Chapter 3 Planning Chart: Collecting, Organizing, and Displaying Data

Cross-Curricular Competency: Cooperates with others. The data gathering activities in Chapter 3 (particularly in Lessons 2 and 5 and the Chapter Task) require cooperation of students in the class.

Broad Area of Learning: Environmental Awareness. Questions 4 and 6 in Lesson 6 provide a starting point for discussions about environmental issues such as recycling, food production, and use of natural resources and how these issues affect the global population.

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
Getting Started: The Biggest Handful–Up or Down?, pp. 90–91			Assessment Opportunity: Use prompts A–E and Questions 1, 2, 5.

Lesson 1: Organizing and Presenting Data, pp. 92–95	*Statistics: Statistical Reports*
	• Table: characteristics, frequencies
	• Reading graphs: bar graphs, broken-line graphs, circle graphs
		Statistics: Processing Data From Statistical Reports
		• Organizing and choosing certain tools to present data:
		  • Constructing tables
		  • Constructing graphs: bar graphs, broken-line graphs, circle graphs
		  • Highlighting some of the information that can be derived from a table or a graph (e.g. minimum value, maximum value, range, mean)
			Scatter plot and stem-and-leaf plot are referred to throughout the lesson, but they are beyond Cycle One. Do not assess.
			The lesson refers to a "line graph", which may be treated as a broken-line graph (as it is referred to in the QEP).
			The activity without considering scatter plots and stem-and-leaf plots can be used, without the Example. Use Questions 3a), b), d), 4, 5, 7, 8.

Mental Math: Calculating a Fraction of a Whole Number, p. 95	*Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense* • Reading, writing, various representations, patterns, properties • Fractional, decimal and exponential (integral exponent) notation; percentage, square root	*Arithmetic: Different Ways of Writing and Representing Numbers* • Using a variety of representations (e.g. numerical, graphic) • Recognizing and using equivalent ways of writing numbers: • Simplification and reduction *Numbers Written in Decimal and Fractional Notation* • Mental computation: the four operations, especially with numbers written in decimal notation, using equivalent ways of writing numbers and the properties of operations	

Lesson A: Qualitative Variables	*Statistics: Statistical Reports*
	• Data
	  • Qualitative variable
	• Reading graphs: bar graphs, broken-line graphs, circle graphs
		Statistics: Processing Data From Statistical Reports
		• Organizing and choosing certain tools to present data:
		  • Constructing graphs: bar graphs, broken-line graphs, circle graphs
			New Lesson
			Student Resource
			Teacher Resource

Lesson B: Discrete Quantitative Variables	*Statistics: Statistical Reports*
	• Data
	  • Qualitative variable
	  • Discrete or continuous quantitative variable
	• Reading graphs: bar graphs, broken-line graphs, circle graphs
		Statistics: Processing Data From Statistical Reports
		• Organizing and choosing certain tools to present data:
		  • Constructing graphs: bar graphs, broken-line graphs, circle graphs
			New Lesson
			Student Resource
			Teacher Resource

Lesson C: Continuous Quantitative Variables	*Statistics: Statistical Reports*
	• Data
	  • Qualitative variable
	  • Discrete or continuous quantitative variable
	• Table: characteristics, frequencies
	• Reading graphs: bar graphs, broken-line graphs, circle graphs
		Statistics: Processing Data From Statistical Reports
		• Organizing and choosing certain tools to present data:
		  • Constructing tables
		  • Constructing graphs: bar graphs, broken-line graphs, circle graphs
			New Lesson
			Student Resource
			Teacher Resource

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes

Lesson 2: Exploring Sample Size, pp. 96–97	*Probability: Random Experiment*
	• Random experiment
	  • Random experiments involving one or more steps (with or without replacement, with or without order)
	  • Outcome of random experiment
	  • Sample space
	Statistics: Statistical Reports
	• Population, sample
	  • Sample survey, poll, census
	  • Representative sample
	• Table: characteristics, frequencies
		Statistics: Processing Data From Statistical Reports
		• Conducting a survey or a census
		  • Determining the population or the sample
		  • Gathering data
		Statistics: Processing Data From Statistical Reports
		• Organizing and choosing certain tools to present data:
		  • Constructing tables	

Curious Math: When Is a Low Score Not a Bad Score?, p. 97			Beyond Cycle One. Do not assess.

Lesson D: Sampling Methods	*Statistics: Statistical Reports*
	• Population, sample
	  • Sample survey, poll, census
	  • Representative sample
	  • Sampling methods: simple random, systematic
	  • Sources of bias
	• Data
	  • Discrete or continuous quantitative variable
		Statistics: Processing Data From Statistical Reports
		• Conducting a survey or a census
		  • Determining the population or the sample
			New Lesson
			Student Resource
			Teacher Resource

Lesson E: Polls	*Statistics: Statistical Reports*
	• Population, sample
	  • Sample survey, poll, census
	  • Representative sample
	  • Sampling methods: simple random, systematic
	• Data
	  • Discrete or continuous quantitative variable
		Statistics: Processing Data From Statistical Reports
		• Conducting a survey or a census
		  • Determining the population or the sample
		  • Gathering data
			New Lesson
			Student Resource
			Teacher Resource

Lesson 3: Using Electronic Databases, pp. 98–101			Beyond Cycle One. Do not assess.
Mid-Chapter Review: pp. 102–103			Assessment Opportunity Exclude the last of the Frequently Asked Questions; it is beyond Cycle One. Use Questions 1, 2a), 3.
Lesson 4: Histograms, pp. 104–107	*Statistics: Statistical Reports* • Table: characteristics, frequencies • Reading graphs: bar graphs, broken-line graphs, circle graphs	*Statistics: Processing Data From Statistical Reports* • Organizing and choosing certain tools to present data: • Constructing graphs: bar graphs, broken-line graphs, circle graphs	Beyond Cycle One. Do not assess. The introduction without a mention of histogram and Example 1 could be used for bar graphs.

Lesson F: Bar Graphs	*Statistics: Statistical Reports*
	• Table: characteristics, frequencies
	• Reading graphs: bar graphs, broken-line graphs, circle graphs
		Statistics: Processing Data From Statistical Reports
		• Organizing and choosing certain tools to present data:
		  • Constructing graphs: bar graphs, broken-line graphs, circle graphs
		  • Highlighting some of the information that can be derived from a table or a graph (e.g. minimum value, maximum value, range, mean)
			New Lesson
			Student Resource
			Teacher Resource

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
Lesson 5: Mean, Median, and Mode, pp. 108–110	*Statistics: Statistical Reports* • Arithmetic mean		Calculating the median and mode are not required in Cycle One. The focus of the lesson is comparing mean, median, and mode as methods of representing data, thus, enhancing students' understanding of mean. Example 2 is solved using a stem-and-leaf plot, which is beyond Cycle One. Modify the solution presented to the class by rewriting the data as an ordered list instead.
Math Game: What's the Average?, p. 111	*Statistics: Statistical Reports* • Arithmetic mean		Optional

Lesson 6: Communicating about Graphs, pp. 112–114	*Statistics: Statistical Reports*
	• Table: characteristics, frequencies
	• Reading graphs: bar graphs, broken-line graphs, circle graphs
	• Arithmetic mean
		Statistics: Processing Data From Statistical Reports
		• Organizing and choosing certain tools to present data:
		  • Constructing graphs: bar graphs, broken-line graphs, circle graphs
		  • Highlighting some of the information that can be derived from a table or a graph (e.g. minimum value, maximum value, range, mean)
			Teaching and Learning: Since histograms are beyond Cycle One, the discussion for the activity based on the central question could avoid mention of them and the Example could be omitted.
			Consolidation: Use Questions 3, 5, 6.

Chapter Self-Test: p. 115			Self-Assessment Opportunity: Select from Questions 2, 5.
Chapter Review: pp. 116–117			Assessment Opportunity. Omit the Frequently Asked Questions. Use Questions 2, 5, 6.

Chapter Task: Jumping Ability, p. 118	*Statistics: Statistical Reports*
	• Population, sample
	  • Sample survey, poll, census
	  • Representative sample
	  • Sampling methods: simple random, systematic
	• Data
	  • Discrete or continuous quantitative variable
	• Table: characteristics, frequencies
	• Reading graphs: bar graphs, broken-line graphs, circle graphs
		Statistics: Processing Data From Statistical Reports
		• Conducting a survey or a census
		  • Determining the population or the sample
		  • Gathering data
		Statistics: Processing Data From Statistical Reports
		• Organizing and choosing certain tools to present data:
		  • Constructing tables
		  • Constructing graphs: bar graphs, broken-line graphs, circle graphs
			Assessment Opportunity

Chapters 1–3 Cumulative Review: pp. 119–120			Assessment Opportunity: Select from Questions 1–8, 10, 11a), d).