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Authentic Data Integration

The engineering lesson I chose to do is a maker challenge Cool Puppy! A Doghouse Design Project from teach engineering website. This activity is suitable for middle and high school students and it covers both math and science standards easily, a summary of the activity could be added to also cover writing standards.

The goal of this activity is to solve a practical problem through the development of a doghouse to shelter their puppy from the heat. I chose this project because many of my students can relate to this lesson because many of them have dogs or animals, they need to keep cool. Many of my students have show livestock and it is important to keep those animals cool, so their hair grows thick for showing and for them to appropriately gain weight.

This lesson starts off with the challenge to keep their puppy cool during a record-setting heat wave. The students have to build a doghouse to protect the puppy from the thermal energy for the sun. The students are given a lesson on how light energy can be absorbed or reflected and about how different color surfaces absorb and reflect light. They also have a video to watch that emphasize the importance of building a thermally insulated doghouse, or for my students a shed

for their livestock. The students are given the list of materials, constraints and procedure to design their building. Once they have designed the building they will begin collecting data by placing their building under a lamp, with a thermometer inside and outside of it for 30 minutes. Students will analyze their results, make any redesigns necessary and at the end all the final results will be shared with the whole class. This is a good interdisciplinary lesson for the STEM model. To enhance this lesson the students could use electronic thermometers connected to their computers to gather more accurate temperature data.

The website for the activity is <https://www.teachengineering.org/makerchallenges/view/uod-1906-cool-puppy-doghouse-design-heat>