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Indiana Department of Education

Glenda Ritz, NBCT
Indiana Superintendent of Public Instruction

Indiana Department of Education State Board of Education 8/5/2015

2010 Science Standards Revision

Jeremy Eltz

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Revision Goals

- 2010
  - Complete overhaul of previous standards
  - Included Process, Design, engineering, and technology
  - Reduced the number of standards
  - Included Literacy Standards
  - Rated highly in the country

- 2016
  - Update current standards to latest national research
    - Framework for K12 Science Education & Next Generation Science Standards
    - Project 2061
    - National Science Education Standards
  - Continue to pare down to essential knowledge
  - **Include Computer Science K-8**

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Standards Revision

- What we have done
  - Analyzed Next Generation Science Standards (NGSS)
  - Cross-walked NGSS with 2010 Standards
  - Reviewed the adoption of other states
  - Defined review groups and management structure

  - Recruitment: online application for volunteers
  - Set-up online review groups and populated with resources for review
    - Learning Connection
  - First round of revisions
  - Posted for online Public Review, Due August 21

http://www.doe.in.gov/ccr/public-comment-science-standards

Revision Timeline

- February
  - Post application
  - Define review groups
  - Set up online review platform
- March-April
  - Formed review groups
  - Training and support for revision teams
- May-June
  - First round revisions

- July
  - Draft development
- August
  - Public Review
- September
  - Second round revision
- October
  - Second round public comment

Revision Timeline Cont.

- November-December
  - Final round of revision
  - College and Career Ready Committee evaluation
  - Resource determination & development

- January-March
  - State Board of Education adoption
- Goal is an early 2016 adoption

Reviewers

- Over 150 volunteers from:
  - Public, private, charter, and homeschool
  - Every grade level
  - All regions of the state
  - Near equal representation from urban, suburban, & rural

- Teachers, administrators, professors, and industry

- Almost 20 Doctorates or PhDs

- Purdue, Rose Hulman, Notre Dame, IUPUI, Taylor, IUSB, IPFW, Ball State, Marian

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Kindergarten Revision Example

Indiana's 2010 Academic Standards	Next Generation Science Standards
Standard 1: Physical Science	
K.1.1. Use all senses as appropriate to observe, sort and describe objects according to their composition and physical properties, such as size, color and shape. Explain these choices to others and generate questions about the objects.	2-PS1-1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
K.1.2. Identify and explain possible uses for an object based on its properties and compare these uses with other students' ideas.	2-PS1-1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

Example K.1.1 Comments:
- I would not combine these. The 2 NGSS standards are from Grade 2. and should go
- I agree to keep this standard and add 2-PS1-1 as a separate standard indicator for Physical Science…..

Example K.1.2 Comments:
- I like the wording of the NGSS standard here
- Keep this as is K.1.2 and please consider adding the forces and motion standards….

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Kindergarten Revision Example

Indiana's 2010 Academic Standards	Next Generation Science Standards	**Revised Standards**
Standard 1: Physical Science		
K.1.1. Use all senses as appropriate to observe, sort and describe objects according to their composition and physical properties, such as size, color and shape. Explain these choices to others and generate questions about the objects.	2-PS1-1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.	Plan and conduct an investigation using all senses to describe and classify different kinds of objects by their composition and physical properties. Explain these choices to others and generate questions about the objects
K.1.2. Identify and explain possible uses for an object based on its properties and compare these uses with other students' ideas.	2-PS1-1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.	Identify and explain possible uses for an object based on its properties and compare these uses with other students' ideas.

Computer Science K-3

Grades K-3 Computational Thinking

The student will be able to:

1. Use technology resources (e.g., puzzles, logical thinking programs) to solve age-appropriate problems.
2. Use writing tools, digital cameras, and drawing tools to illustrate thoughts, ideas, and stories in a step-by-step manner.
3. Understand how to arrange (sort) information into useful order, such as sorting students by birth date, without using a computer.
4. Recognize that software is created to control computer operations.
5. Demonstrate how 0s and 1s can be used to represent information.

Grades K-3 Collaboration

The student will be able to:

1. Gather information and communicate electronically with others with support from teachers, family members, or student partners.
2. Work cooperatively and collaboratively with peers, teachers, and others using technology.

Computer Science Teachers Association
http://csta.acm.org/Curriculum/sub/K12Standards.html

Please Consider Review

http://www.doe.in.gov/ccr/public-comment-science-standards

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http://www.doe.in.gov/ccr/public-comment-science- Public Comment - Science ... ✕

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Public Comment – Science Standards

Posted: Tue, 06/23/2015 – 8:45am   Updated: Wed, 07/29/2015 – 9:12am

This Indiana Department of Education would like to thank you for taking the time to review and add comments on the first round of revisions for the Indiana Academic Standards for Science. We would also like you to know that these standards are not final and are considered draft, so any comments, suggestions, and feedback you can provide would be greatly appreciated. Over 100 teachers, professors, and STEM professionals have reviewed and revised these standards to get them to this point. Reviewers believe the standards may benefit from further revisions and are seeking input from other stakeholders at this time. Comments and feedback should include specific suggestions for improving the standard, this could include rewording, additions, clarifying statements, moving the standard to a different grade level, or deleting the standard all together. However, please understand that all of these standards are based in research and professional expertise so there is a reason for them being included in this first round of revision. After you review the standards, please take the survey below. In the survey there is a box for *Additional Comments*, indicate the specific standards you are referencing in that box. We would not be able to incorporate your feedback about specific standards if that is not included. All feedback will be taken back to the review teams and considered. If you would like to participate on the second round of internal revision, please contact Jeremy Eltz, jeltz@doe.in.gov.

Additional IDOE Links

Accuplacer/Remediation Information
Assessment
Early Learning
English Learners
Learning Connection
Parent Portal
Special Education

July

		1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31

Contact

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⚠ **Please post your reactions and comments no later than Friday, August 21, 2015**

- Kindergarten–Grade 2
- Grade 3–5
- Grades 6–8
- Biology I
- Chemistry I
- Earth and Space Science
- Integrated Chemistry – Physics
- Physics 1
- Physics 2
- Process Standards
- Environmental Science
- Computer Science K–8

Click Here to Submit Your Review

9:13 PM
7/30/2015

Questions?

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