NEXT GENERATION SCIENCE STANDARDS ASSESSMENT

PRECONFERENCE PRESENTATION

WILLIAM BENNETT

CENTER FOR EDUCATIONAL TESTING AND EVALUATION

TRANSITION FROM KSS TO NGSS

- Kansas Science Standards Assessments for 2014-2015
  - Aligned with Next Generation Science Standards
  - All KSS Assessed Indicators NOT aligned have been removed
  - Upcoming assessment is half as long (~30 for HS/MS, ~20 for ES)
- Next Generation Science Standards Assessment for 2015-2016
  - Currently in development
  - Typical length (~60 for HS/MS, ~30 for ES)
  - Reflects structure and content of NGSS

NGSS ASSESSMENT

- NGSS developed to emphasize
  - Links among Core Ideas, S&E Practices, and Crosscutting Concepts
  - Importance of Engineering within and between braches of science
- Inquiry, History/Nature of Science, and Personal/Environmental Perspectives
  - Incorporated throughout instead of separate categories
- Assessment writing reflects integration and areas of emphasis
  - Science and Technology is special case

ENGINEERING DESIGN

- Performance Expectations for Engineering reflect actual practice but
- Engineering Design is embedded within other domains
  - Engineering in physical science
  - Engineering in life science and
  - Engineering in Earth and space science
- Item writing for assessment is intended to reflect the standards
  - Progression of PE for Engineering Design within the testlet

EXAMPLE OF ENGINEERING

- Too many considerations for item writing to cover
  - Cheat sheet provided for your convenience
- Examples of an ES, MS, and HS engineering testlet
  - Mistakes and errors are present in the examples
- Read over and review each of the engineering items
  - PE for engineering are at the bottom of the page
- Please turn in example sheet when finished!
  - (We're also interested in future reviewers if you're willing to help)

30 MINUTE BREAK TO REVIEW EXAMPLES

FINDINGS FROM ENGINEERING EXAMPLES

- How well did the items align with the NGSS?
- Did you see any errors or “don’ts” when reviewing them?
- Alternatives for higher/lower grade levels?
- Alternatives for different science domains (Physical to Life?)

STRUCTURE OF NGSS ITEMS

- Connections among Core Ideas, SEPs, and CCCs
  - Frequent (50-75%) use to testlets to link components within the assessments
  - Not all PE's have an SEP or CCC but many have both
  - All items will have a DCI at its core though
- Some items (10-25%) will be individual items
- Not all PE's will be assessed (71 HS PE's, ~60 items)
  - A list of assessed PE's will not be given
  - The PE's assessed each year may vary

DEVELOPING NGSS ITEMS

- Item writing starts with the DCI for each grade level
- SEP and CCC connections made second
- Items are written at different difficulty and cognitive types
  - Difficulty: Easy, Intermediate, and Hard
  - Depth of Knowledge: Memorization, Skill/Application, and Critical Thinking
  - Most items will NOT be Memorization (~10%) either easy or hard
  - Most items will be Skill/Application (~50-80%)

TECHNOLOGY ENHANCED ITEMS

- Technology enhanced (TE) items add functionality to items
- TE items will NOT be used because they are new and shiny
- TE items will assess skill/applications to match student activities
  - Drag-and-drop items on a grid (ordering events, component parts)
  - Graph lines or line segments (lab data)
- New TE functions will be developed over the next year
  - Initially, low number of TE items (~10%)

REVIEWING ITEMS

- Once items are written, extensive rounds of review begin
  - Alignment to NGSS
  - Proof-reading for grammar
  - References for scientific accuracy
  - Review for grade appropriate language/vocabulary
  - Review for bias and sensitivity
  - Revisions for special considerations (Braille, large-print, Spanish, etc.)
  - Year-long process…

QUESTIONS ABOUT THIS YEAR'S KSS OR NEXT YEAR'S NGSS ASSESSMENT?

CONTACT INFO

- Matt Krehbiel mkrehbiel@ksde.org @ksscienceguy
  - Matt prezi presentation: http://prezi.com/8-vpfjusngy7/?utm_campaign=share&utm_medium=copy&rc=ex0share
- William Bennett william-d-bennett@ku.edu

THANK YOU FOR YOUR TIME