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Data Integration Assignment

NAS Graphs and Charts: All Introduced Aquatic Species in the US

<https://nas.er.usgs.gov/graphs/All.aspx>

The data chosen is from the United States Geological Society (USGS). It is a collection of graphs and charts that show introduced aquatic species in the United States. The first graph in the data set shows how the number of introduced aquatic species has increased from prior to the 1900s to present time. Students can then click on the graph and will see a list of the invasive species that were introduced during a specific time period.

I would use this data in the Explore section of my 5E lesson plan. The lesson plan is centered on invasive species in the United States. The graph will allow students to observe the large increase of aquatic invasive species in the past 100 years, they can analyze the graph in partners and discuss the impact that invasive species have on the aquatic ecosystems. They can also hypothesize as to why the number of invasive species has grown so drastically in the past 100 years.

The data set also provides the common and scientific names of the invasive species. This would be a great place for students to begin to explore the topic further. Students can work with a partner and choose one of the species listed and research information on that species. Students can research the introduction and spread of the species, the damage the species has caused and the efforts to control the species. This information could be presented to the class in different formats such as slide presentations, posters, videos or written reports.

I believe that integrating data into classroom lessons can have many benefits for high school students. Students can improve their research skills by exploring data sets. If students practice using data sets, it can help improve their ability to analyze their own data that they collect during scientific investigations. Data integration can also help students to develop stronger math skills by analyzing graphs and charts. Students who use data sets will get a sense of how scientists share and utilize information. Most importantly integrating data into the classrooms allows students to connect what is happening in the science classroom with real-world applications.

The use of this data set will integrate the use of technology and math within the science classroom. Students will be expected to analyze the graph and discuss the mathematical information presented in the graph. Students will also have to utilize their technology skills in order to access the information. The data set used can be used to connect to the English curriculum; students will be choosing a specific species from the chart to research. Their research can be presented as a written article or report. The research required also involves investigating the history of the invasive species and its impact on the environment as well as how people have tried to control the invasion of the species. This relates the data to the Social Studies curriculum.