

LESSON 10: Operations Review and Test

Weekly Focus: Operations
Weekly Skill: Review and test

Lesson Summary: First, students will do a word problem with positive and negative numbers. Then they will review number sense and number operations. After the review, students will take a test on number sense and number operations. Ask your site coordinator if you can go over the answers and have the students correct their own tests, or if you should correct the tests. There are two extra questions at the end. Estimated time for the lesson is two hours.

Materials Needed for Lesson 10:

- *Review: Mathematical Reasoning Test Preparation for the 2014 GED Test Student Book p.16, 18, 20, 22.*
- *Test: Mathematical Reasoning Test Preparation for the 2014 GED Test Student Book by Steck-Vaughn © 2013. Pages 17, 19, 21, and 23.*

Objectives: Students will be able to:

- Solve a problem with integers
- Solve varied word problems with whole numbers, fractions, decimals, percent, and integers

ACES Skills Addressed: N, CT, SM, ALS

CCRS Mathematical Practices Addressed: Building Solution Pathways, Mathematical Fluency

Levels of Knowing Math Addressed: Abstract, Application, and Communication

Notes:

You can add more examples if you feel students need them before they work. Any ideas that concretely relates to their lives make good examples.

For more practice as a class, feel free to choose some of the easier problems from the worksheets to do together. The “easier” problems are not necessarily at the beginning of each worksheet. Also, you may decide to have students complete only part of the worksheets in class and assign the rest as homework or extra practice.

The GED Math test is 115 minutes long and includes approximately 46 questions. The questions have a focus on quantitative problem solving (45%) and algebraic problem solving (55%).

Students must be able to understand math concepts and apply them to new situations, use logical reasoning to explain their answers, evaluate and further the reasoning of others, represent real world problems algebraically and visually, and manipulate and solve algebraic expressions.

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This computer-based test includes questions that may be multiple-choice, fill-in-the-blank, choose from a drop-down menu, or drag-and-drop the response from one place to another.

The purpose of the GED test is to provide students with the skills necessary to either further their education or be ready for the demands of today's careers.

Lesson 10 Warm up: Freezer Temperature Problem

Time: 5-10 Minutes

Write on the board: Jada bought a new freezer. When she first plugged it in, the freezer's temperature was 20 degrees Celsius. The temperature of the freezer goes down by 2° every hour. The temperature needs to get colder by 36 degrees.

Basic Questions:

- What will the temperature be 10 hours after she plugged it in? *(zero degrees)*
- How long will it take for the temperature to reach the correct level? *($36/2 = 18$ hours)*

Extension Questions:

- If Jada plugged in the freezer at 2 p.m., on Sunday, when did it reach the correct temperature? *(8 a.m. on Monday)*
- What is the temperature of the freezer after 36 hours? *($20-36 = -16$ degrees Celsius)*

Lesson 10 Activity 1: Review Operations

Time: 30-45 Minutes

Do the problems in the **student book** pages 16, 18, 20, and 22. Do not copy pages 17, 19, 21, and 23. Save those for the test. Circulate to help.

After students finish the word problems, choose the more challenging ones to do together on the board. If there is time, review any other operations students may need.

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Lesson 10 Test

Time: 40-45 Minutes

Use **student book** pages 17, 19, 21, and 23 for the test.

Note to Teacher: Question 66 is about undefined fractions, which they may not know. They can skip it and you can do it together at the end if there is time.

If there is time, go over the answers and have students correct their tests. Ask your coordinator if this is what you should do or if they prefer you collect the tests to correct.

Lesson 10 Extra Activity 1

Time: 10 Minutes

The extra activity is for students who finish the workbook problems quickly. Write the following problem on the board.

Your boss says that his wife has put an 18×51 foot garden in along the whole back end of their back yard. He says that this has reduced the back-yard lawn area by 24%. What are the total dimensions of his back yard? What are the dimensions of the remaining lawn area?

Answer:

Since no suburban lot is going to be only eighteen feet wide (because then the house couldn't fit along the street frontage), the width of the lot must be the 51-foot dimension. Now I need to figure out the length of the back yard. The area of the garden is:

$(18)(51) = 918$. This represents 24% of the total yard area; that is, 24% of the original lawn area. This says that (918 square feet) is (twenty-four percent) of (the original), so: $918 = 0.24x918 \div 0.24 = x = 3825$

*The total back yard area is 3825 square feet. Since the width is 51 feet, then: $3825 \div 51 = 75$
The length then is 75 feet. Since 18 feet are taken up by the garden, then the lawn area is $75 - 18 = 57$ feet deep. The back yard measures $51' \times 75'$ and the lawn measures $51' \times 57'$.*

Lesson 10 Extra Activity 2: Proportion Problems

Time: 10 Minutes

Use the proportion questions below for students who finish the test early.

Lesson 10 Extra Activity 2

Answer each question. Round your answer to the nearest tenth. Round dollar amounts to the nearest cent.

- 15) Asanji took a trip to Mexico. Upon leaving he decided to convert all of his Pesos back into dollars. How many dollars did he receive if he exchanged 42.7 Pesos at a rate of $\$5.30 = 11.1$ Pesos?
- 16) The currency in Argentina is the Peso. The exchange rate is approximately $\$3 = 1$ Peso. At this rate, how many Pesos would you get if you exchanged \$121.10?
- 17) Mary reduced the size of a painting to a width of 3.3 in. What is the new height if it was originally 32.5 in tall and 42.9 in wide?
- 18) Molly bought two heads of cabbage for \$1.80. How many heads of cabbage can Willie buy if he has \$28.80?

Extra Activity 2 Answers

15) Asanji took a trip to Mexico. Upon leaving he decided to convert all of his Pesos back into dollars. How many dollars did he receive if he exchanged 42.7 Pesos at a rate of $\$5.30 = 11.1$ Pesos?

\$20.39

16) The currency in Argentina is the Peso. The exchange rate is approximately $\$3 = 1$ Peso. At this rate, how many Pesos would you get if you exchanged \$121.10?

40.4 Pesos

17) Mary reduced the size of a painting to a width of 3.3 in. What is the new height if it was originally 32.5 in tall and 42.9 in wide?

2.5 in

18) Molly bought two heads of cabbage for \$1.80. How many heads of cabbage can Willie buy if he has \$28.80?

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