AIM: 1-2 How do we interpret and solve division word problems?

Name _____   Date ___9|20___
Ms. Piccolo   Math 6 – Period _____

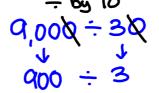**Warm-up:** During a food drive, McCall Middle School collected 8,982 canned food items. Each of the 28 classrooms that participated in the drive donated the same number of items.

Use estimation to find the number of items each classroom donated.

Estimate: 8,982 → __9,000__

Estimate: 28 → __30__

$$\div \text{ by } 10$$
$$9,000 \div 30$$
$$\downarrow \qquad \downarrow$$
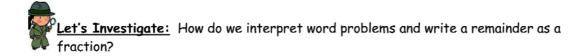$$900 \div 3$$

$$3\overline{)900} = 300$$

Each classroom donated approximately 300 food items.

How can you tell if your answer is reasonable?

Your answer is reasonable if your estimated quotient is close to the actual quotient.

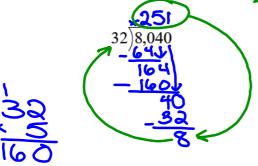**Let's Investigate:** How do we interpret word problems and write a remainder as a fraction?

Vocabulary: | 8. Remainder | 9. Decimal | 10. Estimate |

==

DUMSCBR

1. Divide and write the remainder as a fraction:

$$32 \overline{)8,040}$$

251

$$-64\downarrow$$
$$164$$
$$-160\downarrow$$
$$40$$
$$-32$$
$$8$$

$$\begin{array}{r} ^1 32 \\ \times 5 \\ \hline 160 \end{array}$$

'around the world'

$$251\frac{8 \div 8}{32 \div 8} = 251\frac{1}{4}$$

Now divide using Estimation:

8,040 → _____

32 → _____

2. <u>**Interpreting word problems**</u>:

There are <mark>111 extra books i</mark>n the school library. The books must be packed into boxes to ship to the High School. If <mark>each box holds 15 books,</mark> <u>how many boxes</u> will be needed to pack all of the books?

First, let's set up a division problem! $111 \div 15$
Then, solve your division problem.

$$15\overline{)111}$$
$$-105$$
$$6$$

$$\begin{array}{r} \overset{3}{15} \\ \times\ 7 \\ \hline 105 \end{array} \qquad \begin{array}{r} \overset{3}{15} \\ \times\ 6 \\ \hline 90 \end{array}$$

Write the quotient as a fraction: ___ $7\frac{6}{15}$ ___
    mixed #

What does the remainder represent in this situation? _____
The remainder is 6, which represent there are 6 books left over.

_____

How many boxes are needed to pack all of the books? Explain your reasoning.
You will need a total of 8 boxes because you need to include the six leftover books.

_____

3

T

✏️ <u>Now You Try!</u>   *Partner Practice*

3. Solve and write the quotient as a FRACTION:

$$\begin{array}{r} 104 \\ 24\overline{)2505} \\ \underline{-24} \\ 10 \\ \underline{-\ 0} \\ 105 \\ \underline{-96} \\ 9 \end{array}$$

$$104\frac{9}{24} = 104\frac{3}{8}$$

28

<u>Underline key words</u> and write your answer in a complete sentence.

4. A full sheet cake serves 28 people. Approximately, how many full sheet cakes are needed to serve a graduation for 2,785 guests? Use <u>estimation</u> to determine the quotient.

$3,000 \div 300 = 100$

Approximately 100 cakes will be needed.

Will the actual number of full sheet cakes be <u>*more*</u> or <u>*less*</u> than the estimated quotient you obtained above? Explain how you know without dividing the actual numbers.

<u>The actual number of cakes will be less than the estimated quotient because we rounded both #'s to its largest place value.</u>