Unit 11 Reveal Grade 2

Content Area: **Math**
Course(s): **Math**
Time Period: **May**
Length: **2weeks**
Status: **Published**

Unit Overview

UNIT 11 PLANNER
Data Analysis

PACING: 9 days

LESSON		MATH OBJECTIVE	LANGUAGE OBJECTIVE	SOCIAL AND EMOTIONAL LEARNING OBJECTIVE	LESSON	KEY VOCABULARY
Unit Opener	IntoMath Mystery Data	Students discover the importance of labeling a set of data.				
11-1	Understand Picture Graphs	Students draw a picture graph to represent data.	Students explain how to draw a picture graph to represent data using the terms *title*, *category*, *tally mark*, *tally chart*, and *key*.	Students determine the strategies and analyses necessary to make informed decisions when engaging in mathematical practices.	11-1	Math Terms category data key picture graph tally chart tally marks title
11-2	Understand Bar Graphs	Students draw a bar graph to represent data.	Students discuss drawing a bar graph to represent data using the terms *height*, *length*, and *value*.	Students engage in active listening and work collaboratively with a partner to complete mathematical tasks.	11-2	bar graph
11-3	Solve Problems Using Bar Graphs	Students use a bar graph to solve problems.	Students talk about using a bar graph to solve problems using the terms *most* and *least*.	Students employ techniques that can be used to help maintain focus and manage reactions to potentially frustrating situations.	11-3	bar graph
11-4	Collect Measurement Data	Students collect measurement data by measuring the length of objects and organizing it in a tally chart.	Students talk about collecting measurement data, using the terms *more than once* and *measure*.	Students actively listen without interruption as peers describe how they approached a complex mathematical task.	11-4	centimeters inches
11-5	Understand Line Plots	Students interpret measurement data on a line plot.	Students discuss measurement data on a line plot using the terms *most common* and *least common*.	Students identify personal traits that make them good students, peers, and math learners.	11-5	centimeters inches line plot
Math Probe	Reading Line Plots	Students indicate if a given statement correctly describes what is shown on the line plot.				
11-6	Show Data on a Line Plot	Students make a line plot to show the measurement of lengths of objects.	Students explain how to make a line plot to show the measurement of lengths of objects using the terms *title* and *unit*.	Students discuss the value of hearing different viewpoints and approaches to problem solving.	11-6	centimeters inches line plot
Unit Review Fluency Practice						
Unit Assessment Performance Task						

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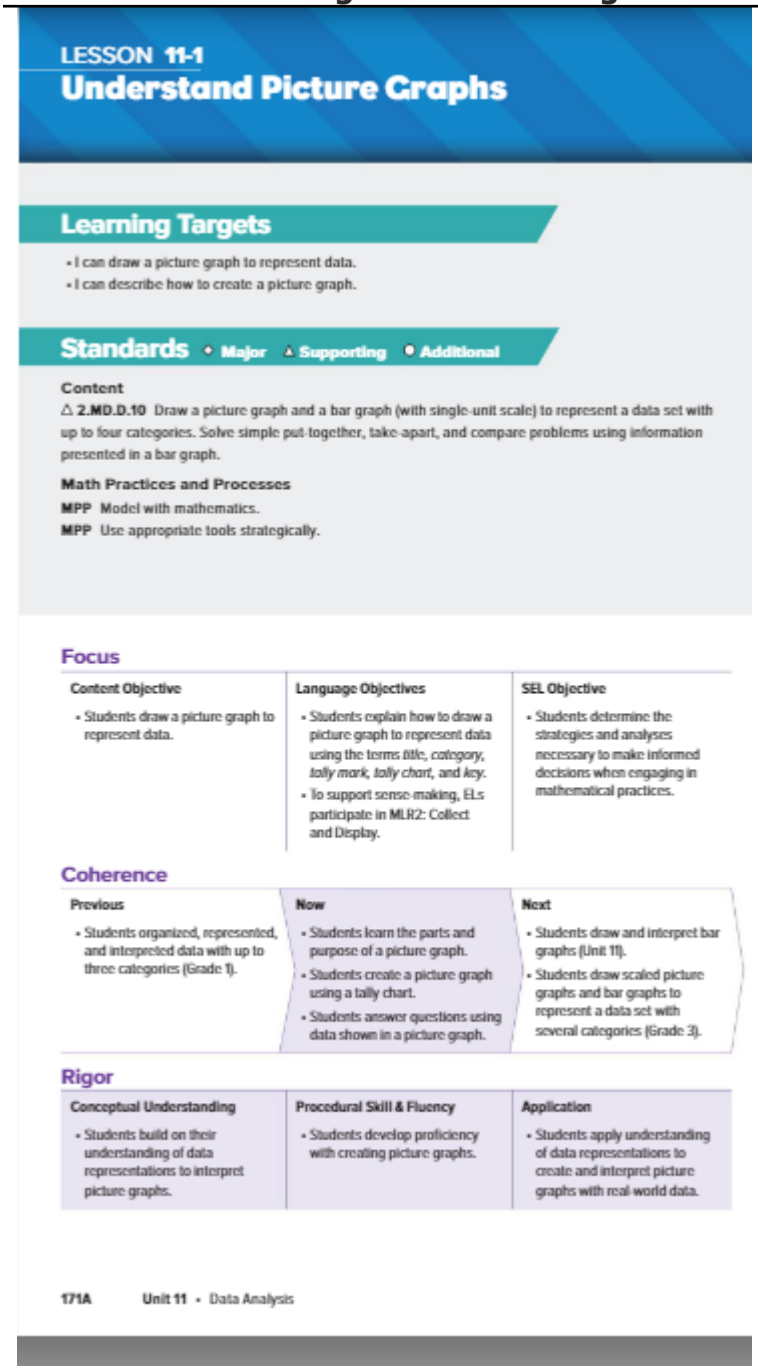
Enduring Understandings

See Above

Essential Questions

How can picture graphs, bar graphs, and line plots help me interpret data?

Instructional Strategies and Learning Activities



LESSON 11-1

Understand Picture Graphs

Learning Targets

- I can draw a picture graph to represent data.
- I can describe how to create a picture graph.

Standards ◆ Major △ Supporting ○ Additional

Content

△ **2.MD.D.10** Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.

Math Practices and Processes

MPP Model with mathematics.

MPP Use appropriate tools strategically.

Focus

Content Objective	Language Objectives	SEL Objective
• Students draw a picture graph to represent data.	• Students explain how to draw a picture graph to represent data using the terms *title*, *category*, *tally mark*, *tally chart*, and *key*. • To support sense-making, ELs participate in MLR2: Collect and Display.	• Students determine the strategies and analyses necessary to make informed decisions when engaging in mathematical practices.

Coherence

Previous	Now	Next
• Students organized, represented, and interpreted data with up to three categories (Grade 1).	• Students learn the parts and purpose of a picture graph. • Students create a picture graph using a tally chart. • Students answer questions using data shown in a picture graph.	• Students draw and interpret bar graphs (Unit 11). • Students draw scaled picture graphs and bar graphs to represent a data set with several categories (Grade 3).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students build on their understanding of data representations to interpret picture graphs.	• Students develop proficiency with creating picture graphs.	• Students apply understanding of data representations to create and interpret picture graphs with real-world data.

LESSON 11-2

Understand Bar Graphs

Learning Targets

- I can draw a bar graph to represent data.
- I can explain how to read data in a bar graph.

Standards ◆ Major ▲ Supporting ● Additional

Content

△ **2.MD.D.10** Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put together, take-apart, and compare problems using information presented in a bar graph.

Math Practices and Processes

MPP Model with mathematics

MPP Use appropriate tools strategically.

Focus

Content Objective	Language Objectives	SEL Objective
• Students draw a bar graph to represent data.	• Students discuss drawing a bar graph to represent data using the terms *height*, *length*, and *value*. • To support optimizing output, ELs participate in MLR1: Stronger and Clearer Each Time.	• Students engage in active listening and work collaboratively with a partner to complete mathematical tasks.

Coherence

Previous	Now	Next
• Students organized, represented, and interpreted data with up to three categories (Grade 1). • Students used tally charts to draw picture graphs (Unit 11).	• Students learn the parts and purpose of a bar graph.	• Students solve problems using bar graphs (Unit 11). • Students draw scaled picture graphs and bar graphs to represent a data set with several categories (Grade 3).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students build on their understanding of data representations to interpret bar graphs.	• Students develop proficiency with creating bar graphs.	• Students apply their understanding of data representations to create and interpret bar graphs with real-world data.

LESSON 11-2

Understand Bar Graphs

Learning Targets

- I can draw a bar graph to represent data.
- I can explain how to read data in a bar graph.

Standards ◆ Major ▲ Supporting ● Additional

Content

▲ **2.MD.D.10** Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put together, take-apart, and compare problems using information presented in a bar graph.

Math Practices and Processes

MPP Model with mathematics

MPP Use appropriate tools strategically.

Focus

Content Objective	Language Objectives	SEL Objective
• Students draw a bar graph to represent data.	• Students discuss drawing a bar graph to represent data using the terms *height*, *length*, and *value*. • To support optimizing output, ELs participate in MLR1: Stronger and Clearer Each Time.	• Students engage in active listening and work collaboratively with a partner to complete mathematical tasks.

Coherence

Previous	Now	Next
• Students organized, represented, and interpreted data with up to three categories (Grade 1). • Students used tally charts to draw picture graphs (Unit 11).	• Students learn the parts and purpose of a bar graph.	• Students solve problems using bar graphs (Unit 11). • Students draw scaled picture graphs and bar graphs to represent a data set with several categories (Grade 3).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students build on their understanding of data representations to interpret bar graphs.	• Students develop proficiency with creating bar graphs.	• Students apply their understanding of data representations to create and interpret bar graphs with real-world data.

LESSON 11-3

Solve Problems Using Bar Graphs

Learning Target

- I can use a bar graph to solve problems.

Standards ◆ Major △ Supporting ○ Additional

Content

△ **2.MD.D.10** Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.

Math Practices and Processes

MPP Reason abstractly and quantitatively.

MPP Make sense of problems and persevere in solving them.

Focus

Content Objective

- Students use a bar graph to solve problems.

Language Objectives

- Students talk about using a bar graph to solve problems using the terms *most* and *least*.
- To support maximizing cognitive and linguistic meta-awareness, ELs participate in MLR8: Discussion Supports.

SEL Objective

- Students employ techniques that can be used to help maintain focus and manage reactions to potentially frustrating situations.

Coherence

Previous

- Students organized, represented, and interpreted data with up to three categories (Grade 1).
- Students used tally charts to draw bar graphs (Unit 11).

Now

- Students solve problems by examining information shown in bar graphs.

Next

- Students collect measurement data (Unit 11).
- Students draw scaled picture graphs and bar graphs to represent a data set with several categories (Grade 3).

Rigor

Conceptual Understanding

- Students build on their understanding of bar graphs to make comparisons and solve problems involving the data.

Procedural Skill & Fluency

- Students develop proficiency with examining bar graphs and solving problems involving data.

Application

- Students apply their understanding of data representations to make comparisons and solve problems involving real-world data presented in bar graphs.

LESSON 11-4

Collect Measurement Data

Learning Targets

- I can collect measurement data by measuring the length of objects.
- I can explain how to collect data from measurements I have taken of various objects.

Standards ◆ Major △ Supporting ○ Additional

Content

△ **2.MD.D.9** Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.

Math Practices and Processes

MPP Attend to precision.

MPP Use appropriate tools strategically.

Focus

Content Objective	Language Objectives	SEL Objective
• Students collect measurement data by measuring the length of objects and organizing it in a tally chart.	• Students talk about collecting measurement data, using the terms *more than once* and *measure*. • To support cultivating conversation, ELs participate in MLR3: Critique, Correct, and Clarify.	• Students actively listen without interruption as peers describe how they approached a complex mathematical task.

Coherence

Previous	Now	Next
• Students organized, represented, and interpreted data with up to three categories (Grade 1). • Students collected and analyzed data in tally charts, picture graphs, and bar graphs (Unit 11).	• Students use a tally chart to organize measurement data they collect.	• Students interpret measurement data on a line plot (Unit 11). • Students generate measurement data to halves and fourths of an inch and show the data on line plots (Grade 3).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students build on their understanding of data representations by organizing measurement data into a tally chart.	• Students develop proficiency with collecting measurement data and organizing the data into a tally chart.	• Students apply their understanding of data representations to collect real-world measurement data and organize the data into a tally chart. *Application is not a targeted element of rigor for this standard.*

LESSON 11-5

Understand Line Plots

Learning Target

- I can interpret the measurement data on a line plot.

Standards ◆ Major △ Supporting ○ Additional

Content

△ **2.MD.D.9** Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.

Math Practices and Processes

MPP Construct viable arguments and critique the reasoning of others.

MPP Model with mathematics.

Focus

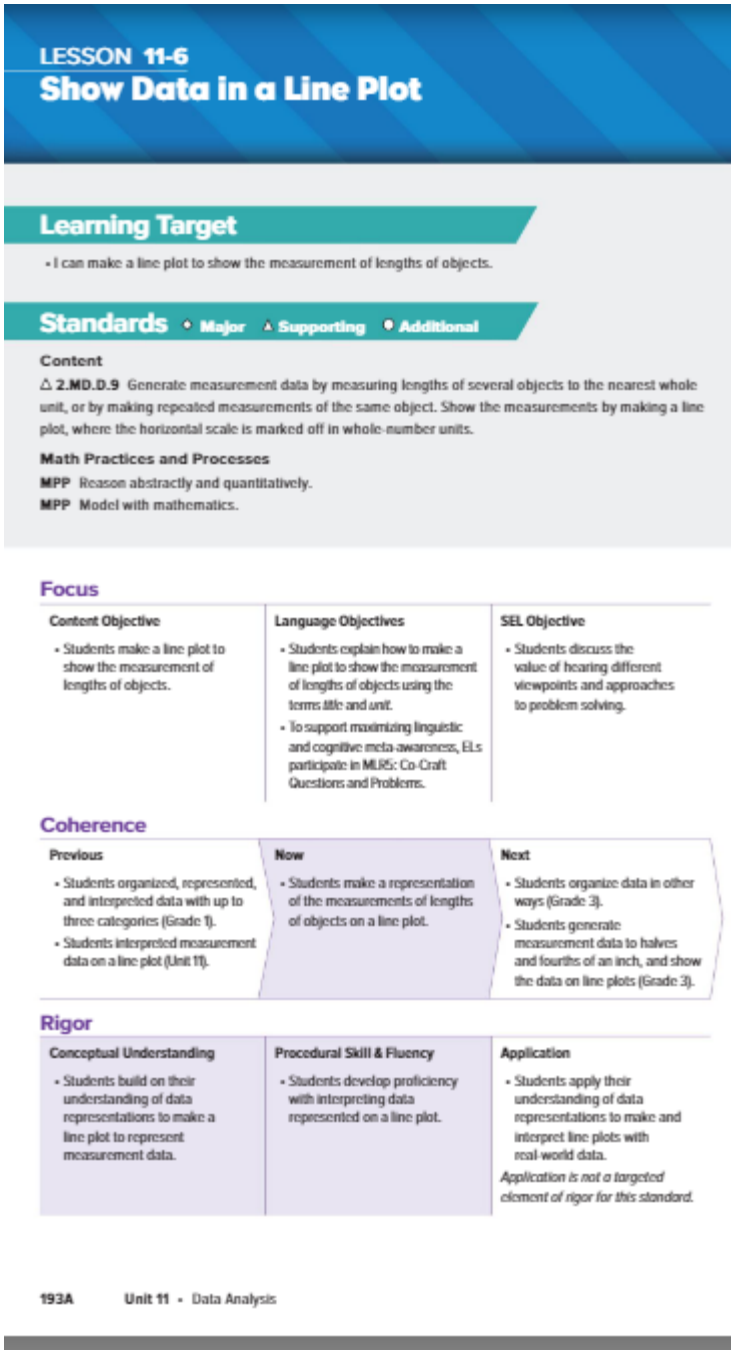
Content Objective	Language Objectives	SEL Objective
• Students interpret measurement data on a line plot.	• Students discuss measurement data on a line plot using the terms *most common* and *least common*. • To cultivate conversation, ELs participate in MLR8: Discussion Supports.	• Students identify personal traits that make them good students, peers, and math learners.

Coherence

Previous	Now	Next
• Students organized, represented, and interpreted data with up to three categories (Grade 1). • Students organized measurement data into a tally chart (Unit 11).	• Students use a line plot to interpret measurement data.	• Students make a line plot to show the measurement of lengths of objects (Unit 11). • Students generate measurement data to halves and fourths of an inch and show the data on line plots (Grade 3).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students build on their understanding of data representations to interpret measurement data represented on a line plot.	• Students develop proficiency with interpreting measurement data represented on a line plot.	• Students apply their understanding of data representations to interpret line plots with real-world data. *Application is not a targeted element of rigor for this standard.*



LESSON 11-6

Show Data in a Line Plot

Learning Target

- I can make a line plot to show the measurement of lengths of objects.

Standards ◆ Major ▲ Supporting ● Additional

Content

▲ **2.MD.D.9** Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.

Math Practices and Processes

MPP Reason abstractly and quantitatively.

MPP Model with mathematics.

Focus

Content Objective	Language Objectives	SEL Objective
• Students make a line plot to show the measurement of lengths of objects.	• Students explain how to make a line plot to show the measurement of lengths of objects using the terms *title* and *unit*. • To support maximizing linguistic and cognitive meta-awareness, ELs participate in MLR5: Co-Craft Questions and Problems.	• Students discuss the value of hearing different viewpoints and approaches to problem solving.

Coherence

Previous	Now	Next
• Students organized, represented, and interpreted data with up to three categories (Grade 1). • Students interpreted measurement data on a line plot (Unit 11).	• Students make a representation of the measurements of lengths of objects on a line plot.	• Students organize data in other ways (Grade 3). • Students generate measurement data to halves and fourths of an inch, and show the data on line plots (Grade 3).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students build on their understanding of data representations to make a line plot to represent measurement data.	• Students develop proficiency with interpreting data represented on a line plot.	• Students apply their understanding of data representations to make and interpret line plots with real-world data. *Application is not a targeted element of rigor for this standard.*

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Integration of Career Readiness, Life Literacies and Key Skills

9.1.2.CR.1	Recognize ways to volunteer in the classroom, school and community.
9.4.2.CI.1	Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2).
9.4.2.CI.2	Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a).
9.1.2.CR.2	List ways to give back, including making donations, volunteering, and starting a business.
9.1.2. FI.1	Differentiate the various forms of money and how they are used (e.g., coins, bills, checks, debit and credit cards).

9.4.2.CT.2	Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3).
9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
9.1.2.FP.1	Explain how emotions influence whether a person spends or saves.
9.1.2.FP.3	Identify the factors that influence people to spend or save (e.g., commercials, family, culture, society).
9.4.2.DC.3	Explain how to be safe online and follow safe practices when using the internet (e.g., 8.1.2.NI.3, 8.1.2.NI.4).
9.1.2.PB.1	Determine various ways to save and places in the local community that help people save and accumulate money over time.
9.1.2.PB.2	Explain why an individual would choose to save money.
9.4.2.DC.6	Identify respectful and responsible ways to communicate in digital environments.
9.4.2.DC.7	Describe actions peers can take to positively impact climate change (e.g., 6.3.2.CivicsPD.1).
9.4.2.TL.2	Create a document using a word processing application.
9.4.2.TL.5	Describe the difference between real and virtual experiences.
9.4.2.TL.6	Illustrate and communicate ideas and stories using multiple digital tools (e.g., SL.2.5.).
9.4.2.TL.7	Describe the benefits of collaborating with others to complete digital tasks or develop digital artifacts (e.g., W.2.6., 8.2.2.ED.2).

Technology and Design Integration

8.1.2.CS.1	Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.
8.1.2.DA.1	Collect and present data, including climate change data, in various visual formats.
8.1.2.DA.3	Identify and describe patterns in data visualizations.
8.1.2.DA.4	Make predictions based on data using charts or graphs.
8.1.2.AP.4	Break down a task into a sequence of steps.
8.1.2.AP.5	Describe a program's sequence of events, goals, and expected outcomes.
8.2.2.ITH.4	Identify how various tools reduce work and improve daily tasks.

Interdisciplinary Connections

LA.RI.2.1	Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
LA.RI.2.2	Identify the main topic of a multiparagraph text as well as the focus of specific paragraphs within the text.
LA.RI.2.3	Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text.
LA.RI.2.4	Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area.
LA.RI.2.5	Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently.
LA.RI.2.6	Identify the main purpose of a text, including what the author wants to answer, explain, or describe.

LA.RI.2.7	Explain how specific illustrations and images (e.g., a diagram showing how a machine works) contribute to and clarify a text.
LA.RI.2.8	Describe and identify the logical connections of how reasons support specific points the author makes in a text.
LA.RI.2.9	Compare and contrast the most important points presented by two texts on the same topic.
LA.RI.2.10	Read and comprehend informational texts, including history/social studies, science, and technical texts, at grade level text complexity proficiently with scaffolding as needed.
LA.W.2.5	With guidance and support from adults and peers, focus on a topic and strengthen writing as needed through self-reflection, revising and editing.
LA.SL.2.1	Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
LA.L.2.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

Differentiation

- Understand that gifted students, just like all students, come to school to learn and be challenged.
- Pre-assess your students. Find out their areas of strength as well as those areas you may need to address before students move on.
- Consider grouping gifted students together for at least part of the school day.
- Plan for differentiation. Consider pre-assessments, extension activities, and compacting the curriculum.
- Use phrases like "You've shown you don't need more practice" or "You need more practice" instead of words like "qualify" or "eligible" when referring to extension work.
- Encourage high-ability students to take on challenges. Because they're often used to getting good grades, gifted students may be risk averse.

- **Definitions of Differentiation Components**:

    - Content – the specific information that is to be taught in the lesson/unit/course of instruction.
    - Process – how the student will acquire the content information.
    - Product – how the student will demonstrate understanding of the content.
    - Learning Environment – the environment where learning is taking place including physical location and/or student grouping

Differentiation occurring in this unit:



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Modifications and Accommodations

Refer to QSAC EXCEL SMALL SPED ACCOMMOCATIONS spreadsheet in this discipline.

Modifications and Accommodations used in this unit:

Benchmark Assessments

Benchmark Assessments are given periodically (e.g., at the end of every quarter or as frequently as once per month) throughout a school year to establish baseline achievement data and measure progress toward a standard or set of academic standards and goals.

Schoolwide Benchmark assessments:

Aimsweb benchmarks 3X a year

Linkit Benchmarks 3X a year

DRA

Additional Benchmarks used in this unit:

Reveal Unit assessments

Formative Assessments

Assessment allows both instructor and student to monitor progress towards achieving learning objectives, and can be approached in a variety of ways. **Formative assessment** refers to tools that identify misconceptions, struggles, and learning gaps along the way and assess how to close those gaps. It includes effective tools for helping to shape learning, and can even bolster students' abilities to take ownership of their learning when they understand that the goal is to improve learning, not apply final marks (Trumbull and Lash, 2013). It can include students assessing themselves, peers, or even the instructor, through writing, quizzes, conversation, and more. In short, formative assessment occurs throughout a class or course, and seeks to improve student achievement of learning objectives through approaches that can support specific student needs (Theal and Franklin, 2010, p. 151).

Formative Assessments used in this unit:

Teacher observation

Checklists

Questioning and Discussion

Quizzes

Summative Assessments

summative assessments evaluate student learning, knowledge, proficiency, or success at the conclusion of an instructional period, like a unit, course, or program. Summative assessments are almost always formally graded and often heavily weighted (though they do not need to be). Summative assessment can be used to great effect in conjunction and alignment with formative assessment, and instructors can consider a variety of ways to combine these approaches.

Summative assessments for this unit:

End of Unit assessments

Instructional Materials

See above

Standards

2.DL.B.3	Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.
2.DL.B.4	Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put together, take-apart, and compare problems using information presented in a bar graph.