building satellites! ✓Assign homework	Transitioning to new learning Organization, writing, memory	Previewing the next lesson Post homework, use planners, post on class website

Listen to the audio about Closure at http://mast.ecu.edu/modules/udl_elp/lib/media/audio/Clark/Clark_10.mp3 . The transcript follows.

"We will come back inside for **closure** and finish up with the KWL chart. We will do this first with individual KWL charts and then come together as a group. When we pose questions to help them focus on important concepts, students will be given wait time and be asked to discuss their answers with a partner before responding. This gives everyone an opportunity to find the words they want to use and briefly rehearse. It also keeps some students from blurting out or dominating the discussion. The responses we get this way are usually much better. We'll record their responses on our large chart as well as on an iPod for assessment. Students may also use their word cards as response cards for some quick assessment. Student efforts will be praised to build confidence. The upcoming lesson will be previewed to help students transition to new learning. Students will record homework in their planners and we will post it, along with today's PowerPoint and video link, on the class website. To help students transition to the next activity, we'll sing the song from the lesson beginning as we line up. Hopefully, when we reflect on and assess our lesson, we will see that we have helped **all** students access this curriculum."

- **Activity Suggestion**

Provide copies or have participants access the sample 5th grade science lesson plan at http://mast.ecu.edu/modules/udl_elp/lib/documents/UDL-Elem_LessonPlanGr5Sci.pdf. Assign each of the phases of UDL lesson planning (preplanning, advance organizer, lesson opening, teacher input, guided practice, independent practice, closure) to individual small groups. Ask participants to reflect on how each phase is addressed, and if and how UDL components are addressed.

In large group, have small groups report back sequentially.

►Summary (1 minute)

- **Presentation Guide**

Look at Ms. Gimble and Mr. Clark's entire lesson plan at http://mast.ecu.edu/modules/udl_elp/lib/documents/UDL-Elem-LP2.pptx so you can also see what it looks like when put together. It has more details and examples than we have covered, including pyramid planning. From planning with goals, assessment, methods, and materials from the start, these teachers have increased the opportunities for students in their classroom to successfully access this science and math curriculum. The options they have provided for students with special needs should actually help even more learners access the content. Although this has been an elementary science/math example, the process is the same for all content areas.

We hope this presentation has helped you see the benefits of planning with UDL elements from the start. A blank UDL lesson planning template can be downloaded at http://mast.ecu.edu/modules/udl_elp/lib/documents/UDL-Elem_Pre-Planning_Template.pdf and http://mast.ecu.edu/modules/udl_elp/lib/documents/UDL_preplanning_template.doc. Check it out!

►Evaluation (3 minutes)

- **Presentation Guide**

Ask participants to complete an evaluation that will help us refine this training to meet your needs. Thank you.

- **Activity Suggestion**

Provide the evaluation developed for this module (a copy is provided at end of this guide) or an alternative evaluation.

❖ Focus and Reflection Questions

The following questions are suggestions a facilitator might use to help students/participants gain additional information and increase depth of understanding of this topic. As the facilitator or instructor, you will need to consider which of these would be most effective as a discussion topic, assignment or group activity.

► Questions/Topics for Discussion

1. This module opens with the proverb, "He who fails to plan, plans to fail." Make a connection to a time in your own life that reflects the wisdom of this quote. In terms of 'school', what do you see as some of the advantages of careful, diligent planning and the potential disadvantages of being unplanned?

2. What do you think are some of the advantages and disadvantages of co-teaching partnerships between general and special educators? What do you see as the role of collaboration in the inclusion process?

3. Why is it important to consider potential academic, physical, and social barriers in planning? Provide examples from your experience. How might teachers combine all three elements when constructing lessons to make their practice as seamless as possible?

4. What is the difference between a lesson accommodation and a modification? When would the use of each be appropriate? Provide examples. What are some possible disadvantages of using them?

❖ Application and Extension Activities

► Projects or Products

1. Access the K-12 teaching standards for your state for one subject area (e.g. language arts, mathematics, science, social studies). Using key words from the standards, design a matrix that shows key concepts taught for each grade level to see the 'big picture' of the instructional sequence for that content area. Describe this goal progression and explain how this practice can be useful in planning.

2. Brainstorm a list of potential barriers (e.g. attention, low vision, culture) students may bring to a classroom and then brainstorm a list of solutions for each one.

3. Find a lesson plan (e.g. your own, a colleague's, or one from the internet). Add a "UDL Solutions" column to it and brainstorm ways to infuse the three UDL principals. Then create a pyramid planning organizer for the same plan. Consider the three principles of UDL as you differentiate instruction. Think about learners who need more challenge as well as more support.

4. Create a book for students reading at a lower level for your classroom or to donate to another class. See the Power Point book example ("Nell") in the Component 4 Section of the module. Extract key vocabulary and concepts from the content and add visuals, symbols, and/or sound. Use low and/or 'high' technologies. Upon completion, reflect on the process.

5. Look over the Think-Tac-Toe organizer example on the next page for that was created for book report activity options. Students choose three activities in a row to process and express what they have learned in a book they have read. Use this organizer format to plan another lesson activity that can offer flexible options. Remember, all students can reach the same outcome but may arrive there in different ways. Bookmark this website for future reference (http://www.k8accesscenter.org).

Think-Tac-Toe

Book Report

Draw a picture of the main character.	Perform a play that shows the conclusion of a story.	Write a song about one of the main events.
Write a poem about two main events in the story.	Make a poster that shows the order of events in the story.	Dress up as your favorite character and perform a speech telling who you are.
Create a Venn diagram comparing and contrasting the introduction to the closing.	Write two paragraphs about the main character.	Write two paragraphs about the setting.

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- **Self Assessment**

  A self-assessment with response feedback is available at http://mast.ecu.edu/modules/udl_elp/quiz/.

  Participants may take this assessment online to evaluate their learning about content presented in this module.

- **Session Evaluation Form**
  See next page.

Session Evaluation

Universal Design for Learning:
Elementary Lesson Planning

Please assess your knowledge or skills to apply the goals listed below using the following rubric:
1 - Limited or no knowledge or skills
2 - Some knowledge or skills to apply in practice
3 - Sufficient knowledge or skills to apply in practice
4 - Sufficient knowledge or skills to apply in practice AND teach to others

Prior to this session, my knowledge and skills were:					Following this session, my knowledge and skills are:			
1	2	3	4	Session Goals	1	2	3	4
				Identify the four UDL curricular components in academic learning.				
				Identify multiple ways to address learner academic, social and/or physical barriers using UDL principles.				
				Distinguish between the terms accommodation and modification when considering adaptations.				
				Recognize expanded traditional lesson plans to increase their effectiveness with diverse learners, including pyramid planning.				

❖ References and Resources

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Ogle, D. (1986). K-W-L: A teaching model that develops active reading of expository text. *The Reading Teacher, 39*(6), 564–570.

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Zike, D. (2005). *Dinah Zike's teaching mathematics with foldables*. New York: Glencoe McGraw-Hill.

Suggested reading:

Coyne, M., Kame'enui, E., & Carnine, D. (2007). *Effective teaching strategies that accommodate diverse learners* (3rd ed.). Upper Saddle River, NJ: Pearson Education.

Mercer, C., & Mercer, A. (2005). *Teaching students with learning problems*. Upper Saddle River, NJ: Pearson Education.

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❖ **Web Resources**

Web Sources	**URL**
Access Center	Book report activity. http://www.k8accesscenter.org
CAST UDL PAL (Planning for All Learners) Toolkit	This toolkit can assist you further with setting goals, exploring curriculum barriers, and brainstorming UDL solutions. Templates and a helpful video are included. http://www.cast.org/teachingeverystudent/toolkits/tk_procedures.cfm?tk_id=21
CAST UDL Lesson Builder	Sample science UDL lesson plans (Pre-K through Grade 8) are provided that align to standards and link to UDL connections. http://lessonbuilder.cast.org/explore.php
Don Johnston, Inc.	Training videos of high-tech product applications (read aloud, word prediction software, for example) that support UDL principles can be viewed here. http://www.donjohnston.com/prof_services/training_product.html This particular web link shares UDL principles used in the design of "Start-to-Finish" books that can be purchased from this company. http://www.donjohnston.com/research/articles/lessons_using_udl.html
Macomb ISD Universal Design for Learning Initiative	Sample UDL lesson plans (middle and high school) with a UDL planning guide and a planning template that can be used by all grades. Helpful resources for teachers and students in all subject areas. http://e3t.org/page41/page41.html
Teaching Exceptional Children Plus	This article describes the design and implementation of a UDL multisensory spelling lesson. A video and sample UDL lesson plan is included. http://journals.cec.sped.org/cgi/viewcontent.cgi?article=1688&context=tecplus

❖ **Handouts**

See next page.

UDL Lesson Plan Template

Instructor: _____
Subject: _____ Grade._____

Lesson Objective/s:
Assessment/s:
State Standards Correlation:
Materials/Resources:
Preplanning Activities:

Lesson Element	Procedure for Teacher	Potential Barriers for Learning:	UDL Multiple Means of… Representation Engagement Expression
Lesson Opening			
Teacher Input			
Guided Practice			
Independent Practice			
Closure			

Planning Universally Designed Instruction
(Pre-Planning Guide)

Teacher(s): _____ Grades: _____ Period: _____ Subject: _____ Collaborators:_____ Setting: _____ # of Students: _____	**Students Needing Extra Supports** Adaptations/Modifications: (add student initials): IEPs _____ Section 504 _____ BIPs _____ Language _____ Other needs/challenges:	**Students Needing Enrichment** Extensions/Challenges (add student initials: _____ _____ Notes:_____ _____

Topic:_____
Standard Course of Study Goals/Objectives:
_____
_____
Broad IEP Goals (Where Applicable): _____
Unit Goals and Essential Questions for All Students: _____
_____

Lesson Objectives: Some: _____

Most: _____

All: _____

Brainstorm Activities

Multiple Means of **Representation**: _____
_____
Multiple Means of **Engagement**: _____
_____
Multiple Means of Expression: _____
_____

Source(s) for digital/scaffolded text for this unit:
_____
_____
Computer lab needs/schedule_____
Other space requirements: _____
Other Materials/Resources needed:
_____
Paraprofessionals:_____ Community Resources:_____
Grouping Students: Large group: _____
Small group: _____
Individual: _____

Source: Adapted from P. Hubbard, *Reducing Barriers to Learning Through a Universally Designed Classroom*, poster session presented at the 2008 CEC Convention and Expo, Boston, MA (2008, April).