Standards Analysis

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While further examining the standards relevant to teaching Kindergarten, I was able to see a correlation among standards. Problem solving and engineering were present among various standards and overlapped with several in other content areas.

The first standard I analyzed was CCSS.MATH.CONTENT.K.G.B.5-Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes. This standard immediately refers to the verbs that coincide with engineering. Model, draw, and build are mentioned in the standard above. The relevancy of constructing items in the world around a Kindergartener allows them to make a connection to content as well as retain meaningful content.

The second standard I studied was the NGSS standard K-PS2-1-Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. This standard addresses engineering as well as problem solving. The verbs plan and conduct depict a plain illustration of an experiment conducted through the use of problem solving as well as engineering.

The last standard I reviewed was the NGSS standard K-PS3-2-Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area. This standard address both problem solving and engineering due to the fact that the students are responsible for designing and build a structure with a main purpose.

All of the standards listed above are similar when addressing engineering but one is more vague when problem solving is considered. The CCSS-K.G.B.5 requires students to model objects in the world around them, but does not require students to complete a critical thinking task. I think that this standard could be rewritten to address problem solving in a more rigorous manner.

Engineering design and problem solving should be thoroughly addressed in cross-curricular units in order to enhance and enrich learning experiences. Allowing students to make relevant connections to content though engineering and design challenges will have a lasting effect on the students learning. Students need to be able to approach challenges with the ability to persevere. As an educator it is our job to equip our students with the skills needed to achieve and succeed in life. College and career readiness has become a focus in our district. In order for our students to become college and career ready we need to design rich lessons that will push our students to think outside of the box and present problems with several different solutions. Life is unpredictable and the way we teach should be too.

Sources

The Nature of Science in the Next Generation Science Standards. Appendix H. (2013). Washington DC: The National Academy Press

Standards for Mathematical Practice. (n.d.). Retrieved February 12, 2018, from http://www.corestandards.org/Math/Practice/