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### **Data Integration in the Classroom**

**Data Source: Title: Run! Link: <https://homeweb.csulb.edu/~lhenriqu/Run.pdf>**

**Lesson Enhancement:** In the Math classroom it is important to integrate data into our lessons from time to time that work not only in our subject area but also successfully integrates another subject area. I have been teaching 7th grade Mathematics for 3 years, and every year I have tried to enhance my lessons in a way where I could integrate other subject areas into my lessons and engage the students even further. So, when I started my unit on ratios and proportions, I wanted to integrate science into my lesson somehow. I ran across the website listed above and found a data-driven lesson that fit perfectly with what I was covering. The lesson I found focused on students grouping up to construct their own distance-time graphs using walking, running, and another form of transportation. During this lesson, students were not only introduced to CCSS: 7.RP Math standards, but they were also introduced to NGSS: MS-PS2-2 involving Newton's First & Second Law. In the CCSS Math standards, students focus on proportional relationships as well as constructing and interpreting graphs while finding slope, line of best fit, etc. In the NGSS standards, students have to plan an investigation with evidence supported by the sum of the forces and the mass of the object being tested. The Science instructor and I were able to have a few days of cross-content lessons where she discussed Newton's Laws as well as mass and force. The students were able to use their data that they had gathered for my Math class and transform it into something much deeper than the usual 7.RP unit. With that being said, I was able to address objectives not only in Mathematics, but also objectives that were tested in Science. This changed the trajectory of student learning in a very positive way because my students were not just sitting at a table looking at graphs; they were moving around outside not only constructing graphs, but also testing their graphs based on their masses and the force behind how fast they were moving.

Data in the classroom is a very powerful tool in many ways, especially, in my opinion, when students collect data themselves. This gets students involved with every aspect of the lesson as opposed to when students are given a worksheet with data already collected. It helps them to not only solve the problems they are supposed to be solving, but to also learn the importance of data, and how data is to be read and interpreted. Even if it is just collecting data for a graph in Math class, it can translate to students knowing the importance of data and how we can use it in everyday life. For this reason, I wanted to dive head first into this lesson and see how it went because of all of the benefits my students would be getting by completing this lesson in its entirety, and I was not disappointed. I will be doing this lesson set with my students for years to come.

**Interdisciplinary Context:** After focusing more on STEM this year, I have found that there are very few lessons out there that can in no way, shape, or form be integrated across multiple subject areas. With that being said, I have found more opportunities to do interdisciplinary content in my classroom and the importance of this is tremendous. The use of this data in my classroom has shown me that students also "buy in" to the concept of Interdisciplinary STEM

because they get to see firsthand how easily Science, Math, Technology, and other concepts of STEM can be connected and used perfectly.

While this focuses more so on Science & Math, the possibilities are endless on connecting this to Technology, Engineering, ELA, and possibly even history. Technology, actually, was very influential in this lesson for the students that were absent for the days that we went outside. Provided for them was a technology simulation that they could complete on their chromebooks to do that part of their experiment. Engineering could definitely be completed during this lesson by constructing a mode of transportation and seeing how fast it gets from point A to point B based on its mass and velocity. This lesson could connect to ELA by students writing a report on their findings as well as how they will move forward from this lesson. The possibilities with STEM are truly endless and it was fun watching this lesson unfold the way that it did.