Math strand plan

Statistics and Probability (Data Analysis)

General Outcome:

Collect, display, and analyze data to solve problems.

6.SP.1. Create, label, and interpret line graphs to draw conclusions.

[C, CN, PS, R, V]

 Determine the common attributes (title, axes, and intervals) of line graphs by comparing a set of

line graphs.

 Determine whether a set of data can be represented by a line graph (continuous data) or a series of

points (discrete data), and explain why.

 Create a line graph from a table of values or set of data.

 Interpret a line graph to draw conclusions.

6.SP.2. Select, justify, and use appropriate methods of collecting data,

including

 questionnaires

 experiments

 databases

 electronic media

[C, PS, T]

 Select a method for collecting data to answer a question, and justify the choice.

 Design and administer a questionnaire for collecting data to answer a question and record the results.

 Answer a question by performing an experiment, recording the results, and drawing a conclusion.

 Explain when it is appropriate to use a database as a source of data.

 Gather data for a question by using electronic media, including selecting data from databases.

6.SP.3. Graph collected data and analyze the graph to solve problems.

[C, CN, PS]

 Select a type of graph for displaying a set of collected data, and justify the choice of graph.

 Solve a problem by graphing data and interpreting the resulting graph.

Strand:

Statistics and Probability

(Chance and Uncertainty)

General Outcome:

The following set of indicators may be used to determine whether students

have met the corresponding specific outcome.

6.SP.4. Demonstrate an understanding of probability by

 identifying all possible outcomes of a probability

experiment

 differentiating between experimental and theoretical

probability

 determining the theoretical probability of outcomes in a

probability experiment

 determining the experimental probability of outcomes in a

probability experiment

 comparing experimental results with the theoretical

probability for an experiment

[C, ME, PS, T]

 List the possible outcomes of a probability experiment, such as

 tossing a coin

 rolling a die with any number of sides

 spinning a spinner with any number of sectors

 Determine the theoretical probability of an outcome occurring for a probability experiment.

 Predict the probability of an outcome occurring for a probability experiment by using theoretical

probability.

 Conduct a probability experiment, with or without technology, and compare the experimental results to

the theoretical probability.

 Explain that as the number of trials in a probability experiment increases, the experimental probability

approaches theoretical probability of a particular outcome.

 Distinguish between theoretical probability and experimental probability and explain the difference

6.PR.1. Demonstrate an understanding of the relationships within

tables of values to solve problems.

[C, CN, PS, R]

 Generate values in one column of a table of values, values in the other column, and a pattern rule.

 State, using mathematical language, the relationship in a table of values.

 Create a concrete or pictorial representation of the relationship shown in a table of values.

 Predict the value of an unknown term using the relationship in a table of values and verify the

prediction.

 Formulate a rule to describe the relationship between two columns of numbers in a table of values.

 Identify missing elements in a table of values.

 Identify and correct errors in a table of values.

 Describe the pattern within each column of a table of values.

 Create a table of values to record and reveal a pattern to solve a problem.

6.PR.2. Represent and describe patterns and relationships using graphs

and tables.

[C, CN, ME, PS, R, V]

 Translate a pattern to a table of values and graph the table of values (limit to linear graphs with

discrete elements).

 Create a table of values from a pattern or a graph.

 Describe, using everyday language, orally or in writing, the relationship shown on a graph

6.N.4. Relate improper fractions to mixed numbers.

[CN, ME, R, V]

 Demonstrate using models that an improper fraction represents a number greater than 1.

 Express improper fractions as mixed numbers.

 Express mixed numbers as improper fractions.

 Place a set of fractions, including mixed numbers and improper fractions, on a horizontal or vertical

number line, and explain strategies used to determine position.

6.N.5. Demonstrate an understanding of ratio, concretely, pictorially,

and symbolically.

[C, CN, PS, R, V]

 Provide a concrete or pictorial representation for a ratio.

 Write a ratio from a concrete or pictorial representation.

 Express a ratio in multiple forms, such as 3:5,

3

—5

, or 3 to 5.

 Identify and describe ratios from real-life contexts and record them symbolically.

 Explain the part/whole and part/part ratios of a set (e.g., for a group of 3 girls and 5 boys, explain

the ratios 3:5, 3:8, and 5:8).

 Solve a problem involving ratio.

6.N.6. Demonstrate an understanding of percent (limited to whole

numbers) concretely, pictorially, and symbolically.

[C, CN, PS, R, V]

 Explain that “percent” means “out of 100.”

 Explain that percent is the ratio of a certain number of units to 100 units.

 Use concrete materials and pictorial representations to illustrate a percent.

 Record the percent displayed in a concrete or pictorial representation.

 Express a percent as a fraction and a decimal.

 Identify and describe percents from real-life contexts and record them symbolically.

 Solve a problem involving percents