Rising Tide Charter Public School   **Designer:** Katie Fletcher
Grade 5 Mathematics

Unit Topic: Statistics and Graphing

Subject Area Essential Question (s):
- How is data represented and interpreted?
- How can numbers be misleading?

Unit Level Essential Question(s):
- How can data be displayed in various ways?
- How can data be analyzed and interpreted?
- What are ways that data and statistics can be misleading?
- When can graphs be used to solve mathematical problems?
- What are the ways data can be collected?

Goals

A: Skills
Communicator
  Receptive:
- Interpret circle graphs to find missing percents
  Expressive
- Chooses an appropriate way to represent data
Investigator
  Inquiry:
- Analyze and interpret bar graphs
- Analyze and interpret line graphs
- Collect and organize data
  Innovation:
- Utilize data to create bar graphs, line graphs, line plots, stem and leaf plots, circle graphs and frequency tables
- Examine graphs for misleading data
Self-Directed Learner
  Self-Awareness:
- Work to improve on understanding during individual skills work
  Skills in Taking Responsibility:
- Prepare for the mid-chapter quiz, skills check, cumulative test
- Participate actively in the daily warm-up, note-taking
Community Steward
  Skills in Awareness of Others:
- Utilize classroom data to create new graphing models
  Collaboration Skills:
- Utilize mean, median, mode and range to interpret data

B: Content Knowledge

Definitions: average, bar graph, frequency, graph, horizontal axis, key, line graph, line plot, measures of central tendency, mean, median, mode, negative numbers, outlier, positive numbers, range, stem and leaf plot, vertical axis, statistics

- Line graphs show changes in data over time
- Frequency tables organize data
- Setting up graphical displays can change the way data is interpreted

MA Mathematics Curriculum Framework 5.G
MA Mathematics Curriculum Framework 6.SP

C: Understandings
- Describe how numbers and data can be manipulated for different outcomes
- Explain how data can be interpreted in various ways
- Transfer data to graphical displays
- Interpret graphs and draw conclusions

Evidence of Student's Reaching Goals:
- Group work
- Independent work
  -Graded worksheet on measures of central tendency
- Data collection-surveying students
  -Using data collected on graphing project
- In class assignments
- Class discussions
- Informal assessment through question and answer sessions
- Student presentation of graphs to classmates
- Homework assignments
- Mid chapter quizzes
  -Skills check quiz with mean, median, mode and range
- Cumulative test

Inquiry – and Skill-Based Teaching and Learning Ideas:
- Model skills
- Daily warm ups
- Skill instruction with in class notes and examples
- Group instruction/Activities
  -M&M graphing data activity
  -Mean activity with chips
- Individual skill practice
  -Frequency data tables with class data
  -Stem and Leaf Plot worksheets
  -Creating line graphs and bar graphs from data
- Verbal presentation
  -Discussion about misleading statistics and graphs in the real world/media
- Creation of graphs using class data
- Visual models
  -Graphs

Key Texts and Resources:
enVision
Go Math Textbook
Buckle Down to the Common Core State Standards Workbook