**Weather or Not?**

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| **5-Part Plan Title:** | **Weather or Not?** |
| **Engineering Grand Challenge Covered:** | **Advance Personalized Learning, Restore and Improve Urban Infrastructure** |
| **Fellow Contributor(s) / Group Number:** | **Rebekah Johnston, Adam Roth, Max Jin, Kevin Nikolaus** |
| **Grade Level(s):** | **4-6** |

**5-Part Make it Happen Plan**

1. **Learn It:** Students will record the weather at a specific time during the day over the course of an entire week. This will allow them to simultaneously experience the scientific importance of empirical data while providing them with real numbers with which to do several fraction exercises. Students will contemplate questions such as: How often does it rain? How often is it sunny? This encourages them to think critically about weather and climate. These observations can also be used to consider how cities and infrastructure are designed to match their environment.
2. **Do It:** Students will analyze the weather patterns in the local area thus providing them with quantifiable values with which to apply their knowledge of fractions. They will then graphically represent the data they gathered over the two weeks to better visualize the weather pattern in the region.
3. **Share It:** Students will be encouraged to look up the weather in other areas and access how it is different from their hometown. They should think about the fractions that they recorded and discuss what role they think their climate zone had on their results. They should also consider the effect of the season on the likelihood of certain weather events.
4. **Create It:** Students will be asked to keep a weather journal for a week and create notecards that match each weather pattern. Students will record the weather and collect several types of quantitative data measurements like temperature, humidity, and inches rainfall, which will each provide a different mathematical experience. The instructor would explain how temperature is measured on a scale with a set convention, that humidity is in percentages, and that the rainfall is most easily measured in fractions of an inch.
5. **Teach It:** Based on each student’s findings they will create a graph of the fractional distribution of weather events. They could make a list of building styles that are clearly designed for specific climate zones (i.e. slanted roofs in Buffalo vs adobe structures in New Mexico). What is one design element that they have seen in Durham that was made for the weather we experience here?