

Standards Analysis

I analyzed the kindergarten sections of the 2018 Mississippi College- and Career-Readiness Standards for Science, ITEEA Standards for Technological Literacy, and Common Core Math Standards. I have to admit I have never heard of the ITEEA, so I was excited to see what it entailed. During my research, I was pleased to see how all of these standards incorporated engineering design for kindergarteners.

- Which technology education, mathematics, and science standards relate to problem solving or engineering design?

2018 MCCRS- E.K.10.3 Create a product from the reused materials that will meet a human need (e.g., pencil holder, musical instrument, bird feeder). Use an engineering design process to define the problem, design, construct, evaluate, and improve the product.*

CCMS- [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.

ITEEA- Standard 3- The study of technology uses the same ideas and skills as other subjects.

Within the ITEEA, I especially liked the Standard 3 vignette for the K-2 section. It told of a teacher using *Stuart Little* to show how technology relates to other subjects. The students built a home out of a cardboard box with rooms and other useful things for the Little family. They also used electrical devices to equip the house with lights. The students also developed a vehicle for the Little family to visit the zoo.

- How are these standards similar to each other?

These three standards are similar in the way they all can use a building aspect to show competency in a lesson using these three standards separately or together. I can also see how these standards could be used in a lesson focusing on recycling goods. The students could make a pencil holder out of reusable materials (ex. straws and tin foil) resembling shapes found in the environment. Technology can be used by creating a schematic on the computer of the product or using an electrical device to add lights or another electrical component (ex. digital name read-out).

- How are they different from each other?

These standards are different in the way they incorporate engineering. The MCCRS uses an EDP for students to use to accomplish the task of

Angel Young

incorporating reusable materials in constructing a product. The students have the freedom to create any useful product. The CCMS wants students to create a model of shapes (rectangles, squares, triangles) found in the world. ITEEA simply allows students to explore how technology relates to other fields of study to make a more meaningful connection with technology as well as other subjects.

- What are your thoughts on engineering design problem solving as a “unifying” concept/skill?

From analyzing these three standards from the different standards documents, I see how the other letters in STEM (science, technology, and mathematics) incorporate engineering. Evidence of engineering concepts can be found in all of these standards. Engineering problem-solving in the age level I teach (K-3 kindergarten) is possible. Incorporating engineering in a science lesson is the easiest for my preschoolers, but it is possible with the other areas of focus. I just received a Chrome Book for my classroom and look forward to getting into coding with my preschoolers. I think it would be great fun to have them construct an object which is codable. This lesson would nicely incorporate technology into an engineering lesson. Teaching STEM concepts in a unifying way to preschoolers is possible, but the teacher should be aware of the level of support needed for the young students. Finding a parent volunteer for these fun challenges would be a wonderful help!