



Warm-Up Activity #1 Name _____

**Concept: Understanding Fractions
in the Real World**

Directions: A prerequisite to working with fractions is the understanding of the fraction. The following is a review of the meaning of fractions and their everyday uses. Select a partner and answer each question thoughtfully for fractions are a part of our everyday life that will never go away!

1. In your own words, describe what a fraction means to you.

2. Give at least three examples of where YOU encounter fractions every day.

a) _____

b) _____

c) _____

3. Give at least three examples of where fractions appear in a newspaper.

a) _____

b) _____

c) _____

4. Give at least three examples of where fractions are used by the TV media.

a) _____

b) _____

c) _____

5. Name three examples of fractions involved in measurement within the household.

a) _____

b) _____

c) _____



Warm-Up Activity #1 Name Answer Key

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6. In your own words, describe what a fraction means to you.
A fraction is a part of a whole.
7. Give at least three examples of where YOU encounter fractions every day.
(Answers will vary.)
 - a) Shoe sizes
 - b) Time spent on homework or on a job.
 - c) Amount of 32-oz drink consumed or left.
8. Give at least three examples of where fractions appear in a newspaper.
(Answers will vary.)
 - a) Interest rates.
 - b) Food and health.
 - c) Advertisements for sales, i.e., 1/2 price sale.
9. Give at least three examples of where fractions are used by the TV media.
(Answers will vary.)
 - a) Scheduling of half-hour TV programs.
 - b) Measuring the length of cable needed.
 - c) Calculating shutter speed.
10. Name three examples of fractions involved in measurement within the household.
(Answers will vary.)
 - a) Cooking – using recipes enlarging or reducing quantities.
 - b) Using measuring devices, i.e., measuring cups, measuring spoons to measure exact quantities.
 - c) Using measuring devices, i.e., measuring tapes and rulers to figure dimensions.

GENERAL APPROACH TO PROBLEM SOLVING

Having difficulty solving math problems? The following four-step approach can make problems more manageable.

- **Step 1: READ.** *Take a deep breath and read the problem slowly.* Decide what information is given and what needs to be found. Sometimes it helps to underline the question being asked.
- **Step 2: PLAN.** Decide what type of operation or strategy you should use to solve the problem. Does your choice of procedure make sense, considering what you are looking for?
- **Step 3: SOLVE.** Do the math. Be very careful. Don't let careless mistakes hurt you now. If you are not comfortable doing the calculations on your own, use your calculator.
- **Step 4: CHECK.** Go back to the problem and see if you have answered the question that was asked. Does your answer make sense? Use your calculator to check your work

Remember the following problem from the diagnostic assessment:

Three hundred shares of stock are purchased at $\$37\frac{1}{2}$ *per* share and sold at $\$49\frac{1}{16}$ *per* share. What is the amount of *rise per* share in the stock market value?

$$49\frac{1}{16} = 49.0625$$

$$37\frac{1}{2} = \underline{37.5000}$$

Difference is **11.5625**

Dollar amounts are usually rounded to the nearest cent (hundredths).

Should you **round** to the *nearest cent*?

To accurately figure sixteenths of a dollar, notice the decimal is extended two more places to a quarter of a cent, or 0.0025.

That's not much of a difference for one share, but it really adds up when you're buying 100,000 shares!

What occupation can you identify with this type of problem? _____

Displayed below is a second problem from the diagnostic assessment.

An agent has placed newspaper ads of $6\frac{1}{2}$ c.i. (column inches), $5\frac{3}{4}$ c.i., $4\frac{3}{4}$ c.i., and 5 c.i. At the rate of \$8 **per half** column inch, find the **total** cost of the ads.

Convert \$8 **per half** column inch to \$16 **per** inch.

Find the **total** number of column inches:

$$6\frac{1}{2} + 5\frac{3}{4} + 4\frac{3}{4} + 5 = 22 \text{ c.i.}$$

Multiply the total number of column inches by \$16.

$$\text{Total cost} = \underline{\$352.00}$$

What occupation can you identify with this type of problem? _____

VEHICLE MAKES, MODELS, & PRICES

(Information obtained from www.carsdirect.com, September 17, 2001.)

Top 10 SUVs @carsdirect.com	Top 10 Cars @carsdirect.com	Top 10 Trucks @carsdirect.com	Best Selling Cars in US
Lexus RX300 \$33,955	Honda Civic \$12,760	Toyota Tacoma \$11,900	Ford F-Series \$17,245
Toyota Rav4 \$16,525	Honda Accord \$15,500	Dodge Dakota \$14,010	Chevy Silverado \$16,045
Toyota 4Runner \$26,335	Toyota Camry \$18,970	Toyota Tundra \$15,605	Honda Accord \$15,500
Jeep Wrangler \$15,230	Toyota Corolla \$12,568	Ford F-150 \$17,245	Toyota Camry \$18,970
Honda CR-V \$12,760	Volkswagon Jetta \$16,850	Nissan Frontier \$11,749	Ford Explorer \$24,200
Jeep Cherokee \$25,425	Nissan Maxima \$21,249	Ford Ranger \$12,110	Ford Taurus \$18,550
Nissan Pathfinder \$27,749	Hyundai Elantra 12499	Chevy Silverado \$16,045	Dodge Ram \$15,285
Dodge Durango \$28,770	Volkswagon Passat \$21,750	Dodge Ram \$15,285	Honda Civic \$12,760
Nissan Xterra \$19,049	Volkswagon Beetle \$15,900	Ford F-250 \$20,880	Ford Ranger \$12,110
Toyota Highlände \$23,515	Hyundai Accent \$ 8,999	GMC Sierra \$15,285	Dodge Caravan \$19,160

Rising and Falling Fractions

“When are we ever going to USE this Math?”



OOPS! I knew I should have not taken a $\frac{1}{2}$ step!

Directions: The following problems relate to mathematics set in a real world context. Always show justifications and explanations for your answers. Answers only do **not** justify reasoning ability! Refer to the General Approach to Problem Solving handout as a guide.

1. **Use the Loan Amortization Calculator.** Select an automobile from the Automobile Makes, Models, & Prices handout. Compare the cost at $6\frac{1}{2}\%$ for 3 years and 9% for 3 years. Assume you have saved \$500 for a down payment.

2. **Use the Loan Amortization Calculator.** Mr. and Mrs. Johnson want to buy a house for \$125,000. They have decided on Paddington Mortgage. Due to a family illness, the closing on the house was delayed for two weeks. Paddington Mortgage offered financing at 7% two weeks ago. Now financing is offered at $6\frac{1}{4}\%$. This represents a fall of only $\frac{3}{4}\%$. How much will they save if they finance their house over 30 years?

3. Matthew purchased 125 shares of stock last week at $8\frac{7}{16}$ per share. The value of the stock on today's market is listed at $-1\frac{3}{8}$. What is the market value of his stock on today's market?

4. Referring to Problem #3, let's go a step further. How much money has Mr. Matthews lost based on today's market value?

5. Now, let's figure the stock as being listed today at $+1\frac{3}{8}$ instead of $-1\frac{3}{8}$.
 - a) What effect would this have on the value of his stock on today's market?

 - b) What is the market value of the 125 shares of stock at the increased rate?

 - c) How much would Mr. Matthews gain at the higher market value rate?



Rising and Falling Fractions

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Directions: The following problems relate to mathematics set in a real-world context. Always show justifications and explanations for your answers. Answers only do not justify reasoning ability! Refer to the General Approach to Problem Solving handout as a guide.

1. **Example: Dodge Ram less \$500 down Interest rate rises from $6\frac{1}{2}\%$ to $9\frac{1}{4}\%$.**

Principal	Monthly Payment	APR	Total Interest	Total Loan Value
\$14785.00	\$453.15	6.5000%	\$1528.40	\$16313.40
\$14785.00	\$471.88	9.2500%	\$2202.68	\$16987.68

2. **Interest rate falls from 7 % to $6\frac{1}{2}\%$.**

Principal	Payment	APR	Total Interest	Total Loan Value
\$125000.00	\$831.63	7.0000%	\$174386.80	\$299386.80
\$125000.00	\$769.65	6.5000%	\$152074	\$277074.00

$$\$299386.80 - \$277074.00 = \underline{\$22312.80} \text{ Savings over 30 years}$$

3. Convert $8\frac{7}{16}$ and $1\frac{3}{8}$ to decimals. Subtract to establish the value of the stock on today's market.

$$8.4375 - 1.375 = 7.0625 \text{ Price per share}$$

Multiply number of shares times price per share.

$$125 \times 7.0625 = 882.8125$$

Value to the nearest quarter of a cent = \$882.8125

4. Using the decimal conversion of $8\frac{7}{16}$, multiply number of shares times price per share.

$$125 \times 8.4375 = 1054.6875$$

Subtract the two values.

$$1054.6875 - 882.8125 = 171.875$$

Amount of Loss to the nearest half of a cent = \$171.875

5. a) The value of the stock would have risen instead of fallen and would be worth $9\frac{13}{16}$ per share or \$9.8125 per share.

- b) Multiply the total number of shares times price per share.

$$125 \times 9.8125 = 1226.5625$$

- c) Subtract the market value at the purchase price from the market value at the increased rate.

$$1226.5625 - 1054.6875 = \$171.875$$

Amount of Gain to the nearest half of a cent = \$171.875

Student Problem Solving Skills Checklist - Rising & Falling Fractions

MA.A.1.4.1 & MA.A.1.4.3

Place a check (✓) in each block as each student demonstrates the required skill. Place a cross mark (x) in each block as each student asks for assistance or demonstrates difficulty in completing the required task. Use the comments column to record information for essential feedback.

Students	All Answers Correct	At least 4 out of 5 Answers Correct	Less than 4 Answers Correct	Accurate Explanation	No Attempt	Comments
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