
Universal Design for Learning

The CAST Guidelines!

Webinar

December 10th, 2018



Introducing the Presenters



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Options for Today



Options for Perception:

Large Projection

Website

Options for Action and Expression:

Stand, Sit, Walk, Stretch

Raise a hand, write in the chat,
tweet #CASTPL or #udlchat

Tools Needed for Expert Learning:

Colored Pencils, Notebooks,
Fidgets, Markers

<http://bit.ly/BuffaloVariability>

Goals:

Review the foundational concepts of UDL

Understand the development of the CAST guidelines

Explore each Principle

Design using the guidelines

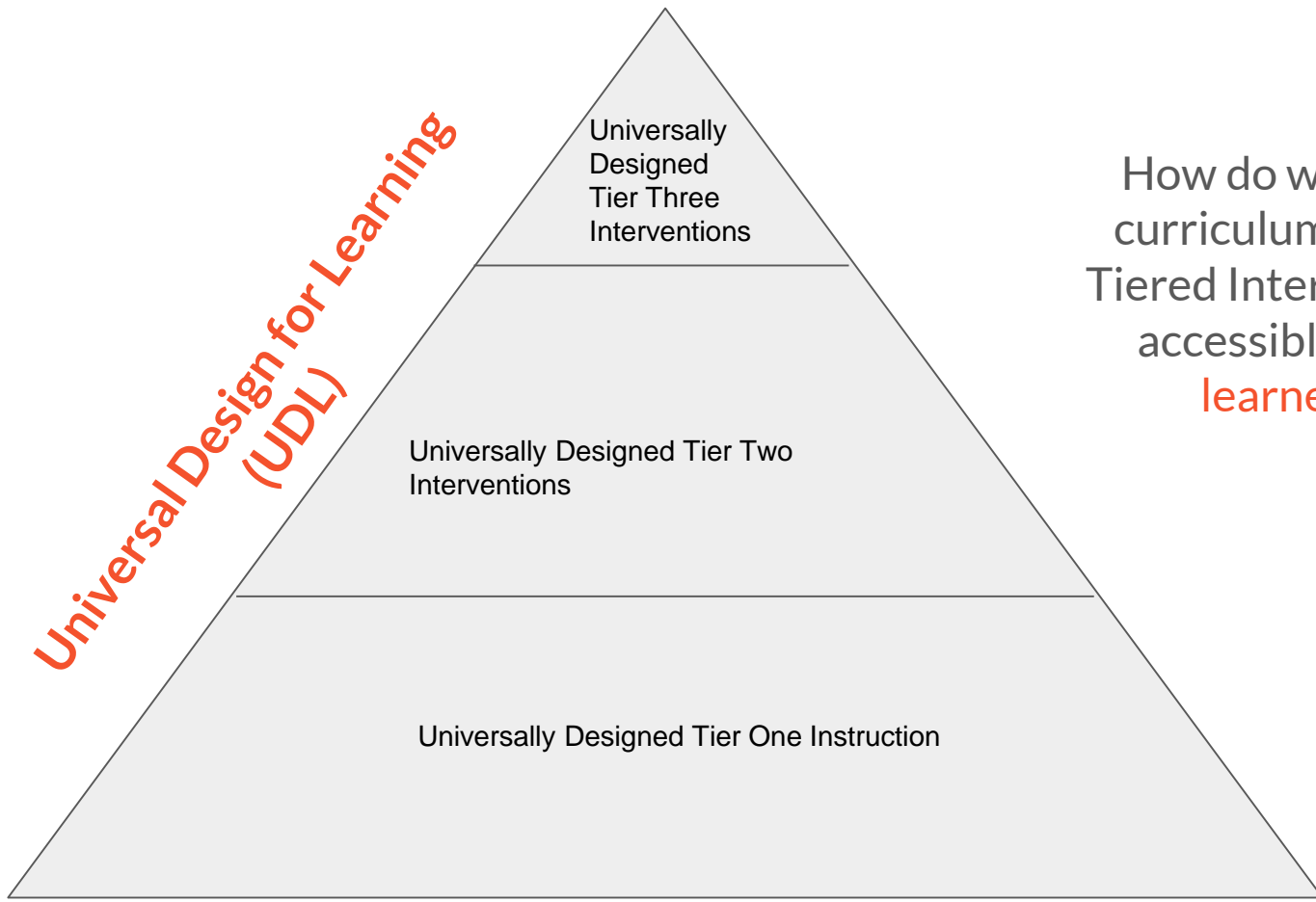
Explore strategies for each guideline

Your Own Goals

- What are your **personal** goals for today's workshop?
- What are your **professional** goals for today?

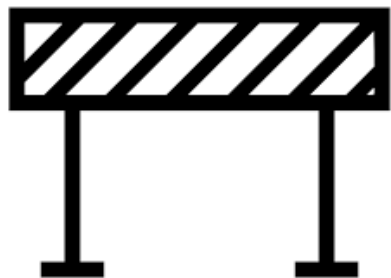


Universal Design for Learning
(UDL)



How do we make
curriculum and all
Tiered Interventions
accessible to **all**
learners?

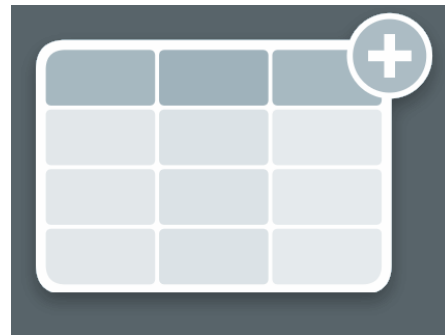
Review The UDL Core Concepts



Architecture

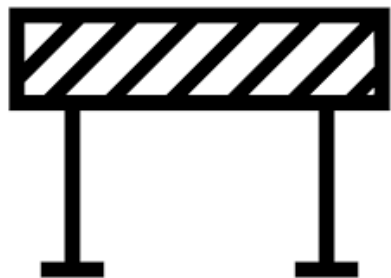


Neuroscience



Guidelines

Review: The UDL Core Concepts



The Barrier is in
the Environment

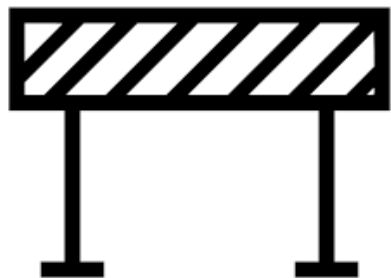


Neuroscience



Guidelines

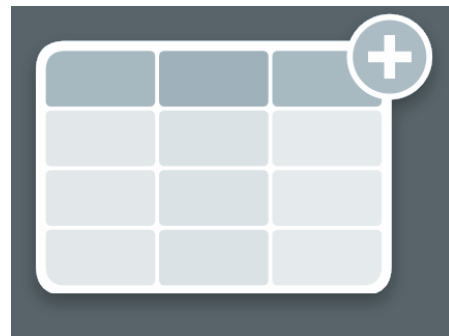
The UDL Core Concepts



The Barrier is in
the Environment

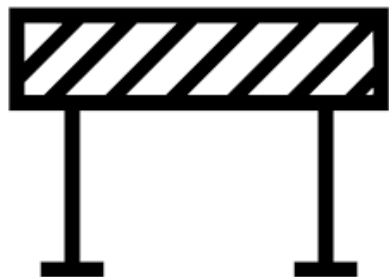


Variability is the
Norm



Guidelines

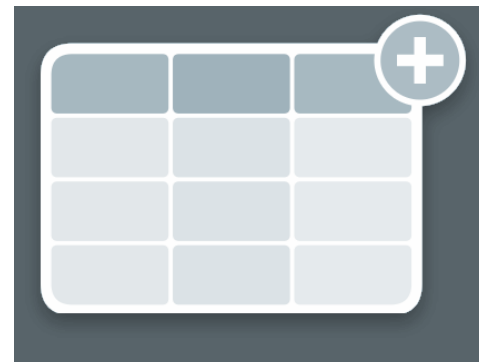
The UDL Core Concepts



The Barrier is
in the
Environment



Variability is the
Norm



The Goal is
Expert Learning

Developing the Guidelines

Sources

Modern research in the learning sciences: cognitive science, cognitive neuroscience, neuropsychology, neuroscience.

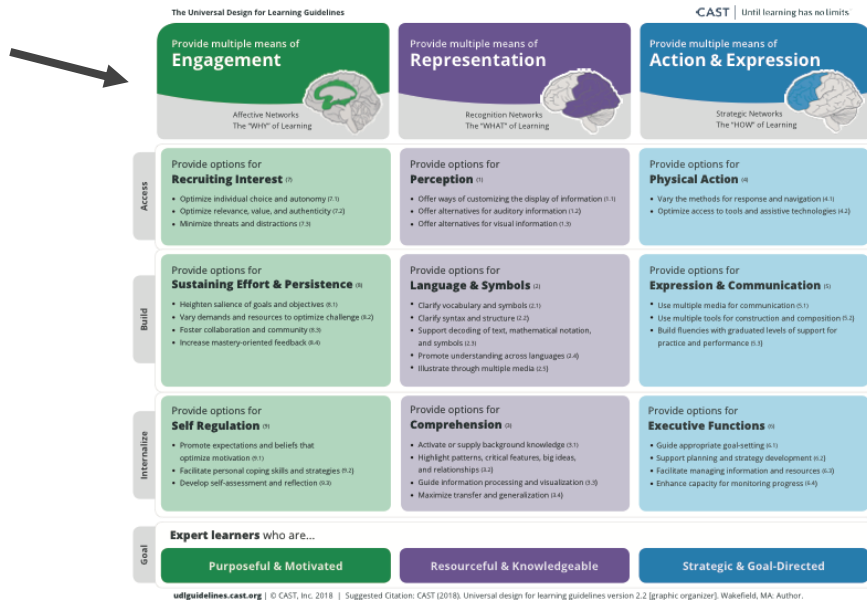
[UDL Guidelines Research](#)

Stage 1

Focus

What is the range and sources of human variance in learning?

Yield: 3 Principles



Provide multiple means of Engagement

Affective Networks
The "WHY" of Learning



Affective networks
monitor the internal and external
environment to set priorities,
motivate, and engage learning and
behavior

Provide multiple means of Representation

Recognition Networks
The "WHAT" of Learning



Recognition networks sense and
perceive
information in the
environment and
transform it into
usable knowledge.

Provide multiple means of Action & Expression

Strategic Networks
The "HOW" of Learning



Strategic networks plan,
organize, and
initiate purposeful
actions
in the
environment.

How students will engage?

How students will perceive?

How students will act on
their understanding?

Stage 2

Focus

What are the essential components to supporting variance in the three networks?



Yield: 9
guidelines.

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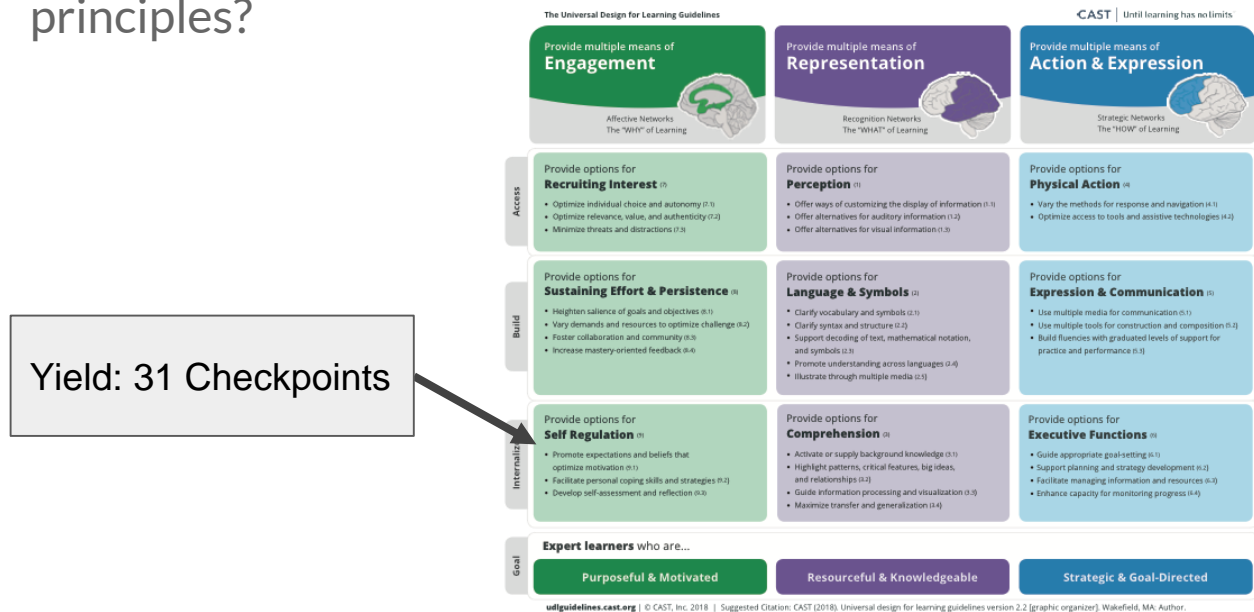
@CAST_UDL | #UDLpower

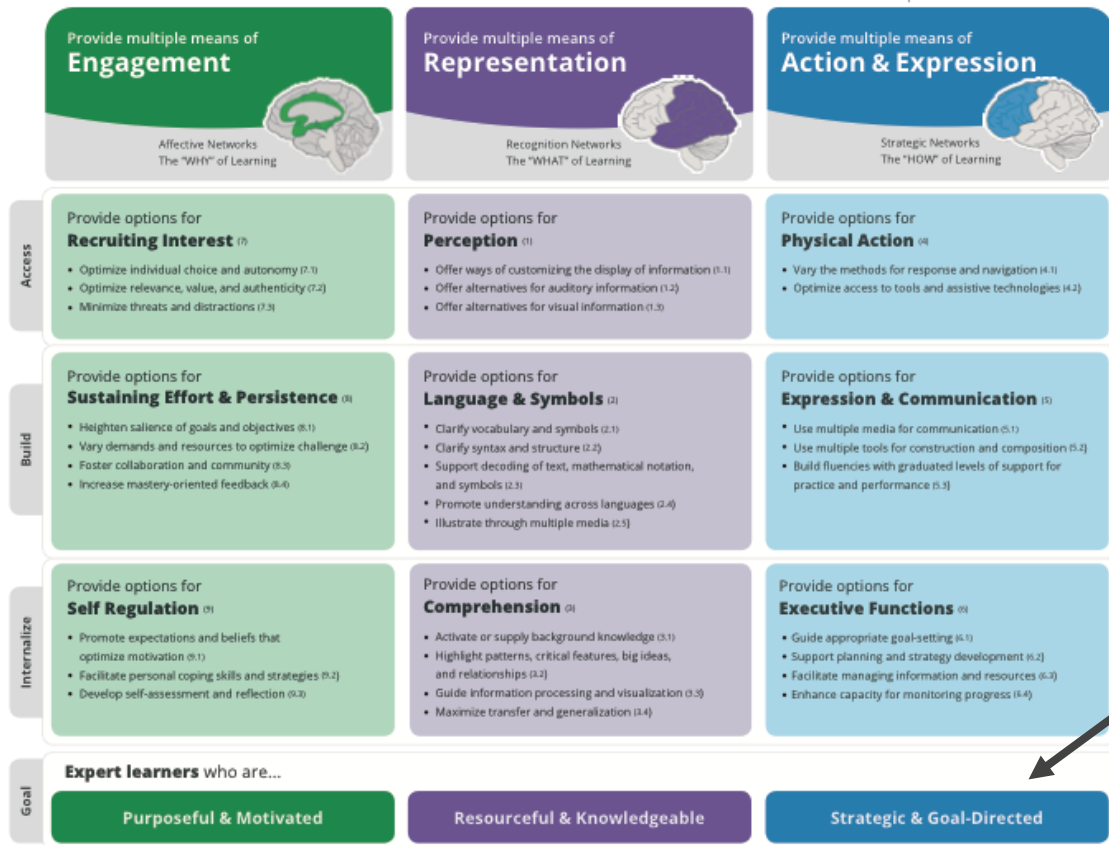
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Stage 3

Focus

What are the specific practices that reduce barriers to learning in each of the principles?





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The goal of UDL is to support **expert learning**.

UDL Guidelines

Teacher Led

Teacher and Student

Student Led

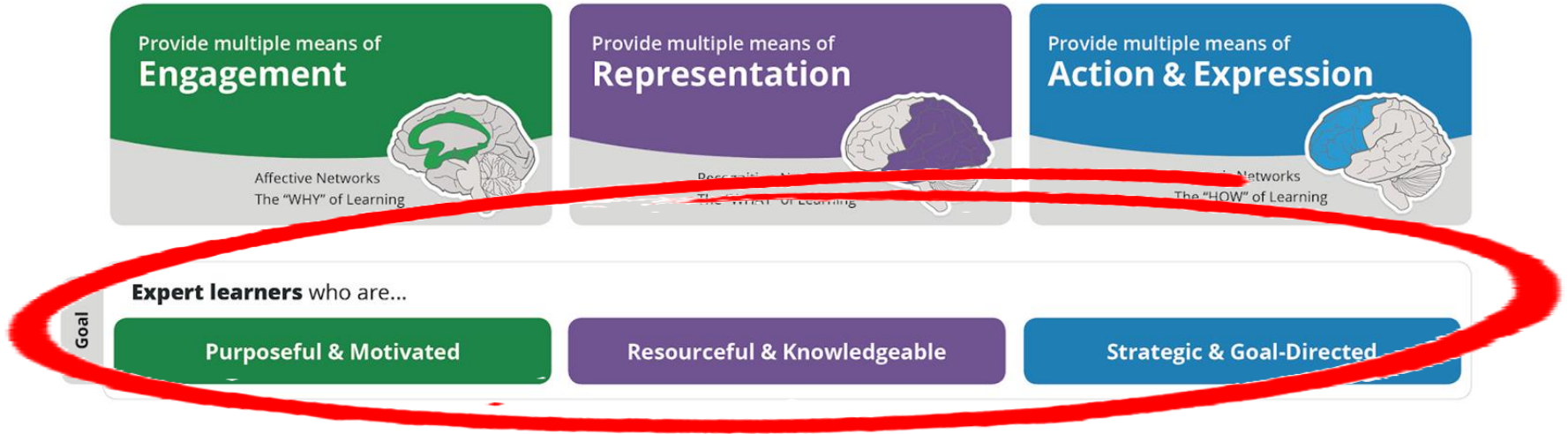




“All learning is the interaction between the learner and the environment.”

- David Rose

The Goal of Universal Design for Learning



Expert Learning

Ask yourselves:

When have you been an expert learner?

What did that look like?

What do you expect from your students in terms of expert learning?

The Goal of UDL Developing Expert Learners		
Engagement Purposeful & Motivated Learners	Representation Resourceful & Knowledgeable Learners	Action and Expression Strategic & Goal-Directed Learners
<ul style="list-style-type: none"> • Are eager for new learning and motivated by the mastery of learning itself • Are goal directed in their learning • Know how to set challenging learning goals for themselves • Know how to sustain the effort and resilience that reaching those goals will require • Monitor and regulate emotional reactions that would be impediments or distractions to successful learning. 	<ul style="list-style-type: none"> • Consider prior knowledge when learning (Make connections to prior learning experiences) • Activate that prior knowledge to identify, organize, prioritize and assimilate new information • Recognize the tools and resources that would help find structure and remember new information • Know how to transform new information into meaningful and usable knowledge 	<ul style="list-style-type: none"> • Formulate plans for learning • Devise effective strategies and tactics to optimize learning • Organize resources and tools to facilitate learning • Monitor their progress • Recognize their strengths and weaknesses as learners • Abandon plans and strategies that are ineffective

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Expert learners who are...

Purposeful & Motivated

Resourceful & Knowledgeable

Strategic & Goal-Directed

Networks Overview

Engagement Principle



Affective Network

We Feel Therefore we learn!

Reflection:

1. What surprised you about the content?
2. What most resonated with you?



Representation Principle

Provide multiple means of Representation

Recognition Networks
The "WHAT" of Learning



Provide options for **Perception**

- Offer ways of customizing the display of information
- Offer alternatives for auditory information
- Offer alternatives for visual information

Provide options for **Language & Symbols**

- Clarify vocabulary and symbols
- Clarify syntax and structure
- Support decoding of text, mathematical notation, and symbols
- Promote understanding across languages
- Illustrate through multiple media

Provide options for **Comprehension**

- Activate or supply background knowledge
- Highlight patterns, critical features, big ideas, and relationships
- Guide information processing and visualization
- Maximize transfer and generalization

Resourceful & Knowledgeable

Fugue - Music Only



Fugue - Sheet Music

Sheet music supplied by: www.music-arts.com

Toccata and Fugue in D minor

Johann Sebastian BACH
(1685-1750)
BWV. 565

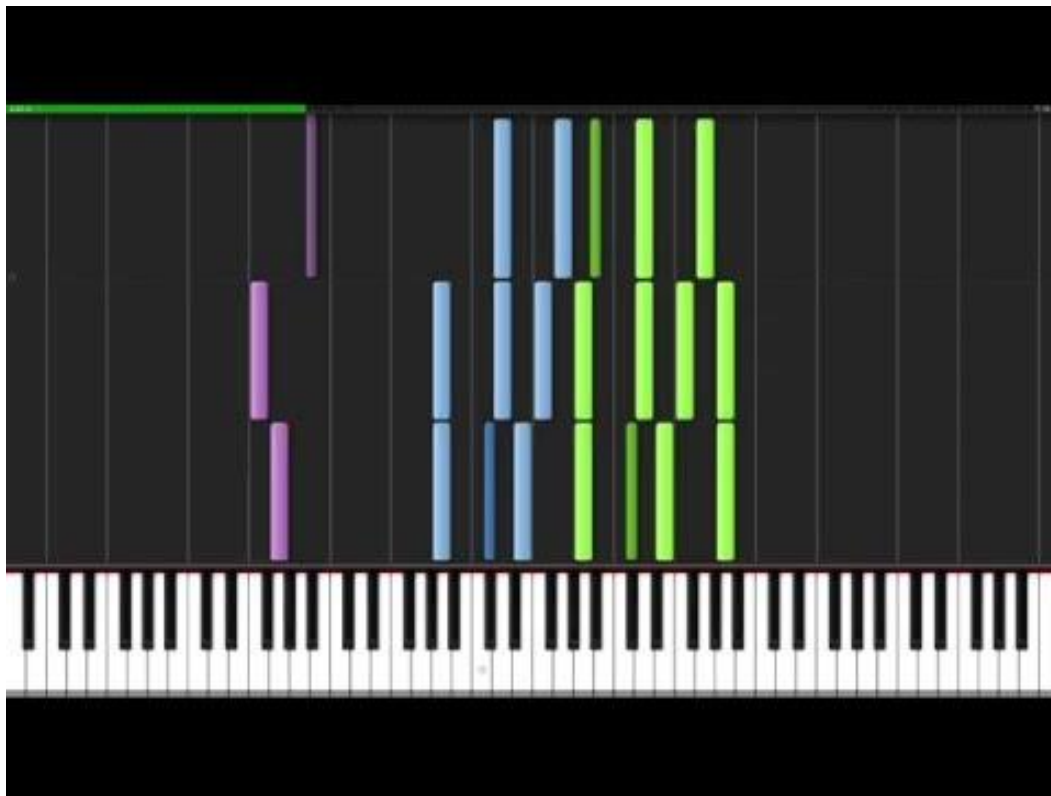
Adagio

Organ

Ped.

Prestissimo

Fuge - Alternative Representation





Reflection

- Which representation worked for you and why?
- Did a combo of representations work and why?
- Can you think of another way to represent this content?

Options for Action and Expression:

- In the Chat
- In your own notebook
- Sketch

Action and Expression Principle



Action and Expression

Reflection:

What if Stephen were limited to one aspect of expression?

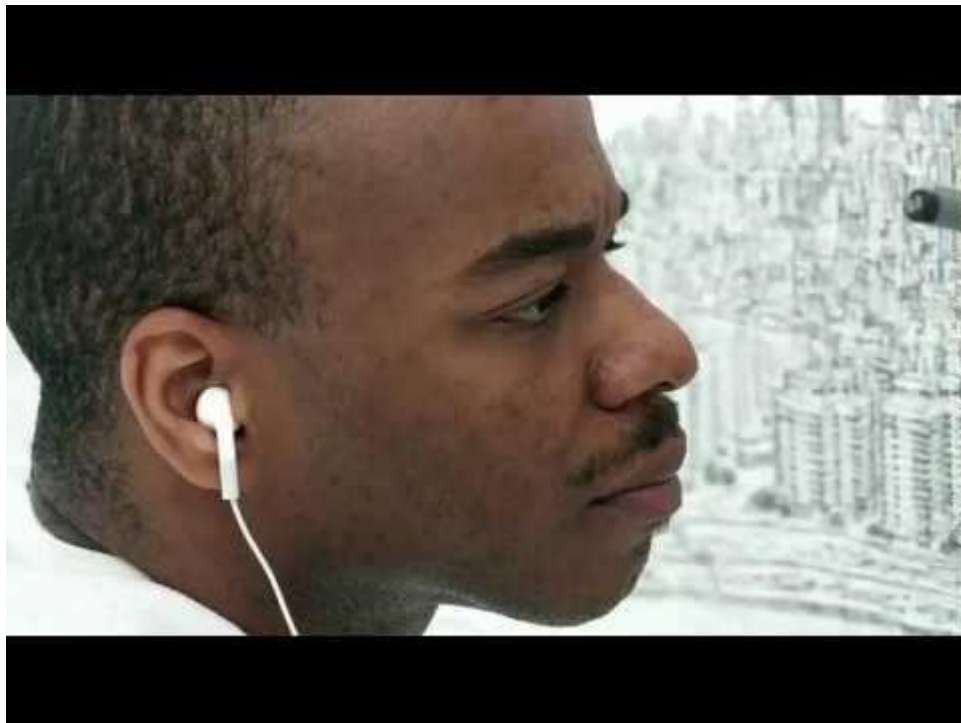
Given your experience in schools, what resonates with you about this?

Express:

In the chat

On your own

Sketch



Reflect and Record

In what ways are you already offering options in your instruction?

What are your go to teacher moves and where do you see them fitting in the guidelines?

Options for Expression:

- Put it in the chat
- Record on your own
 - Notebook
 - Voice recorder
 - Sketch
- Use the [pdf](#) of the guidelines

So What?



Keep in Mind

UDL is a **framework**,
not a checklist



Think of looking at learning through a UDL lens


Start Small

Small changes
make a big
difference!



UDL: Designing to Minimize Barriers

Provide multiple means of
Engagement




Affective Networks
The "WHY" of Learning

How students will engage?

- Choice of 2 relevant texts

Provide multiple means of
Representation




Recognition Networks
The "WHAT" of Learning

How students will perceive?

- Read aloud
- Individual Copies paper/digital
- Record on [vocaroo](https://vocaroo.com)

Provide multiple means of
Action & Expression



Strategic Networks
The "HOW" of Learning

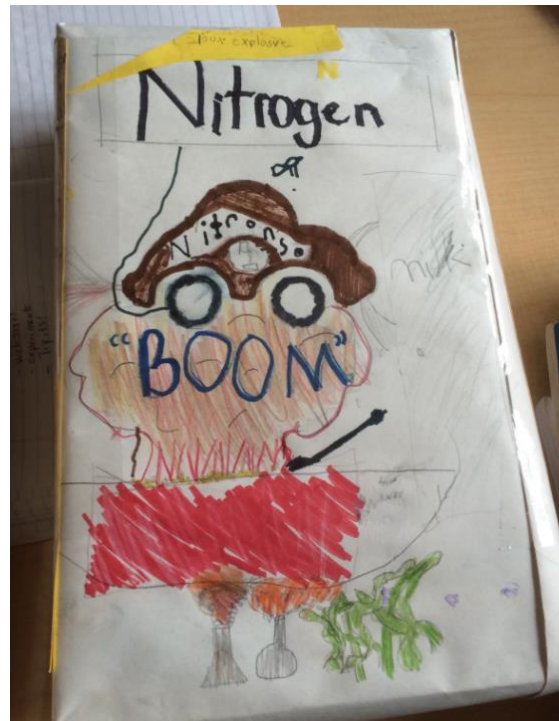
How students will act on their understanding?

- Options
 - Podcast, Infographic, Thesis Paper, Blog
- Graphic Organizer

Let's Try!

Standard: Use the periodic table as a model to predict the relative properties of main group elements.

Goal: Students will create a cereal box to show understanding of element



Barriers

Where might you anticipate barriers in the Affective Network or the Engagement Principal?

Standard: Use the periodic table as a model to predict the relative properties of main group elements.

Goal: Students will create a cereal box to show understanding of element

Options for Expression:

- Put it in the chat
- Record on your own
 - Notebook
 - Voice recorder
 - Sketch



Barriers

Standard: Use the periodic table as a model to predict the relative properties of main group elements.

Goal: Students will create a cereal box to show understanding of element

Where might you anticipate barriers in the Recognition Network or the Representation Principal?

Options for Expression:

- Put it in the chat
- Record on your own
 - Notebook
 - Voice recorder
 - Sketch

Provide multiple means of
Representation



Recognition Networks
The "WHAT" of Learning

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- Illustrate through multiple media

Provide options for
Comprehension

- Activate or supply background knowledge
- Highlight patterns, critical features, big ideas, and relationships
- Guide information processing and visualization
- Maximize transfer and generalization

Resourceful & Knowledgeable

Barriers

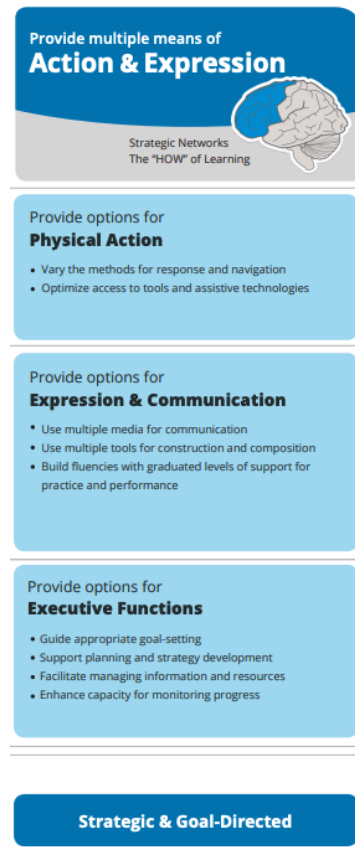
Standard: Use the periodic table as a model to predict the relative properties of main group elements.

Goal: Students will create a cereal box to show understanding of element

Where might you anticipate barriers in the Strategic Network or the Action and Expression Principal?

Options for Expression:

- Put it in the chat
- Record on your own
 - Notebook
 - Voice recorder
 - Sketch



Options

Standard: Use the periodic table as a model to predict the relative properties of main group elements.

Goal: Students will demonstrate their understanding of the properties of a particular element

What options might you build into this lesson in order to reduce barriers in the Affective Network or the Engagement Principal?

Options for Expression:

- Put it in the chat
- Record on your own
 - Notebook
 - Voice recorder
 - Sketch



Options

Standard: Use the periodic table as a model to predict the relative properties of main group elements.

Goal: Students will demonstrate their understanding of the properties of a particular element

What options might you build in to address barriers in the Recognition Network or the Representation Principal?

Options for Expression:

- Put it in the chat
- Record on your own
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Provide multiple means of
Representation

Recognition Networks
The "WHAT" of Learning



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Resourceful & Knowledgeable



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Options

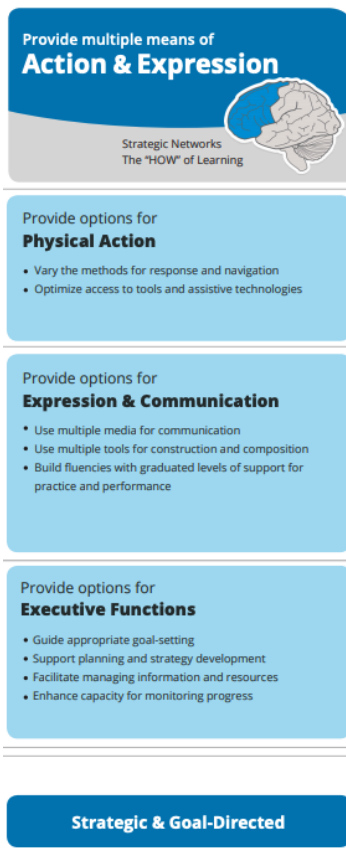
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Guide to Designing Your UDL Lesson

CAST PROFESSIONAL LEARNING
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Guide to Designing Your UDL Unit/Lesson

GOALS

Standard: _____

Goal/Objective: _____

Check:

- Is your goal clear and specific?
- Are the means flexible?
- If not, how can you scaffold?
- Where will the goal be posted?
- How will students revisit the goal throughout the lesson?

EVIDENCE

How will you know if students have achieved the goal? _____

What assessments will you use? _____

Check:

- What will "success" look like?
- Have you offered multiple means for students to demonstrate success?
- Does the assessment directly measure realization of the goal?
- Do you have options for both formative and summative assessment?

BARRIERS

What barriers to attaining the goal can you anticipate? _____

Check:

- Are there barriers in the context (location, grouping, noise level, presentation (oral, written) or activities (writing, speaking, planning)?

VARIABILITY: Engagement

What options for engagement will address the anticipated barriers?

- _____
- _____
- _____
- _____

Check:

- Do these options address the anticipated barriers?
- Are there options for choice, relevancy, and minimizing distractions?
- Options for balancing perceived demands and resources?
- Options for mastery-oriented feedback? Collaboration? Self-reflection?

CAST PROFESSIONAL LEARNING
Until Learning Has No Limits

Guide to Designing Your UDL Unit/Lesson

VARIABILITY: Representation

What option for representation will address the anticipated barriers?

- _____
- _____
- _____
- _____

Check:

- Do these options address the anticipated barriers?
- Are there options for audio/visual/display of info?
- Are there options to access language, math, and symbols?
- Are there options to build background knowledge and highlight key patterns?

VARIABILITY: Action and Expression

What options for action and expression will address the anticipated barriers??

- _____
- _____
- _____
- _____

Check:

- Do these options address the anticipated barriers?
- Are there options for physical action?
- Are there options for multiple communication tools?
- Are there options for varying levels of support?
- Are there options for goal setting, strategy development, and self-monitoring?

After the lesson...

REFLECT

How did the lesson go? What barriers did you encounter? What will you try differently next time? What will you keep the same?

Guidelines Exploration

Recruiting Interest: Optimize Individual Choice and Autonomy

Choices

- ❑ Texts or Topics
- ❑ Collaboration Partners/ Seating
- ❑ Perceived Challenge
- ❑ Materials
- ❑ Co-Constructing Curriculum
- ❑ Ways to practice or demonstrate competence
- ❑ Organization
- ❑ Sequence of tasks
- ❑ Setting own goals



Recruiting Interest: Optimize Relevance, Value and Authenticity

- ❑ Culturally Relevant and Responsive
- ❑ Socially Relevant
- ❑ Age Appropriate
- ❑ Real World Examples
- ❑ Real World Application
- ❑ Authentic novel problems and products
- ❑ Foster creativity and Self Reflection



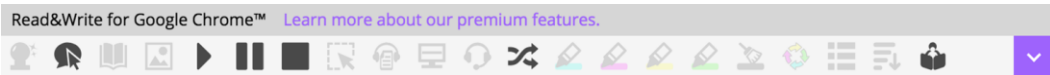
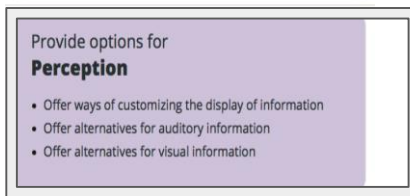
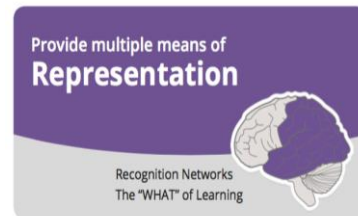
Recruiting Interest: Minimize Threats and Distractions

- ❑ Trauma Sensitive Classroom
 - ❑ Choice of Seating
 - ❑ Options for Self Regulation
 - ❑ Predictable routines
 - ❑ Visual timers, cues, status bars
- ❑ Vary level of sensory stimulation
- ❑ Vary Social engagement or demand



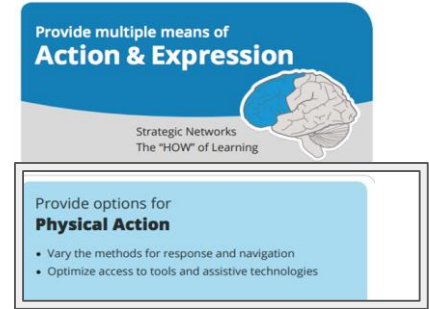
Options for Perception

- Ways to enlarge, highlight, alter text.
- Closed Captioning, speed up or slow down videos
- Speech to text



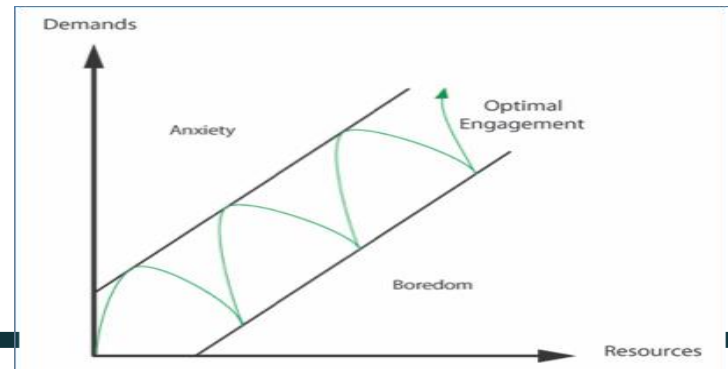
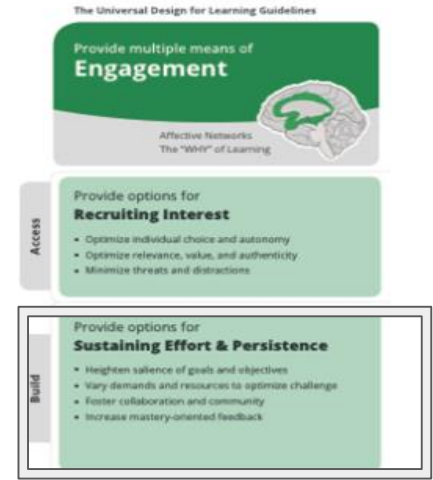
Options for Physical Action

- Draw, write, talk (vocaroo), manipulate or sketch
- Switches, alternative keyboards, Google Read&Write



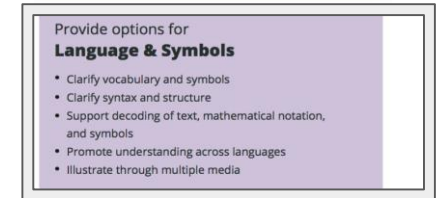
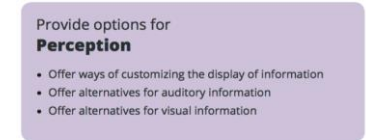
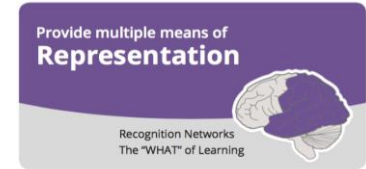
Options to Sustain Effort & Persistence

- Make goals public and student facing
- Vary resources for demands
 - Zone of proximal development
- Collaboration (direct instruction)
- Mastery-oriented feedback
 - Moving beyond sticker charts.



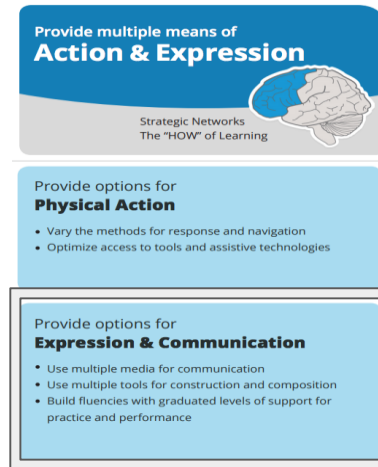
Provide Options for Language and Symbols

- Word Walls
- Interrupted passage?
- Interactive Dictionary's
- Picture Dictionary
- Images to support text
- Edpuzzle - annotate a video
- Annotated Versions
- QR Codes for supplemental information.
- Anchor Charts
- Opt In Groups



Options for Expression & Communication

- Compose in multiple media such as text, speech, drawing, illustration, design, film, music, dance/movement, visual art, sculpture or video
- Physical manipulatives
- Interactive web tools - google docs
- Solve problems using a variety of strategies
- Spell/Grammar Check
- Sentence Starters
- Calculators
- Story Webs/Graphic Organizers
- Differentiated Feedback



Options for Self-Regulation

- Rubrics, guides, checklists, status bars
- Set goals with students to increase self reflection
- Slowly increasing demand or time on task
- Timers
- Demonstrate coping skills
- Model self reflection
- Encourage students to try out strategies
- Coping strategy plans with feedback



The Universal Design for Learning Guidelines

Provide multiple means of Engagement

Affective Networks
The "WHY" of Learning



Access

Provide options for Recruiting Interest

- Optimize individual choice and autonomy
- Optimize relevance, value, and authenticity
- Minimize threats and distractions

Build

Provide options for Sustaining Effort & Persistence

- Heighten salience of goals and objectives
- Vary demands and resources to optimize challenge
- Foster collaboration and community
- Increase mastery-oriented feedback

Internalize

Provide options for Self Regulation

- Promote expectations and beliefs that optimize motivation
- Facilitate personal coping skills and strategies
- Develop self-assessment and reflection

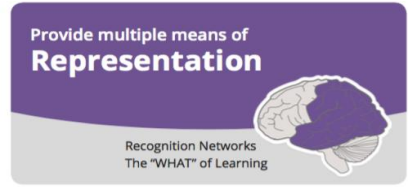
Goal

Expert learners who are...

Purposeful & Motivated

Options for Comprehension

- Graphic Organizers
- Concept Maps
- Bridge concepts with metaphors or analogies
- Make explicit cross curricular connections
- Highlight critical features
- Provide Options for organization of information, tables, graphs, charts
- Multiple pathways into material



Provide options for **Perception**

- Offer ways of customizing the display of information
- Offer alternatives for auditory information
- Offer alternatives for visual information

Provide options for **Language & Symbols**

- Clarify vocabulary and symbols
- Clarify syntax and structure
- Support decoding of text, mathematical notation, and symbols
- Promote understanding across languages
- Illustrate through multiple media

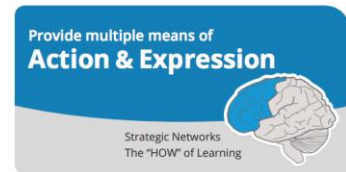
Provide options for **Comprehension**

- Activate or supply background knowledge
- Highlight patterns, critical features, big ideas, and relationships
- Guide information processing and visualization
- Maximize transfer and generalization

Resourceful & Knowledgeable

Options for Executive Function

- Goal-setting templates
- Progress Trackers
- Rubrics (see [Single Point Rubrics](#))
- Goals and Schedules in an obvious place
- Provide check-lists or other supports for appropriate strategies and sequence for students to organize their efforts.
- Model Think Aloud Process
- Graphic Organizers
- Self Assessment Strategies



Provide options for

Physical Action

- Vary the methods for response and navigation
- Optimize access to tools and assistive technologies

Provide options for

Expression & Communication

- Use multiple media for communication
- Use multiple tools for construction and composition
- Build fluencies with graduated levels of support for practice and performance

Provide options for

Executive Functions

- Guide appropriate goal-setting
- Support planning and strategy development
- Facilitate managing information and resources
- Enhance capacity for monitoring progress

Strategic & Goal-Directed

Keep in Mind

UDL is a **framework**,
not a checklist



Think of looking at learning through a UDL lens

Start Small

Small changes
make a big
difference!



Reflection

What questions do you have?

What concerns you?

What excites you?



Thank You!