

Alignment by Design

Designing and Prioritizing Developmentally Appropriate Grade Level Expectations

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Alignment by Design

- Karin Hess – Thumbnail Sketch of Development Process
- Marge Petit – Mathematics Prioritization Activity
- Panel
 - Elizabeth Hyman: Field Reviews & School Response
 - Doug Harris: Applying in Other Content Areas
 - Tim Kurtz: Strengths & Challenges of Multi-state Consensus (AKA Playing Nicely with Others!)
- Jim Popham - Discussant

The ultimate validity test...

“If a school is identified under NCLB for low performance in mathematics, the response by the school should be to strengthen the mathematics instruction based upon a solid set of grade level expectations.”

Tim Kurtz, NH Assessment Director

What was unique about this GLE development process?

- Closely linked to learning...and support for classroom instruction
- Working towards the BIG ideas of each discipline
 - Structure of GLEs
 - Prioritization
 - Distribution of Emphasis for test design
- Inform Test Specs development
- Our learning
- Re-thinking what we thought we learned...

Design Features of the NECAP Assessment ...

- New England Common Assessment Program GLEs – Determining concepts and skills to be assessed, by grade level;
- Prioritization;
- Distribution of Emphasis across the content strands;
- Depth of Knowledge (Webb) and Levels of Complexity (NAEP);
- Item types matched with examples;
- Conserving the Mathematical Construct;
- Describing Increasing Text Complexity; and
- Expert and Field Reviews.

Design Features for GLE Development...

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- **Prioritization;**
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Definition of a GLE ...

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.

Development Criteria GLEs ...

- Must relate to the VT, NH, and RI standards.
- Maintain a balance between a generalizable skill, concept, or piece of knowledge, **and** have enough specificity to differentiate skill, concept, or knowledge between adjacent grades, to make it clear to teachers what is to be taught and learned, *without being so specific that it narrows the curriculum.*
- Explicitly indicate cognitive demand (interaction of content and process). There should be a mix of cognitive demands at all grade levels, not an assumption that students in lower grades do less cognitively demanding work.
- Be specific and clear enough to know how it will be assessed.
- Contain language that describes expected performance so that a student's performance in relation to the GLEs can be validly assessed for state assessment purposes.

The “Set of GLEs” should ...

- Be of comparable grain size.
- Differentiate concepts, skills, and knowledge between adjacent grade levels.
- Reflect the relative importance of the discipline, as defined by the Distribution of Emphasis.
- Promote coherent, focused, developmentally appropriate instruction, as opposed to isolated instruction *just* on topics, facts, or individual skills that need to be covered.
- Be reasonable to adequately learn within a school year, and still allow for learning additional state and local expectations (assuming prior learning).
- Be constructed as a continuum of learning:
 - Success in one grade should be a good predictor of success in the following year.
 - Success on GLEs across multiple years should be a good predictor of performance at the national benchmark years. (i.e., NAEP).

Format of GLEs...

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

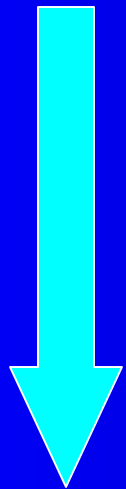
W-4-7 In informational writing, students effectively convey purpose by...

W-4-7.2 Stating and maintaining a focus/controlling idea on a topic .

Differences between adjacent grades are underlined.

Designed to 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

3 Ways GLEs Generally Develop across Grade Levels

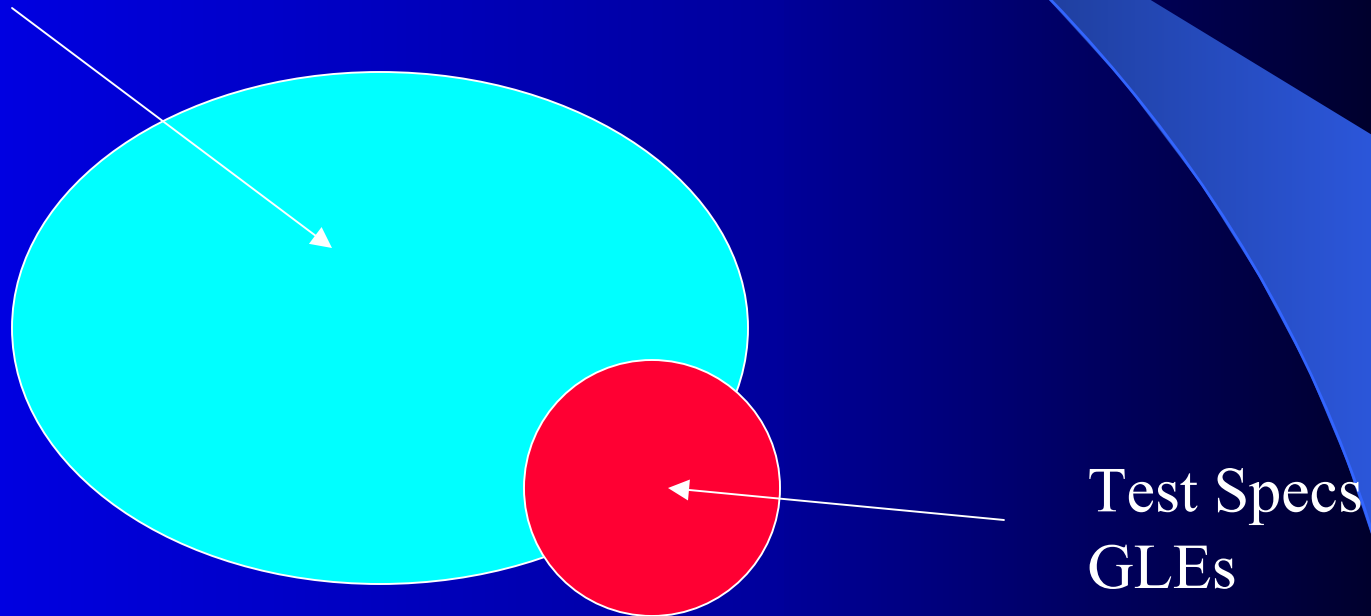
- **Accumulate:** GLEs that accumulated knowledge, concepts, or skills across the grade span.
(E.g., as you move from grade 3 to 8 in mathematics, the number of graphs students need to use increases.)
- **Discontinues/Begins:** GLEs which as a whole, or in part, are phased out/in as you move across grades.
(E.g., in reading, Word Identification discontinues by grade 6.)
- **Increases in cognitive complexity:** GLEs that do not add additional concepts or skills, but require deeper knowledge.
(E.g., Reading GLEs that interact with test complexity in applying Vocabulary Strategies or Analysis of Text)

Prioritization

- Testing Space:
 - Determining State/Local GLEs
 - Determining Appropriate Grade Levels
- Time for Teaching and Learning

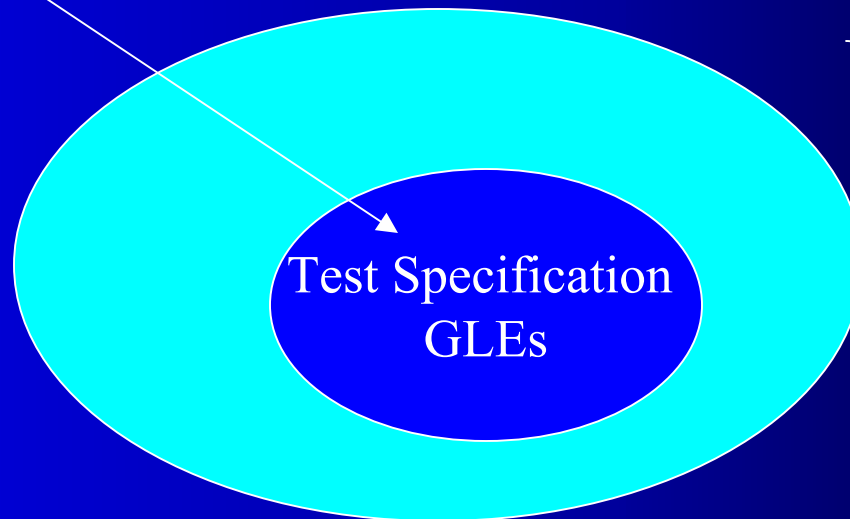
Goal: To move away from...

Local Curriculum
& Assessment GLEs



Two Types of Grade Level Expectations

Test Specification
GLEs for the large-
scale assessment



GLEs for
local
curriculum
and
assessment

Characteristics of Two GLE Types

Test Specification GLE

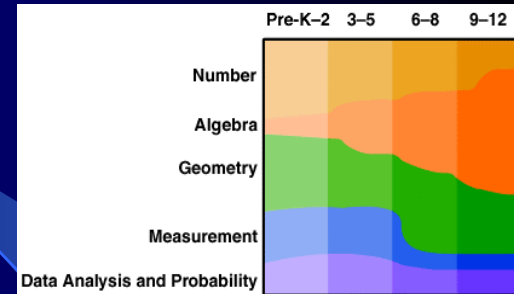
- Must be assessable in an on-demand large-scale setting
- Should be a prioritized set

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

- 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?



Design Features for Developing Test Specifications

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Distribution of Emphasis for Test Specification is influenced by...

- Review of literature/research and national standards and assessments
- Number of GLEs – but NOT driven by the number of GLEs
- Specifics described within GLEs
- Sampling protocols (ands/ors, e.g./i.e.)

Sample Distribution of Emphasis for NECAP Reading

Reporting Categories	Gr 3	Gr 4	Gr 5	Gr 6	Gr 7	Gr 8
Word Ident (R1)	20%	15%	10%	0	0	0
Vocabulary (R2, R3)	20%	20%	20%	20%	25%	25%
Initial Understanding (Lit R4/ Inf R7)	20 %	20 %	20 %	20 %	15 %	15 %
Analysis & Interpretation (Lit R5, R6/Inform text R8)	10 %	15 %	15%	20%	20%	20%
	10 %	10%	15%	20%	20%	20%

Depth of Knowledge – Levels of Complexity

- Levels that are focused on the complexity of the item, not on how different students interact with the item.
- Descriptors *in each discipline* to guide development and classification.
- Levels to help define upper limits (“ceiling”) and range of the complexity of items that are “fair game” for an assessment for a given GLE.

Depth of Knowledge (Webb)

Depth of Knowledge Levels (as applied to mathematics):

Level 1 involves recall, or the use of a procedure, solving an equation, or applying an algorithm or formula.

Level 2 involves more than one step, demonstrating conceptual understanding through models and explanations, classifying information, and interpreting data from a simple graph.

Level 3 involves reasoning, planning, or using evidence.

Level 4 requires complex reasoning, planning, and thinking over extended periods of time. In mathematics, Level 4 Depth of Knowledge will not be assessed on the state grade level assessments.

Identifying “ceilings” and “range” for assessment... Why important?

If GLEs are only assessed at the “ceiling,” then...

- The assessment as a whole might be too difficult;
- Important information might be lost about gains in student learning.

Identifying the “ceilings” and “range” for large-scale assessment items...

GLE	DOK Ceiling	Range
<p>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></p>	3	2, 3
<p>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)</p>	2	1, 2

Providing Item Types Matched with Examples

Reading GLE	R—3--7.1 Demonstrate initial understanding of informational texts (expository and practical texts) by... Obtaining information, using text features (e.g., table of contents, glossary, basic transition words, bold or italicized text, headings, graphic organizers, charts, graphs, or illustration)
Focus	The intent: Identifying and using text features within text passages to obtain specific information.
Examples	<p>1. The author uses the headings in this article to help the reader find...</p> <ul style="list-style-type: none">a. page numbers.b. important dates.c. how things are alike or different.d. what a word means. <p>This item asks students <i>how</i> text features help the reader locate information.</p> <p>2. Under which heading would you find two ways that animals are different from plants?</p> <p>The CR item, asks students to find specific information using the text feature and assesses whether the student knows what a heading is, in order to find the correct heading. A multiple choice item would provide headings to choose from and also be appropriate, but have a lower cognitive demand.</p>

Conserving the Mathematical Construct (Petit and Lager 2003)

- Explicitly aligning items with mathematical construct being assessed— content and process demands in GLE;
- Make intentional decisions of when and how to use context to assess the mathematics construct;
- Streamlining language (Lager, 2003) to provide access without compromising mathematical construct being assessed;
- Appropriately using graphics, pictures, graphs, tables, diagrams, and models.

Text Complexity Factors

(Hess & 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**

Design Features for Refining GLEs...

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- **Expert and Field Reviews.**

Field Reviews in Each State

We asked 4 Questions:

- Is the GLE articulated in a way that it is clear what is expected of classroom instruction/curriculum and state or local assessment?
- At the grade level at which you are responding, are the differences within the GLEs between adjacent grades clear?
- For the grade level at which you are responding, is this GLE more rigorous, similar to, or less rigorous *than what is presently expected in your school?*
- Does the set of GLEs *within* each content cluster promote coherent instruction, without narrowing your curriculum? How could they be improved?

Analysis of Review Feedback

- Revise GLE for clarity?
- Revise GLE for content?
- Address through professional development?
- Develop support materials to assist local curriculum and assessment?
 - Glossary
 - Instructional strategies
 - Assessment models

The journey continues - states are working to...

- Extend to other grade levels (K-HS)
- Apply to other content areas
- Support professional development – curriculum alignment, instructional strategies, classroom assessment, use of student work to “mine” diagnostic and instructional information