Vertically Articulated Content Standards – Lessons Learned

Designing and Prioritizing Developmentally Appropriate

Grade Level Expectations

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Nine Lessons Learned

- Begin with some essential assumptions
- Validate GLE development criteria
- Build protocols to support design
- Notice how GLEs develop across grades
- Each discipline requires its own unique considerations
- Prioritization strategies are essential for resolving issues
- Test Specifications are influenced by…
  - Distribution of Emphasis
  - Applying Depth of Knowledge – Levels of Complexity
  - Identifying the DOK "ceilings" and "range" for assessment

What is unique about this approach to the GLE & test development process?

- Closely linked to learning…and support for classroom instruction

- Working towards assessing the BIG ideas of each discipline
  - Format of GLEs
  - Prioritization Strategies
  - Distribution of Emphasis Studies

Lesson #1:

Begin development with some essential assumptions.

- Articulate a continuum of learning

- Have a research-based rationale for expectations and grade-level differences

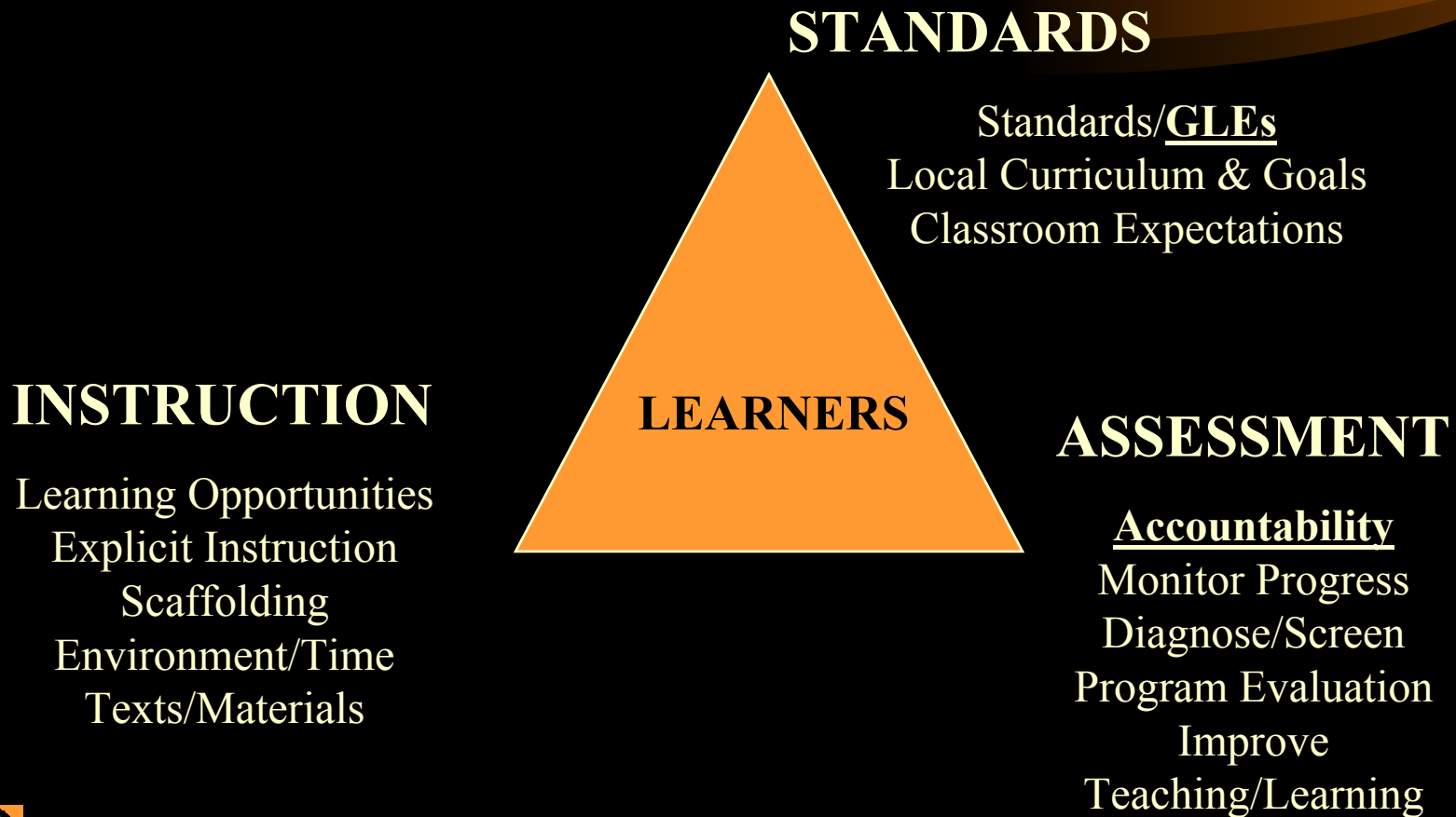- Support meaningful links between standards-instruction-assessment

A Grade Level Expectation (GLE) is a stated objective that is aligned with NH, RI, and VT standards, by grade level. A GLE differentiates performance on concepts, skills, or content knowledge between adjacent grade levels. As a set, GLEs lead to focused, coherent, and developmentally appropriate instruction without narrowing the curriculum…<u>and provide the foundation for designing large-scale assessment</u>.

S-I-A Alignment Triangle
Standards-Instruction-Assessment

STANDARDS

Standards/**GLEs**
Local Curriculum & Goals
Classroom Expectations

LEARNERS

INSTRUCTION

Learning Opportunities
Explicit Instruction
Scaffolding
Environment/Time
Texts/Materials

ASSESSMENT

Accountability
Monitor Progress
Diagnose/Screen
Program Evaluation
Improve
Teaching/Learning

What the GLEs are……………………….. and are NOT

- Specific expectations in reading, writing, and mathematics for grades K- HS

- Drawn from curriculum standards and other sources/national references

- A "fair- game" list: GLEs marked "state" will be tapped for state-level assessments in reading, writing, and math

- A list of expectations for what is to be taught and assessed locally

- Descriptions of what students should be able to do *independently* at a grade level

- Intended to BE a local curriculum (but they should inform and focus local curriculum and instruction)

- A replacement for the standards. Rather – they are a grade-by-grade supplement to the standards – *to guide assessment.*

- A description of what instruction should look like. GLEs focus on the "what" to be learned, not the "how" of instruction.

- A checklist of topics to "cover." (Simply checking off that something has been addressed won't get us very far!)

Lesson #2:

Validate GLE development criteria.

- Aligned to (*but not limited by*) standards
- Maintain a balance between a generalizable skills, concepts, and knowledge *(discipline differences)*
- Have enough specificity to differentiate between adjacent grades, making it clear what is to be taught and learned *(Expert and Field Reviews)*
- Indicate cognitive demand explicitly - interaction of content and process *(DOK guides)*
- Be specific enough to know how it will be assessed (*provide aligned sample items*)

Lesson #3:

Build protocols to support design.

- Determine concepts & skills by grade level

- Prioritization

- Distribution of Emphasis across the content strands

- Depth of Knowledge (Webb) and Levels of Complexity (NAEP)

Format of GLEs adds clarity …

Stem (in bold) = Big Idea

"The What"

Specifics (unbold) = Cognitive Demand at a given grade - "The How"

W-3-7 In informational writing, students effectively convey purpose by… W–3–7.1 Establishing a topic W–3–7.2 Stating a focus/controlling idea on a topic EXAMPLES: "Dogs" = topic; "Dogs make good pets" = focus	**W-4-7 In informational writing, students effectively convey purpose by…** W–4–7.2 Stating and <u>maintaining a</u> focus/controlling idea on a topic . Differences between adjacent grades are <u>underlined to show new learning</u>.

Format of GLE sets provide coherence within grades and across grades …

R–2–5: Analyze and interpret elements of literary texts, citing evidence where appropriate by…

R–2–5.1 Making logical predictions EXAMPLE: What might happen next?

R–2–5.2 Identifying relevant physical characteristics or personality traits of main characters

Notice how GLEs develop across grades.

- Accumulate (more - but not harder)

- Discontinue/Begin (new)

- Increase in Cognitive Complexity (deeper understanding)

Ways GLEs Generally Develop across Grade Levels

1. Accumulate: GLEs that accumulate or expand upon knowledge, concepts, or skills across the grade span. More does not always mean harder.

➢ In mathematics, as you move from grade 3 to grade 8, the types of graphs students need to use and interpret increases.

Ways GLEs Generally Develop across Grade Levels

2. Discontinue/Begin: GLEs which as a whole, or in part, are phased out/in as you move across grades, usually as a result of developmental appropriateness.

➢ In reading, Word Identification *discontinues* by grade 6.

Ways GLEs Generally Develop across Grade Levels

3. Increase in Cognitive Complexity: GLEs that may not add additional concepts or skills, but require deeper knowledge in their applications, conditions, or context.

➢ In reading, *text complexity* interacts with comprehension when applying vocabulary strategies or analysis of text, thus requiring deeper knowledge.

➢ In mathematics, conceptual understanding of addition, subtraction, and multiplication of integers and use of powers *using models, diagrams, or explanations* requires deeper knowledge.

Each discipline has its own unique considerations.

- Conserving the Mathematical Construct

- Describing Factors Influencing Increasing Text Complexity in Reading

- Determining How Unifying Themes in Science Interact with Science Domains and Scientific Inquiry

Conserving the Mathematical Construct (Lager and Petit 2003)

- Explicitly align items with mathematical constructs being assessed– content and process demands in GLE

- Make intentional decisions of when and how to use context to assess the mathematics construct

- Streamline language (Lager, 2003) to provide access without compromising mathematical construct being assessed

- Appropriately use graphics, pictures, graphs, tables, diagrams, and models

Interactive Model of Reading

……….Changing Contexts………..

Text

Activity
or Task

Reader
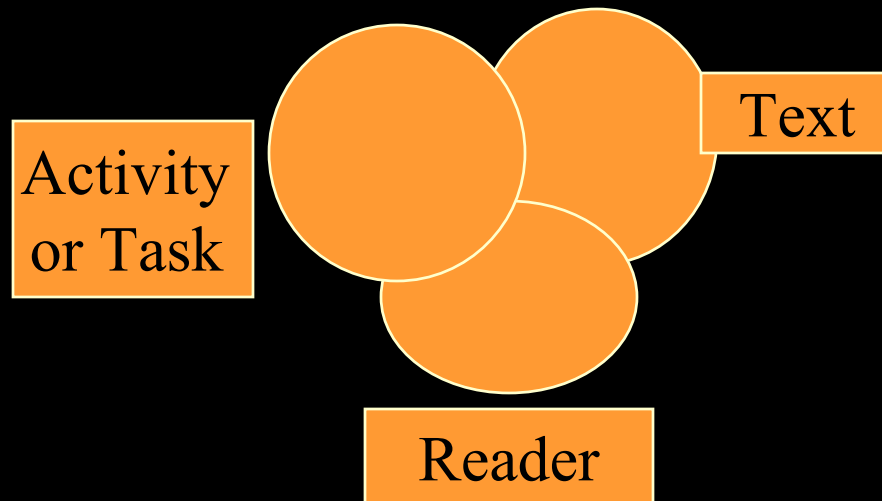
Factors Influencing Text Complexity
(Hess and Biggam 2004)

- ➢ **Word Difficulty and Language Structure**
- ➢ **Text Structure and Discourse Style**
- ➢ **Genre and the Characteristic Features of Texts**
- ➢ **Background Knowledge and/or Degree of Familiarity with Content Needed**
- ➢ **Level of Reasoning Required**
- ➢ **Format and Layout**
- ➢ **Length of Text**

Prioritization strategies are essential for resolving issues.
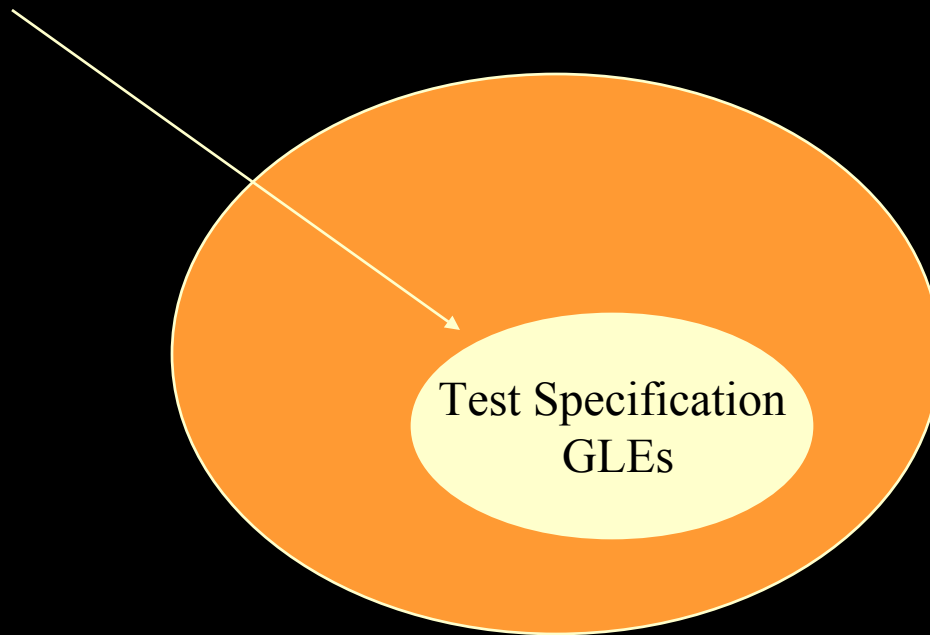
- Testing Space

  Determining State/Local GLEs

  Determining Appropriate Grade Levels

  Determining Distribution of Emphasis at each Grade Level

- Time for Teaching and Learning

Two Types of Grade Level Expectations

Test Specification GLEs for large-scale assessment

GLEs for local curriculum, instruction, and assessment

Test Specification GLEs

Characteristics of Two GLE Types

Test Specification GLE

- Must be assessable in an on-demand, large-scale setting

- Should be a prioritized set

Local Curriculum and Assessment GLE

- Can include concepts and skills not easily assessable in an on-demand setting

- Can fill gaps between grades as a result of prioritization for test specification

- Can include foundational skills as they develop across grades

Questions to Guide GLE Prioritization (Hess and Petit 2004)

1) Is the concept or skill part of a big idea in the discipline?

2) Is the success on the concept or skill in a given grade essential for success in this subject area in subsequent grades?

3) Should the concept or skill be assessed at an earlier grade, because success at that earlier grade is important for success at the given grade?

4) Is the concept or skill assessed adequately at an earlier grade?

5) Should the concept or skill be assessed at a later grade for state/large-scale assessment purposes?

6) Is the concept or skill subsumed in other GLEs at that grade level?

7) Is the concept or skill better assessed in the classroom?
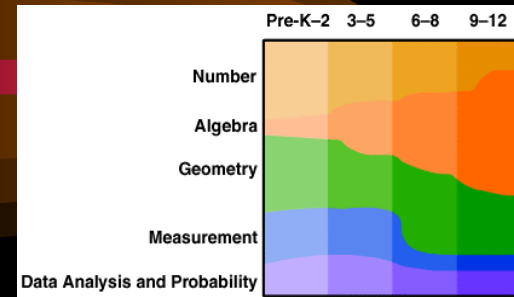
Distribution of Emphasis for Test Specification is influenced by…

- Review of literature/research and national standards and assessments

- The number of GLEs – but NOT driven by the number of GLEs

- Specifics described within GLEs (e.g., Depth of Knowledge)

- Sampling protocols (ands/ors, e.g./i.e.)

How should you spend your 100 pennies?

Sample Distribution of Emphasis for NECAP Reading

Reporting Categories	Gr 3	Gr 4	Gr 5	Gr 6	Gr 7	Gr 8
Word Identification Vocabulary	20% 20%	15% 20%	10% 20%	0 20%	0 25%	0 25%
Initial Understanding of (Literature/Info text)	20 % 20 %	20 % 20 %	20 % 20 %	20 % 20 %	15 % 20 %	15 % 20 %
Analysis & Interpretation of (Literature/Info text)	10 % 10 %	15% 10%	15% 15%	20% 20%	20% 20%	20% 20%

- Levels are focused on the complexity of the item, not on how different students interact with the item.

- Descriptors of each level, *specific to each discipline,* are essential in guiding GLE and item development and alignment.

- Levels help to define upper limits ("ceiling") and range of the complexity of items that are "fair game" for an assessment for a given GLE.

Identifying the "ceilings" and "range" for assessment is important.

If GLEs are only assessed at the "ceiling," then…

- The assessment as a whole might be too difficult; and

- Important information might be lost about gains in student learning and instructional implications.

Identifying the "ceilings" and "range" for large-scale assessment items…

GLE	DOK Ceiling	DOK Range
Mathematics example: **M–F&A–6–1 Identifies, extends to specific cases, <u>and generalizes</u> a variety of patterns** represented in models, tables, <u>graphs</u>, sequences, or in problem situations; and writes a rule in words or symbols for finding specific cases; <u>and uses words or symbols to express the rule/generalization of a linear relationship.</u>	3	2, 3
Reading example: **R—5.2.1 Students identify the meaning of unfamiliar vocabulary by…** Using strategies to unlock meaning (e.g., knowledge of word structure, including prefixes/suffixes and base words; or context clues; or other resources, such as dictionaries or glossaries; or prior knowledge)	2	1, 2

*Coming Full Circle –
Grade Level Expectations and
Assessment Support Meaningful
Teaching and Learning...*

Zone of Proximal Development
(What a child can do with assistance today)

What a child can
do independently

What a child can
do independently
tomorrow

**Actual
Development
Area**

**The
ZONE**

**Potential
Development
Area**

Dynamic area

Causes development to move forward

Social interaction essential (Scaffolding for Learning, Vygotsky)

For more information:

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