

YWiC-4

Centennial High School

Earth and Space Sciences

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Our projects is looking at the after effects of hurricanes on the environment and in residential areas as well as the weather of the area after the hurricane has swept through and find a way to better prepare people for hurricanes and map when it can be safer to leave and return to the area. To solve this problem computationally we plan on building agent based models in NetLogo to show the damage that the hurricanes can put on houses and on nature based on the category of the hurricane. We also plan on modeling the weather for the days after the hurricane has come through the area. Up to this point we have done research on how hurricanes form, how hurricanes move. We have found several hurricanes to build models on and we are finding a way to organize their categories to model. In NetLogo we plan on coding in different methods for each hurricane and then using a slider to change different variables of hurricanes such as wind speed, temperature and barometric pressure. Another factor that we want to include is the timer that's in NetLogo, the ticker will keep time that way we can code our models to follow the time frame of the hurricane in a scale. The results that we are expecting is an organized model that works efficiently with easily manipulated variables as well as a system that is capable of showing the damage that different categories that put on houses as well as the landscape and the vegetation on that land.

<https://www.wunderground.com/hurricane/models.asp>

<http://www.express.co.uk/news/weather/718412/Hurricane-Matthew-spaghetti-models-which-best-latest-forecasts-US-storm-America>

<http://www.usatoday.com/story/news/nation-now/2016/10/05/hurricane-matthew-double-swipes-florida/91613290/>

<http://tropical.colostate.edu/>

<http://www.cpc.ncep.noaa.gov/products/outlooks/hurricane.shtml>