



SPRINGFIELD PUBLIC SCHOOLS
ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY GLOBAL SKILLS

Springfield Public Schools
Springfield, New Jersey 07081

Grade 5
Math

Curriculum Guide

2024

This curriculum may be modified through varying materials, techniques, and strategies as per an individual student's IEP.

Springfield Board of Education
Approved August 26, 2024



**Springfield Public Schools
Springfield, New Jersey**

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Unit Overview Template

Content Area:	Math	Grade Level:	5	Unit Title:	Operations on Decimals and Numerical Expressions
Unit Summary: Students will understand the place value of digits, and compare different place values. Students will read and write decimals using numerals, number names, and expanded form. Students will analyze and complete operations with decimals, such as comparing, rounding to any decimal place, and adding and subtracting.					
Primary Interdisciplinary Connections: <i>Science and Engineering</i> 21st Century Themes ☐ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ ICT Literacy ☐ Information Literacy ☐ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy					
Unit Rationale: This unit will build on students' understanding of operations on decimals and numerical expressions.					
Career Readiness (Standard 9): 9.1.5.CR.1: Compare various ways to give back and relate them to your strengths, interests, and other personal factors. 9.1.5.EG.3: Explain the impact of the economic system on one's personal financial goals. 9.1.5. EG.4: Describe how an individual's financial decisions affect society and contribute to the overall economy. 9.1.5.PB.1: Develop a personal budget and explain how it reflects spending, saving, and charitable contributions. 9.1.5.PB.2: Describe choices consumers have with money (e.g., save, spend, donate). 9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3).					

Learning Targets

Standards: 5.NBT	
Content Statements: Understand the place value system; Perform operations with multi-digit whole numbers and with decimals to hundredths.	
CPI#:	Cumulative Progress Indicator (CPI):
5.NBT.A.1	Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.
5.NBT.A.3	Read, write, and compare decimals to thousandths. a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.



	b. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.
5.NBT.A.4	Use place value understanding to round decimals to any place.
5.NBT.B.7	Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.
3-5-ETS1-2	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
NJSLSA.W2	Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
W.5.7	Conduct short research projects that use several sources to build knowledge through investigation of different perspectives of a topic.
SEL.PK-12.1.4	Recognize the importance of self-confidence in handling daily tasks and challenges.
SEL.PK-12.4.1	Develop, implement and model effective problem solving and critical thinking skills.
SEL.PK-12.2.2	Recognize the skills needed to establish and achieve personal and educational goals.

Unit Essential Questions:

- How can students interpret numerical expressions and identify place value?
- How can students represent products with rectangular arrays and multiplication number models?
- How can students find all factors of a number?
- How can students classify numbers as prime, composite or square?
- How can I understand that a digit in one place represents 10 times as much as its place to the right and $1/10$ of what represents in the place to its left?
- How can I read and write decimals using numerals, number names, and expanded form?
- How can I compare two decimals?
- How can I round decimals to any place value?
- How can I add and subtract decimals?

Unit Enduring Understandings:

- Foundation of fact awareness and applicability to higher level concepts.
- Analyzing decimals and place values.
- Classification of numbers.

Unit Learning Targets:

Students will interpret numerical expressions and identify place value, represent products with rectangular arrays, find factors, and classify numbers.



Evidence of Learning

Summative Assessment: Unit Test

Equipment Needed: i-Ready Classroom Vol. 1 Workbook, STEM Stories: Dolores “Dolly” Garza, games: The Winning Touch, Factor Captor, iReady games: Bounce, Cloud Machine, Cupcake, Pizza & Zoom, Base-ten blocks, fraction models, number line, note-taking templates, iReady Toolbox, iXL

Teacher Resources: i-Ready Classroom, iReady Program, teacher-created materials, CAR Unit 1, IXL, NJSLA items, Illustrative Math, BrainPop, Edpuzzle

Formative Assessments:

- OnCourse assessment pages
- i-Ready Classroom - lesson quiz
- i-Ready - unit quiz
- Pop Quizzes
- Timed Fact Tests



Lesson Plans

Lesson	Time Frame
Lesson 1 Understanding Decimal Place Value	2 ½ - 3 hours
Lesson 2 Compare and Round Decimals	3 hours
Lesson 3 Add and Subtract Decimals	5 hours

Teacher Notes:

Use a variety of tools e.g. base-ten blocks, fraction models, place value posters, 1/10th of 10 manipulatives, number lines

Curriculum Development Resources/Technology Resources:

Click the links below to access additional resources used to design this unit:

<https://tasks.illustrativemathematics.org/content-standards>

<https://edpuzzle.com/media/5ff48427598bfc4254000ofd>

<https://numberock.com/lessons/rounding-decimals-whole-numbers/>

<https://drive.google.com/open?id=1Bec7vx-nanB2mZ3eAKr3vtFHKtEcALng>



Lesson Plan 1 Template

Content Area: Math Lesson Title: Understanding Decimal Place Value Time Frame: 2 1/2 - 3 hours

Lesson Components

21st Century Themes

- ☐ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☐ Health Literacy

21st Century Skills

- ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ Information Literacy
☐ Life and Career Skills ☐ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections: Science and Engineering

Integration of Technology: EdPuzzle, BrainPop, i-Ready Classroom presentation slides, i-Ready tools, IXL

Equipment Needed: Teacher laptop, student iPads, projector

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Recognize in a multi-digit number that a digit is 10 times the value of the digit to its right. - Recognize in a multi-digit number that a digit is 1/10 the value of the digit to its left.	Lesson Sequence - i-Ready Classroom - Unit 2 - Self Check pg.117. The teacher will use the data to help determine student groups. - STEM story - Dolores "Dolly" Garza pgs. 117 st - 118 st - Making sense of a problem and solving it. - Build vocabulary -pg. 118. - i-Ready Classroom - Lesson 6 - Sessions 1 - 3. - Connect to Prior Knowledge - Presentation slide. - Using place value charts students show movement between place values. - Students will work in groups on decimal place value by completing	- Entry Ticket/Skill check - i-Ready data - Group work - NJSLA problems - Illustrative Math problems - IXL skills - EdPuzzle - i-Ready Classroom quiz or Digital Comprehension Check



	tables comparing and ordering a variety of numbers in numeral form, as expressions, and in word form. 8. Teachers will meet with small groups to review skill checks and student progress. 9. Students will apply knowledge to NJSLA, and Illustrative Math problems. 10. Students will complete an EdPuzzle or IXL skills on Place Value.	
Differentiation: • Utilize Base-10 Models (hundreds, tens, and ones blocks) to identify changing place values. • Utilize money manipulatives to identify changes in place value. • Physically acting out a number line. • Movement Activity - Students represent numbers on a place value chart, hold numbers and students will read the number, discuss values, and round. • Decimal Hopping - Students will represent places on a decimal place value chart and hop right or left to show 10x or 1/10 of a place. • Place Value Math Mystery - Case of the Puzzled Pirate.		
Resources Provided: • i-Ready Classroom Workbook • i-Ready • NJSLA released items • Illustrative Math Website • EdPuzzle • IXL		



Lesson Plan 2 Template		
Content Area: Math	Lesson Title: Rounding Decimals	Time Frame: 3 hours
Lesson Components		
<u>21st Century Themes</u>		
☐ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy ☐ Civic Literacy ☐ Health Literacy		
<u>21st Century Skills</u>		
☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ Information Literacy ☐ Life and Career Skills ☐ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy		
Interdisciplinary Connections: Science and Engineering		
Integration of Technology: EdPuzzle, BrainPop, i-Ready Classroom presentation slides, iReady tools, iXL		
Equipment Needed: Teacher laptop, student iPads, projector		

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Use >, <, and = to compare decimals to the thousandths place. • Use place-value understanding to round decimals to the nearest hundredth, tenth, and whole number.	Lesson Sequence 1. Review place value by having students share different examples in groups, then come back together as a whole group. 2. i-Ready Classroom, Unit 2 - Lesson 9 - 4 sessions. 3. Connect to Prior Knowledge - Presentation Slide. 4. Review >, <, and =. Numberock - The Hungry Alligator. 5. View BrainPop: Rounding Decimals. 6. Explore - Comparing and rounding decimals. 7. Visualize different numbers with decimals on the number line.	• i-Ready data • Group work • NJSLA problems • Illustrative Math problems • IXL skills • EdPuzzle • i-Ready Classroom quiz or Digital Comprehension Check



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| | <p>Have students work in groups to determine placement.</p> <p>8. Students should round numbers as numerals, expressions, and words.</p> <p>9. Teacher meets with small groups to work on estimating sums and differences.</p> <p>10. Students will apply knowledge by working on NJSLA, Illustrative Math or IXL tasks.</p> | |
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Differentiation:

- Continue use of number lines.
- Physical Acting Number Line (movement activity)
- Rounding poem taped onto desk for visual reminder
- Rounding War (Sw be divided into teams, pick a number, round to a given place)
- Real-life Rounding Word Problems
- Logic Puzzle Born to Run & Start your Engines- Decimal Place Value
- Decimal Alley PBL
- Place Value Puzzlers

Resources Provided:

- i-Ready Classroom Workbook
- i-Ready
- NJSLA released items
- Illustrative Math Website
- EdPuzzle
- IXL



Lesson Plan 3 Template

Content Area: Math Lesson Title: Add and Subtract Decimals Time Frame: 2 hours

Lesson Components

21st Century Themes

- ☐ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☐ Health Literacy

21st Century Skills

- ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ Information Literacy
☐ Life and Career Skills ☐ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections: English Language Arts

Integration of Technology: EdPuzzle, BrainPop, i-Ready Classroom presentation slides, iReady tools, XL

Equipment Needed: Teacher laptop, projector, student iPads

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Add and subtract decimals to hundredths using concrete models or drawings. - Relate the strategy to the concrete model or drawing, and explain the reasoning used. - Add and subtract decimals to hundredths using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.	Lesson Sequence - i-Ready Classroom Vol 1 Unit 2 Lessons 10 Add Decimals. - Session 1 Explore & Connect pg 189-192, 205-208. - Session 2 Develop 193-198, 209-212. - Students will break into groups to work on problems, including NJSLA, Illustrative Math and iXL tasks. - The teacher will introduce the Menu Math math/writing project, and students will begin working individually. - At the completion of the Math Menu, students will meet in pairs to discuss	- Entry Ticket - i-Ready data - i-Ready Lesson Quizzes - OnCourse Add/Sub Decimal Quiz - Group work - NJSLA problems - Menu Math Project



their math and writing.

Differentiation:

- Grid paper
- Place value chart
- Base-10 models to build/model given decimal amounts
- Decimal Alley PBL
- Place Value Puzzlers
- Spend and Save Game

Resources Provided:

- i-Ready Classroom Workbook
- i-Ready
- NJSLA released items
- Illustrative Math Website
- IXL
- EdPuzzle



Lesson Reflection

Reflect on the lesson you have developed and rate the degree to which the lesson *Strongly*, *Moderately* or *Weakly* meets the criteria below.

Lesson Activities	Strongly	Moderately	Weakly
Are challenging Strongly and require higher order thinking and problem solving skills	X		
Allow for student choice		X	
Provide scaffolding for acquiring targeted knowledge/skills	X		
Integrate global perspectives		X	
Integrate 21st century skills	X		
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills	X		
Foster student use of technology as a tool to develop critical thinking, creativity and innovation skills		X	
Are varied to address different student learning styles and preferences	X		
Are differentiated based on student needs	X		
Are student-centered with teacher acting as a facilitator and co-learner during the teaching and learning process	X		
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives	X		
Provide opportunities for student reflection and self- assessment	X		
Provide data to inform and adjust instruction to better meet the varying needs of learners	X		

Curriculum Design Template

Content Area: Math	Grade Level: 5	Unit Title: Operations on Decimals and Numerical Expressions
Created: 2024	Board Approved on: Type Here	



Unit Overview Template

Content Area: Math Concepts	Grade Level: 5	Unit Title: Decimal Multiplication and Concepts
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Unit Summary: Students will multiply and divide powers of ten, multi-digit numbers and decimals using a variety of strategies. Students will apply the order of operations. Students will apply power of ten to metric conversions.

Primary Interdisciplinary Connections: *Science and Engineering*

21st Century Themes ☑ Creativity and Innovation ☑ Critical Thinking and Problem Solving ☑ ICT Literacy
 ☑ Information Literacy ☑ Life and Career Skills ☑ Communication and Collaboration ☑ Media Literacy

Unit Rationale: To build students' understanding of multiplication and division, and where to apply these operations.

Career Readiness (Standard 9):

9.1.5.CR.1: Compare various ways to give back and relate them to your strengths, interests, and other personal factors.

9.1.5.EG.3: Explain the impact of the economic system on one's personal financial goals.

9.1.5. EG.4: Describe how an individual's financial decisions affect society and contribute to the overall economy.

9.1.5.PB.1: Develop a personal budget and explain how it reflects spending, saving, and charitable contributions.

9.1.5.PB.2: Describe choices consumers have with money (e.g., save, spend, donate).

9.2.5.CAP.1: Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.

9.2.5.CAP.2: Identify how you might like to earn an income.

9.2.5.CAP.3: Identify qualifications needed to pursue traditional and non-traditional careers and occupations.

9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these requirements.

9.4.5.CI.1: Use appropriate communication technologies to collaborate with individuals with diverse perspectives about a local and/or global climate change issue and deliberate about possible solutions (e.g., W.4.6, 3.MD.B.3, 7.1.NM.IPERS.6).

9.4.5.CI.2: Investigate a persistent local or global issue, such as climate change, and collaborate with individuals with diverse perspectives to improve upon current actions designed to address the issue (e.g., 6.3.5.CivicsPD.3, W.5.7).

9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).

9.4.5.CT.2: Identify a problem and list the types of individuals and resources (e.g., school, community agencies, governmental, online) that can aid in solving the problem (e.g., 2.1.5.CHSS.1, 4-ESS3-1).

9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.

9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of 9.1.5.CR.1: Compare various ways to give back and relate them to your strengths, interests, and other personal factors.



- 9.1.5.EG.3: Explain the impact of the economic system on one's personal financial goals.
- 9.1.5. EG.4: Describe how an individual's financial decisions affect society and contribute to the overall economy.
- 9.1.5.PB.1: Develop a personal budget and explain how it reflects spending, saving, and charitable contributions.
- 9.1.5.PB.2: Describe choices consumers have with money (e.g., save, spend, donate).
- 9.2.5.CAP.1: Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.
- 9.2.5.CAP.2: Identify how you might like to earn an income.
- 9.2.5.CAP.3: Identify qualifications needed to pursue traditional and non-traditional careers and occupations.
- 9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these requirements.
- 9.4.5.CI.1: Use appropriate communication technologies to collaborate with individuals with diverse perspectives about a local and/or global climate change issue and deliberate about possible solutions (e.g., W.4.6, 3.MD.B.3, 7.1.NM.IPERS.6).
- 9.4.5.CI.2: Investigate a persistent local or global issue, such as climate change, and collaborate with individuals with diverse perspectives to improve upon current actions designed to address the issue (e.g., 6.3.5.CivicsPD.3, W.5.7).
- 9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).
- 9.4.5.CT.2: Identify a problem and list the types of individuals and resources (e.g., school, community agencies, governmental, online) that can aid in solving the problem (e.g., 2.1.5.CHSS.1, 4-ESS3-1).
- 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.
- 9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3).
- 9.4.5.GCA.1: Analyze how culture shapes individual and community perspectives and points of view (e.g., 1.1.5.C2a, RL.5.9, 6.1.5.HistoryCC.8).

Learning Targets

Standards: 5.NBT; 5.M; 5.OA

Content Statements: Convert like measurement units within a given measurement system; Understand the place value system; Perform operations with multi-digit whole numbers and with decimals to hundredths; Write and interpret numerical expressions.

CPI#:	Cumulative Progress Indicator (CPI):
5.M.A.1	Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.
5.NBT.A.2	Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use



	whole-number exponents to denote powers of 10.
5.NBT.B.5	With accuracy and efficiency, multiply multi-digit whole numbers using the standard algorithm.
5.NBT.B.6	Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
5.NBT.B.7	Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.
5.OA.A.1	Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
5.OA.A.2	Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product.
5-PS1-3	Make observations and measurements to identify materials based on their properties.
3-5-ETS1-2	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
NJSLSA.W 2	Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
W.5.7	Conduct short research projects that use several sources to build knowledge through investigation of different perspectives of a topic.
SEL.PK-12. 1.4	Recognize the importance of self-confidence in handling daily tasks and challenges
SEL.PK-12. 4.1	Develop, implement and model effective problem solving and critical thinking skills.
SEL.PK-12. 2.2	Recognize the skills needed to establish and achieve personal and educational goals.

Unit Essential Questions:

- How can I multiply and divide powers of ten?
- How can I apply powers of ten to metric conversions?
- How can I multiply multi-digit whole numbers using a variety of strategies?
- How can I multiply decimals?
- How can I divide larger numbers using a variety of strategies?
- How can I divide decimals?
- How can I evaluate the order of operations?

Unit Enduring Understandings:



- Multiplying and dividing powers of 10 have many applications.
- Metric conversion simplifies measurements by utilizing powers of 10.
- Multiplying and dividing multi-digit whole numbers and decimals have a variety of strategies.
- The order of operations is essential to proper mathematical applications.

Unit Learning Targets:

Students will apply powers of 10, multiply and divide multi-digit and decimal numbers, and apply the order of operations.



Evidence of Learning

Summative Assessment: Unit Test

Equipment Needed: i-Ready program, Teacher laptop, Student iPads

Teacher Resources: i-Ready Classroom, iReady Program, teacher-created materials, CAR Unit 2A & B, IXL, NJSLA items, Illustrative Math, BrainPop, Edpuzzle

Formative Assessments:

- OnCourse Pre-Test, Quizzes, Post-Test
- i-Ready Classroom Lesson Quizzes
- i-Ready Classroom Assignments, Lessons, Interactive Practices
- “Metrification or Not?” PBL



Lesson Plans

Lesson	Time Frame
Lesson 1 Multiply and Divide with Powers of Ten	2 hours
Lesson 2 The Metric System	2 hours
Lesson 3 Writing and Evaluating Expressions	2 hours

Teacher Notes:

Use a variety of tools e.g. place value chart, metric staircase and ladder, and area models.

Curriculum Development Resources/Technology Resources:

Click the links below to access additional resources used to design this unit:

<https://tasks.illustrativemathematics.org/content-standards>

<https://nj.mypearsonsupport.com/practice-tests/math/>



Lesson Plan 1 Template

Content Area: Math Lesson Title: Multiply and Divide with Powers of Ten Time Frame: 2 hours

Lesson Components

21st Century Themes

- ☐ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☐ Health Literacy

21st Century Skills

- ☐ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ Information Literacy
☒ Life and Career Skills ☐ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections: Science and Engineering

Integration of Technology: EdPuzzle, BrainPop, i-Ready Classroom presentation slides, i-Ready tools, IXL

Equipment Needed: Teacher laptop, projector, student iPads

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Explain patterns in the number of zeros of the product when multiplying by powers of 10. - Explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. - Denote powers of 10 by using whole-number exponents.	Lesson Sequence - i-Ready Classroom - Unit 2 Lessons 7 Understand Powers of 10. - Connect to Prior Knowledge - Presentation Slide. - Session 1 Explore Powers of 10 pg 133 - 136. - Session 2 Develop Understanding pg 137 - 140. - Session 3 Refine Ideas about Powers of 10 pg 141 - 142. - Have students work through examples shifting decimals using powers of 10. Ask students to analyze the different possibilities in their groups.	- Entry Ticket - Exit Ticket - i-Ready data - i-Ready Classroom lesson quiz - Group work - NJSLA problems - Ed Puzzle



	7. While students work in small groups, the teacher meets with groups of students to review place value or do enrichment such as the Powers of Ten Task Cards. 8. Come together as a whole class to complete the Who Dunit Jamboard Mystery. 9. Students will then work on NJSLA, Illustrative Math and IXL tasks in small groups.	
Differentiation: • Desk top Place Value chart • Powers of 10 Video (study.com) • Physical Acting Number Line (Movement Activity) • Base-10 blocks • Decimal Placemat • Multiplication/Division Chart • Small group place value practice • Basic place value puzzles • Place Value Puzzlers • Logic Puzzle Pop! Powers of Ten		
Resources Provided: • i-Ready Classroom Workbook • i-Ready • NJSLA released items • Illustrative Math Website • IXL • EdPuzzle		



Lesson Plan 2 Template

Content Area: Math Lesson Title: The Metric System Time Frame: 2 hours

Lesson Components

21st Century Themes

- ☒ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy
☒ Civic Literacy ☒ Health Literacy

21st Century Skills

- ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Information Literacy
☒ Life and Career Skills ☒ Communication and Collaboration ☒ Media Literacy ☒ ICT Literacy

Interdisciplinary Connections: Science and Engineering, English Language Arts

Integration of Technology: EdPuzzle, BrainPop, i-Ready Classroom presentation slides, iReady tools, IXL

Equipment Needed: Teacher laptop, projector, student iPads

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Convert within the metric system using powers of ten. - Convert among different-sized standard measurement units within a given measurement system. - Use conversions in solving multi-step, real world problems.	Lesson Sequence - i-Ready Classroom - Unit 4 - Self Check pg.505. The teacher will use the data to help determine student groups. - STEM story - Swati Mohan pgs. 505st - 506st - Making sense of a problem and solving it. - Build vocabulary - pg. 506. - Class view BrainPop - Numbers & Operations, Customary Units. - Connect to Prior Knowledge - Presentation slide. - i-Ready Classroom - Lesson 25. - Session 1 - Explore converting measurement units pg 509 - 512. - Session 2 - Develop converting larger units to smaller units pg 513-518.	- Entry Ticket - i-Ready data - Group work - i-Ready Classroom lesson quiz - NJSLA problems - EdPuzzle “Metrification or Not?” PBL



9. Session 3 - Develop converting smaller units to larger units pg 519 - 524.
10. Session 4 - Refine converting measurement units pgs 525 - 526.
11. Comprehension check.
12. Students work on the EdPuzzle on metric conversions.
13. Student groups work out examples while the teacher meets with small groups based on entry ticket results.
14. Student groups work through NJSLA, Illustrative Math and iXL tasks.
15. The teacher then introduces the “Metrification or Not?” PBL. Students are asked to create a campaign for the use of the metric system in the USA. Students will research and design their product based, utilizing information from a variety of careers (e.g. scientists, marketing) and businesses (e.g. food, automotive) in the project.
16. Students present their PBLs when completed.

Differentiation:

- Desk-top metrics conversion chart
- “King Henry” desk-top chart
- Small group: practice conversions using King Henry
- Centimeter Grid Paper
- Conversion tables
- Measuring cups



Resources Provided:

- i-Ready Classroom Workbook
- i-Ready
- NJSLA released items
- Illustrative Math Website
- IXL
- EdPuzzle



Lesson Plan 3 Template		
Content Area: Math	Lesson Title: Writing and Evaluating Expressions	Time Frame: 2 hours
Lesson Components		
<u>21st Century Themes</u>		
☐ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy ☐ Civic Literacy ☐ Health Literacy		
<u>21st Century Skills</u>		
☐ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ Information Literacy ☒ Life and Career Skills ☐ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy		
Interdisciplinary Connections: Science and Engineering		
Integration of Technology: EdPuzzle, BrainPop, i-Ready Classroom presentation slides, iReady tools, IXL		
Equipment Needed: Teacher laptop, projector, student iPads		

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Evaluate order of operations. - Evaluate numerical expressions with parentheses, brackets, and braces, including expressions containing fractions and decimals. - Use parentheses, brackets, or braces to group parts of a numerical expression. - Write simple numerical expressions from a description that record calculations with numbers. - Interpret numerical expressions to compare	Lesson Sequence - i-Ready Classroom - Unit 5 - Self Check pg.621. The teacher will use the data to help determine student groups. - STEM story - Jose Celso Barbosa pgs. 621st - 622st - Logical arguments using analyzed reasoning. - Build vocabulary - pg. 622. - Connect to Prior Knowledge - Presentation slide. - i-Ready Classroom - Lesson 30. - Session 1 - Explore evaluating, writing and	- Entry Ticket - i-Ready data - Group work - i-Ready Classroom lesson quiz - NJSLA problems - EdPuzzle



their values without evaluating them.	interpreting expressions pg 623 - 628. 7. Session 2 - Develop evaluating expressions pg 629 - 634. 8. Session 3 - Develop writing and interpreting expressions pg 635 - 640. 9. Session 4 - Refine evaluating, writing and interpreting expressions pg 641 - 642. 10. Comprehension check. 11. Students should work on the Order of Operations EdPuzzle. 12. As a class, play Order of Operations Math Millionaire. 13. Break back into groups to work on NJSLA, Illustrative Math and iXL tasks while the teacher circulates to meet with individual groups. 14. For groups that are ready, have multi-step word problem task cards around the room.	
Differentiation: ● Math Key Word Chart ● PEMDAS desk-top anchor chart ● Writing Expressions Logic Puzzler ● Ready Math - Game - Most Valuable Expressions ● Name that Number Game ● High-Stakes Heist ● Order of Operation Math Millionaire Game ● Order of Operations Task Cards/Scoot Game		
Resources Provided: ● i-Ready Classroom Workbook ● i-Ready ● NJSLA released items ● Illustrative Math Website ● IXL ● EdPuzzle		



Lesson Reflection

Reflect on the lesson you have developed and rate the degree to which the lesson *Strongly*, *Moderately* or *Weakly* meets the criteria below.

Lesson Activities	Strongly	Moderately	Weakly
Are challenging Strongly and require higher order thinking and problem solving skills	X		
Allow for student choice		X	
Provide scaffolding for acquiring targeted knowledge/skills	X		
Integrate global perspectives	X		
Integrate 21st century skills		X	
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills	X		
Foster student use of technology as a tool to develop critical thinking, creativity and innovation skills		X	
Are varied to address different student learning styles and preferences	X		
Are differentiated based on student needs	X		
Are student-centered with teacher acting as a facilitator and co-learner during the teaching and learning process	X		
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives	X		
Provide opportunities for student reflection and self- assessment	X		
Provide data to inform and adjust instruction to better meet the varying needs of learners	X		

Curriculum Design Template

Content Area: Math	Grade Level: 5	Unit Title: Decimal Multiplication & Division Concepts
Created: 2024	Board Approved on: Type Here	



Unit Overview Template

Content Area: Math **Grade Level:** 5 **Unit Title:** Volume

Unit Summary: Students will analyze solid figures and determine volumes. Students will understand and apply different volume units. Students will solve for volumes of specific objects such as prisms, and apply these to real-world problems.

Primary Interdisciplinary Connections: *Science and Engineering*

21st Century Themes ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ ICT Literacy
 ☐ Information Literacy ☐ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy

Unit Rationale: To explore and classify 3-dimensional geometry terms and figures, and apply volume equations.

Career Readiness (Standard 9):

- 9.1.5.CR.1: Compare various ways to give back and relate them to your strengths, interests, and other personal factors.
- 9.1.5.FP.3: Analyze how spending choices and decision-making can result in positive or negative consequences.
- 9.2.5.CAP.3: Identify qualifications needed to pursue traditional and non-traditional careers and occupations.
- 9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these requirements.
- 9.2.5.CAP.6: Compare the characteristics of a successful entrepreneur with the traits of successful employees.
- 9.4.5.CI.3: Participate in a brainstorming session with individuals with diverse perspectives to expand one's thinking about a topic of curiosity (e.g., 8.2.5.ED.2, 1.5.5.CR1a).
- 9.4.5.CI.4: Research the development process of a product and identify the role of failure as a part of the creative process (e.g., W.4.7, 8.2.5.ED.6).
- 9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).
- 9.4.5.CT.2: Identify a problem and list the types of individuals and resources (e.g., school, community agencies, governmental, online) that can aid in solving the problem (e.g., 2.1.5.CHSS.1, 4-ESS3-1).
- 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.
- 9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3).
- 9.4.5.DC.4: Model safe, legal, and ethical behavior when using online or offline technology (e.g., 8.1.5.NI.2).
- 9.4.5.IML.1: Evaluate digital sources for accuracy, perspective, credibility and relevance (e.g., Social Studies Practice - Gathering and Evaluating Sources).
- 9.4.5.IML.2: Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3).
- 9.4.5.TL.3: Format a document using a word processing application to enhance text, change page formatting, and include appropriate images, graphics, or symbols.
- 9.4.5.TL.4: Compare and contrast artifacts produced individually to those developed collaboratively (e.g., 1.5.5.CR3a).
- 9.4.5.TL.5: Collaborate digitally to produce an artifact (e.g., 1.2.5.CR1d).



Learning Targets

Standards: 5.M

Content Statements: Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

CPI#: **Cumulative Progress Indicator (CPI):**

5.M.B.2	Recognize volume as an attribute of solid figures and understand concepts of volume measurement. a. A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume. b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.
5.M.B.3	Measure volumes by counting unit cubes, using cubic cm, cubic in., cubic ft., and non-standard units.
5.M.B.4	Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. b. Apply the formulas $V = l \times w \times h$ and $V = B \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real world and mathematical problems. c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.
3-5-ETS1-2	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
NJLSA.W 2	Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
W.5.7	Conduct short research projects that use several sources to build knowledge through investigation of different perspectives of a topic.
SEL.PK-12. 1.4	Recognize the importance of self-confidence in handling daily tasks and challenges.
SEL.PK-12. 4.1	Develop, implement and model effective problem solving and critical thinking skills.
SEL.PK-12. 2.2	Recognize the skills needed to establish and achieve personal and educational goals.

Unit Essential Questions:



- What does it mean for a solid figure to have volume?
- In what units is volume measured?
- How do I solve for the volume of a rectangular prism?
- How do I solve for the volume of a composite prism?
- How do I apply volume to real-world problems?

Unit Enduring Understandings:

- The meaning of volume.
- Applying different units of volumes and how it changes the numerical value of volume.
- Solving volume for rectangular and composite prisms.
- Looking for prisms in real-world situations.

Unit Learning Targets:

Students will solve volumes by deriving formulas, and applying those formulas to real-world scenarios.



Evidence of Learning

Summative Assessment: Unit Test

Equipment Needed: i-Ready program, Teacher laptop, Student iPads

Teacher Resources: i-Ready Classroom, iReady Program, teacher-created materials, CAR Unit 2C, IXL, NJSLA items, Illustrative Math, BrainPop, Edpuzzle

Formative Assessments:

- OnCourse Pre-Test, Quizzes, Post-Test
- i-Ready Classroom Lesson Quizzes
- i-Ready Classroom Assignments, Lessons, Interactive Practices
- Pop Quizzes
- Timed Fact Test
- Aquarium PBL



Lesson Plans

Lesson	Time Frame
Lesson 1 Measuring Volume	2 hours
Lesson 2 Volumes of Rectangular Prisms	2 hours
Lesson 3 Volumes of Composite Figures	2 hours

Teacher Notes:

Emphasize the importance of the application of the formulas from the Aquarium project.

Curriculum Development Resources/Technology Resources:

Click the links below to access additional resources used to design this unit:

<https://tasks.illustrativemathematics.org/content-standards>

<https://nj.mypearsonsupport.com/practice-tests/math/>



Lesson Plan 1 Template

Content Area: Math Lesson Title: Measuring Volume Time Frame: 2 hours

Lesson Components

21st Century Themes

- ☒ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy
☒ Civic Literacy ☐ Health Literacy

21st Century Skills

- ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ Information Literacy
☐ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections: Science and Engineering

Integration of Technology: EdPuzzle, BrainPop, i-Ready Classroom presentation slides, i-Ready tools, IXL

Equipment Needed: Teacher laptop, projector, student iPads

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Understand the concept of volume and how volume is measured. - Explore how a cube with side length 1 unit is called a “unit cube”, has “one cubic unit” of volume, and can be used to measure volume. - Explore how a solid figure which can be packed without gaps or overlaps using (n) unit cubes has a volume of n cubic units. - Measure volumes by counting unit cubes, using cubic cm, cubic in., cubic ft., and non-standard units.	Lesson Sequence - i-Ready Classroom - Unit 1 - Self Check pg.1. The teacher will use the data to help determine student groups. - STEM story - Abraham “Abe” Nemth pgs. 1st - 2nd - How to strategically use appropriate tools in math class and outside of school. - Build vocabulary - pg. 2. - Discuss what kinds of things can have volume. Have students identify objects with and without volume from around the classroom, and maintain a T-chart with the list. - Connect to Prior Knowledge - Presentation slide.	- Entry Ticket - i-Ready data - Group work - i-Ready Classroom lesson quiz - NJSLA problems - EdPuzzle



	6. i-Ready Classroom - Lesson 1 - Understand Volume. 7. Session 1 - Explore volume pg 3 - 8. 8. Session 2 - Develop understanding of volume pg 9 - 12. 9. Session 3 - Refine ideas about volume pg 13 - 14. 10. Comprehension check. 11. Student groups work out examples while the teacher meets with small groups based on entry ticket results. 12. Student groups work through NJSLA, Illustrative Math and iXL tasks. 13. Come back as a class and discuss the proper unit notations. Why are these notations important? 14. Discuss the relationship between “counting cubes” in volume and “counting boxes” in a 2-d shape. Can you “count boxes” on a 3-D shape as well?	
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Differentiation:

- Review attributes of 3-dimensional figures
- Base-10 unit cubes and assorted containers to practice finding volume w/o using formulas
- Small group compare/contrast of 2-dimensional shapes & 3-dimensional shapes

Resources Provided:

- i-Ready Classroom Workbook
- i-Ready
- NJSLA released items
- Illustrative Math Website
- IXL
- EdPuzzle



Lesson Plan 2 Template

Content Area: Math	Lesson Title: Volumes of Rectangular Prisms	Time Frame: 2 hours
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Lesson Components

21st Century Themes

- ☒ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☐ Health Literacy

21st Century Skills

- ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ Information Literacy
☐ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections: Science and Engineering

Integration of Technology: EdPuzzle, BrainPop, i-Ready Classroom presentation slides, iReady tools, XL

Equipment Needed: Teacher laptop, projector, student iPads

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Measure volume based on a rectangular prism's length, width, and height. - Represent volumes as the product of three whole numbers. - Apply the formulas $V = l \times w \times h$ and $V = B \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real world and mathematical problems.	Lesson Sequence - Connect to Prior Knowledge - Presentation slide. - BrainPop - Volume. - i-Ready Classroom - Lesson 2 - Finding Volume. - Have students break into groups and measure multiple prisms using unit cubes. Have students share strategies and shortcuts they used to find the volume. 2. Discuss how finding the bottom layer and knowing the number of layers to fill the prism (height) provides a faster way to find the volume	- Entry Ticket - i-Ready data - Group work - i-Ready Classroom lesson quiz - NJSLA problems - EdPuzzle



	than counting individual cubes. 6. Session 1 - Explore - Finding volume using unit cubes pg 17 - 20. 7. Introduce $B \times H$ formula and apply to examples. 8. Explore images of missing unit cubes. How can we find the volume? 9. Lead students to realize the base = length x width, multiplied by the height is $l \times w \times h$. Have students create their own volume formulas. 10. Session 2 - Finding volume using unit cubes pg 21 - 26. 11. Session 3 - Refine ideas about volume pg 27 - 30. 12. Comprehension check. 13. In their groups, ask students to generalize the formula for volume and how it relates to the area of the shapes. 14. Students will then complete rotations in their groups: Volume Board Game, NJSLA, Illustrative Math and iXL tasks, and Volume Enrichment. The teacher will circulate and meet with groups to assess progress.	
Differentiation: ● Small group review of area formula and contrast with volume ● Logic Puzzle Pump Up the Volume ● Geometry Goblin Mystery ● Minecraft in Education: Finding Volume by Adding Layers		
Resources Provided: ● i-Ready Classroom Workbook ● i-Ready		



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- NJSLA released items
- Illustrative Math Website
- IXL
- EdPuzzle



Lesson Plan 3 Template

Content Area: Math Lesson Title: Volumes of Composite Figures Time Frame: 2 hours

Lesson Components

21st Century Themes

- ☒ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☐ Health Literacy

21st Century Skills

- ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ Information Literacy
☒ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections: Science, Engineering, and English Language Arts

Integration of Technology: EdPuzzle, BrainPop, i-Ready Classroom presentation slides, iReady tools, IXL

Equipment Needed: Teacher laptop, projector, student iPads

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Find the volume of composite figures. - Recognize volume as additive and find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.	Lesson Sequence - Connect to Prior Knowledge - Presentation slide. - i-Ready Classroom - Lesson 3 - Finding Volume Using Formulas. - Session 1 - Explore - Finding volume using formulas pg 33 - 36. - Session 2 - Finding volume using formulas pg 37 - 42. - Show image of real-world composite volumes (e.g. rectangular wedding cake, instrument cases, etc.) - How could we use what we know to estimate the volume of these shapes? Have student groups	- Entry Ticket - iReady data - Group work - i-Ready Classroom lesson quiz - NJSLA problems - EdPuzzle - Aquarium Designer PBL



discuss, then come together as a whole class.

7. Lead the students to realize $V_1 + V_2 =$ Composite Volume.
8. Session 3 - Develop - Breaking apart figures to find volume pg 43 - 48.
9. Session 4 - Refine - finding volume using formulas pg 49 - 52.
10. Comprehension check
11. The teacher then should introduce the Aquarium Designer PBL.
12. PBL Task: As a new designer with a background in aquatic habitats, you will need to win over the design and production team of the hottest new interior design firm in the northeast United States. They want to hire someone who will add creativity and innovation to their production and design team. In order to be hired, you will have to create a model of a unique aquarium that can be maintained in a residential home or a commercial facility. You will also need to provide an estimate of the cost to create the full-size tank. As you continue, make sure to apply the design process and problem-solving methods to the development of your invention.



Differentiation:

- Small group: hands on pieces of a larger composite-find volume of each, combine
- Enrichment: Design a community swimming pool with 3 sections
- Buying a Fish Tank activity
- Base 10 blocks
- Hundreds flats
- Inch cubes & Activity Sheet - L-shaped figures

Resources Provided:

- i-Ready Classroom Workbook
- i-Ready
- NJSLA released items
- Illustrative Math Website
- IXL
- EdPuzzle



Lesson Reflection

Reflect on the lesson you have developed and rate the degree to which the lesson *Strongly*, *Moderately* or *Weakly* meets the criteria below.

Lesson Activities	Strongly	Moderately	Weakly
Are challenging Strongly and require higher order thinking and problem solving skills	X		
Allow for student choice	X		
Provide scaffolding for acquiring targeted knowledge/skills	X		
Integrate global perspectives		X	
Integrate 21st century skills		X	
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills		X	
Foster student use of technology as a tool to develop critical thinking, creativity and innovation skills		X	
Are varied to address different student learning styles and preferences	X		
Are differentiated based on student needs	X		
Are student-centered with teacher acting as a facilitator and co-learner during the teaching and learning process	X		
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives	X		
Provide opportunities for student reflection and self- assessment	X		
Provide data to inform and adjust instruction to better meet the varying needs of learners	X		

Curriculum Design Template

Content Area: Math	Grade Level: 5	Unit Title: Volume
Created: 2024	Board Approved on:	Type Here



Unit Overview Template

Content Area: Math	Grade Level: 5	Unit Title: Adding and Subtracting Fractions
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Unit Summary: Students will add and subtract fractions with unlike denominators. Students will extend this to adding and subtracting mixed numbers. Students will apply these operations to real-world applications and estimation.

Primary Interdisciplinary Connections: *Science and Engineering*

21st Century Themes

☐ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ ICT Literacy ☐ Information Literacy ☐ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy

Unit Rationale: Students will build and extend on prior knowledge of fractions, and continue to apply fractions in future grade levels.

Career Readiness (Standard 9):

9.1.5.CR.1: Compare various ways to give back and relate them to your strengths, interests, and other personal factors.

9.1.5.FI.1: Identify various types of financial institutions and the services they offer including banks, credit unions, and credit card companies.

9.1.5.FP.1: Illustrate the impact of financial traits on financial decisions.

9.1.5.FP.4: Explain the role of spending money and how it affects wellbeing and happiness (e.g., "happy money," experiences over things, donating to causes, anticipation, etc.).

9.1.5.FP.5: Illustrate how inaccurate information is disseminated through various external influencers including the media, advertisers/marketers, friends, educators, and family members.

9.1.5.PB.2: Describe choices consumers have with money (e.g., save, spend, donate). 9.2.5.CAP.2: Identify how you might like to earn an income.

9.2.5.CAP.3: Identify qualifications needed to pursue traditional and non-traditional careers and occupations.

9.2.5.CAP.6: Compare the characteristics of a successful entrepreneur with the traits of successful employees.

9.2.5.CAP.7: Identify factors to consider before starting a business.

9.4.5.CI.3: Participate in a brainstorming session with individuals with diverse perspectives to expand one's thinking about a topic of curiosity (e.g., 8.2.5.ED.2, 1.5.5.CR1a).

9.4.5.CI.4: Research the development process of a product and identify the role of failure as a part of the creative process (e.g., W.4.7, 8.2.5.ED.6).

9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).

Learning Targets

Standards: 5.NF

Content Statements: Use equivalent fractions as a strategy to add and subtract fractions.

CPI#:	Cumulative Progress Indicator (CPI):
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5.NF.A.1	Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, $\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}$. (In general, $\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$.)
5.NF.A.2	Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result $\frac{2}{5} + \frac{1}{2} = \frac{3}{7}$, by observing that $\frac{3}{7} < \frac{1}{2}$.
3-5-ETS1-2	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
NJSLSA.W 2	Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
W.5.7	Conduct short research projects that use several sources to build knowledge through investigation of different perspectives of a topic.
SEL.PK-12. 1.4	Recognize the importance of self-confidence in handling daily tasks and challenges.
SEL.PK-12. 4.1	Develop, implement and model effective problem solving and critical thinking skills.
SEL.PK-12. 2.2	Recognize the skills needed to establish and achieve personal and educational goals.

Unit Essential Questions:

- How can I add and subtract fractions with unlike denominators?
- How can I add and subtract mixed numbers?
- How can I answer real-world problems using adding and subtracting fractions?
- How can I use estimation to determine if my answer is reasonable?

Unit Enduring Understandings:

- Concepts of addition and subtraction, and applicability to real world problems
- Applying knowledge to estimate values.

Unit Learning Targets:

Students will add and subtract fractions with unlike denominators, and apply these concepts to real world problems.



Evidence of Learning

Summative Assessment: Unit Test

Equipment Needed: iReady program, Teacher laptop, Student iPads

Teacher Resources: i-Ready Classroom, iReady Program, teacher-created materials, CAR Unit 3A, IXL, NJSLA items, Illustrative Math, BrainPop, Edpuzzle

Formative Assessments:

- OnCourse Pre-Test, Quizzes, Post-Test
- i-Ready Classroom Lesson Quizzes
- i-Ready Classroom Assignments, Lessons, Interactive Practices
- Pop Quizzes
- Timed Fact Test
- Designer Pizza PBL



Lesson Plans

Lesson	Time Frame
Lesson 1 Adding Mixed Numbers	2 hours
Lesson 2 Subtracting Mixed Numbers	2 hours
Lesson 3 The Designer Pizza PBL	2 hours

Teacher Notes:

When meeting with small groups, ensure students are comfortable adding and subtracting fractions with the same denominators, including with mixed numbers.

Curriculum Development Resources/Technology Resources:

Click the links below to access additional resources used to design this unit:

<https://tasks.illustrativemathematics.org/content-standards>

<https://nj.mypearsonsupport.com/practice-tests/math/>



Lesson Plan 1 Template

Content Area: Math Lesson Title: Adding Mixed Numbers Time Frame: 2 hours

Lesson Components

21st Century Themes

- ☐ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☐ Health Literacy

21st Century Skills

- ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ Information Literacy
☐ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections: English Language Arts

Integration of Technology: EdPuzzle, BrainPop, i-Ready Classroom presentation slides, i-Ready tools, IXL

Equipment Needed: Teacher laptop, Student iPads, Projector

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Add fractions with unlike denominators, including mixed numbers, by replacing given fractions with equivalent fractions. - Solve word problems involving addition and subtraction of fractions including those with unlike denominators referring to the same whole.	Lesson Sequence - Introduce improper fractions and mixed numbers and convert between the two. - Edpuzzle: Convert between Mixed & Improper. - Converting and simplifying fractions whole group practice. - Present task: iReady Unit 2 Lesson 12: Develop pg. 237. Introduce mixed numbers, have students show and explain different models and methods used to solve. - Connect it and apply pages 238-240. - Practice Adding with Mixed Numbers pages 241-246.	- Entry Ticket - i-Ready data - Group work - i-Ready Classroom lesson quiz - NJSLA problems - Illustrative Math Sample Tasks 5.NF.A.1 - EdPuzzle



- | | | |
|--|---|--|
| | 7. Adding & Subtracting Fractions GoogleSlides Practice.
8. IXL L.18 | |
|--|---|--|

Differentiation:

- Many ways to write 1 game
- Desktop Anchor Chart with Terms
- Converting Mixed to Improper Mini-Lesson/ Group
- Rename that Mixed Number Game
- Fraction Circle Pieces (Manipulatives)
- Fraction Number Lines
- Enrichment: Breaking Up the Bakery

Resources Provided:

- i-Ready Classroom Workbook
- i-Ready
- NJSLA released items
- Illustrative Math Website
- IXL
- EdPuzzle



Lesson Plan 2 Template

Content Area: Math Lesson Title: Subtracting Mixed Numbers Time Frame: 2 hours

Lesson Components

21st Century Themes

- ☐ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☐ Health Literacy

21st Century Skills

- ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ Information Literacy
☒ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections: English Language Arts

Integration of Technology: EdPuzzle, BrainPop, i-Ready Classroom presentation slides, iReady tools, IXL

Equipment Needed: Teacher laptop, student iPads, projector

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Add fractions with unlike denominators, including mixed numbers, by replacing given fractions with equivalent fractions. - Solve word problems involving addition and subtraction of fractions including those with unlike denominators referring to the same whole.	Lesson Sequence - Renaming Fractions Whole Group Lesson (4 $\frac{2}{3} = 3 \frac{5}{3} = 2 \frac{8}{3} = 1 \frac{11}{3} = 1 \frac{15}{3}$). - Present task: iReady Unit 2 Lesson 13: Develop pg. 259. Introduce subtracting mixed numbers, have students show and explain different models and methods used to solve. Emphasize the need to regroup, call on different students to show various methods (picture models, regrouping a whole, changing all to improper, etc.). - Connect it and apply pages 260-262.	- Entry Ticket - i-Ready data - Group work - i-Ready Classroom lesson quiz - NJSLA problems - Illustrative Math Sample Tasks 5.NF.A.2 - EdPuzzle



- | | | |
|--|---|--|
| | <ol style="list-style-type: none"> 4. EdPuzzle: Subtracting Mixed Numbers. 5. Practice Subtracting with Mixed Numbers pages 263-268. 6. IXL L.19 & L.22. | |
|--|---|--|

Differentiation:

- Many ways to write 1 game
- Desktop Anchor Chart with Terms
- Converting Mixed to Improper Mini-Lesson/ Group
- Rename that Mixed Number Game
- Fraction Circle Pieces (Manipulatives)
- Fraction Number Lines
- Enrichment: Breaking Up the Bakery

Resources Provided:

- i-Ready Classroom Workbook
- i-Ready
- NJSLA released items
- Illustrative Math Website
- IXL
- EdPuzzle



Lesson Plan 3 Template

Content Area: Math Lesson Title: Designer Pizza PBL Time Frame: 2 hours

Lesson Components

21st Century Themes

- ☐ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☐ Health Literacy

21st Century Skills

- ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ Information Literacy
☒ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections: Financial Literacy, English Language Arts

Integration of Technology: Google Suite

Equipment Needed: Teacher laptop, Projector, Student iPads

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Solve real-world problems involving adding and subtracting fractions. - Solve a real-world PBL involving addition and subtraction of fractions including those with unlike denominators referring to the same whole.	Lesson Sequence - The teacher will introduce the PBL task. - Many pizza shops today offer a variety of pizzas by the slice. So, for example, you could purchase a slice of pepperoni pizza and a slice of Hawaiian pizza. Typically, however, pizzas are cut into eight slices. - What if you wanted a larger piece of everything pizza and smaller pieces of cheese pizza and buffalo chicken pizza? Maybe pizza shops should consider more customization of pizza purchases! - Develop a quality plan you could present to a	Designer Pizza PBL



	pizza shop or chain to innovate pizza purchases. Offer a variety of types of pizza slices of various sizes based on some initial market research to determine popular pizza preferences. 5. Design “Meal Options” of slice combinations, for example: a one-eighth slice buffalo chicken, a one-fifth slice pepperoni, and two one-twelfth slices of cheese. 6. Once you develop your plan, work as a team to select meal options to combine into one plan. Identify your target pizza shop and determine their full-size pie prices to calculate menu costs. 7. Students will work on the PBL while the teacher calls up small groups to assess progress on topics from this unit.	
Differentiation: ● Math Key Word Chart ● Review: problem solving strategies ● Ready Math Unit 2 Game - Fraction Sums and Differences		
Resources Provided: ● iPads ● Pizza Designer packet with rubric		



Lesson Reflection

Reflect on the lesson you have developed and rate the degree to which the lesson *Strongly*, *Moderately* or *Weakly* meets the criteria below.

Lesson Activities	Strongly	Moderately	Weakly
Are challenging Strongly and require higher order thinking and problem solving skills	X		
Allow for student choice	X		
Provide scaffolding for acquiring targeted knowledge/skills	X		
Integrate global perspectives		X	
Integrate 21st century skills		X	
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills	X		
Foster student use of technology as a tool to develop critical thinking, creativity and innovation skills			X
Are varied to address different student learning styles and preferences		X	
Are differentiated based on student needs	X		
Are student-centered with teacher acting as a facilitator and co-learner during the teaching and learning process		X	
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives	X		
Provide opportunities for student reflection and self- assessment		X	
Provide data to inform and adjust instruction to better meet the varying needs of learners		X	

Curriculum Design Template

Content Area: Math	Grade Level: 5	Unit Title: Adding and Subtracting Fractions
Created: 2024	Board Approved on: Type Here	



Unit Overview Template

Content Area: Math **Grade Level:** 5 **Unit Title:** Multiplying & Dividing Fractions

Unit Summary: Students will explore multiplying and dividing fractions with a variety of representations. Students will solve fraction-of problems, calculate areas with fractional lengths, and investigate how fractions affect the size of a product. Students will interpret fractions as division, and apply concepts to dividing mixed numbers.

Primary Interdisciplinary Connections: *Science, Engineering, English Language Arts*

21st Century Themes

☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ ICT Literacy
☐ Information Literacy ☒ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy

Unit Rationale: To further apply operations with fractions and mixed numbers.

Career Readiness (Standard 9):

9.1.5.CR.1: Compare various ways to give back and relate them to your strengths, interests, and other personal factors.

9.1.5.EG.3: Explain the impact of the economic system on one's personal financial goals.

9.1.5. EG.4: Describe how an individual's financial decisions affect society and contribute to the overall economy.

9.1.5.PB.1: Develop a personal budget and explain how it reflects spending, saving, and charitable contributions.

9.1.5.PB.2: Describe choices consumers have with money (e.g., save, spend, donate).

9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3).

Learning Targets

Standards: 5.NF; 5.M

Content Statements: Apply and extend previous understandings of multiplication and division to multiply and divide fractions; Represent and interpret data.

CPI#:	Cumulative Progress Indicator (CPI):
5.NF.B.3	Interpret a fraction as division of the numerator by the denominator (i.e., $a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. For example, interpret $3/4$ as the result of dividing 3 by 4, noting that $3/4$ multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size $3/4$. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?
5.NF.B.4	Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. a. Interpret the product $(a/b) \times q$ as a part of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$, and create a story



	context for this equation. Do the same with $(2/3) \times (4/5) = 8/15$. (In general, $(a/b) \times (c/d) = ac/bd$.) b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.
5.NF.B.5	Interpret multiplication as scaling (resizing), by: a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.
5.NF.B.6	Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem
5.NF.B.7	Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for $(1/3) \div 4$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $(1/3) \div 4 = 1/12$ because $(1/12) \times 4 = 1/3$. b. Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for $4 \div (1/5)$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$. c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share.
5.DL.A.1	Develop strategies to collect, organize and represent data of various types and from various sources. Communicate results digitally through a data visual (e.g. chart, storyboard, video presentation).
5.DL.A.2	Develop strategies to collect, organize and represent data of various types and from various sources. Communicate results digitally through a data visual (e.g. chart, storyboard, video presentation).
5.DL.A.3	Collect and clean data to be analyzable (e.g., make sure each entry is formatted correctly, deal with missing or incomplete data).
5.DL.A.4	Using appropriate visualizations (i.e. double line plot, double bar graph), analyze data across samples.
5.DL.B.5	Make a line plot to display a data set of measurements in fractions of a unit ($1/2$, $1/4$, $1/8$). Use operations on fractions for this grade to solve problems involving information presented in line plots. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.



3-5-ETS1-2	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
NJSLSA.W 2	Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
W.5.7	Conduct short research projects that use several sources to build knowledge through investigation of different perspectives of a topic.
SEL.PK-12. 1.4	Recognize the importance of self-confidence in handling daily tasks and challenges.
SEL.PK-12. 4.1	Develop, implement and model effective problem solving and critical thinking skills.
SEL.PK-12. 2.2	Recognize the skills needed to establish and achieve personal and educational goals.

Unit Essential Questions:

- How can I solve for fraction-of problems?
- How can I multiply fractions?
- How can I solve for an area with fractional side lengths?
- How does multiplying by a fraction affect the size of the product?
- How can I multiply mixed numbers?
- How can I interpret fractions as division?
- How can I divide fractions by fractions?
- How can I divide mixed numbers?
- How can I interpret fractional line plots?

Unit Enduring Understandings:

- How to properly multiply fractions.
- How to conceptualize the meaning of dividing fractions.
- Rewriting division as multiplication.
- Conversion between fractions, decimals, and mixed numbers.
- Interpreting and using fractional line plots.

Unit Learning Targets:

- Students will multiply and divide fractions.
- Climate Change Example: To examine the impact climate change has on agriculture, students may solve word problems about the reduced yields of staple crops and their distribution that involve division of whole numbers and lead to answers in the form of fractions.
- Climate Change Example: To examine the impact climate change has on agriculture, students may solve real-world problems about the reduced yields of staple crops and their distribution that involve division of unit fractions by non-zero whole numbers and/or division of whole numbers by unit fractions.



Evidence of Learning

Summative Assessment: Unit Test

Equipment Needed: iReady Curriculum, Teacher Laptop, Student iPads, Projector

Teacher Resources: i-Ready Classroom, iReady Program, teacher-created materials, CAR Unit 3B, IXL, NJSLA items, Illustrative Math, BrainPop, Edpuzzle

Formative Assessments:

- OnCourse Pre-Assessments, Quizzes, Post-Assessments
- i-Ready Lesson Assignments & Interactive Practice
- i-Ready Lesson Quizzes
- GoogleSlides Line Plot Activity



Lesson Plans

Lesson	Time Frame
Lesson 1 Fractions as Division	2 hours
Lesson 2 Multiplying Fractions by Fractions	2 hours
Lesson 3 Line Plots with Fractions	2 hours

Teacher Notes:

Emphasize the differences between adding/subtracting fractions and multiplying/dividing fractions.

Curriculum Development Resources/Technology Resources:

Click the links below to access additional resources used to design this unit:

<https://tasks.illustrativemathematics.org/content-standards>

<https://nj.mypearsonsupport.com/practice-tests/math/>



Lesson Plan 1 Template

Content Area: Math Lesson Title: Fractions as Division Time Frame: 2 hours

Lesson Components

21st Century Themes

- ☒ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☐ Health Literacy

21st Century Skills

- ☒ Creativity and Innovation ☐ Critical Thinking and Problem Solving ☐ Information Literacy
☒ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections: Science, Engineering and English Language Arts

Integration of Technology: EdPuzzle, BrainPop, i-Ready Classroom presentation slides, iReady tools, IXL, Google Slides

Equipment Needed: Teacher laptop, projector, student iPads

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Interpret fractions as division and solve for division remainders as fractions. - Interpret a fractions as division of the numerator by the denominator using visual fraction models or equations. - Solve word problems involving division of whole numbers resulting in a fraction or mixed number quotient. - Compute and interpret the quotients of a unit fraction by a non-zero whole number.	Lesson Sequence - i-Ready Classroom Lesson 18 - Connect to prior knowledge - presentation slide. - Sessions 1 - 3 - Explore Intro pg. 375. - Connect & Develop pgs. 376-382. - Break students into group to work on dividing unit fractions by whole numbers (e.g. $\frac{1}{5}$ divided by 10). - Ask students to analyze and look for patterns. Ask students to generalize the operations. - In groups, pose the Interpreting Remainder questions to students to analyze (e.g. Frank needs 459 nails for a construction project).	- Entry Ticket - i-Ready data - Group work - i-Ready Classroom lesson quiz - NJSLA problems - Illustrative Math Sample Tasks 5.NF.B.4a - Interpret Remainders Exit Slip



	Nails are sold in boxes of 28. How many boxes of nails will Frank need?) 7. Have groups present their problem and solution to another group. 8. Using a common class Google Slide, have student groups create their own questions and have other groups solve them. Come back as a whole group and discuss the difficulties in creating these problems. 9. i-Ready Classroom Refine pgs. 385-388. 10. Digital Comprehension Check/Lesson quiz. 11. Project a sample NJSLA student response, and ask students to determine the mistake with a partner.	
Differentiation: ● Fractions Bars ● Base-ten blocks ● Grid paper ● Math Key Word Chart ● Multiplication Chart (Desktop) ● Enrichment: Fractions of a Whole Challenge Word Problems ● Dividing Fractions task cards ● Mystery Words - Dividing Fractions ● Dividing Fractions Cut, Solve, Color		
Resources Provided: ● i-Ready Classroom Workbook ● i-Ready ● NJSLA released items ● Illustrative Math Website ● IXL ● EdPuzzle		



Lesson Plan 2 Template

Content Area: Math Lesson Title: Multiplying Fractions by Fractions Time Frame: 2 hours

Lesson Components

21st Century Themes

- ☒ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☐ Health Literacy

21st Century Skills

- ☐ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ Information Literacy
☒ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections: Science and Engineering

Integration of Technology: EdPuzzle, BrainPop, i-Ready Classroom presentation slides, iReady tools, IXL, GoogleSlides

Equipment Needed: Teacher Laptop, Student iPad, Projector

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Multiply fractions by fractions. • Interpret the product of a fraction and a fraction as $(a/b) \times (c/d) = ac/bd$.	Lesson Sequence 1. The class will discuss multiplying fractions with whole numbers. The teacher asks how to rewrite a whole number as a fraction ($x/1$) and then asks the students to multiply again. 2. The teacher then asks the students to pair-share how they would multiply two fractions together. Have students share their findings. 3. i-Ready Classroom - Lesson 19 Connect to prior knowledge - presentation slide. 4. Introduction Lesson 19 - Sessions 1 - 3 Explore: pgs. 391-394.	• Entry Ticket • i-Ready data • Group work • i-Ready Classroom lesson quiz • NJSLA problems • Illustrative Math Sample Tasks 5.NF.B.4a • EdPuzzle • GoogleSlides Practice



	5. Students break into groups to work on the EdPuzzle Multiplying Fractions. 6. The groups then work on the paper folding strategy to multiply fractions (make folds based on the fractions in the problem to see the representational answer). The teacher circulates and meets with groups to assess progress. 7. i-Ready Develop: pgs. 395-400. 8. Digital Comprehension/lesson quiz. 9. Students then work in pairs on the Multiplying Fractions Scavenger Hunt.	
Differentiation: ● Multiplication Chart ● Paper Folding Strategy ● Shading/Coloring Models ● Enrichment: Let's Get Cooking PBL ● Enrichment: Multiplying Fractions Build & Scale Dog House ● Multiplying Fractions - task cards ● Multiplying & Dividing Fractions Escape Room		
Resources Provided: ● i-Ready Classroom Workbook ● i-Ready ● NJSLA released items ● Illustrative Math Website ● IXL ● EdPuzzle		



Lesson Plan 3 Template

Content Area: Math Lesson Title: Line Plots with Fractions Time Frame: 2 hours

Lesson Components

21st Century Themes

- ☒ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☐ Health Literacy

21st Century Skills

- ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Information Literacy
☒ Life and Career Skills ☒ Communication and Collaboration ☒ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections: Science Engineering

Integration of Technology: EdPuzzle, BrainPop, i-Ready Classroom presentation slides, iReady tools, IXL, GoogleSlides

Equipment Needed: Teacher laptop, Student iPads, Projector

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Interpret fractional line plots. - Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). - Use operations with fractions to solve problems involving information presented in line plots.	Lesson Sequence - Students will make a line plot to display a data set in fractions of a unit. Ex: Measure all student pencil lengths to the nearest $\frac{1}{4}$ inch, put on post its and organize data into a line plot. - Add, subtract, multiply and divide fractions to solve problems that contain fraction data sets present in line plots. Ex: What is the average of the data? The difference between the largest and smallest value? The total of the largest 4 values? Etc. - i-Ready Classroom - Lesson 27 - Connect to	- Entry Ticket - i-Ready data - Group work - i-Ready Classroom lesson quiz - NJSLA problems - Illustrative Math Sample Tasks 5.MD.B.2 (new 5.DL.B.5) - EdPuzzle - Interpreting Remainders Exit Slips



	prior knowledge - presentation slide. 4. Sessions 1 - 4 Explore pgs. 553-556. 5. Connect & Practice pgs. 557 - 568. 6. Refine pgs. 569-572. 7. In groups, students will then log onto the Make and Interpret Line Plots Google Slide. Students will take and record data in the shared Slides, make a line plot using the data, then analyze and interpret the plot. 8. The teacher circulates the room to assess the progress of student groups. 9. When completed, students will then begin to analyze and correct an NJSLA student sample response.	
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Differentiation:

- Review Vocabulary: Data set, line plots
- Foundational iReady instruction from fourth grade on line plots
- Floor, chalk, or post-it hands on line plots
- Index cards, masking tape
- Number cube
- Bean bag, yardstick
- Enrichment: Solving Candle Problems

Resources Provided:

- i-Ready Classroom Workbook
- i-Ready
- NJSLA released items
- Illustrative Math Website
- IXL
- EdPuzzle
- Google Slides



Lesson Reflection

Reflect on the lesson you have developed and rate the degree to which the lesson *Strongly*, *Moderately* or *Weakly* meets the criteria below.

Lesson Activities	Strongly	Moderately	Weakly
Are challenging Strongly and require higher order thinking and problem solving skills	X		
Allow for student choice	X		
Provide scaffolding for acquiring targeted knowledge/skills	X		
Integrate global perspectives	X		
Integrate 21st century skills		X	
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills		X	
Foster student use of technology as a tool to develop critical thinking, creativity and innovation skills		X	
Are varied to address different student learning styles and preferences	X		
Are differentiated based on student needs	X		
Are student-centered with teacher acting as a facilitator and co-learner during the teaching and learning process	X		
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives	X		
Provide opportunities for student reflection and self- assessment	X		
Provide data to inform and adjust instruction to better meet the varying needs of learners	X		

Curriculum Design Template

Content Area: Math	Grade Level: 5	Unit Title: Multiplying and Dividing Fractions
Created: 2024	Board Approved on: Type Here	



Unit Overview Template

Content Area: Math	Grade Level: 5	Unit Title: The Coordinate Plane & Classifying 2D Figures
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Unit Summary: Students will interpret and plot points on a coordinate plane to solve real-world problems. Students will create and evaluate expressions to represent graphs and coordinates, and determine rules for related tables. Students will apply coordinates to 2D figures, and determine properties of these figures. Students will classify triangles and quadrilaterals using hierarchies.

Primary Interdisciplinary Connections: *Science and Engineering*

21st Century Themes ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ ICT Literacy
☐ Information Literacy ☒ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy

Unit Rationale: Students will continue to apply manipulations within the coordinate plane in both math and science. Students will continue to further their analysis of 2D figures.

Career Readiness (Standard 9):

- 9.1.5.CR.1: Compare various ways to give back and relate them to your strengths, interests, and other personal factors.
- 9.1.5.CP.1: Identify the advantages of maintaining a positive credit history.
- 9.1.5.EG.1: Explain and give examples of what is meant by the term “tax.”
- 9.1.5.EG.2: Describe how tax monies are spent.
- 9.1.5.EG.3: Explain the impact of the economic system on one’s personal financial goals.
- 9.1.5. EG.4: Describe how an individual’s financial decisions affect society and contribute to the overall economy.
- 9.1.5. EG.5: Identify sources of consumer protection and assistance.
- 9.1.5.FP.2: Identify the elements of being a good steward of money.
- 9.1.5.PB.1: Develop a personal budget and explain how it reflects spending, saving, and charitable contributions.
- 9.1.5.PB.2: Describe choices consumers have with money (e.g., save, spend, donate).
- 9.1.5.RMI.1: Identify risks that individuals and households face.
- 9.1.5.RMI.2: Justify reasons to have insurance.
- 9.2.5.CAP.1: Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.
- 9.2.5.CAP.2: Identify how you might like to earn an income.
- 9.2.5.CAP.3: Identify qualifications needed to pursue traditional and non-traditional careers and occupations.
- 9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these requirements.
- 9.4.5.CI.1: Use appropriate communication technologies to collaborate with individuals with diverse perspectives about a local and/or global climate change issue and deliberate about possible solutions (e.g., W.4.6, 3.MD.B.3,7.1.NM.IPERS.6).
- 9.4.5.CI.2: Investigate a persistent local or global issue, such as climate change, and collaborate with individuals with diverse perspectives to improve upon current actions designed to address the issue (e.g., 6.3.5.CivicsPD.3, W.5.7).



- 9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).
- 9.4.5.CT.2: Identify a problem and list the types of individuals and resources (e.g., school, community agencies, governmental, online) that can aid in solving the problem (e.g., 2.1.5.CHSS.1, 4-ESS3-1).
- 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.
- 9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3).
- 9.4.5.GCA.1: Analyze how culture shapes individual and community perspectives and points of view (e.g., 1.1.5.C2a, RL.5.9, 6.1.5.HistoryCC.8).

Learning Targets

Standards: 5.G; 5.OA

Content Statements: Graph points on the coordinate plane to solve real-world and mathematical problems; Classify two-dimensional figures into categories based on their properties; Write and interpret numerical expressions; Analyze patterns and relationships

CPI#:	Cumulative Progress Indicator (CPI):
5.G.A.1	Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the origin on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).
5.G.A.2	Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.
5.G.B.3	Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.
5.G.B.4	Classify two-dimensional figures in a hierarchy based on properties.
5.OA.A.1	Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
5.OA.A.2	Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating.
5.OA.B.3	Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.



3-5-ETS1-2	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
NJSLSA.W 2	Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
W.5.7	Conduct short research projects that use several sources to build knowledge through investigation of different perspectives of a topic.
SEL.PK-12. 1.4	Recognize the importance of self-confidence in handling daily tasks and challenges.
SEL.PK-12. 4.1	Develop, implement and model effective problem solving and critical thinking skills.
SEL.PK-12. 2.2	Recognize the skills needed to establish and achieve personal and educational goals.

Unit Essential Questions:

- How can I interpret and plot on coordinate planes?
- How can I represent and interpret real-world mathematical problems using graphs?
- How can I identify a rule for a table, coordinate, or graph?
- How can I create and evaluate expressions to represent graphs, coordinates, and mathematical real-world problems?
- How can I understand the properties of 2D figures?
- How can I classify quadrilaterals using their hierarchy?
- How can I classify triangles using their hierarchy?

Unit Enduring Understandings:

- Plotting points and interpreting graphs.
- Translating a graph to a table or vice versa.
- Data presentation is an important life skill.
- Classifying 2D shapes by analysis.

Unit Learning Targets:

- Students will graph on the coordinate plane, and analyze 2D shapes on and off the coordinate plane.
- Climate Change Example: Students may represent real world problems about the reduced yields of staple crops by graphing points in the first quadrant of the coordinate plane; Students may interpret coordinate values of points in the agricultural context.



Evidence of Learning

Summative Assessment: Unit Test

Equipment Needed: iReady Curriculum, Student iPads, Teacher Laptop, Projector

Teacher Resources: i-Ready Classroom, iReady Program, teacher-created materials, CAR Unit 4, IXL, NJSLA items, Illustrative Math, BrainPop, Edpuzzle

Formative Assessments:

- OnCourse Quizzes, Pre and Post-Assessments
- iReady Lesson Quizzes
- iReady Assigned Lessons and Interactive Practices
- Geometry-Town PBL
- IXL



Lesson Plans

Lesson	Time Frame
Lesson 1 Plotting on the Coordinate Plane	2 hours
Lesson 2 Properties of 2D Figures	2 hours
Lesson 3 Geometry Town	2 hours

Teacher Notes:

Emphasize the importance of graphing on the coordinate plane, ensuring students can make the link between a graphed figure and a figure that is not graphed.

Curriculum Development Resources/Technology Resources:

Click the links below to access additional resources used to design this unit:

<https://tasks.illustrativemathematics.org/content-standards>

<https://nj.mypearsonsupport.com/practice-tests/math/>



Lesson Plan 1 Template

Content Area: Math Lesson Title: Plotting on the Coordinate Plane Time Frame: 2 hours

Lesson Components

21st Century Themes

- ☒ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☐ Health Literacy

21st Century Skills

- ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ Information Literacy
☒ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections: Science and Engineering and English Language Arts

Integration of Technology: iReady, EdPuzzle, Online Treasure Hunting Game, BrainPop

Equipment Needed: Teacher laptop, Student iPads, Projector

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Interpret and plot coordinate planes. - Learn that a coordinate system is defined by a pair of perpendicular lines called axes with the intersection of the lines, the origin, occurring at 0 on each line. - Learn that a given point in the coordinate plane is located using an ordered pair of numbers called coordinates. - Apply that the first number in an ordered pair indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis.	Lesson Sequence - Students will work through Understanding the Coordinate Plane on i-Ready. - The class will watch the BrainPop on the coordinate plane. - i-Ready Classroom Unit 5 Lesson 31 Explore pages 647-648. - Students create their own definitions and examples of the terms coordinate plane, x-axis, y-axis, origin, ordered pair, x-coordinate, y-coordinate on i-Ready Classroom Vocab pg 649. - Have students play Coordinate Battleship Game to plot and communicate coordinates and distances from the axis.	- OnCourse Coordinate Plane Quiz - i-Ready Lesson Quiz - i-Ready Lesson Assignment Understand Coordinate Plane - GoogleSlides



Explore how the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).	- Students then work in groups on a variety of tasks: Coordinate Mystery Pictures, Coordinate Grid Riddles, Coordinate Plane Tasks & Exit Slips, Coordinate Grids I Have Who Has, Over and Up Squares, Treasure Hunting - online game. - Next day, complete i-Ready Classroom Unit 5 Lesson 32 Develop pages 669-674. - EdPuzzle: Interpreting Data & Graphs. - i-Ready Classroom Lesson Assignment Understand Coordinate Plane and or GoogleSlides Practice Graphing Number Patterns. - Digital Comprehension or lesson quiz.	
Differentiation: “Run, Rise” movements and association (X-Axis runs, Y-Axis rises) - Practice naming points on a coordinate grid - Hidden Treasure activity - Small group: Practice locating, placing ordered pairs on a grid. Enrichment: Create your own coordinate mystery picture in all four quadrants - Assign fourth grade iReady reteach and interactive lessons if needed - Enrichment: Logic Puzzle What’s the Point? - Enrichment: Four Quadrant Mystery Coordinate Picture		
Resources Provided: - i-Ready Classroom Workbook - i-Ready - NJSLA released items - Illustrative Math Website - IXL - EdPuzzle - Google Slides - Teacher created resources in OnCourse		



Lesson Plan 2 Template			
Content Area:	Math	Lesson Title:	Properties of 2D Figures
		Time Frame:	2 hours
Lesson Components			
<u>21st Century Themes</u>			
☐ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy ☐ Civic Literacy ☐ Health Literacy			
<u>21st Century Skills</u>			
☒ Creativity and Innovation ☐ Critical Thinking and Problem Solving ☐ Information Literacy ☒ Life and Career Skills ☐ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy			
Interdisciplinary Connections: Science and Engineering and English Language Arts			
Integration of Technology: EdPuzzle, iReady, IXL, BrainPop			
Equipment Needed: Teacher Laptop, Student iPads, Projector			

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Identify the properties of two-dimensional figures. - Explore how the attributes belonging to a category of two-dimensional figures also belong to all subcategories.	Lesson Sequence - The students will take an entrance quiz on different classifications of 2D figures. 2D Shapes slideshow presentation with guided notes for math notebooks. - i-Ready Classroom Unit 5 Lesson 28 Explore pages 575-578. - EdPuzzle: Quadrilateral Hierarchy Lesson. - Sorting Quadrilaterals Activity. - GoogleSlides: Practice Classifying 2D Figures. - i-Ready Lesson Classifying 2D Figures.	- OnCourse Quiz Classifying 2D Figures - i-Ready Lesson Quizzes - GoogleSlides Assignment - Geometry Jeopardy - Sorting Quadrilateral Activity - Entry & Exit Tickets (OnCourse)
Differentiation: Geometry Goblin Mystery Enrichment		



- Vocabulary review: Attribute, quadrilateral, quadrangle, polygon
- Small Group: Play “Name the Shape” based on attributes
- Review Grade 4 iReady 2D Figures

Resources Provided:

- i-Ready Classroom Workbook
- i-Ready
- NJSLA released items
- Illustrative Math Website
- IXL
- EdPuzzle
- Geometry Google Slides for discussion
- Geometry Jeopardy Google Slides



Lesson Plan 3 Template

Content Area: Math Lesson Title: Geometry Town Time Frame: 2 hours

Lesson Components

21st Century Themes

- ☒ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy
☒ Civic Literacy ☒ Health Literacy

21st Century Skills

- ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Information Literacy
☒ Life and Career Skills ☒ Communication and Collaboration ☒ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections: Science and Engineering, English Language Arts, Personal Financial Literacy

Integration of Technology: Research on city planning

Equipment Needed: Teacher Laptop, Student iPads, Projector

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Apply the properties of two-dimensional figures. • Apply knowledge of coordinate planes to 3D structures. • Apply geometric nets to design a city. • Create a city to include residential, commercial, and emergency service buildings and green spaces in meaningful locations in relation to each other to promote health, safety, and efficiency in the city.	Lesson Sequence 1. Introduce the PBL: Geometry Town is a project based learning activity where students will take their geometry skills and design their own city. This project doesn't just focus on math skills, as there are components of social studies (mapping skills), writing, problem solving and comprehension skills. 2. Geometry Town is broken into seven phases. Students will begin working on each phase. 3. Phase One: Permits. Reviewing and previewing geometric	• Completion and presentation of the students' Geometry Towns, graded on rubric • Unit 4 OnCourse Assessment



	terms and visuals; creating a mini-map. 4. Phase Two: Design & Build. Up to nine city sections can be built. Each page has 10-14 requirements that must be completed. 5. Phase Three: Construction. Putting our city together for the world to see. 6. Phase Four: Building Up. Using nets and 3D to make the city rise above the paper. 7. Phase Five: Assessment. Three types of self-assessments for students: Self, Individual, and group work. 8. Phase Six: Tourism. Create a postcard to persuade visitors to come. 9. Phase Seven: Challenge - 5 extra higher level challenges for students that want to create more.	
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Differentiation:

- Enrichment: Classifying Triangles Math Stations (Measuring Angles & Justifying Claims)
- Enrichment: Logic Puzzle Party Time!
- Vocabulary review: right triangle, isosceles triangle, scalene triangle
- Small Group: Review EM Grade 4 2.10 Classifying Triangles
- Vocabulary: hierarchy
- Play the Living Hierarchy game (Stand if you're a human. Move to the back if you're human and have siblings. Move to the side of the room if you're human, have siblings and you're the youngest. Keep going to establish a hierarchy.)

Resources Provided:

- iPads
- Geometry City Materials



Lesson Reflection

Reflect on the lesson you have developed and rate the degree to which the lesson *Strongly*, *Moderately* or *Weakly* meets the criteria below.

Lesson Activities	Strongly	Moderately	Weakly
Are challenging Strongly and require higher order thinking and problem solving skills	X		
Allow for student choice	X		
Provide scaffolding for acquiring targeted knowledge/skills	X		
Integrate global perspectives	X		
Integrate 21st century skills	X		
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills	X		
Foster student use of technology as a tool to develop critical thinking, creativity and innovation skills		X	
Are varied to address different student learning styles and preferences		X	
Are differentiated based on student needs	X		
Are student-centered with teacher acting as a facilitator and co-learner during the teaching and learning process	X		
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives	X		
Provide opportunities for student reflection and self- assessment		X	
Provide data to inform and adjust instruction to better meet the varying needs of learners		X	

Curriculum Design Template

Content Area: Math	Grade Level: 5	Unit Title: The Coordinate Plane & Classifying 2D Figures
Created: 2024	Board Approved on: Type Here	