**MCC. 3.MD.3 (Data and Graphing)**

Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.

**ENDURING UNDERSTANDINGS**

*Data and Graphing…*

● Charts, tables, line plot graphs, pictographs, Venn diagrams, and bar graphs may be used to display data.

● One way to compare data is through the use of graphs.

● The scale increments used when making a bar graph is determined by the scale intervals being graphed.

**ESSENTIAL QUESTIONS**

*Graphing and Data…*

● · How are tables, bar graphs, and line plot graphs useful ways to display data?

● · How can you use graphs to answer a question?

● · How can surveys be used to collect data?

● · How can surveys be used to gather information?

● · How can graphs be used to display data gathered from a survey?

● · How can data displayed in tables and graphs be used to inform?

● · How can graphs be used to compare related data?

● · How can data displays be used to describe events?

● · How do I decide what increments to use for my scale?

**STRATEGIES FOR TEACHING AND LEARNING**

● Representation of a data set is extended from picture graphs and bar graphs with single-unit scales to scaled picture graphs and scaled bar graphs. Intervals for the graphs should relate to multiplication and division with 100 (product is 100 or less and numbers used in division are 100 or less). In picture graphs, use values for the icons in which students are having difficulty with multiplication facts. For example, an icon represents 7 people. If there are three icons, students should use known facts to determine that the three icons represents 21 people. The intervals on the vertical scale in bar graphs should not exceed 100.

● Students are to draw picture graphs in which a symbol or picture represents more than one object. Bar graphs are drawn with intervals greater than one. Ask questions that require students to compare quantities and use mathematical concepts and skills. Use symbols on picture graphs that student can easily represent half of, or know how many half of the symbol represents.

● Students are to measure lengths using rulers marked with halves and fourths of an inch and record the data on a line plot. The horizontal scale of the line plot is marked off in whole numbers, halves or fourths. Students

**EVIDENCE OF LEARNING**

By the conclusion of this unit, students should be able to demonstrate the following competencies:

*Data and Graphing…*

● Read and solve problems using scaled graphs using different intervals.

● Use understanding of number facts to create

● Use the PCAI model to **P**ose a question, **C**ollect data, **A**nalyze data, and **I**nterpret data and graph data that is relevant to their lives.

**LEARNZILLION:**

<https://learnzillion.com/lessonsets/655-draw-scaled-picture-and-bar-graphs>

<https://learnzillion.com/lessonsets/569-answer-questions-using-information-in-scaled-picture-and-bar-graphs>