

Arizona Draft Computer Science Standards Technical Review Document

Reviewer Name: **LeeAnn Lindsey**

Introduction Section

As you conduct your review of the introduction, please consider the following questions.

- A. Does the introduction provide sufficient information and guidance on how to read the standards? **Yes. The information on pgs. 14-15 is quite clear.**
- B. Does the introduction provide sufficient information on how the standards are structured? **The introduction provides a wealth of information, in fact, perhaps too much information, in that, the essential information on the computer science standards themselves got a little lost. Specifically, the section on pgs.7-8 about the integration with computer literacy, educational technology, digital citizenship, and information technology is not needed in the introduction section and seems ancillary. It's good information, but its placement in the introduction detracts from the focus on what is essential to understand within the standards document. Perhaps it would be better placed at the end of the document as an appendix that further explicates the positionality of the computer science standards, big picture.**

The “Computer Science Practices for Students” section is also somewhat confusing here, as is. The content within this section is excellent, but a bit more explanation on the context of the practices within the computer science standards would be helpful. For example, “As a result of quality implementation of the computer science standards, students will develop competency within the following seven practices...”

Finally, and **most importantly, what’s glaringly missing here is information about:**

- **Whether these are mandatory or optional for all students
 - **or mandatory at some grade levels and optional at others**
 - **or some strands mandatory and others optional****
- **Whether these are intended to be met within a “regular” classroom, integrated into other content areas, or taught as a separate content area potentially by a specialized teacher (such as art is taught by someone who specializes in art once kids get to a certain grade level and art becomes more advanced.)**

It is essential to address these in the introduction text, in order that teachers and school/district leaders know how to proceed to implementation. Additionally, the content of the standards may need adjustment based on the answers to either of these questions.

C. Is there anything missing that should be included in the introduction?

See response to item B.

Please provide feedback on the Introduction section. Include strengths and well as suggestions for refinements.

Some of the content in the Vision is repeated in the Introduction section. I recommend removing from one section or the other to tighten it up. Also, I recommend an explicit statement about whether these standards are intended for all teachers, or for “computer teachers.”

If intended to be integrated: This will be new to most mainstream teachers (i.e., not computer or computer science standards) so being explicit about integrating these standards (if that’s the objective) into all classrooms will be essential to scale the practice, along with quite a bit of professional development, resources, and time.

Standards Section by Grade Level

As you conduct your review of the grade level and High School standards, please consider these questions.

- A. Does the introductory information for the grade band and for each grade level provide enough context to understand how the standards connect within the grade and between grades within each band?
- B. Does each standard clearly state what students should know and be able to do?
- C. Can the standard be measured?
- D. Are there any ambiguous or unclear words/phrases?
- E. Do the standards in each section have appropriate **breadth**?
- F. Do the standards in each section have appropriate **depth of content and rigor** for the grade level?
- G. Is there meaningful alignment and development of skills/knowledge within each grade and from one grade band/grade level to the next?

1. Please provide feedback on Kindergarten:

- K.CS.T.1.: I especially like how this is written. It provides a great example of what the standard should look like in practice, for a K student.
- K.NI.C.1: “Appropriately use and protect” could be explained a bit more, in terms of what it would look like. For example, “Students should enter a password independently and commit to keeping their password private.”

- K.NI.NCO.1: *“Details about the connection points are not expected at this level.”* It would be helpful to describe what IS expected at this level, in addition to what is not. For example, “Kindergarten students should be able to explain that devices are connected, though details about connection points are not expected at this level.”
- K.DA.CVT.1: Great examples given for this indicator
- K.DA.S.1: This standard could use further explanation of what K students should be able to do.
- K.DA.IM.1: Some of the examples for this standard seem too high (developmentally) for K students.
- K.AP.A.1: Could use clarity on what K students should be able to do. For example, “Recognize daily step-by-step processes, such as brushing teeth or following a morning procedure as ‘algorithms’ that lead to an end result.”
- K.AP.C.1: This standard could use further explanation of what K students should be able to do.
- K.AP.PD.1: The phrase “their program” is vague within this description. Does it mean K students should write a program? If so, something very explicit needs to be added to the introduction stating that programming is a new expectation for all students starting in K. If not, and this can be integrated or substituted, then replacing “their program” with “an end product” might work.
- K.AP.PD.3: It is not clear what K students should be able to do. Providing an example would help.
- K.AP.PD.4: *“the programs they create”* is confusing here. Again, I’m not sure if the standards intend for K students to write programs. If not, I suggest replacing this phrase with something that is integrated into K curriculum. For example, “K students could describe their thinking about a story map or set of instructions they develop.”

2. Please provide feedback on Grade 1:

- 1.CS.D.1: “Students could compare different web browsers or word processing, presentation, or drawing programs.” At this age, students probably won’t be using multiple web browsers or multiple presentation programs. It would be appropriate to have them determine the right tool for the right job, i.e., answer the question, “What do you want to accomplish?” then select a tool that is best suited for the task, as in, “you want to type a story, so MS Word or Google Docs would be a good tool to use.”
- 1.CS.T.2: I really like how this is written. It gives specific examples while also acknowledging that solving the problems should happen as they occur (not manufactured for a lesson).
- 1.NI.C.1: What does *“They should appropriately use and protect the passwords they are required to use”* mean for a first grader? Is it the same as for a K student? When phrases like “appropriately use” are used, there is a lot of room for assumption on the part of the reader. It is helpful to replace this language with something more concrete.
- 1.NI.NCO.1: *“Details about the connection points are not expected at this level.”* It would be helpful to describe what IS expected at this level, in addition to what is not. (This is the same feedback I gave for the same standard at the K level.) For example, “First graders should be able to explain that devices are connected, though details about connection points are not expected at this level.”

- 1.DA.S.1: Same feedback as the standard for K. It could use further explanation of what 1st grade students should be able to do. For example, “First graders should be able to retrieve files that they previously used and saved.”
- 1.AP.A.1: Needs an example to illustrate what first graders should be able to do.
- 1.AP.C.1: This standard had me puzzled in K and again in grade 1. The way it is written, it sounds as though students should be writing programs. Is this the expectation? If not, an example of how they can demonstrate this integrated into content would be helpful.
- 1.AP.PD.1: Same feedback as the same standard in K. The phrase “their program” is vague within this description. Does it mean K students should write a program? If not, I think that replacing “their program” with “an end product” might work.
- 1.AP.PD.3: Same feedback as the same standard in K. It is not clear what K students should be able to do, as in, what algorithms and problems will they work with to meet this standard? Providing an example would help.
- 1.AP.PD.4: Same feedback as K.AP.PD.4 in terms of the expectation for them to write programs.
- 1.IC.SLE.1: I would recommend replacing this language, “Rules guiding interactions in the world, such as “stranger danger,” apply to online environments as well,” with something more positive, such as, “Students should commit to interacting with only those they know in person, in an online environment.” I am a firm believer that digital citizenship needs to be phrased in positive, empowering language, rather than fear-based language.

3. Please provide feedback on Grade 2:

- 2.CS.D.1: Most students in second grade won’t have a lot of experience using software with the same functionality, such as multiple presentation programs. They may have experience using both MS word and Google docs. I suggest giving that example to make it seem more do-able for second graders or revising the expectation to having them identify one or two applications that would work to meet an intended purpose.
- 2.CS.T.1: “(e.g., when an app or program is not working as expected, a device will not turn on, the sound does not work, etc.)” The same examples are used for the K and 1 standard. I suggest using different examples for 2nd grade because by this age, they can be a little more specific about the problems, such as a hyperlink is broken, or a device is frozen, etc.
- 2.NI.C.1: “They should appropriately use and protect the passwords they are required to use.” Same feedback as for the standard in K and 1. What does “appropriate use” look like at second grade? This clarification will help teachers greatly.
- 2.NI.NCO.1: It would be helpful to describe what IS expected at this level, in addition to what is not. (This is the same feedback I gave for the same standard at the K and 1 level.) For example, “Second graders should be able to explain that devices are connected, though details about connection points are not expected at this level.” I think it is okay if it is the same indicator as used in K as long as what is expected is clarified.
- 2.DA.S.1: Same feedback as the standard for K and 1. It could use further explanation of what 2nd grade students should be able to do. For example, “Second graders should be able to save

files using an intentional strategy, such as placing it in a specific folder, and retrieve those files later.”

- 2.AP.A.1: Needs an example to illustrate what second graders should be able to do.
- 2.AP.C.1: See feedback for 1.AP.C.1 (same)
- 2.AP.PD.1: See feedback for 1.AP.PD.1 (same)
- 2.AP.PD.2: By second grade, student can give attribution in written form, at minimum by listing a website where they got information/picture/music. They may also use a citation builder to format into APA or MLA format.
- 2.AP.PD.3: See feedback for 1.AP.PD.3 (same)
- 2.AP.PD.4: Same feedback as 1.AP.PD.4 in terms of the expectation for them to write programs.
- 2.IC.SLE.1: Same feedback as 1.IC.SLE.1 in terms of phrasing it in the positive.

4. Please provide feedback on Grade 3:

- 3.CS.HS.1: This indicator is formatted differently than the others, with “Explanation:” at the beginning. I recommend removing this for consistency in formatting. Additionally, it would be helpful to add what students should be expected to do in the description, especially because the standard begins with “Recognize” which is not observable/measurable.
- 3.CS.HS.2: This indicator is formatted differently than the others, with “For example” at the beginning. I recommend revising this for consistency in formatting. Additionally, it would be helpful to add what students should be expected to do in the description, especially because the standard begins with “Recognize” which is not observable/measurable.
- 3.NI.C.1: It would be helpful to provide an example of a “*topic that is applicable to students and the programs/devices they use*” for this grade level.
- 3.NI.NCO.1: This indicator includes an explanation of the paths for information communication, but lacks direction on what students should be able to do. Using the word “Model” at the beginning of the standard confounds the vagueness. It would be helpful to explain what it means to “model how information flows...” What would this look like as a third grader?
- 3.DA.CVT.1: This indicator would be more clear with an example.
- 3.DA.S.1: An explanation is included, but it would be helpful to add a statement of what students should be able to do. For example, “Second grade students should recognize common file extensions such as .doc, .pdf, and .jpg”
- 3.DA.IM.1: This indicator needs a statement about what students should be able to do. An example would also help clarify the content.
- 3.AP.V.1: This explanation is unclear for the average reader. This sentence: “*Variables are used to store and modify data*” needs further explanation. Additionally, if students are expected to create a program, that should be integrated into the examples given.
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5. Please provide feedback on Grade 4:

- 4.CS.D.1: Good explanation – but needs a statement about what students should be able to do. The word “model” in the standard statement needs further explanation. For example, should

students be connecting multiple devices together to form a system? Or should they be able to explain when/how multiple devices are connected?

- 4.CS.HS.1: What should students be able to do? There's not enough information here to understand the expectation or what it might look like for a fourth grader.
- 4.CS.HS.2: See feedback for 3.CS.HS.2 (same)
- 4.CS.T.1: The phrase "develop a model" is confusing. What does a model entail? What does it look like? I am inclined to think that the expectation might be for students to "develop and apply simple troubleshooting strategies" as opposed to "creating a model." If so, I recommend rewording.
- 4.NI.C.1: It would be helpful to provide an example of a *or "topic that is applicable to students and the programs/devices they use"* for this grade level.
- 4.NI.NCO.1: This indicator includes a clear explanation of the paths for information flow, but lacks direction on what students should be able to do. Using the word "Model" at the beginning of the standard confounds its vagueness. It would be helpful to explain what it means to "model how information is broken down..." What would this modeling look like as a third grader?
- 4.DA.S.1: See feedback for 3.DA.S.1 (same)
- 4.DA.IM.1: See feedback for 3.DA.IM.1 (same)
- 4.AP.V.1: See feedback for 3.AP.V.1 (same)

6. Please provide feedback on Grade 5:

- 5.CS.D.1: Good explanation – but needs an explanation of what students should be able to do. For example, should they be able to connect multiple components that are interdependent?
- 5.CS.D.2: This lacks any indication of what students are expected to do, both in the standard and the description. I recommend adding verbs, as appropriate, such as "Explain," "Identify," or "Describe."
- 5.CS.HS.1: What should students be able to do? There's not enough information here to understand the expectation or what it might look like for a fifth grader. For example, should they be able to explain the conversion of roman numerals to binary equivalents? Or, should they be able to convert roman numerals to binary equivalents?
- 5.CS.HS.2: The explanation for this standard is clear. I recommend revising the phrase "provide examples" to "demonstrate" or "explain."
- 5.CS.T.1: I like the phrase "Independently apply" – that is very clear. By fifth grade, students could apply more sophisticated troubleshooting strategies than checking connections and power. I recommend giving a couple different examples.
- 5.AP.V.1: See feedback for 4.AP.V.1 (same)
- 5.AP.PD.3: This indicator is formatted differently than the others, with "Explanation:" at the beginning. I recommend removing this for consistency in formatting; it isn't needed.
- 5.AP.PD.4: This indicator is formatted differently than the others, with "Explanation:" at the beginning. I recommend removing this for consistency in formatting; it isn't needed.

- 5.AP.PD.5: This indicator is formatted differently than the others, with “Explanation:” at the beginning. I recommend removing this for consistency in formatting; it isn’t needed.
- 5.IC.C.1: This indicator is formatted differently than the others, with “Explanation:” at the beginning. I recommend removing this for consistency in formatting; it isn’t needed.
- 5.IC.C.2: This indicator is formatted differently than the others, with “Explanation:” at the beginning. I recommend removing this for consistency in formatting; it isn’t needed.
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7. Please provide feedback on Grade 6:

- 6.CS.D.1: This could use some further explanation. What does it look like to consider usability through several lenses? What should students be able to do, explain, or apply?
- 6.CS.HS.1: Could use an example to explain what students should be able to do.
- 6.CS.T.1: Are students expected to also apply troubleshooting solutions to the problems? As it is written, they are only expected to identify the problems.
- 6.NI.C.1: Is it appropriate to expect students to “*identify different methods of encoding and decoding for encryptions*”? If so, then it might be helpful to give examples of the different methods they should be able to identify. This may be too complex. Is there a way to take the same concept but “dial it down” a bit?
- 6.NI.C.2: This indicator is formatted differently than the others, with “Explanation:” at the beginning. I recommend removing this for consistency in formatting; it isn’t needed.
- 6.NI.NCO.1: This indicator is formatted differently than the others, with “Explanation:” at the beginning. I recommend removing this for consistency in formatting; it isn’t needed.
- 6.DA.CVT.1: What is meant by “transform data”? I suggest an example that will help explain what this looks like. I assume you mean into a graphic representation, so using that phrase may help clarify.
- 6.DA.S.1: “binary and ASCII” may need additional explanation.
- 6.AP.A.1: I’m not sure “recognize” is the right word here. Would “use” or “apply” be more accurate?
- 6.AP.M.1: The descriptor is the same as the standard. This may be a typo?
- 6.AP.PD.1: I like the way this is written.
- 6.IC.SLE.1: This could use a little more explanation on what this looks like specifically in 6th grade compared to the other grades. In the lower grades, I believe 2nd grade (same standard), things like keeping passwords private were mentioned. What are some examples for this grade level?

8. Please provide feedback on Grade 7:

- 7.CS.D.1: I like how this is written better than the same standard in 6th grade. Consider using this language there, too.
- 7.CS.HS.1: I like how this is written better than the same standard in 6th grade. Consider using this language there, too.

- 7.CS.T.1: I like the examples given for this one. My question here is whether the expectation for students is to evaluate solutions or evaluate strategies. The standard says they are to evaluate solutions, while the examples given are strategies to solve the problem. Those have different meanings.
- 7.NI.NCO.1: “The priority at this level is understanding the purpose of protocols and how they enable secure and errorless communication.” The standard states though, that they should develop models to illustrate the role of protocols. This seems like a mismatch to me. If the focus is on understanding the purpose of protocols, then maybe developing a model isn’t the right wording.
- 7.NI.C.1: I like the way this is written. My question is more around the content/expectation. Is it necessary for students to understand this level of encryption methods, such as Caesar cyphers or steganography? If these standards are intended for all students in AZ, then this may not be appropriate. If the standards are intended as optional, then it works just fine.
- 7.DA.CVT.1: This seems less explicit than the same standard in lower grades. An example for this grade level might help clarify.
- 7.DA.IM.1: A question remains for me about whether these standards are supposed to be met through classroom (content) teachers or in a stand-alone computer class. If the former, this standard seems unrealistic as an expectation for all.

9. Please provide feedback on Grade 8:

- 8.CS.T.1: Same feedback as 7.CS.T.1 regarding the distinction between strategies to identify solutions, and the solutions themselves.
- 8.NI.C.1: The language here is a bit more clear than in 7.NI.C.1. I would replace the 7th grade description with this one. Though, my question from 7.NI.C.1 still applies about whether or not this is a necessary level of understanding for all 7th grade students.
- 8.NI.NCO.1: Same comments as 7.NI.NCO.1
- 8.DA.CVT.1: This is written more clearly than 7.DA.CVT.1. I suggest using this language there, too.
- 8.DA.IM.1: Same comment as 7.DA.IM.1
- 8.AP.PD.2: Here, I have some questions around the content/expectation. Is it necessary for students to understand this level of coding? If the standards are intended for all AZ students, then this expectation may be unrealistic. If they are optional, then it is just fine.
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10. Please provide feedback on High School:

- HS.CS.D.1: This standard is reasonable, yet it doesn’t seem “connected” to the same standard from K-8. Instead of being a logical progression in the same concept, this seems like a different concept. Consider tweaking the same standard at the MS level to transition more smoothly.
- HS.CS.HS.1: I’m not sure “compare levels of abstraction...” is the right language for this standard. If I’m wrong, and the expectation is actually for students to compare levels of abstraction and interactions, then more is needed in the description about what is being compared and how.

- HS.CS.T.1: This is very clear
- HS.NI.C.1: “Give examples” might be replaced with “Describe how sensitive data...”
- HS.NI.C.2: This description is a little confusing. Starting with, “*Students should systematically evaluate the feasibility of using computational...*” it is unclear how it relates to the concept of recommending security measures. It seems as though there are a few different concepts in this one standard and they are competing against one another.
- HS.DA.IM.1: The standard language itself (as opposed to the description) is rather “muddy,” meaning, there’s a lot going on in the standard statement making it difficult to read/understand. I recommend simplifying it.
- HS.AP.M.1: I recommend adding an example here.
- HS.IC.C.1: I really appreciate how equity is brought into this standard. In fact, I wish equity was also integrated in K-8. So important in this work!
- HS.IC.SI.1: I would revise the standard language slightly, removing the word “connectivity” as it could be confused with network connectivity. “Analyze the impact of tools and methods for increasing collaboration,” seems clearer. Also, the example should have students applying the tools and methods THEN analyzing. “For example students use different social media tools and analyze their effectiveness for teamwork and collaboration,” is more appropriate.

Standards Section organized by Essential Concept, Subconcept and learning progression

You have also been provided with each standard organized by essential concept to review and provide feedback on the development of the learning progression for each essential concept. As you conduct your review of the progression, please consider the following questions.

- A. Does the standard address meaningful content within each essential concept?
- B. Do the standards within each progression, including subconcepts have appropriate **depth of content and rigor**?
- C. Is there meaningful alignment and development of skills/knowledge within each grade and from one grade level to the next for each progression?

1. Please provide feedback on the Essential Concept Computing Systems:

Starting in Gr. 6, these standards seem complex for a content-area teacher to do. They are far more “computer science centric” rather than something that can be integrated in content instruction. In looking at some other states’ draft standards (referenced in the standards document), our standards seem much more advanced, in comparison. For example, in the substrand, “Computing Systems” our standards expect 8th grade students to understand HCI and be able to improve systems. In Wisconsin, HS students are applying reasonable criteria

for evaluating computer systems for a specific purpose. Wisconsin's standards seem more realistic for all students to master.

2. Please provide feedback on the Essential Concept Networking and the Internet:

Similar feedback as what I wrote for Essential Concept 1. Starting in Gr. 6, these standards seem complex for a content-area teacher to do. They are far more "computer science centric" rather than something that can be integrated in content instruction. The description in 8.NI.C.1 says, "Students should encode and decode messages using a variety of encryption methods.." and "students could secure messages using methods such as Caesar cyphers or steganography..." The same standard in Wisconsin for 6-8 grade is to "Analyze and summarize security risks associated with weak passwords, lack of encryption, insecure transactions, and persistence of data." Again, I believe their level of rigor for the same concept is more meaningful and appropriate than ours, if our standards are intended for ALL AZ students.

3. Please provide feedback on the Essential Concept Data and Analysis:

I very much like the focus on using data and creating meaningful representations of data. This is a strength of the standards. It is also easy to integrate into other content areas, thus making it realistic and meaningful/applicable in many forms.

Some of the subconcepts didn't seem to have a full "through line" in each of the grades. For example, in the younger grades, there seemed to be a strand on file management, where students would learn how to save and retrieve files. In later grades, the DA.S.1 strand turned into something totally different about bit representations of non-numerical data; the previous emphasis on file management disappeared in middle levels then appears back in HS in HS.DA.S.2. I recommend looking at the numbering and making sure that there is through lines wherever possible and that the numbering system aligns at each grade level for similar concepts. Wisconsin does a nice job of formatting the standards to visually show the through line across grade bands, while also acknowledging that some concepts don't belong in some grade bands. Could this be a model for AZ's standards?

4. Please provide feedback on the Essential Concept Algorithms and Programming:

This concept is the one that prompted the most questions for me, mainly, is this standard intended for ALL students or some students who have a special interest in programming (particularly the subconcept for program development - AP.PD.1)? In lower grades, some of the subconcepts can be integrated into other core content, such as K.AP.V.1, and some seems like a "stand alone" concept where there should be direct instruction and dedicated time to programming and coding such as K.AP.PD.1 and K.AP.PD.3. This same question (about whether or not ALL students were expected to program/code) kept coming up until about 6th

grade, when I finally started assuming that this was intended for a specialized class in computers/computer science rather than the mainstream content area teacher. My next question is/was: Are these standards mandatory for all students? Or, are they optional? If they are for all students, then I have some issues with the level of depth in this area. While I absolutely advocate for all students to have an opportunity to learn programming and coding, I do not believe that all students need to go so in depth with the skills specified here. All students can be exposed to the skills but I don't see ALL 6th grade students combining control structures and organizing code for multiple projects, for example. On the other hand, if these standards are optional and/or not intended for all students, then I think the level of rigor is quite appropriate. I could see introducing students in the younger grades to opportunities and as they get older, they may have opportunities for an elective that would develop more intricate knowledge and understanding of coding and algorithms where they would do what this strand indicates.

5. Please provide feedback on the Essential Concept Impacts of Computing:

One question that comes to mind when I think about this strand is, will there continue to be educational technology standards (in addition to computer science standards)? And if so, will they continue to be updated? The reason I ask this is because if these computer science standards are intended to replace the educational technology standards, then there is too little emphasis on digital citizenship. There are more strands of ethical use that need to be included. However, if the educational technology standards are going to not only remain in place, but also be updated, then digital citizenship can be emphasized within those, thus the ethical use piece in this set of standards would be just fine, as is. Personally, I hope the educational technology standards will continue to exist and encompass much of the digital citizenship piece so that the ethics piece in computer science is more tightly connected to the computer science content, as it is in current form.

I like the substrand around culture in this strand. It's appropriate and meaningful.

Subconcept: Safety, Law, and Ethics (SLE): It seems like this subconcept goes back and forth between security of one's own information (passwords, personal info, etc.) and copyright. Either one or the other is represented at different grade levels. I wonder if this should be delineated into two separate standards so both can be represented at each grade level.

Glossary and Additional Resources

Please provide any additional comments related to the Glossary and Additional Resources section that you would like the working group to consider.

I'm glad to see ISTE Standards included. The ones identified should be marked as "ISTE Standards for Students (2016)". Additionally, ISTE is currently finalizing ISTE Standards for Computer Science Educators, which, once published, should also be added here.

Additional Feedback

Please provide any additional comments about this draft that you want the revision working group to consider. Also use this an opportunity to summarize the strengths of the draft standards.

Overall Feedback

Overall, I think this is a good first draft. I can tell a lot of hard work has been put into this and that the national frameworks for computer science have been considered. However, these standards are quite wordy compared to other computer science standards. I wonder if the language could be simplified to become more succinct. Also, the technical knowledge and skills set needed by students to meet these standards (and the knowledge and skills of the teacher to teach them) is much higher than what I have seen from other states, for the same concepts/subconcepts. This leads me to believe that the standards, at least at some grade levels, or some concepts are optional, not intended for all teachers to teach all standards. If my assumption isn't correct, then some of the content within the standards should be reviewed to be more consistent with what other states are expecting.

Additionally, the standards should use a consistent format and "voice" across concepts, subconcepts, and grade levels. I understand the process for drafting these standards probably had various people writing text across concepts and grade levels, which is why they "sound" different. Yet, before they are finalized, the language should be looked at and revised for consistency. Here's what I noticed, in the process of my review:

There seem to be 3 parts to the content for the standards: 1) An explanation of the standard, 2) an example, and 3) a statement about what students should be able to do. One strength of the document is that most of the explanations were clear.

Sometimes, 2 and 3 are combined, e.g., "Second grade students should..... for example...."
Sometimes, 2 and/or 3 do not exist.

I highly recommend that each standard be formatted in the same way (or very similar way), including all three components (explanation, example, statement about what students should be able to do)

Specific Feedback

Practices: Practices are noted at the bottom of each standard: "*Practice(s)*: Developing and Using Abstractions: 4.4" –

I know the first number refers to the practice number. I'm not sure what the second number represents... the .4 (after the decimal point). Is that identified anywhere?