Unit 6: Understand and Use Percents

Content Area: **Mathematics**
Course(s):
Time Period: **March**
Length: **3-4 weeks**
Status: **Published**

Enduring Understandings

- A percent is a rate in which the first term is compared to 100. The present the the number of hundredths that represent the part of the whole.
- Fractions, decimals, and percents are three ways to show parts of a whole.
- A percent greater than 100 is equivalent to more that the whole. A percent less that 1 is equivalent to less than 1/100 of a whole.
- Equivalent fractions and compatible numbers can be used to estimate the percent of a number.
- Finding the percent of a whole is like finding the fractional part of a whole.
- Models and equations can be used to find the whole amount when the percent and a part are known.

Essential Questions

- How can I convert between fractions, decimals, and percents?
- How can I use percents to find the part or the whole of a number?

Content

Critical Knowledge and Skills

Vocabulary :

Percent

Equivalent

Decimal

Part

Whole

Estimate

Learning Objectives

- 6-1: Understand Percent
    - Represent the percent of a whole
    - Find the percent of a whole
- 6-2: Relate Fractions, Decimals, and Percents
    - Write equivalent value as fractions, decimals, and percents.
    - Write fractions as decimals and percents when the denominator of the fraction is not 100.
- 6-3: Represent Percents Greater Than 100 of Less Than 1
    - Write percents that are greater than 100 and less than 1.
- 6-4: Estimate to Find Percent
    - Estimate the percent of a number
- 6-5: Find Percent of a Number
    - Use the decimal form of a percent to find the percent of a number
    - Write an equation to solve percent problems
- 6-6: Find the Whole Given a Part and the Percent
    - Find the whole amount when given a part and the percent.

Resources

- Lesson Resources
    - Student Edition
    - Additional Practice Workbook
    - Teaching Resources
        - Reteach to Build Understanding, Additional Vocabulary Support, Build Mathematical Literacy, Enrichment
    - Digital Lesson Courseware
        - Today's Challenge, Visual Learning Animation Plus, Key Concepts, Additional Examples, 3-Act Mathematical Modeling, Online Practice powered by MathXL for School, Virtual Nerd Video Tutorials, Animated Glossary, Digital Math Tools, Online Math Games
- Topic Resources
    - Student's Edition

- Review What You Know, Build Literacy in Mathematics, Mid-Topic Checkpoint and Performance Task, Topic Review, Fluency Practice Activity, STEM Project

- Digital Topic Support for Students

  - Math Practice Animations, STEM Project, 3-Act Mathematical Modeling Lesson

Standards for Mathematical Practice and Content

CCSS.Math.Practice.MP1	Make sense of problems and persevere in solving them. Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.
MA.6.RP.A.1	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.
CCSS.Math.Practice.MP2	Reason abstractly and quantitatively.
CCSS.Math.Practice.MP3	Construct viable arguments and critique the reasoning of others.
CCSS.Math.Practice.MP4	Model with mathematics.
CCSS.Math.Practice.MP5	Use appropriate tools strategically.
CCSS.Math.Practice.MP6	Attend to precision.
MA.6.RP.A.3c	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.Practice.MP7	Look for and make use of structure.
CCSS.Math.Practice.MP8	Look for and express regularity in repeated reasoning.

Interdisciplinary Connections

NJSLS Companion Standards Grades 6-8

RST.6-8.3. Follow precisely a multistep procedure when carrying out experiments, taking measurements, or

performing technical tasks.

RST.6-8.4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.

RST.6-8.7. Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

NJSLSA.W4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

21st Century Life and Careers

CRP2. Apply appropriate academic and technical skills.

CRP4. Communicate clearly and effectively and with reason.

CRP11. Use technology to enhance productivity.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

9.1.8.C.3 Compare and contrast debt and credit management strategies.

9.1.8.B.1 Distinguish among cash, check, credit card, and debit card.

9.2.8.B.3 Evaluate communication, collaboration, and leadership skills that can be developed through school, home, work, and extracurricular activities for use in a career.

9.2.8.B.7 Evaluate the impact of online activities and social media on employer decisions.

Technology

8.1.8.A.1 Demonstrate knowledge of a real world problem using digital tools.

8.1.8.D.1 Understand and model appropriate online behaviors related to cyber safety, cyber bullying, cyber security, and cyber ethics including appropriate use of social media.

8.2.8.C.1 Explain how different teams/groups can contribute to the overall design of a product.

8.2.8.C.8 Develop a proposal for a chosen solution that include models (physical, graphical or mathematical) to communicate the solution to peers.