**Lesson Plan: iSense Project Week 3**

**Teacher:** Ms. Brady

**Subject:** Math

**Lesson Title:** Introduction to Graphing Data on the Coordinate Plane

**Content Objective:** Students will be able to identify relationships between independent and dependent variables using graphs and tables.

**Language Objective:** Students will be able to explain the relationship that exists between variables using the terms “direct correlation”, “inverse correlation”, “independent variable” and “dependent variable”.

**Content Standard: (6.EE.9)** Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.

**Language Standard: (6.LS.6)** Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

**Procedure:**

* **Do Now:** (Slide 2) Students should discuss the following questions with their table group and then record.
	+ What do you know about graphing?
	+ What do you know about the coordinate plane?
	+ What is an independent variable?
	+ What is a dependent variable?
* **Objectives:** (Slide 3) Review content and language objectives with the class. Have these posted at the front of the room.
* **Graphing Activity 1:** (Slide 4) Explain graphing activity 1 to the class. Explain to students that to achieve a true resting heartbeat they must be quiet and still. Explain where on the body a heartbeat can be found (neck or wrist). Explain not to use the thumb to feel heartbeat because it has its own pulse. Assist any students in need of help when trying to find their heartbeat.
* **Give me a Beat!**: (Slide 5) Explain to students that they should be silently counting their heartbeats as soon as I say go, and stop when I say stop. We will do this for 15, 30, 45 and 60 seconds, respectfully. After I say stop they should record the number of heartbeats in the appropriate column and then immediately try and re-locate their heartbeat.
* **Graphing Data Using iSense:** (Slide 6) Distribute chromebooks. Walk students through each step of the directions, modeling using the smartboard. Circulate the room to monitor students’ progress and ensure accuracy. Assist students when necessary.
* **Relationship Between Variables:** (Slide 7) Once students have completed the submission of their data, iSense will automatically direct them to a scatter plot of their data. Here students will be able to analyze their graph to determine if there is a relationship that exists between variables. They can then look at the table they created on page 6 to see if they notice any trends or patterns amongst the numbers. As they answer these questions they will record their thoughts.
* **Analysis of Class Data:** (Slide 8) Manipulate the class data shown as a scatterplot so that the X-axis is “Time” and the Y-axis is “Number of Heartbeats”. Ask students to turn and talk with their table groups about the patterns or trends they notice amongst the class data. Ask them to identify the independent and dependent variables. Ask them to identify the quadrant the data is graphed in. Explain to students that the relationship that exists between the independent and dependent variables shows a direct correlation – refer to the table as evidence showing that the data in each column is travelling in the same direction. Draw a model graph of a linear equation. Ask what they think a graph might look like if the data travels in opposite directions. Draw a model graph of a linear equation and label it as an “inverse correlation”.
* **Exit Slip:** (Slide 9) Tell students to complete the exit slip, following the iSense directions on slide 6 if necessary. They may look back into packet at anytime. When they finish each student should raise his or her hand to be checked.