## NEW MILFORD PUBLIC SCHOOLS

New Milford, Connecticut


Practical Math: Percent
November/2021

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## New Milford's Mission Statement

The mission of the New Milford Public Schools, a collaborative partnership of students, educators, family and community, is to prepare each and every student to compete and excel in an ever-changing world, embrace challenges with vigor, respect and appreciate the worth of every human being, and contribute to society by providing effective instruction and dynamic curriculum, offering a wide range of valuable experiences, and inspiring students to pursue their dreams and aspirations.

## Practical Math: Percent

 9-12This is a one-semester course designed to give students exposure to real-world applications of percents. Because this is a course in practical math; standards will focus on the Standards for Mathematical Practice and assessments will often be practical in nature.

## From the Program of Studies:

The goal of this course is to provide a review of foundational skills and concepts related to percentages before exploring how the concept is used in a variety of fields.Skills to be reviewed will include but are not limited to:solving single variable equations, including proportions and converting percent to decimal and vice versa.Applications that will be discussed include but are not limited to taxes, discounts/markups, interest (auto/home loans, banking, etc.), and estate division.

## Pacing Guide

Include a list of the units and the approximate number of days/weeks it will take to teach the unit.

## Unit Title

Working with Percents
Working with Decimals, Fractions, Ratios and Proportions
Applications of Percents: Interest
Applications of Percents: Budgeting
Applications of Percents: Taxes
Culminating Project \& Exam
\# of Weeks
3 Weeks
3 Weeks
3 Weeks
4 Weeks
4 Weeks
2 Weeks

## ESTABLISHED GOALS

Include any national/state/or school goals (Power standards).

## CCSS.MATH.CONTENT.6.RP.A.3.C

Find a percent of a quantity as a rate per 100 (e.g., $30 \%$ of a quantity means $30 / 100$ times the quantity); solve problems involving finding the whole, given a part and the percent.

## CCSS.MATH.CONTENT.7.RP.A. 3

Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.

## Transfer

Students will be able to independently use their learning to...

- Make sense of problems initiating a plan and implementing a procedure when expressing percentages.
- Model with mathematics by choosing the correct method of calculating a percentage given information.
- Attend to precision by calculating percentages using a given method

| Meaning |  |
| :---: | :---: |
| UNDERSTANDINGS <br> Students will understand that... <br> - Percents can be expressed in a variety of different forms | ESSENTIAL QUESTIONS <br> Students will keep considering... <br> - How do I express a percent? <br> - How do I calculate a percentage given different information? <br> - When is a percentage appropriate to use? |
| Acquisition |  |
| Students will know... <br> - Calculating a percentage of a quantity <br> - Verbally expressing a percentage correctly <br> - Calculating a percentage of a quantity given a real world scenario and applying the answer to the context | Students will be skilled at... <br> - Writing mathematically correct statements about percentages <br> - Writing and solving expressions involving percentages. |


| Code | Evaluative Criteria | Assessment Evidence |
| :---: | :---: | :---: |
| T, M, A | Scoring Rubric used to evaluate successful understanding of using knowledge of percentages to compare and contrast and ultimately choose a car that is the most cost effective. The rubric will look for: <br> - Students will accurately calculate the taxes and maintenance costs of the car <br> - Students will write a detailed explanation of reasoning <br> - Their work is visually neat, organized <br> - Communication Rubric for NMHS | Goal: Choose the most cost effective option for buying a car out of three choices. <br> Role: Prospective buyer at a car dealership <br> Audience: The car salesman <br> Situation: The car salesman has given three different options for buying a car and to decide the student must use their knowledge of percentages to calculate the most cost effective option. <br> Product or Performance: a written explanation and mathematical work explaining why they chose the car option. <br> Standards for Success: <br> - accurate calculation of the taxes and maintenance costs of the car <br> - a detailed written explanation of reasoning <br> - visually neat, organized <br> - Communication Rubric for NMHS |


|  |  | OTHER EVIDENCE: <br> Students will show they have achieved Stage 1 goals by... <br> - Monitoring class work through board work, group work, questioning, and walk-arounds <br> - Check for understanding via going over homework, whiteboard activities, and medium such as reflections, exit tickets, and journals <br> - Differentiate through purposeful or flexible grouping, use of diagrams and explanations to demonstrate understanding and active lessons involving discovery, scaffolding, jigsaw activities and use of hands-on manipulatives <br> - Alternative assessment projects such as posters, drawings, pictures and real world applications. <br> - Unit Test - to include a variety of DOK level problems. <br> - Quiz on Working with Percents, fluency with the mathematics of expressing percentages |
| :---: | :---: | :---: |

## Pre-Assessment

- Teacher checks for prerequisite skills and prior knowledge via warm-up, pre-assessment and questioning activities, such as basic problems on order of operations and the associative, commutative and distributive properties with fractions and decimals.
- Prerequisite knowledge will be reviewed as it is incorporated into multi-step problems both in class and on review assignments.

Summary of Key Learning Events and Instruction
Student success at transfer meaning and acquisition depends on...
A

A

A

A, M
A, M
A, M, T
A, M, T

A, M, T

- Students will participate in an introductory activity that involves using ratios and proportions, as well as fractions and decimals and converting between them. This activity will be a review of the previous unit in order to prepare the students for this new application.
- Teacher will guide students to use percentages to find the part of a number, the whole number, and the percentage.
- Teacher will introduce vocabulary and corresponding examples having to do with percentages and finding percentages.
- Teacher will introduce to the students how to calculate percentages using specific procedures.
- The teacher will lead students to discover the difference between each procedure.
- Students will practice by relating vocabulary to real life examples
- Students will use kahoots, peardeck slide shows, matching activities and crossword puzzles as ways to review vocab definitions and application to real world scenarios
- Teacher and students will partake in a discussion on the differences between the procedure for finding the part, whole, and percentage in different mathematical problems.


## Progress Monitoring

- Warm up questions
- Students will compare and contrast the procedures used to find percentages given different information
- Students will demonstrate precision when calculating percentages, parts, and wholes
- Students will practice on whiteboard/chalkboard with direct teacher observation
- Students will complete Kahoot quizzes or pear deck slideshows with review questions and direct teacher observation
- Students will complete projects/performance tasks modeling real world problems, crossword puzzles and matching activities
- Summative assessments: Quizzes, Performance Assessment


## ESTABLISHED GOALS

Include any national/state/or school goals (Power standards).

CCSS.MATH.CONTENT.6.RP.A.3.C
Find a percent of a quantity as a rate per 100 (e.g., $30 \%$ of a quantity means $30 / 100$ times the quantity); solve problems involving finding the whole, given a part and the percent.

## CCSS.MATH.CONTENT.7.RP.A. 3

Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.

## Transfer

Students will be able to independently use their learning to...

- Make sense of problems initiating a plan and implementing a procedure.
- Model with mathematics by choosing the correct representation of percentage value for a given situation.
- Attend to precision by writing and solving proportions to represent real life problems

| Meaning |  |
| :---: | :---: |
| UNDERSTANDINGS <br> Students will understand that... <br> - A numerical value can be expressed as a decimal or a fraction <br> - A numerical value can be converted between fraction and decimal <br> - A proportion can be used to express a certain fraction with a different whole. | ESSENTIAL QUESTIONS <br> Students will keep considering... <br> - How else can I express a percentage? <br> - How can I change between a fraction and percentage? <br> - How can a proportion be used to rewrite a fraction? |
| Acquisition |  |
| Students will know... <br> - How to change between fraction and percentage <br> - How to solve a proportion <br> - How to use a proportion to change a fraction | Students will be skilled at... <br> - Apply a proportion to change the terms of a fraction <br> - Read a blueprint and/or survey <br> - Scale a photo or copy to size |


| Code | Evaluative Criteria | Assessment Evidence |
| :---: | :---: | :---: |
| T, M, A | Scoring Rubric used to evaluate successful understanding of using knowledge of ratios and proportions, as well as fractions and decimals, to create a blueprint of a home to scale for a client. The rubric will look for: <br> - Students will accurately convert between decimals and fractions. <br> - Students will accurately use proportions and ratios to scale up and down <br> - Students will write a detailed explanation of reasoning <br> - Their work is visually neat, organized <br> - Presentation rubric for NMHS | Goal: Create a blueprint to accurately model a design <br> Role: Architect <br> Audience: Client <br> Situation: You need to create a blueprint for the house of a client to scale <br> Product or Performance: a blueprint which is correct to scale <br> Standards for Success: <br> - accurate conversions between decimals and fractions, as well as accurate use of proportions and ratios to scale up and down <br> - a detailed written explanation of reasoning <br> - visually neat, organized <br> - Presentation rubric for NMHS |



## Pre-Assessment

- Teacher checks for prerequisite skills and prior knowledge via warm-up, pre-assessment and questioning activities, such as basic problems on order of operations and the associative, commutative and distributive properties with fractions and decimals.
- Prerequisite knowledge will be reviewed as it is incorporated into multi-step problems both in class and on review assignments.

Summary of Key Learning Events and Instruction
Student success at transfer meaning and acquisition depends on...

A

A, T
$\mathrm{A}, \mathrm{M}, \mathrm{T}$

A

A, M, T

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A, M, T

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- Students will participate in an introductory activity that involves using ratios and proportions, as well as fractions and decimals and converting between them. This activity will be referenced throughout the unit.
- Teacher will introduce the difference between each form (decimal, fraction, ratio, proportion) by leading them through an investigation
- Students will practice by relating vocabulary to real life examples
- Teacher will introduce students to the difference between the procedures for converting between and calculating each decimal, fraction, ratio, and proportion
- Students will engage in activities that allow them to match the fractions, ratios, and percentages to different scenarios
- Students will use kahoots, peardeck slide shows, matching activities and crossword puzzles as ways to review vocab definitions and application to real world scenarios
- Teacher and students will partake in discussions involving when it would be appropriate to express numerical answers as ratios, fractions, or percentages in different real world scenarios
- Additional review assignments will be provided where students examine all aspects of implementing learning about ratios, percentages, and fractions to different scenarios.


## Progress Monitoring

- Warm up questions
- Students will compare and contrast the procedures used to convert between decimals, fractions, ratios, and percentages given different information
- Students will demonstrate precision when calculating decimals, fractions, ratios, and proportions
- Students will practice on whiteboard/chalkboard with direct teacher observation
- Students will complete Kahoot quizzes or pear deck slideshows with review questions and direct teacher observation
- Students will complete projects/performance tasks modeling real world problems, crossword puzzles and matching activities
- Summative assessments: Quizzes, Performance Assessment

ESTABLISHED GOALS
Include any national/state/or school goals (Power standards).

## CCSS.MATH.CONTENT.6.RP.A.3.C

Find a percent of a quantity as a rate per 100 (e.g., $30 \%$ of a quantity means $30 / 100$ times the quantity); solve problems involving finding the whole, given a part and the percent.

## CCSS.MATH.CONTENT.7.RP.A. 3

Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error

## Transfer

Students will be able to independently use their learning to ...

- Make sense of problems by initiating a plan and implementing a procedure to calculate interest.
- Model with mathematics by solving word problems with a variety of loan and interest calculations in order to converse about real world applications.
- Use appropriate tools by calculating interest using their knowledge of percentages
- Attend to precision by defining and conversing about loans and interest using mathematical vocabulary

| Meaning |  |
| :--- | :--- |
| UNDERSTANDINGS | ESSENTIAL QUESTIONS |
| Students will understand that... | Students will keep considering... |
| $\bullet \quad$ Percents are presented daily in news | $\bullet$ How does interest work? | articles and the world around us.

- How does interest work?
- How much will a loan cost at its conclusion?
- 'Interest' and 'loan' are both financial terms that require an understanding of percentages and how to find them

Acquisition
Students will know...

- Calculating a percentage

Students will be skilled at...

- Using an amortization table
- Calculating interest and loan payments
- Calculating the monthly payment for a loan
- How to express a percentage as a decimal.
- Calculating interest on an account
fraction, or percentage
- Calculating interest and loan payments given a word problem/real world scenario.

| Code | Evaluative Criteria | Assessment Evidence |
| :---: | :---: | :---: |
| T, M, A | Scoring Rubric used to evaluate successful understanding of utilizing the amortization table and knowledge of loans and interest to calculate payments on car, student, or mortgage loans. The rubric will look for: <br> - Accurate calculations and mathematical work shown for calculations of interest on loans for car, student loan or mortgage over time. <br> - A detailed written explanation of reasoning <br> - Visually neat, organized <br> - Specific Product rubric | Goal: Create a table which amortizes a car, student loan or mortgage over its term <br> Role: Consumer <br> Audience: Co-signer <br> Situation: The consumer wants to demonstrate that the loan is a good deal to the co-signer. <br> Product or Performance: a table with description and summary of terms of a loan. <br> Standards for Success: <br> - accurate calculations and mathematical work shown for calculations of interest on loans for car, student loan or mortgage over time. <br> - a detailed written explanation of reasoning <br> - visually neat, organized <br> - Specific Product rubric |


|  |  | OTHER EVIDENCE: <br> Students will show they have achieved Stage 1 goals by... <br> - Monitoring class work through board work, group work, questioning, and walk-arounds <br> - Check for understanding via going over homework, whiteboard activities, and medium such as reflections, exit tickets, and journals <br> - Differentiate through purposeful or flexible grouping, use of diagrams and explanations to demonstrate understanding and active lessons involving discovery, scaffolding, jigsaw activities and use of hands-on manipulatives <br> - Alternative assessment projects such as posters, drawings, pictures and real world applications. <br> - Students will research amortization tables and payments <br> - Students will define terms used in interest and loans <br> - Vocab quiz on terms of loans and interest <br> - Quiz on amortization tables |
| :---: | :---: | :---: |
|  |  |  |

## Pre-Assessment

- Teacher checks for prerequisite skills and prior knowledge via warm-up, pre-assessment and questioning activities, such as basic problems on order of operations and the associative, commutative and distributive properties with fractions and decimals.
- Prerequisite knowledge will be reviewed as it is incorporated into multi-step problems both in class and on review assignments.

Summary of Key Learning Events and Instruction
Student success at transfer meaning and acquisition depends on...
A

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A, M

A, M, T
A, M, T

A, M, T

- Students will participate in an introductory activity that involves using ratios and proportions, as well as fractions and decimals and converting between them. This activity will be a review of the previous unit in order to prepare the students for this new application.
- Teacher will introduce vocabulary and corresponding examples, starting with differentiating between "good" and "bad" interest rates, terms, principle rates, and compound rates.
- Teacher will introduce to the students how to calculate loans and interest on loans.
- The teacher will lead students to discover the difference between a 'good' interest rate and a 'bad' interest rate for a loan.
- Students will practice by relating vocabulary to real life examples
- The teacher will lead students to discover how to calculate interest on different loans that they will have in the future and reason about which loans have the best interest rates.
- Students will use kahoots, peardeck slide shows, matching activities and crossword puzzles as ways to review vocab definitions and application to real world scenarios


## Progress Monitoring

- Warm up questions
- Students will compare and contrast good interest rates and bad interest rates
- Students will demonstrate precision when calculating interest rates on loans for cars, mortgages and student loans
- Students will practice on whiteboard/chalkboard with direct teacher observation
- Students will complete Kahoot quizzes or pear deck slideshows with review questions and direct teacher observation
- Students will complete projects/performance tasks modeling real world problems, crossword puzzles and matching activities
- Summative assessments: Quizzes, Performance Assessment

| A, M, T | - Teacher and students will partake in discussions involving <br> the difference between a 'good' interest rate and a 'bad' <br> interest rate for a loan in different real world scenarios |  |
| :--- | :--- | :--- | :--- |

## ESTABLISHED GOALS

Include any national/state/or school goals (Power standards).

## CCSS.MATH.CONTENT.6.RP.A.3.C

Find a percent of a quantity as a rate per 100 (e.g., $30 \%$ of a quantity means $30 / 100$ times the quantity); solve problems involving finding the whole, given a part and the percent.

## CCSS.MATH.CONTENT.7.RP.A. 3

Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.

## Transfer

Students will be able to independently use their learning to ...

- Make sense of problems by initiating a plan and implementing a procedure to calculate tax.
- Model with mathematics by applying knowledge of finding percentages and sales tax to budgeting exercises and other real world applications.
- Use appropriate tools to define and converse about budgeting using mathematical vocabulary
- Attend to precision by calculating sales tax and using percentages to budget income.

| Meaning |  |
| :---: | :---: |
| UNDERSTANDINGS <br> Students will understand that... <br> - A budget is a helpful tool for a consumer in society. <br> - A budget can be calculated by percent of one's monthly income | ESSENTIAL QUESTIONS <br> Students will keep considering... <br> - How do I create a budget? <br> - What percent should I allot to the portions of my budget? <br> - How much do I get taxed on purchases? |
| Acquisition |  |
| Students will know... <br> - How to calculate a percentage <br> - How to divide a monthly income <br> - Determine sales tax | Students will be skilled at... <br> - Create a budget <br> - Present a budget in various graphical forms <br> - Creating and using a budget to track expenses |


| Code | Evaluative Criteria | Assessment Evidence |
| :---: | :---: | :---: |
| T, M, A | Scoring Rubric used to evaluate successful understanding of creating a budget using knowledge of percentages and how to calculate the amount of income projected for each section of a budget. This rubric will consider: <br> - Students will accurately calculate and have mathematical work shown for calculations of the budget <br> - Students will write a detailed explanation of reasoning <br> - Their work is visually neat, organized <br> - Presentation rubric for NMHS | Goal: Create a budget in graph format and table format. <br> Role: Consumer <br> Audience: Self/peers <br> Situation: The consumer needs to divide their income into appropriate sections in order to budget effectively <br> Product or Performance: a budget presented in both graphical and tabular forms. <br> Standards for Success: <br> - accurate calculations and mathematical work shown for calculations of the budget <br> - a detailed written explanation of reasoning <br> - visually neat, organized <br> - Presentation rubric for NMHS |


|  |  | OTHER EVIDENCE: <br> Students will show they have achieved Stage 1 goals by... <br> - Monitoring class work through board work, group work, questioning, and walk-arounds <br> - Check for understanding via going over homework, whiteboard activities, and medium such as reflections, exit tickets, and journals <br> - Differentiate through purposeful or flexible grouping, use of diagrams and explanations to demonstrate understanding and active lessons involving discovery, scaffolding, jigsaw activities and use of hands-on manipulatives <br> - Alternative assessment projects such as posters, drawings, pictures and real world applications. <br> - Students will display a budget in both graphical and tabular forms. <br> - Quiz on student's ability to budget a given amount and budgeting vocabulary |
| :---: | :---: | :---: |

## Pre-Assessment

- Teacher checks for prerequisite skills and prior knowledge via warm-up, pre-assessment and questioning activities, such as basic problems on order of operations and the associative, commutative and distributive properties with fractions and decimals.
- Prerequisite knowledge will be reviewed as it is incorporated into multi-step problems both in class and on review assignments.

Summary of Key Learning Events and Instruction
Student success at transfer meaning and acquisition depends on...
A

A

A

A, M, T
A, M, T

A, M, T

A, M, T

- Students will participate in an introductory activity that involves using ratios and proportions, as well as fractions and decimals and converting between them. This activity will be a review of the previous unit in order to prepare the students for this new application.
- Teacher will introduce vocabulary and corresponding examples, starting with differentiating between "good" and "bad" interest rates, terms, principle rates, and compound rates.
- Teacher will introduce to the students how to calculate budgets and sales tax.
- Students will practice by relating vocabulary to real life examples
- The teacher will lead students to discover how to calculate portions of a budget off of one's monthly income and which percentages are the most beneficial amounts for certain categories of the budget.
- Students will use kahoots, peardeck slide shows, matching activities and crossword puzzles as ways to review vocab definitions and application to real world scenarios
- Teacher and students will partake in discussions to discover how to budget effectively to save money. Students will discuss the difference between fixed and discretionary


## Progress Monitoring

- Warm up questions
- Students will converse about wants versus needs in a budget and how to determine the difference.
- Students will demonstrate precision when calculating budgets and sales tax.
- Students will practice on whiteboard/chalkboard with direct teacher observation
- Students will complete Kahoot quizzes or pear deck slideshows with review questions and direct teacher observation
- Students will complete projects/performance tasks modeling real world problems, crossword puzzles and matching activities
- Summative assessments: Quizzes, Performance Assessment

|  | expenses and how to categorize their own expenses for a <br> budget. |  |
| :--- | :--- | :--- |

## ESTABLISHED GOALS

Include any national/state/or school goals (Power standards).

## CCSS.MATH.CONTENT.6.RP.A.3.C

Find a percent of a quantity as a rate per 100 (e.g., $30 \%$ of a quantity means $30 / 100$ times the quantity); solve problems involving finding the whole, given a part and the percent.

## CCSS.MATH.CONTENT.7.RP.A. 3

Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.

## Transfer

Students will be able to independently use their learning to ...

- Make sense of problems by initiating a plan and implementing a procedure to calculate tax.
- Model with mathematics by applying operations with percentages to finding tax withholding, taxable income and more, given an annual income.
- Use appropriate tools to calculate taxes on income using operations with percentages.
- Attend to precision by identifying and defining different types of taxes

| Meaning |  |
| :---: | :---: |
| UNDERSTANDINGS <br> Students will understand that... <br> - Taxes are calculated by a percentage of one's income <br> - There are many different types of taxes and they all do different things for us and our communities | ESSENTIAL QUESTIONS <br> Students will keep considering... <br> - How much do I get taxed? <br> - What are the different types of taxes that will come out of my paycheck? <br> - How do I file taxes? |
| Acquisition |  |
| Students will know... <br> - How to calculate a percentage <br> - How to calculate their tax rate for income tax <br> - Determine sales tax | Students will be skilled at... <br> - Identify a tax bracket and calculate net income after income tax <br> - Prepare a basic tax document |


| Code | Evaluative Criteria | Assessment Evidence |
| :---: | :---: | :---: |
| T, M, A | Scoring Rubric used to evaluate successful understanding of why we pay taxes and also how the tax system works. Students will be scored on their ability to navigate and define terms like deductible, tax withholding, personal exemption, and more. This rubric is considering: <br> - Students will have accurate answers to questions on scavenger hunt <br> - Students will write a detailed explanation of understanding <br> - Work is visually neat, organized <br> - Communication rubric for NMHS | Goal: Investigate the theory of why we need to pay taxes and to understand the tax system. <br> Role: Investigator <br> Audience: Class <br> Situation: The investigator needs to navigate the IRS website to learn why we need to pay taxes and to overall understand the tax system and its nuances. <br> Product or Performance: Students will fill out a 'scavenger hunt' displaying all of the new information they have gleaned from the IRS website about taxes. <br> Standards for Success: <br> - accurate answers to questions on scavenger hunt <br> - a detailed written explanation of understanding <br> - visually neat, organized <br> - Communication rubric for NMHS |


|  |  | OTHER EVIDENCE: <br> Students will show they have achieved Stage 1 goals by... <br> - Monitoring class work through board work, group work, questioning, and walk-arounds <br> - Check for understanding via going over homework, whiteboard activities, and medium such as reflections, exit tickets, and journals <br> - Differentiate through purposeful or flexible grouping, use of diagrams and explanations to demonstrate understanding and active lessons involving discovery, scaffolding, jigsaw activities and use of hands-on manipulatives <br> - Alternative assessment projects such as posters, drawings, pictures and real world applications. <br> - Students will explore the process of filing taxes <br> - Students will complete basic tax worksheets <br> - Quiz on basic tax information <br> - Completion of personal Tax Worksheet |
| :---: | :---: | :---: |

## Pre-Assessment

- Teacher checks for prerequisite skills and prior knowledge via warm-up, pre-assessment and questioning activities, such as basic problems on order of operations and the associative, commutative and distributive properties with fractions and decimals.
- Prerequisite knowledge will be reviewed as it is incorporated into multi-step problems both in class and on review assignments.

Summary of Key Learning Events and Instruction
Student success at transfer meaning and acquisition depends on...

A

A

T, A
T, M, A

T, M, A

T, M, A
T, M, A

T, M, A

- Students will participate in an introductory activity that involves using ratios and proportions, as well as fractions and decimals and converting between them. This activity will be a review of the previous unit in order to prepare the students for this new application.
- Teacher will introduce vocabulary and corresponding examples, starting with differentiating between "taxable earnings" and "tax withheld", net income, gross income, and the different types of tax.
- The teacher will guide students to calculate tax on income.
- Teacher will introduce to the students how to determine someone's tax bracket and calculate tax on income, retirement, medical, etc.
- The teacher will lead students to discover how to calculate personal exemptions and tax withholding given someone's income and societal status (i.e. married, single, children).
- Students will practice by relating vocabulary to real life examples
- Students will use kahoots, peardeck slide shows, matching activities and crossword puzzles as ways to review vocab definitions and application to real world scenarios
Teacher and students will partake in discussions involving how to categorize


## Progress Monitoring

- Warm up questions
- Students will converse about types of taxes they have heard of and what existing knowledge they have about them.
- Students will demonstrate precision when calculating taxes, deductibles, and personal exemptions.
- Students will practice on whiteboard/chalkboard with direct teacher observation
- Students will complete Kahoot quizzes or pear deck slideshows with review questions and direct teacher observation
- Students will complete projects/performance tasks modeling real world problems, crossword puzzles and matching activities
- Summative assessments: Quizzes, Performance Assessment

ESTABLISHED GOALS
Include any national/state/or school goals (Power standards).

## CCSS.MATH.CONTENT.6.RP.A.3.C

Find a percent of a quantity as a rate per 100 (e.g., $30 \%$ of a quantity means $30 / 100$ times the quantity); solve problems involving finding the whole, given a part and the percent.

## CCSS.MATH.CONTENT.7.RP.A. 3

Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.

## Transfer

Students will be able to independently use their learning to ...

- Make sense of problems by initiating a plan and implementing a procedure to calculate percentages.
- Model with mathematics by applying their knowledge of percentages to calculating budgets, interest/loans, and taxes.
- Use appropriate tools when calculating percentages and converting between fractions, decimals, ratios, and proportions.
- Attend to precision by defining and conversing about percentages and their applications to the real world.

| Meaning |  |
| :---: | :---: |
| UNDERSTANDINGS <br> Students will understand that... <br> - Items in this course will provide me with useful skills for my life <br> - Budgeting is a helpful exercise for healthy spending habits | ESSENTIAL QUESTIONS <br> Students will keep considering... <br> - What would your taxes look like if you prepared them? <br> - What would your realistic monthly budget look like? |
| Acquisition |  |
| Students will know... <br> - How to calculate percentages and fractions <br> - How to read tax documents | Students will be skilled at... <br> - Model a set of prepared taxes <br> - Model their monthly budget |


| Code | Evaluative Criteria | Assessment Evidence |
| :---: | :---: | :---: |
| T, M, A | Scoring Rubric used to evaluate successful understanding of why budgeting and taxes are important as well as procedures used to calculate a budget and taxes. This rubric will consider: <br> - Students will have accurate answers to questions on scavenger hunt <br> - Students will write a detailed explanation of understanding <br> - Work is visually neat, organized <br> - Specific Rubric for Task | Goal: Prepare taxes and create monthly budget <br> Role: Student <br> Audience: Teacher <br> Situation: You will create a culminating project to display learned skills of calculating a budget and taxes. <br> Product or Performance: Prepared Taxes and a Realistic Budget <br> Standards for Success: <br> - accurate answers to questions on scavenger hunt <br> - a detailed written explanation of understanding <br> - visually neat, organized <br> - Specific Rubric for Task |
|  |  | OTHER EVIDENCE: <br> Students will show they have achieved Stage 1 goals by... <br> - Monitoring class work through board work, group work, questioning, and walk-arounds <br> - Students will prepare their mock taxes <br> - Students will be able to create a monthly budget <br> - Final Exam for course on skills |

\begin{tabular}{|c|c|c|}
\hline Code
т, M
T, M \& \multicolumn{2}{|l|}{\begin{tabular}{l}
Pre-Assessment \\
- Teacher checks for prerequisite skills and prior knowledge via warm-up, pre-assessment and questioning activities, such as basic problems on order of operations and the associative, commutative and distributive properties with fractions and decimals. \\
- Prerequisite knowledge will be reviewed as it is incorporated into multi-step problems both in class and on review assignments.
\end{tabular}} \\
\hline A

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Summary of Key Learning Events and Instruction <br>
Student success at transfer meaning and acquisition depends on... <br>
- Students will participate in an introductory activity that involves using ratios and proportions, as well as fractions and decimals and converting between them. This activity will be a review of the previous units in order to prepare the students for this new application. <br>
- Teacher will review vocabulary and corresponding examples from previous units. <br>
- Teacher will guide students through a review of core concepts for this course <br>
- Students will practice by relating vocabulary and procedures to real life examples <br>
- Students will use kahoots, peardeck slide shows, matching activities and crossword puzzles as ways to review vocab definitions and application to real world scenarios. <br>
- Teacher and students will partake in discussions involving when to use different procedures. Students will discuss best methods to use when solving different problems relating to percentages, interest, loans, taxes, and budgeting.

 \& 

Progress Monitoring <br>

- Warm up questions <br>
- Students will actively review concepts <br>
- Students will demonstrate precision when calculating interest rates, taxes, and budgeting review questions. <br>
- Students will practice on whiteboard/chalkboard with direct teacher observation <br>
- Students will complete Kahoot quizzes or pear deck slideshows with review questions and direct teacher observation <br>
- Students will complete a practical final exam for this course.
\end{tabular} <br>

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