

Data Visualization Best Practices Workshop Teacher Report

Name: Ann Larson

Area(s) of Teaching: Computer Science - Introductory Classes

Where You Teach: Middletown High School, Middletown, RI

Please describe your activity goal:

The goal of the activity is for students to create a visualization of datasets in Infographic form using different types of information (including data sets they have studied) that works together to tell a story. Students will use the Narragansett Bay Fish and Shellfish Abundance Data with the option to include (as a differentiation strategy) the Surface and Bottom Temperature Data at Fox Island and Whale Rock to create infographics that describe native(?) fish/shellfish species and their abundance over the past 60 years.

What is the intended visualization?

The intended visualization is an infographic containing charts created from the data sets described above along with additional information, both written and visual (photos and drawings) providing details about a Narragansett Bay fish or shellfish species.

Please provide the activity wordings presented to the students:

Following is an Infographic describing the activity (for the students). Also included is the detailed Activity Guide.

Making Infographics with Piktochart

IN THIS ACTIVITY YOU WILL LEARN ABOUT PIKTOCHART BY CREATING TWO SEPARATE INFOGRAPHICS. THIS CHART DESCRIBES THE STEPS IN THIS ACTIVITY.

1. Create a Piktochart account



<https://piktochart.com/>

2. Watch the Piktochart Tutorial

<https://piktochart.com/video-tutorials/>



3. Create your First Piktochart Infographic



- Use the Monthly Project Status Report Template and
- the directions in the Activity Guide Step 1: Piktochart Tutorial

Activity Guide Step 1: Piktochart Tutorial

Use the following criteria for the tutorial:

1. Go to Infographics and search for Monthly Project Status Report (Template)
2. Change the title to a topic of your choice (school appropriate)
3. Change the text. Color your choice
4. Change the background photo so that it relates to your topic
5. Provide a description of your project in the Project Overview section.
6. Change the picture in the Project overview section so that it relates to your topical.
7. Replace existing graph with a graph of your choice. (You may create a simple table in Google Slides or Excel. Make sure you have a title and legend, label your x and y axis)
8. Delete the remaining pages of the infographic
9. Save as Piktochart_Tutorial_LastName

4. Create your Second Piktochart Infographic for a Narragansett Bay Species



PHOTO: CREDIT: J. JORDAN

For 59 years scientists have recorded data on the abundance of many species of fish and shellfish in Narragansett Bay obtained by trawling two locations in the bay. Your infographic will highlight one of the fish/shellfish species.

5. Learn about Narragansett Bay Species and the Fish Trawl Survey



[HTTPS://WEB.URI.EDU/FISHTRAWL/](https://web.uri.edu/fishtrawl/)
[HTTPS://WEB.URI.EDU/FISHTRAWL/METHODS/](https://web.uri.edu/fishtrawl/methods/)
[HTTPS://WEB.URI.EDU/FISHTRAWL/SPECIES/](https://web.uri.edu/fishtrawl/species/)

6. Open the NB Fish and Shellfish Abundance Data Sheet and find the Information about your Fish/Shellfish species

[HTTPS://WEB.URI.EDU/FISHTRAWL/DATA/](https://web.uri.edu/fishtrawl/data/)
[HTTPS://DRIVE.GOOGLE.COM/DRIVE/FOLDER/3/1EVOGK5CK7EK7NLSQW720AT0BWHKPL1](https://drive.google.com/drive/folder/3/1EVOGK5CK7EK7NLSQW720AT0BWHKPL1)

Web and Database Query Data. PDF through power
Access to the data is available to all users who have been granted access to the database.
If you have any questions about the data, please contact the database administrator.
The data is available to all users who have been granted access to the database.



Following is the Activity Guide for this Infographic Activity. This Activity Guide follows the format for the [Introduction to Computing and Data Science Course](#) that this activity was intended to be incorporated into.

Infographic Activity

Overview:

After reviewing different data sets and determining what is a good visualization and what is a bad visualization, you will create an infographic/visualization using Piktochart. Piktochart has the capability to allow you to represent your information (data sets) in multiple ways so that your data is easy to understand.

To start, you will go through [Piktochart's tutorial](#) and learn about the tools and all the different options that are available to you. Once you have completed the tutorial, you will have the opportunity to put your newly learned skills to use by creating your very own infographic/visual.

You will ...

- Complete Piktocharts's tutorial
- Design an infographic/visual for the data set containing information about your fish/shellfish species in Narragansett Bay.
 - Create a data table containing information for just your fish/shellfish species from the large [NB Fish and Shellfish Abundance Data Sheet](#)
 - Create the Piktochart infographic/visual using your fish/shellfish species data table.

You will submit ...

- Completed activity guide

Activity Steps

Step 1: Piktochart Tutorial

Click on the [Piktochart](#) link to begin. You may need to create an account. Remember to use your school email credentials for this activity. Click the [Piktochart For Beginners](#) play button to begin learning about all the different features that Piktochart has to offer.

Use the following criteria for the tutorial:

1. Go to Infographics and search for Monthly Project Status Report (Template)
2. Change the title to a topic of your choice (school appropriate)
3. Change the text Color your choice
4. Change the background photo so that it relates to your topic
5. Provide a description of your project in the Project Overview section.
6. Change the picture in the Project overview section so that it relates to your topical.
7. Replace existing graph with a graph of your choice. (You may create a simple table in Google Slides or Excel. Make sure you have a title and legend, label your x and y axis)
8. Delete the remaining pages of the infographic
9. Save as Piktochart_Tutorial_LastName
10. Remember to click **share** and then select **publish** so that I can see it. (You will need to copy the link and provide it below)



Let's Paste! Paste a screenshot of the completed infographic/visual Tutorial



Let's Paste! Provide the URL to your finished tutorial project here:

Step 2: Create a Data Table for your Narragansett Bay Fish/Shellfish!

In this step, you will create a table for your data set containing information about your assigned fish/shellfish (*species*). Use Google Sheets to create a table. Review your data set prior to creating the data and select a focus point so that you can create a table for your data set.

DO THE FOLLOWING:

Create a Table:

1. Starting with the [NB Fish and Shellfish Abundance Data Sheet](#) find your data set (the rows of the data sheet containing information about your fish/shellfish (*species*) and make a table in Google Sheets that represents *just* your data (what you want to visualize). Include the following in your table:
 - a. Title
 - b. Subtitle with your Name
 - c. Column headings
 - d. Data with at least 20 rows of data
2. Save the data set as follows: Your species name_LastName



Let's Paste! Paste a screenshot of your table into the box below:



Let's Paste! Paste the URL for your data set into the box below:

Step 3: Create the Piktochart for your Fish/Shellfish Data Set!

In this step, you will create an infographic/visual design from the data table that you created in the previous step (for the fish/shellfish species in Narragansett Bay that was assigned to you). You will use Piktochart to create your infographic/visual. Review your data set prior to starting the infographic/visual so that you know what your topic you are going to focus on. Feel free to use any images and tools that you want in Piktochart but make sure it includes the following:

Create an Infographic/Visual:

1. Launch Piktochart and create a new project.
2. Select **Infographic** to create your project.
3. Use any layout that you feel comfortable with. You can modify it as you see fit.
4. Your infographic/visual should include but not limited to the following:
 - a. A graph generated from the table that you created in Step 2. It should include a title with your full name, appropriate legend, appropriate ranges, and appropriate labels.
 - b. At least one image
 - c. A description of what the species is
 - d. A brief description of the data set.
5. Adjust the text, data, and images to be about your topic.
6. Download as a **PNG** file type.
7. Share your Piktochart Infographic:
 - a. Name your project with the naming convention specified by your teacher.
 - b. Click the Share tab in the top toolbar
 - c. Click "Make this link public"



Let's Paste!

Once you are finished, insert your infographic image into the box below:



Let's Paste!

Once you are finished, copy and paste the URL generated in the "Share" step for your infographic into the box below:

Check out this Activity in picture form. Click [here](#) to see an infographic description of this Activity.



Analytical and Critical Thinking

Answer the following questions in complete sentences. Remember to refer to your infographic and data sets to validate your response.



Let's Write! Explain what the graph helps you notice about the data.



Let's Write! Explain what trends you notice about the data set.



Let's Write! Take a look at a classmate's infographic and explain what connections and trends you notice by examining both.

Please describe the nature of the activity (e.g. In class activity? Homework? Something else) and the rationale behind your choice.

This will be a multi-day in class activity. Students will be able to work at home if they need extra time.

Were students engaged?:

What is/are the dataset(s) that will be used for the activity? How students will access the dataset(s)?

Students will use the [NB Fish and Shellfish Abundance](#) data sheet and also the [Surface and Bottom Temperature Data at Fox Island and Whale Rock](#). The main website is: <https://web.uri.edu/fishtrawl/data/> These are the dataset links: <https://web.uri.edu/fishtrawl/files/Collie2008-25-species-CPUE.xls>

<https://web.uri.edu/fishtrawl/files/FI-temps-59-2017.xls>

<https://web.uri.edu/fishtrawl/files/WR-temps-59-2017.xls>

What tool(s) are students going to use? How will students have access to the tool(s)?

Students will use Google Sheets and Piktochart. Google Sheets is part of their laptop toolset. Piktochart is a free (limited use) web tool.

How are you going to grade the activity? (e.g. Rubric)

Since this is a project based activity I will use a Rubric to grade it. I will create the rubric and provide it to students along with the Activity Guide at the beginning of the project.

Do you think you will keep incorporating data visualization in the future?:

I hope to continue to incorporate data visualization in my computer science classes. With interesting data sets it makes for an engaging activity. I would also like to promote it to teachers in other subjects: math, science, and statistics.

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4. Change the background photo so that it relates to your topic
5. Provide a description of your project in the **Project Overview** section.
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7. Replace existing graph with a graph of your choice. (You may create a simple table in **Google Slides** or **Excel**. Make sure you have a title and legend, label your x and y axes)
8. Delete the remaining pages of the infographic
9. Save as **Piktochart_Initial_LastName**

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<https://web.uri.edu/fishtrawl/>
<https://web.uri.edu/fishtrawl/materpod/>
<https://web.uri.edu/fishtrawl/species/>

6. Open the NB Fish and Shellfish Abundance Data Sheet and find the Information about your Fish/Shellfish species

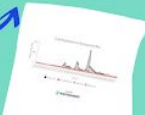
<https://web.uri.edu/fishtrawl/species/>
<https://drive.google.com/drive/folders/578V8830K76K4F03QWZ0V4W8P4C1>

Fish and Invertebrate Catch Data, 1959 through present
 This spreadsheet contains data on the abundance of many species of fish and shellfish in Narragansett Bay obtained by trawling two locations in the bay. The data is organized by species and month.

7. Make a Table for your fish/shellfish species



8. Create a Graph for the species



7. Create the Piktogram Infographic

- include:
- A graph generated from the data set
 - At least one picture of your animal
 - Background information about the animal

