

GED 2002 Teachers' Handbook of Lesson Plans

Area/Skill - Mathematics	Cognitive Skill Level - Application	Correlation to Framework - 05.01/05.07	Lesson Number - 03
<p>Activity Title – Performing Basic Operations With Decimals</p> <p>Goal/Objective</p> <p>To provide students with the skills necessary to perform basic computations using decimals.</p> <p>Lesson Outline</p> <p>Introduction</p> <p>Students in school are often interested in their grade point average - GPA. Often times these averages are computed and given in the form of a decimal using the 4 point scale with 4=A, 3=B, 2=C, 1=D and 0=F. Decimals allow for exact computation of averages. Most people are interested in their money and pay. Many calculations with money involve the use of decimals. This lesson give everyone an opportunity to do some basic computations using decimals.</p> <p>Activity</p> <p>Two students are comparing their Grade Point Average (GPA). Jose states that his test scores are 3.45, 3.5, 2.8, 3.0, and 4.0. Sally states that her test scores are 2.8, 4.0, 3.55, 2.9, and 3.0. In order to compute their individual GPA, they must first add their individual scores. They must then divide this total by the number of scores. In this example each student has 5 scores. Determine their individual averages. Who has the highest? By how much?</p> <p>Ramona works for \$7.38 an hour. If Ramona works a 40 hour week how much would she gross? \$295.20 Last week Ramona was took some time off work that was not paid. If Ramona's gross pay for the week was \$273.06 how many hours did she miss work? 3</p> <p>Debriefing/Evaluation Activity</p> <p>If the students did not have the ability to use decimals, speculate if their grades would be valid when compared. Discuss the importance of accurate use of decimal points in daily life. Poll students regarding usage of decimals in their daily lives.</p>			<p>Materials/Texts/Realia/Handouts</p> <ul style="list-style-type: none"> • Newspapers • Calculators • Paper and pencils • Overhead and transparencies
			<p>Extension Activity</p> <p>If Ramona would work 50 hours during the week and she is eligible for time and one-half for overtime hours over forty, compute her gross pay.</p> <p>Determine what percent the difference in Sally and Jose's grade point represents.</p>
			<p>ESE/ESOL Accommodations</p> <ul style="list-style-type: none"> • Allow students extra time. • Provide students with a peer to work through problems. • Provide students with calculators. • Provide students with a handout of basic definitions of words and the formulas to use in the problems.
<p>Real-Life Connection</p> <p>Distribute copies of the help-wanted ads to the class and have them compute the weekly pay for jobs listed. Assign students to locate one or more jobs that they are interested in and list an hourly rate of pay that contains a decimal. All students should compute a basic 40 hour week gross pay. The students should also compute the gross pay for forty hours after dropping the decimal. This may serve to stimulate some discussion of the importance of the decimal.</p>			

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Activity Title - Performing Basic Operations with Decimals

Introduction

Say: Decimals are used in a variety of ways every day by most people. One of the most common uses of decimals involves our money system. As students, you are also aware that many times grades are computed using decimals. In class we will do examples of both uses for decimals.

Main Activity

Do: Copy the following information on the board.

A = 4, B = 3, C = 2, D = 1, and F = 0

Say: Many schools use a 4 point system to calculate student grades. It is broken down as follows: A = 4, B = 3, C = 2, D = 1, and F = 0. If a student earns a B+ it could be stated using a decimal as 3.5. This system helps keep accurate records and allows students to receive credit for all their hard work.

Do: Write the following information on the board.

Jose test scores are : 3.45, 3.5, 2.8, 3.0, and 4.0. Sally test scores are 2.8, 4.0, 3.55, 2.9, and 3.0.

Do: As you say the script, make sure to write the numbers on the board or overhead.

Say: Now we will compute the individual grade points. First add each student's scores. You will find Jose's total is 16.75 and Sally's total is 15.25. You should now average each score by dividing each total by 5. You will find Jose's average to be 3.35 and Sally's average to be 3.25.

Say: Decimals also play a large part in many of our wages. Pay is generally express as so much per hour. Often, the amount per hour involves a decimal such as \$7.38 per hour. In this case, the .38 represents 38 hundredths of a dollar, or 38 cents. At this time let's all work through some problems that involve decimals.

Say: Next we will compute some pay. We know that Ramona earns \$7.38 an hour. If she works a 40 hour week, how much would her gross pay be? Multiply \$7.38 by 40 and the total is \$295.20. If Ramona took off some time, could we figure out how much Ramona would earn if we knew her gross pay? Let's try. Ramona's gross pay for the week was \$273.06. How many hours did she take off? First subtract \$273.06 from \$295.20. OK, the answer is \$22.14. Since we know Ramona earns \$7.38 an hour, we divide \$22.14 by \$7.38 and we find our answer to be 3. Ramona missed 3 hours of work during this week.

Closure/Conclusion

Ask: Would it be possible to have accurate grades and ratings if we did not have decimals? Explain your answer. Has anyone ever worked with money or record keeping? Are decimals important when working with money? Have students share their experiences with record keeping

Follow-Up Lessons/Activities

Say: Let's take a few minutes and compute Ramona's gross pay if she works some overtime. Remember, Ramona earns time and a half for every hour over 40. You can write that as a decimal as 1.5. Share your answers with the class when you finish.