NCSC Alternate Assessment and Instructional Resources: A UDL Approach

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NCSC Background

- In 2010, the U.S. Department of Education awarded the National Center and State Collaborative (NCSC) a grant to develop a new alternate assessment in math and ELA by the 2014-15 school year*.
- 24 states and five national centers are working together in NCSC. http://www.ncscpartners.org/
- NCSC is also developing instructional resources based on Common Core State Standards (CCSS) that can be used in any state https://wiki.ncscpartners.org

* some states may have a different timeline.

Importance of NCSC Instructional Resources

- Can be used to improve instruction for all students (UDL lessons), but especially benefit students with significant cognitive disabilities
- The materials model good instruction whether or not the state is using the NCSC assessments or Common Core State Standards
- Any administrator, educator or parent can access the materials through the wiki
- They do not dictate how the curriculum will be taught; they provide support when the teacher needs it

NCSC Member “States”

- Original states are Arizona, Connecticut, District of Columbia, Florida, Indiana, Louisiana, Pacific Assessment Consortium (PAC-6), Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, and Wyoming
- States that joined later are Arkansas, California, Delaware, Idaho, Maine, Maryland, Montana, New Mexico, New York, Oregon, and the US Virgin Islands

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College and Career Readiness

Some Students with Intellectual Disabilities Are Going To College

- The Higher Education Opportunity Act (2008) includes two major provisions that may facilitate entry into higher education for students with an intellectual disability.
  - Implementation of model demonstration sites
  - Availability of financial aid if enrolled
- See www.thinkcollege.net for more information on the variety of programs that have been developed (many before 2008)

Cross walking College and Career Readiness

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- All kids
  - Key Cognitive Strategies
    - Problem solving, reasoning, analysis, interpretation, critical thinking
  - Key Content
    - Reading, Math, Science, Social Studies
  - Academic Behaviors
    - Self monitoring, time management, using information resources, social interaction skills, working in groups
  - Contextual Skills and Awareness
    - Seeking help with admissions, procedures, career development

» (Conley, 2007)

- Students with Significant Cognitive Disabilities
  - Academic Access
  - Career Development
  - Social Network
  - Self Determination
  - Integration with College Systems & Practices
  - Coordination and Collaboration

College and Career Readiness
The Key Functional Life Skills

Important for ALL students, including those with significant cognitive disabilities, whether or not they go to college:

- Communicative competence
- Social skills to function well in small groups
- Independent and team work skills
- Problem Solving
- Reading/writing/math
- Skills for identifying and requesting supports

College and Career Readiness Includes Community Readiness

Without college and career ready skills, students with significant cognitive disabilities will likely:

- need greater supports throughout their life
- live and work in more segregated environments
- have more difficulty finding/keeping employment
- have more difficulty learning about and engaging in community activities
- be easier to victimize

NCSC Model

NCSC Philosophy

A well-designed summative assessment alone is insufficient for college, career and community readiness.

To achieve these goals, an Alternate Assessment system requires:

- Curricular & instructional framework
- Teacher resources and professional development
- Communicative Competence as a priority

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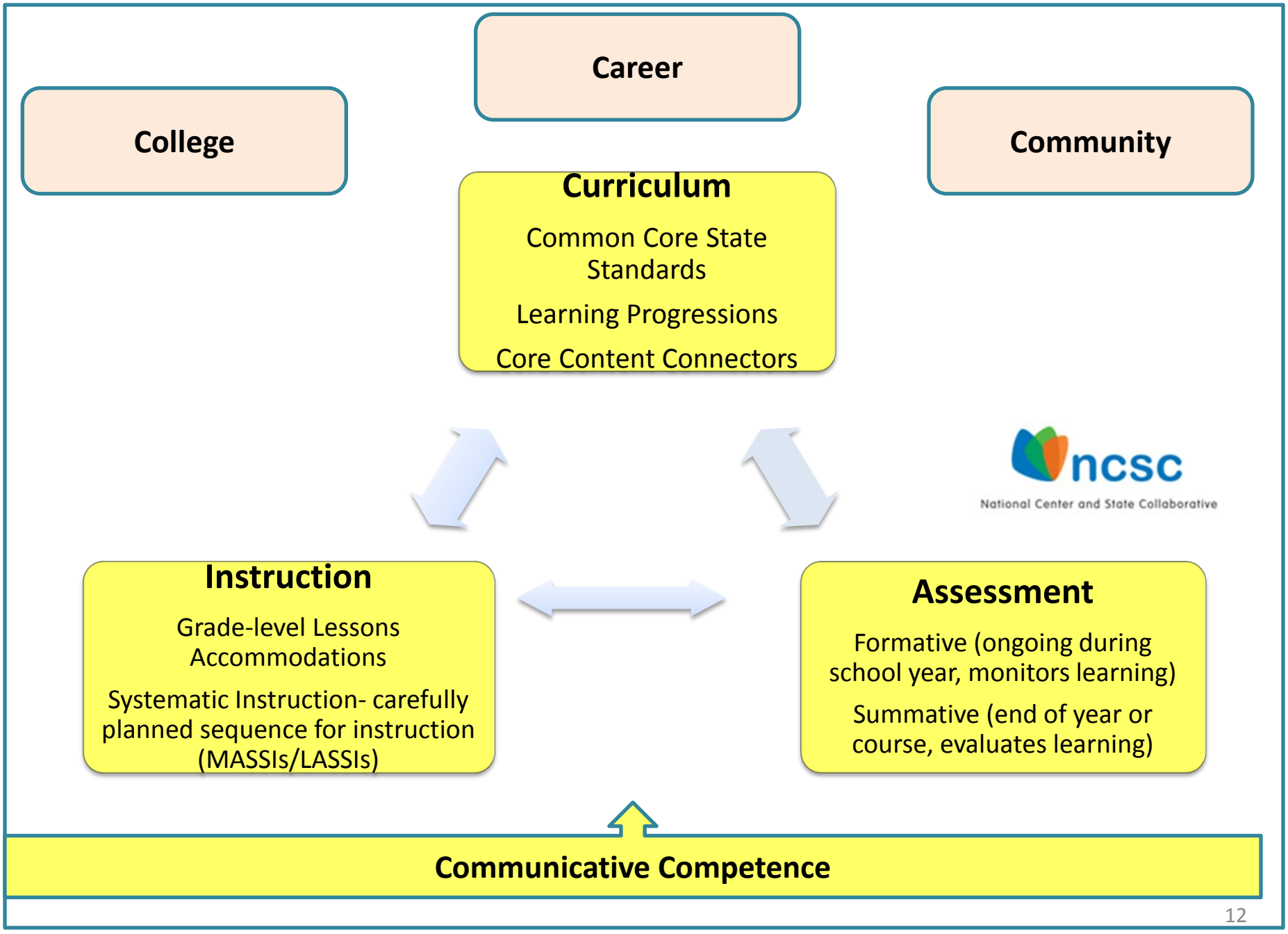
Career
College
Community
Curriculum
Common Core State Standards
Learning Progressions
Core Content Connectors
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Instruction
Grade-level Lessons
Accommodations
Systematic Instruction- carefully planned sequence for instruction (MASSIs/LASSIs)
Assessment
Formative (ongoing during school year, monitors learning)
Summative (end of year or course, evaluates learning)
Communicative Competence

Quality Indicators for Instructional Resources

- Promote Common Core State Standards;
- Set high expectations for all students;
- **Apply principles of Universal Design for Learning (UDL); and**
- Apply evidence-based teaching practices for students with the most significant cognitive disabilities.

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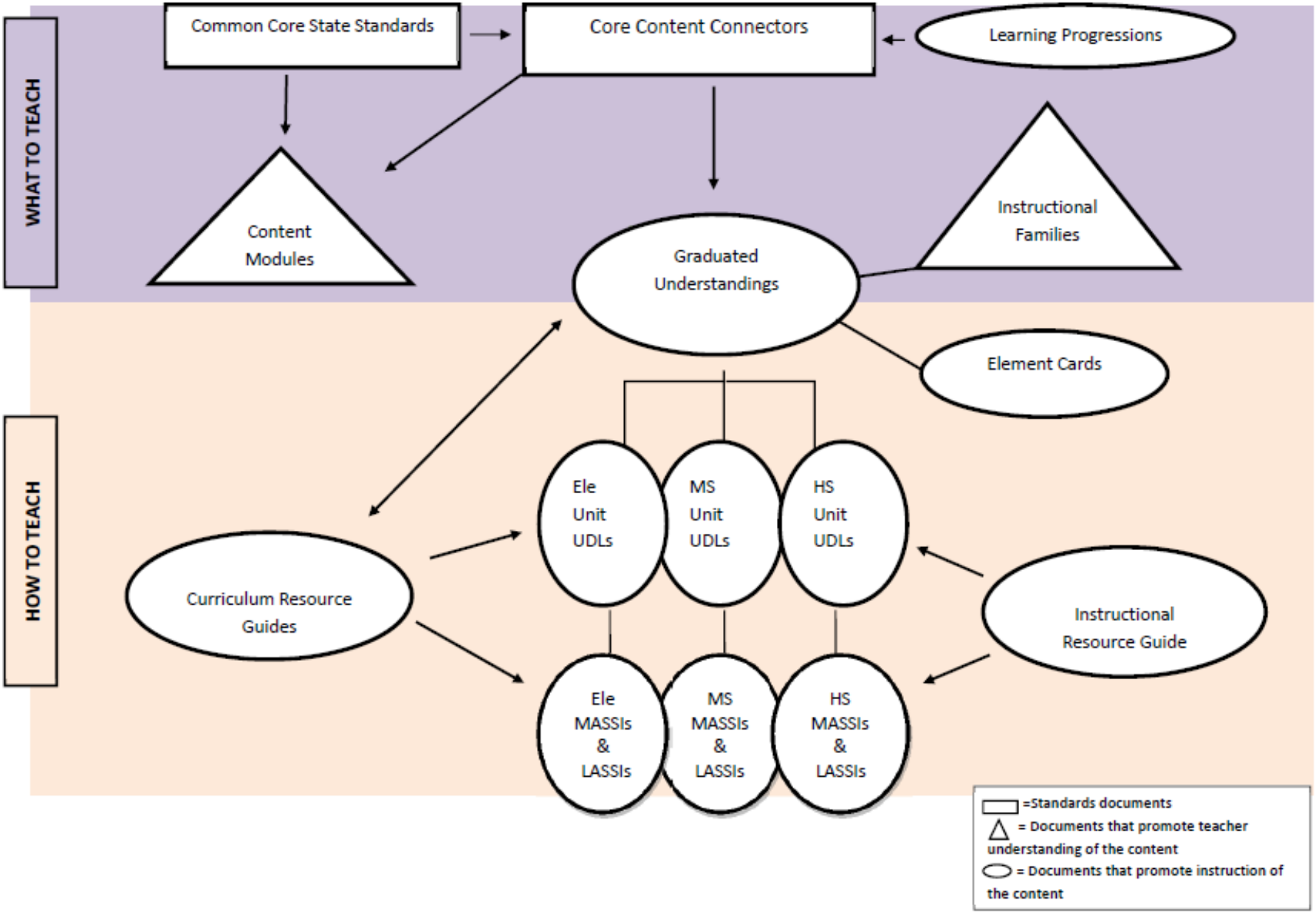
SCHEMA for Common Core State Standards Resources

NCSC Instructional Resources



Learning Progressions Framework (LPF)

- Shows the steps (learning targets)that students typically take to progress through a content area (e.g. math) to get deeper, broader, more sophisticated understanding

- Represents, though the targets, the essential core concepts and processes learned in a content area (sometimes called the “big ideas”)

Hess, Karin K., (December 2011). *Learning Progressions Frameworks Designed for Use with the Common Core State Standards in English Language Arts & Literacy K-12.*

Core Content Connectors (CCCs)

- Based on the learning progressions framework (LPF) and the CCSS
- Focus on the knowledge and skills from CCSS needed at each grade to promote success through future grades
- Break progress indicators from LPF into teachable and assessable segments of content; and
- Operate as a starting point for instruction based on the CCSS

CCC Example

Common Core State Standard- Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

CCC- Ask and answer questions* about key details in a text.

*Instead of an oral or written response, some students may use picture symbols, character figures and props, etc.

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Learning Progression Framework

Curriculum Application

Lesson 5

Using CCCs in a lesson for broad range of learners

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Graphing
- ✓ Locate the x and y axis on a graph
- ✓ Locate points on a graph
- ✓ Use order pairs to graph given points

Area
- ✓ Find area of quadrilaterals
- ✓ Find area of plane figures and surface area of solid figures (quadrilaterals)
- ✓ Describe the changes in surface area, area, and volume when the figure is changed in some way (e.g., scale drawings)

Solve Linear Equations
- ✓ Solve a linear equation to find a missing attribute given the area, surface area, or volume and the other attribute

Ratio & Proportion
- ✓ Solve problems that use proportional reasoning with ratios of length and area
- ✓ Describe the changes in surface area, area, and volume when the figure is changed in some way (e.g., scale drawings)

Fractions
- ✓ Partition circles and rectangles into two and four equal parts
- ✓ Partition shapes into equal parts with equal area

Apply formulas
- ✓ Solve word problems using perimeter and area where changes occur to the dimensions of a figure

Area
- ✓ Use addition to find the perimeter of a rectangle
- ✓ Use tiling and multiplication to determine area

Basic operations
- ✓ Addition
- ✓ Subtraction,
- ✓ Multiplication
- ✓ Division

Part to Whole
- ✓ Partition circles and rectangles into two equal parts

CCCs = that connect skills

CCCs=Sub-skills that develop conceptual understanding

CCCs **=Prerequisite knowledge or emergent skills**

Content Modules

- An online multimedia resource;
- Provides teachers with a deeper understanding of content to support effective planning, teaching, and learning;
- Includes sample universally designed general education lesson plans and participant assessments; and
- Describes potential adaptations and modifications for designing materials and instruction

Curriculum Resource (CR) Guide

- Provides guidance for teaching the CCSS to students with the most significant cognitive disabilities
- Provides UDL charts with examples for making instruction accessible for a wide range of students
- Provides ideas on how to promote college and career ready outcomes while teaching certain concepts

ELA Curriculum Resource Guide

6. How Do I Make Instruction on "Reading Informational Texts" Accessible to ALL the Students I Teach?

6.1 Teach Prerequisites Concurrently While Teaching Skills Related to Reading Informational Texts: Remember that students can continue to learn basic literacy skills in the context of this grade level content.

Basic literacy skills that can be worked on as a part of a lesson relating to informational text:

- Answering literal recall questions
- Making inferences that are relevant and meaningful, possible not related to written text
- Determining the main idea or the most important events in a personally relevant stories (e.g., auto-biographies)
- Differentiating between nonfiction and fiction texts
- Identifying author's purpose
- Vocabulary acquisition
- Using visual cues to find important information (e.g., highlighting or added visuals)

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Example of UDL Table in ELA CR Guide

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6.2 Incorporate Universal Design for Learning (UDL) in planning, and provide for additional Differentiated Instruction when Teaching Reading Informational Texts

Some examples of options for teaching vocabulary and acquisition skills to students who may present instructional challenges due to:				
	Sensory Differences such as Blindness, Visual Impairment, Deafness, or Deaf/Blindness	**Physical Disability or Motor Differences (such as weakness or motor planning difficulty)**	**Extremely limited evidence of experience/ skill or motivation/ attention**	**Limited or no speech**
Representation	Use a talking device such as an avatar; use large print text, raised text or Braille; use objects and images to represent vocabulary words and answers to questions; use online dictionaries that will pronounce the words and read the definitions aloud; use matching picture cards with words and their meanings; add sound effects when appropriate (e.g., sound of a whale, busy city streets, a tornado); preteach basic concepts of a topic using objects; color photos related to topics; Smartboard can be used during instruction.	Student scans an array of possible options and uses a switch to select the correct vocabulary word or answer to questions; use computer representation of word meanings that can be manipulated with switch; place response options on a slant board or eye gaze board; create a vocabulary matching exercise in the classroom that the student can walk or ride on in wheelchair to find the matching words and meanings (this can include picture clues or objects).	Use motivating objects (e.g., pizza, coloring markers in a box, piece of a Lego set) to incorporate key vocabulary and details from text; incorporate technology including computer representations, videos, animations, and talking avatar; allow students to self-select topics for study; use You Tube that is related to instruction; Smartboard can be used during instruction.	Have student use online dictionary to pronounce and define words; use online visual dictionary to increase vocabulary; students can use one to one correspondence to match words or objects with definitions; preteach vocabulary using AAC devices; highlight vocabulary words within the context of the print, keep to one vocabulary word per page and keep an AAC device with matching word with the text; use an iPad during instruction. *Suggestions from other columns may be applicable here.

Math Curriculum Resource Guide

6. How Do I Make Instruction on "Equations" Accessible to ALL the Students I Teach?

6.1 Teach Prerequisites and Basic Numeracy Skills Concurrently: Remember that students can continue to learn basic numeracy skills in the context of this grade level content.

Basic numeracy skills that can be worked on as a part of a lesson relating to equations:

- Number identification
- Equal and/or same
- Symbol identification (+, -, =, x, ÷)
- Addition and subtraction
- Creating sets

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Example of UDL Table in Math CR Guide

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6.2b Incorporate Universal Design for Learning (UDL in planning, and provide for additional differentiated Instruction when teaching Equations.

Some examples of options for teaching equations to students who may present instructional challenges due to:				
	Sensory Differences such as Blindness, Visual Impairment, Deafness, or Deaf/Blindness	**Physical Disability or Motor Differences (such as weakness or motor planning difficulty)**	**Extremely limited evidence of experience/ skill or motivation/attention.**	**Lack of or extremely limited use of speech.**
Options for Representation	**Provide auditory options** -Talking calculator when solving equations; -Text-to-speech software or voice recordings to read aloud story problems -Single message sequence voice–output devices to count aloud -Captioning software that presents auditory information visually **Provide tactile options:** -Object cues, using miniature objects or other tangible symbols to assist with problem comprehension and operations -Tactile equation mat -Create numbers and symbols out of tactile materials such as sandpaper or wikki stix **Provide visual and manipulative options to scaffold representation of concepts:**	**Reduce Physical Effort** -When reading word problems, student can scan array of key math operation words and select correct key word and operation for equation - Place equations and graphic organizers on slant board or eye gaze board -Display flip chart, interactive white board or other teaching materials at student eye level -Utilize a switch instead of a computer mouse or software that allows the mouse to be controlled with the students' head rather than their hands	**Illustrate through multiple media** -Utilize interactive whiteboard -Incorporate interactive websites that provide nonlinguistic tools for exploring math concepts : Illuminations http://illuminations.nctm.org/ActivitySearch.aspx Math Open Reference http://www.mathopenref.com/ There are many resources listed here: http://www.udlcenter.org/implementation/examples - Use virtual manipulatives and technology to show equations -Incorporate computer representations, videos, and animations	**Provide customized display of information** -Consistent model by utilizing modes of communication used by students (point to symbols representing concepts, operations) -Teacher model competent use of AAC during instruction

Graduated Understandings: Instructional Families

- Put related CCCs into families

- Provides educators with different views of how instructional families develop and interact across all the grades and across a grade band (e.g. Elementary School)

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Distribution of Instructional Families: Data Analysis I and II

Grade-span Learning Targets from the Learning Progression Frameworks

(K-4) Elementary School Learning Targets	(5-8) Middle S	
E.DPS-1 Gather and interpret data to answer questions related to a particular/single context. • Formulate questions, gather data, and build representations; • Identify and describe variation in data, and describe and compare shapes of distributions and measures of central tendency.	*M.DPS-1* Design investigations about multiple populations. • Formulate questions, gather • Compare populations by analyzing distribu variability and measures of central tendency.	nd statistical probability principles utions.
E.DPS-2 Conduct simple probability experiments and characterize the outcomes in words, diagrams, or numerically.	*M.DPS-2* Conduct probability experiments: • Generate random samples to characterize variability in estimates and predictions; • Analyze and build models of the association between two variables.	*H.DPS-2* Use the rules of probability to interpret data, • develop explanations, and address real-world problems

K	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	HS

Distribution of Instructional Families and the number of related CCCs by grade

Formulate Questions/ Plan Research	Represent and Interpret Data	Draw Conclusio m Data Collection	Develop and Use Probability Models	Draw Inferences About a Distribution

Five Instructional families for Data Analysis I & II

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Overview of CCCs: Data Analysis I:

(K-4)

Grade-span Learning Target from the Learning Progression Frameworks

E.DPS-1 Gather and interpret data to answer questions related to a particular/sim...

- *Formulate questions, gather data, and build representations;*
- *Identify and describe variation in data, and describe and compare shapes of distributions and measures of cent... tendency.*

Formulate Questions/ Plan Research	Represent and Interpret Data		Draw Conclusions from Data Collection
Grades K-1	**Grade 2**	**Grade 3**	**Grade 4**
K.DPS.1a1 Select a question that is answered... collected data *K.CC.5*			4.DPS.1f2 Develop questions, make a plan for data collection *No CCSS linked*
1.DPS.1a2 Select questions that ask about "How many" and represent up to three categories that can be concretely represented *1.MD.4*	2.DPS.1a6 Identify up to 3 categories resulting from a selected question *1.MD.4*	3.DPS.1g1 Collect data, organize into picture or bar graph *3.MD.3*	4.DPS.1g3 Collect data, organize in graph (e.g. picture graph, line plot, bar graph) *3.MD.3*
1.DPS.1a3 Identify 2 categories resulting from a selected question *1.MD.4*	2.DPS.1a7 Analyze data by sorting into categories established by each question *2.MD.10*	3.DPS.1g2 Organize measurement data into a line plot *3.MD.4*	...(repeated) Select the appropriate ...s the data representations ...picture, bar, line plots)
1.DPS.1a4 Analyze data by sorting into 2 categories; answer questions about the total number of data points and how many in each category *1.MD.4*	2.DPS.1a8 Interpret the number of points in each category *No CCSS linked* 2.DPS.1c2 Organize data by representing categorical data on a pictorial graph or bar graph *2.MD.10*	3.DPS.1i1 Select the appropriate statement that describes the data representations based on a given graph (picture, bar, line plots)	...opriate statement that describes the most frequent or the least frequent data point using a line plot, picture graph, or bar graph *4.G.1*
1.DPS.1c1 Using a picture graph, represent each object/person counted on the graph (1:1 ... *1.MD.4*	2.DPS.1c3 Organize d... ...senting conti... ...plot	3.DPS.1k1 Apply results of data to a real world ...	4.DPS.1k2 Apply results of data to a real world situation *3.MD.4*
1.DPS.1d1 Interpret a pi... questions ab... ...m... *1.MD.4*	...graph or 2... ...n a line plot *2.MD.9* *2.MD.10*		
1.DPS.1e1 Compare the values of the 2 categories of data in terms of more or less *1.MD.4*	2.DPS.1e2 Compare the information shown in a bar graph or picture graph with up to 4 categories. Solve simple comparisons of how many more or how many less *2.MD.10*		

Instructional Families for Data Analysis I (K-4)

Reference to related CCSS

Distribution of CCCs by Instructional Families an grade

Graduated Understandings: Element Cards

- Provide a wide range of suggested instructional strategies and supports to promote instruction for students with diverse learning needs- including those without prior knowledge

- Element cards are available for many CCCs but are meant to serve as models and to be used together with other NCSC instructional resources

CCSS: 1.MD.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another		
CCC:	1.DPS.1 e1	Compare the values of the 2 categories of data in terms of more or less
Strand: Data, Probability and Statistics	**Family: Draw Conclusions from Data Collection**	
Progress Indicator: E.DPS.1e describing and comparing data and beginning to identify what the data do or do not show (e.g., bar graphs, line plots, picture graphs)		
Essential Understandings	**Concrete Understandings:** • Can identify groups of objects in terms of more and less • Can match numbers from a graph to numbers on a number line	**Representation:** • **Identify and use the symbols for <, >, =**
Suggested Instructional Strategies: • **Teach the concept of more or less using example, non-example; apply to data on graph** • **Use or create a graph that provides a visual of the values in each category such as a bar graph** • **Teach the concept of more or less using a number line**		
Supports and Scaffolds: • **Number line** • **Snap cubes to create a concrete bar graph**		

DRAFT

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UDL Instructional Units

Universal Design for Learning (UDL) requires that students be provided with multiple ways to get information, multiple ways to demonstrate their knowledge and skills, and multiple ways to be engaged in learning www.udlcenter.org

A UDL Unit:

- ❑ Includes general education lessons using UDL to provide access to the content for all students and promote inclusive instruction
- ❑ Provides additional considerations for students who are emerging readers and emerging communicators

UDL Instructional Unit

- Provides data sheets and skills tests
- Contains:
  - definitions of key vocabulary,
  - lesson objectives,
  - essential questions and materials, and
  - lesson components (introduction of the lesson, direct instruction and/or facilitation of activities, practice, closure/review and exit assessment)

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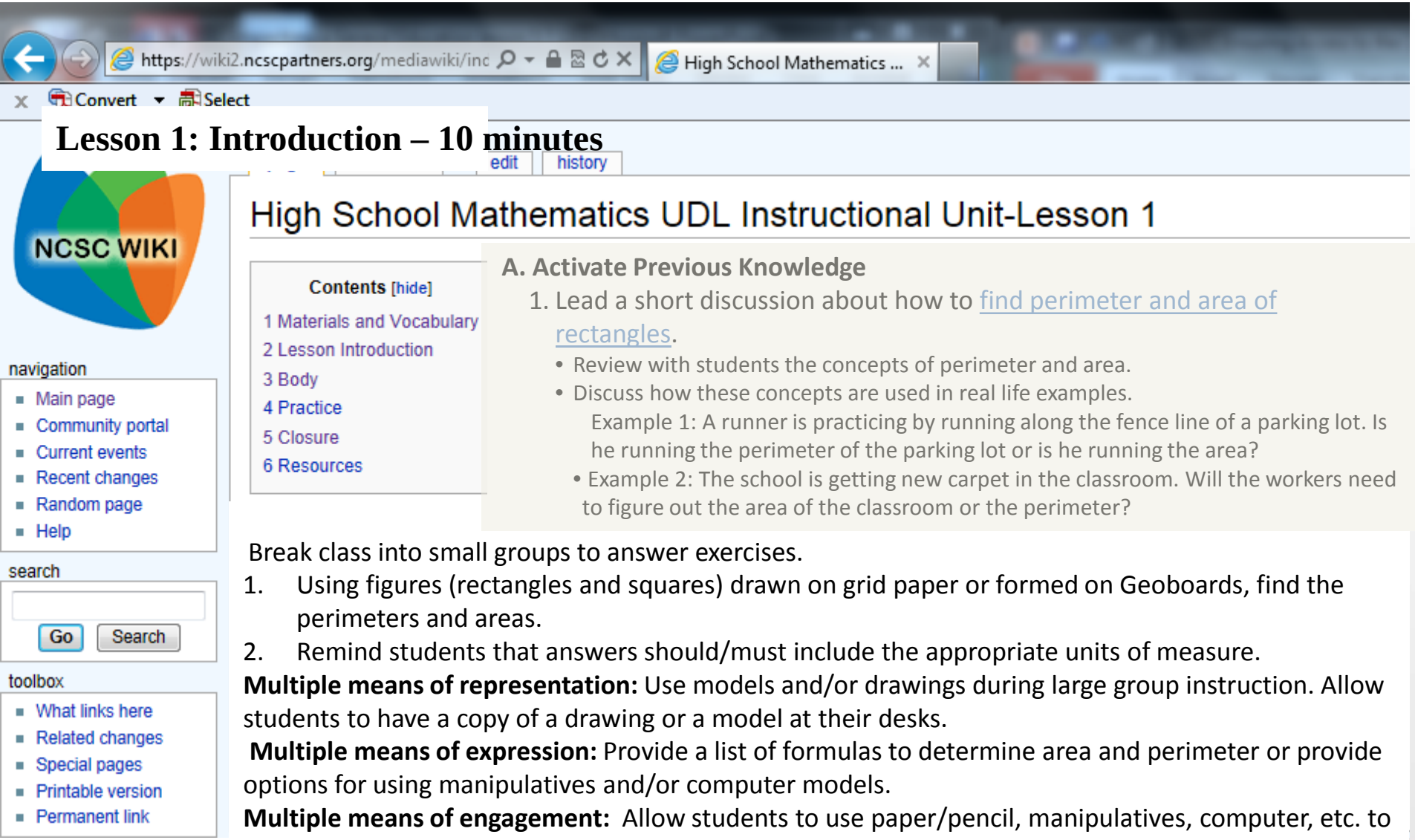
Lesson 1: Introduction – 10 minutes



Break class into small groups to answer exercises.

1. Using figures (rectangles and squares) drawn on grid paper or formed on Geoboards, find the perimeters and areas.
2. Remind students that answers should/must include the appropriate units of measure.

Multiple means of representation: Use models and/or drawings during large group instruction. Allow students to have a copy of a drawing or a model at their desks.

Multiple means of expression: Provide a list of formulas to determine area and perimeter or provide options for using manipulatives and/or computer models.

Multiple means of engagement: Allow students to use paper/pencil, manipulatives, computer, etc. to complete exercises.

Additional Considerations for Emerging Readers and Emerging Communicators

1. Provide picture and/or tactile representations of relevant vocabulary, paired with the written word, each time a salient concept/vocabulary word for rectangle, area, and perimeter is mentioned during the presentation or discussion, as well as the meanings of each word.
2. Create math journals to record vocabulary, formulas, and notes.
3. Provide the formulas for area and perimeter as the concepts of each are discussed.
4. During discussion, provide picture representation of real world uses for area and perimeter.
5. As students work in small groups or pairs, ensure they have a means for gaining their group members' or partner's attention and a means for contributing to the discussion.
6. Students may use their math journals or a graphic organizer to collect/store information gathered during group.
7. To find area and perimeter, use grid paper, count/mark/tally each unit along the length of the figure to determine length and count/mark/tally each unit along the width of the figure to determine the width.
8. Use the formulas to determine area and perimeter.
   - A list of formulas may be used by the student as a reference.
9. Student may be presented with manipulatives of a unit and the rectangle drawn on grid paper.
   - Students determine area and perimeter by placing the manipulative units on each unit around the rectangle on the grid paper to demonstrate perimeter as well as within the rectangle to demonstrate area.
   - Using manipulatives may be demonstrated electronically, using a computer program or PowerPoint, to count units virtually to determine area and perimeter.

See Resources: See PowerPoint, Slides 1 and 2.

10. As answers are reviewed, be sure to reference the appropriate units of measure. For example, if students determine the perimeter of a 3inch by 4inch figure is 14, reply, "That is correct. It is 14 inches." If they determine the area is 12, reply, "That is correct. It is 12 inches square."
    - Remind students to record the appropriate unit.
    - Model how to write the appropriate units.
    - Present students with an alternative representation of unit to record in their math journals or graphic organizers.

Important Note for Communicators Considered Pre-Symbolic: Be sure students have a way to attain peer attention as well as to share and receive information. Limit measurements to one type: standard or metric unit.

Math/ Language Activities for Scripted Systematic Instruction (MASSIs and LASSIs)

- Activities for when students need more intensive instruction on particular key points or on missing prerequisite knowledge
- Generally, designed for use with UDL units
- Incorporates evidence-based instruction from research, including faded prompting
- Provides teaching scripts for educators who may not be familiar with the carefully planned steps of systematic instruction

Instructional Resource Guide

- Defines methods of prompting and feedback
- Explanation of Instructional Strategies
- Includes troubleshooting Q&A

Designed for use with MASSIs and LASSIs but can be used with UDL lessons, as well.

Professional Development

- Professional Development specialists hired by NCSC worked with state education leaders and Communities of Practice to get feedback and develop PD
- Professional Development resources including videos and webinars will be available

Evaluation

- Post-grant governance group will manage and evaluate the Curriculum and Instructional Resources through long-term implementation and measurement of outcomes
- NCSC project validity team will design a ‘post project’ validity evaluation and research agenda for states to implement as materials go to scale-including model demo projects and linking classrooms across states
- Data will be used by states to improve existing and develop additional resources.

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Educator Response-Favorable!

Sample quote:

"I have had the pleasure of observing several classrooms across the state of Indiana where NCSC materials are being implemented on a daily basis. Wow! The impact is powerful, students are responsive, and teachers are dedicated to increased academic achievement."

Amy Howie, Project SUCCESS* Director

*Project SUCCESS is an Indiana resource center that supports high academic achievement for students with disabilities.

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NCSC Assessment

Format

- Approximately 30 items for each subject (1.5-2 hours)
- These 30 items will cover approximately 10 CCCs
- ❑ Most of the assessment items ask the student to select the correct response (e.g. multiple choice).
- Some items will require the student to construct a response (e.g. write a short answer or use an alternate way to respond e.g. picture symbols)
- Assessment design is infused with UDL

Technology

- Some students will use the online testing program directly on the computer.

- For other students, the teacher may print out testing materials and enter student responses into the computer.

Parent Documents

Parent Documents

http://www.ncscpartners.org/resources

Process

- NCSC developed these documents with input from project staff, a State Advisory Group and a Parent Advisory Group
- They are useful regardless of whether the state is a NCSC partner.
- Documents will be added and updated as NCSC's work continues. Also parent training modules will be added
- States will likely make these documents their own and distribute them, but they can also be viewed on the NCSC website

Parent Resources as of 1/28/14

- NCSC Project Description
- NCSC Project Description One Page
- NCSC Diagram and Explanation
- NCSC Model of Curriculum Instruction and Assessment
- NCSC Alternate Assessment FAQs
- NCSC Commonly Asked Parent Questions
- NCSC IEP Team Guidance For Participation in AA-AAS
- NCSC College and Career Readiness
- NCSC College Career Ready (CCR) Policy Paper Summary
- NCSC Communicative Competence
- NCSC Newsletter and Website Information for Parents

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Parent Resources (continued)

- **NCSC Project Description One Page**
- **NCSC Project Description**
- NCSC Diagram and Explanation of Instructional Resources
- Summary of NCSC Frequently Asked Questions regarding the Alternate Assessment
- NCSC Commitment to Students' Communicative Competence
- NCSC Discussion of College and Career Readiness for Students with Significant Cognitive Disabilities

* Accommodation policy will be added

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