[C]	Communication	**[PS]**	Problem Solving
[CN]	Connections	**[R]**	Reasoning
[ME]	Mental Mathematics and Estimation	**[T]**	Technology
		[V]	Visualization

Statistics and Probability (Data Analysis)

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4
		General Learning Outcome Collect, display, and analyze data to solve problems.	General Learning Outcome Collect, display, and analyze data to solve problems.	General Learning Outcome Collect, display, and analyze data to solve problems.
		Specific Learning Outcomes	Specific Learning Outcomes	Specific Learning Outcomes
		2.SP.1. Gather and record data about self and others to answer questions. [C, CN, PS, V] 2.SP.2. Construct and interpret concrete graphs and pictographs to solve problems. [C, CN, PS, R, V]	3.SP.1. Collect first-hand data and organize it using ■ tally marks ■ line plots ■ charts ■ lists to answer questions. [C, CN, V] 3.SP.2. Construct, label, and interpret bar graphs to solve problems. [PS, R, V]	4.SP.1. Demonstrate an understanding of many-to-one correspondence. [C, R, T, V] 4.SP.2. Construct and interpret pictographs and bar graphs involving many-to-one correspondence to draw conclusions. [C, PS, R, V]

Statistics and Probability (Data Analysis)

[C]	Communication	**[PS]**	Problem Solving
[CN]	Connections	**[R]**	Reasoning
[ME]	Mental Mathematics and Estimation	**[T]**	Technology
		[V]	Visualization

Grade 5	Grade 6	Grade 7	Grade 8	Grade 9
General Learning Outcome Collect, display, and analyze data to solve problems.	General Learning Outcome Collect, display, and analyze data to solve problems.	General Learning Outcome Collect, display, and analyze data to solve problems.	General Learning Outcome Collect, display, and analyze data to solve problems.	General Learning Outcome Collect, display, and analyze data to solve problems.
Specific Learning Outcomes	Specific Learning Outcomes	Specific Learning Outcomes	Specific Learning Outcomes	Specific Learning Outcomes
5.SP.1. Differentiate between first-hand and second-hand data. [C, R, T, V] 5.SP.2. Construct and interpret double bar graphs to draw conclusions. [C, PS, R, T, V]	6.SP.1. Create, label, and interpret line graphs to draw conclusions. [C, CN, PS, R, V] 6.SP.2. Select, justify, and use appropriate methods of collecting data, including ■ questionnaires ■ experiments ■ databases ■ electronic media [C, PS, T] 6.SP.3. Graph collected data and analyze the graph to solve problems. [C, CN, PS]	7.SP.1. Demonstrate an understanding of central tendency and range by ■ determining the measures of central tendency (mean, median, mode) and range ■ determining the most appropriate measures of central tendency to report findings [C, PS, R, T] 7.SP.2. Determine the effect on the mean, median, and mode when an outlier is included in a data set. [C, CN, PS, R] 7.SP.3. Construct, label, and interpret circle graphs to solve problems. [C, CN, PS, R, T, V]	8.SP.1. Critique ways in which data are presented. [C, R, T, V]	9.SP.1. Describe the effect of ■ bias ■ use of language ■ ethics ■ cost ■ time and timing ■ privacy ■ cultural sensitivity on the collection of data. [C, CN, R, T] 9.SP.2. Select and defend the choice of using either a population or a sample of a population to answer a question. [C, CN, PS, R]

[C]	Communication	**[PS]**	Problem Solving
[CN]	Connections	**[R]**	Reasoning
[ME]	Mental Mathematics and Estimation	**[T]**	Technology
		[V]	Visualization

Statistics and Probability (Data Analysis) *(continued)*

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4

Statistics and Probability (Data Analysis) *(continued)*

[C]	Communication	**[PS]**	Problem Solving
[CN]	Connections	**[R]**	Reasoning
[ME]	Mental Mathematics and Estimation	**[T]**	Technology
		[V]	Visualization

Grade 5	Grade 6	Grade 7	Grade 8	Grade 9
				General Learning Outcome Collect, display, and analyze data to solve problems.
				Specific Learning Outcomes
				9.SP. 3. Develop and implement a project plan for the collection, display, and analysis of data by ■ formulating a question for investigation ■ choosing a data collection method that includes social considerations ■ selecting a population or a sample ■ collecting the data ■ displaying the collected data in an appropriate manner ■ drawing conclusions to answer the question [C, PS, R, T, V]

[C]	Communication	**[PS]**	Problem Solving
[CN]	Connections	**[R]**	Reasoning
[ME]	Mental Mathematics and Estimation	**[T]**	Technology
		[V]	Visualization

Statistics and Probability (Chance and Uncertainty)

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4

Statistics and Probability (Chance and Uncertainty)

[C]	Communication	**[PS]**	Problem Solving
[CN]	Connections	**[R]**	Reasoning
[ME]	Mental Mathematics and Estimation	**[T]**	Technology
		[V]	Visualization

Grade 5	Grade 6	Grade 7	Grade 8	Grade 9
General Learning Outcome Use experimental or theoretical probabilities to represent and solve problems involving uncertainty.	General Learning Outcome Use experimental or theoretical probabilities to represent and solve problems involving uncertainty.	General Learning Outcome Use experimental or theoretical probabilities to represent and solve problems involving uncertainty.	General Learning Outcome Use experimental or theoretical probabilities to represent and solve problems involving uncertainty.	General Learning Outcome Use experimental or theoretical probabilities to represent and solve problems involving uncertainty.
Specific Learning Outcomes	Specific Learning Outcomes	Specific Learning Outcomes	Specific Learning Outcomes	Specific Learning Outcomes
5.SP.3. Describe the likelihood of a single outcome occurring, using words such as ■ impossible ■ possible ■ certain [C, CN, PS, R] 5.SP.4. Compare the likelihood of two possible outcomes occurring, using words such as ■ less likely ■ equally likely ■ more likely [C, CN, PS, R]	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]	7.SP.4. Express probabilities as ratios, fractions, and percents. [C, CN, R, T, V] 7.SP.5. Identify the sample space (where the combined sample space has 36 or fewer elements) for a probability experiment involving two independent events. [C, ME, PS] 7.SP.6. Conduct a probability experiment to compare the theoretical probability (determined using a tree diagram, table, or another graphic organizer) and experimental probability of two independent events. [C, PS, R, T]	8.SP.2. Solve problems involving the probability of independent events. [C, CN, PS, T]	9.SP.4. Demonstrate an understanding of the role of probability in society. [C, CN, R, T]