Future Ready Project - Surveys from Students

Teacher Name:		Duration (in minutes): approximately 150-180 minutes per grade level
Grade Level(s): 5-7	Subject/Course: Math	Unit: Data Collection & Analysis
Resources needed: (On-site people, facilities, tools, technology, materials, community connections)	New materials needed: 3Doodler Start+ Essential Pen Set Quantity: 5 3Doodler Start+ Plastic Filament 1200 stands Quantity: 2 Current materials already available: Chromebooks Access to G Suite resources (Google Forms, Charts, Drawings, Docs, etc.) Access to Kami	
Learning Standards: (content + CS & DF)	Mathematics Standards: 5.MD.2 Make a line plot to display a data set in fractions of a unit. 6.SP.4 Display quantitative data in plots on a number line. 7.SP.1 Construct and interpret box plots, find the interquartile range, and determine if a data point is an outlier. Computer Science & Digital Fluency Standards: 4-6.CT.2 Collect digital data related to a real-life question or need. 7-8.CT.2 Collect and use digital data in a computational artifact (sensors, surveys, polls). 4-6.DL.2 Select appropriate digital tools to communicate and collaborate while learning with others. 7-8.DL.2 Communicate and collaborate with others using a variety of digital tools to create and revise a collaborative product.	
Big Idea:	Students will create their own anonymous surveys for their peers to complete. Students will choose to compile their data from the surveys in various graphs, such as bar graphs, line plots, box plots, dot plots, etc.	
Authentic Purpose: (Why does this matter to your students?)	Topics for the surveys, and the corresponding questions for polling, will be generated by the students.	
Future-Ready Competencies: _X__Collaboration _X__Communication _X_Critical Thinking & Problem Solving _X__Creativity & Innovation ___Other:	Objectives: The students will be able to 1. Develop survey questions that are of interest to their peers. 2. Analyze the data results. 3. Display the survey results on a graph, such as a bar graph, dot plot, line plot, box plot, etc.	

Project Statement: (Include: issue, problem or challenge; student role, purpose, beneficiary, and desired outcomes)	In textbooks, students are often presented with data, but they do not get as many opportunities to gather their own data. By generating data from a topic they are interested in, they will hopefully be more interested in analyzing and sharing their data results.
Empathy Anchor: (How will students develop empathy and care about this problem)	Students will communicate with peers as they gather data, which will give them the opportunity to practice social skills and collaboration. They will practice listening to another person's point of view and/or suggestions about the project.
Public Audience & Reveal: (Experts, audiences, or product users students will engage with during and at the end of project)	In addition to having students create surveys and corresponding data charts in their RTI math class, I can discuss the opportunity for survey results to be shared in the school newspaper, for the students who are interested. As the club advisor, I can also invite students in the newspaper club to participate in making their own surveys and displaying their data.

Knowledge Construction: (How are students going to construct content knowledge and practice it) Students will use their survey results to create data representations, and they will interpret their data to other students in a class.	Student Assessment: Production of dot plots, line plots, bar graphs, and/or box plots.

Design Process: 1. Discover 2. Research & Empathize 3. Brainstorm 4. Choose 5. Build 6. Test 7. Communicate 8. Redesign	Describe what (& how) students are going to do in each step: 1. Discover - students will see samples of survey questions and data representations. 2. Research & Empathize - Students will create their own survey questions, and will discuss how the questions need to be appropriate and well thought out. 3. Brainstorm - Students will discuss which type of graph would make a good representation of their data. 4. Choose - Students will decide which type of graph they will create. 5. Build - Students will use the 3Doodler Start+ Pen Set and Filament Strands to design their graphs. If this resource is not available, students will use Google Drawings or Kami. Students will most likely have a "rough draft" for their first attempt. 6. Test - Students will complete their representations. Teacher will provide feedback to the students throughout the project. 7. Communicate - Students will discuss their survey findings, and use their visual representations to support their findings. 8. Redesign - Students will have the opportunity to create more than one visual representation of their data, in order to compare which representation they feel best represents their data.