

- **Adding Numbers with More Than Three Digits**
- **Checking One-Digit Division**

Adding Numbers with More Than Three Digits

- When writing whole numbers in columns, carefully line-up digits starting with the ones digit in each number.

Example: 467 + 589 + 1060 + 23

$$\begin{array}{r}
 467 \\
 589 \\
 1060 \\
 + \quad 23 \\
 \hline
 \end{array}$$

Checking One-Digit Division

- We can check a division answer by multiplying the numbers outside the division box.

Example: $3\overline{)15}$ Check: $5 \times 3 = 15$

Practice:

Add.

1.
$$\begin{array}{r}
 1234 \\
 + \quad 607 \\
 \hline
 \end{array}$$

2.
$$\begin{array}{r}
 47,019 \\
 + 21,598 \\
 \hline
 \end{array}$$

3.
$$\begin{array}{r}
 405,679 \\
 + 319,477 \\
 \hline
 \end{array}$$

Divide. Check each answer by multiplying.

4. $3\overline{)24}$ $\begin{array}{r} \boxed{} \\ \times \quad 3 \\ \hline \end{array}$

5. $7\overline{)49}$ $\begin{array}{r} \boxed{} \\ \times \quad 7 \\ \hline \end{array}$

6. $6\overline{)54}$ $\begin{array}{r} \boxed{} \\ \times \quad 6 \\ \hline \end{array}$

7. $9\overline{)27}$ $\begin{array}{r} \boxed{} \\ \times \quad 9 \\ \hline \end{array}$

- **Subtracting Numbers with More Than Three Digits**
- **Word Problems About Equal Groups, Part 2**

Subtracting Numbers with More Than Three Digits

- Always start subtracting in the ones column. Then continue subtracting from right to left.

Example: $1157 - 1080$

$$\begin{array}{r}
 1157 \\
 -1080 \\
 \hline
 7
 \end{array}
 \quad
 \begin{array}{r}
 0\overset{1}{\cancel{5}}7 \\
 1\cancel{1}\overset{1}{\cancel{5}}7 \\
 -1080 \\
 \hline
 77
 \end{array}
 \quad
 \begin{array}{r}
 0\overset{1}{\cancel{5}}7 \\
 1\cancel{1}\overset{1}{\cancel{5}}7 \\
 -1080 \\
 \hline
 077
 \end{array}
 \quad
 \begin{array}{r}
 0\overset{1}{\cancel{5}}7 \\
 1\cancel{1}\overset{1}{\cancel{5}}7 \\
 -1080 \\
 \hline
 0077
 \end{array}$$

Word Problems About Equal Groups

- In word problems, the word “each” usually means an equal-groups problem.
- To find the number in each group, when given the total, we can divide by the number of groups.

$$\frac{\text{number in each group}}{\text{number of groups}) \text{total}}$$

Practice:

Subtract.

1. 1234
 $\underline{- 607}$

2. $47,019$
 $\underline{- 21,598}$

3. $405,679$
 $\underline{- 319,477}$

4. There are 48 people. There are 6 equal teams. How many people are in each team?

) _____ people in each team

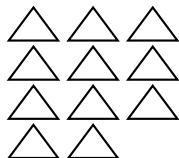
5. Thirty-six students lined up equally on four risers for a chorus recital. How many students were on each riser?

) _____ students on each riser

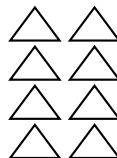
• One-Digit Division with a Remainder

- Sometimes when we try to divide a number of things into **equal groups** we have some things left over.

Example: These 11 triangles cannot be divided into equal groups of four, because there are 3 triangles left over.



11 triangles



2 groups of four triangles



3 triangles left over

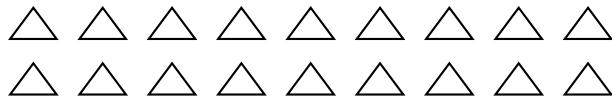
- We call the amount left over the **remainder**. Use the letter R to identify the remainder in an answer.

$$\begin{array}{r} 2 \text{ R} 3 \\ 4 \overline{)11} \\ \underline{-8} \\ 3 \end{array}$$

- Any remainder in a division problem must be smaller than the **divisor**.

Practice:

- Circle groups of triangles below to show $18 \div 4$. Write the answer shown by your sketch.



_____ R _____

Divide. Write each answer with a remainder.

- $2 \overline{)15} \text{ R } \underline{\hspace{1cm}}$

- $5 \overline{)13} \text{ R } \underline{\hspace{1cm}}$

- $4 \overline{)21} \text{ R } \underline{\hspace{1cm}}$

- $17 \div 2 \rightarrow \overline{17} \text{ R } \underline{\hspace{1cm}}$

- $27 \div 6 \rightarrow \overline{27} \text{ R } \underline{\hspace{1cm}}$

- $20 \div 3 \rightarrow \overline{20} \text{ R } \underline{\hspace{1cm}}$

- **The Calendar**
- **Rounding Numbers to the Nearest Thousand**

The Calendar

- A **common year** has 365 days.
- A **leap year** has 366 days. The extra day is added to February. A leap year happens every 4 years.
- This will help you remember how many days are in each month:
 Thirty days have September, April, June, and November.
 The other months have 31 days, except February,
 which has 28, or 29 if it is leap year.
- A **decade** is ten years. A **century** is one hundred years.
- To find the amount of time between two years, subtract.

$$\begin{array}{r}
 1996 \\
 - 1983 \\
 \hline
 13 \text{ years}
 \end{array}$$

Rounding Numbers to the Nearest Thousand

- To round a number to the nearest thousand:
 1. Look at the hundreds place.
 2. Ask: Is the digit in the hundreds place 5 or more? (5, 6, 7, 8, 9)
 Yes → Add 1 to the thousands place.
 No → The thousands place stays the same.
 4. Replace the numbers after the thousands place with zeros.

Example: 6259 → 6000

Practice:

Remember to write the units.

1. How often does a leap year occur? _____
2. According to this calendar, what is the date of the third Wednesday of the month?
 _____ / _____ / _____

3. How many years were there from 1913 to 1958? _____

Round to the nearest thousand.

4. 7901 _____

5. 3399 _____

MAY 2014						
S	M	T	W	T	F	S
					1	2
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

• Prime and Composite Numbers

- Multiples are the numbers we say if we count by a number. For example, the multiples of 4 are: 4, 8, 12, 16, 20, 24, ...
- You can find multiples in a multiplication table.
- To find the **factors** of a whole number:
 1. Start with the number 1.
 2. End with the number given.
 3. Find all the numbers that divide evenly into the given number:
Will 2 divide evenly?
Will 3 divide evenly? (and so on)
 4. Make sure the factors are listed in order.

Example: List the factors of 30. 1, 2, 3, 5, 6, 10, 15, 30

- Counting numbers that have exactly two different factors are **prime numbers**.
- A number with more than two factors is a **composite number**.
- The number 1 has one factor and is not prime or composite.

Practice:

1. Write all the prime numbers less than 12. _____
2. What is the eighth multiple of 3? _____
3. Is the last digit of the multiples of 4 odd or even? _____
4. List the six factors of 12. _____
5. List the factors of 16.

_____, _____, _____, _____, _____

6. Two factors of 20 are 1 and 20. Find four more factors of 20.

_____, _____, _____, _____

7. List the factors of 11. _____, _____

8. List the factors of 24. _____, _____, _____, _____,

_____, _____, _____

• Using Models and Pictures to Compare Fractions

- When we draw pictures to compare fractions, the pictures must have the same shape and equal size. These are called **congruent figures**.
- Another way to compare fractions:
 - Cross multiply.
 - Compare the products.

$$\frac{2}{3} \bigcirc \frac{1}{4}$$

Practice:

Compare the fractions and shade the rectangles to illustrate each comparison. Use fraction manipulatives for help.

$$\frac{3}{5} \bigcirc \frac{2}{3}$$

1.

$$\frac{1}{4} \bigcirc \frac{2}{5}$$

2.

$$\frac{3}{5} \bigcirc \frac{1}{3}$$

3.

$$\frac{5}{7} \bigcirc \frac{4}{5}$$

4.

$$\frac{3}{8} \bigcirc \frac{2}{7}$$

5.

$$\frac{4}{9} \bigcirc \frac{5}{8}$$

6.

• Rate Word Problems

Example: If a cyclist rides 15 miles per hour, how far will he ride in 6 hours?

1. Name the two things the problem is about:

miles

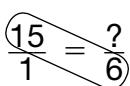
hours

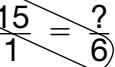
2. Fill in what you know and what you are looking for:

$$\frac{\text{miles}}{\text{hour}} \frac{15}{1} = ?$$

3. Draw a loop around the numbers that are diagonally opposite.

The loop should never include the question mark.

miles 

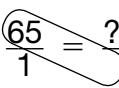
hour 

4. Multiply the numbers inside the loop and divide by the number outside the loop if it is not 1: $6 \times 15 = 90$ miles

Practice:

1. Maya drove 65 miles in one hour. At that rate, how far can she drive in 7 hours?

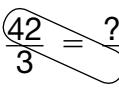
Multiply the loop.

miles 

hours 

2. Kirby could type 42 words in 3 minutes. At that rate, how many words could he type in 30 minutes?

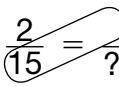
Multiply the loop.

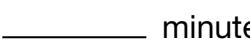
words 

minutes 

3. Emma is the fastest runner in her class. She can run 2 miles in 15 minutes. At that rate, how many minutes would it take her to run a 6-mile race?

Multiply the loop.

miles 

minutes 

• Multiplying Three-Digit Numbers

- We can multiply three-digit numbers the same way we multiplied two-digit numbers: one digit at a time.

Example 1:

Multiply the ones digit. Multiply the tens digit. Multiply the hundreds digit.

- Try to use mental math to carry tens.

Example 2:

Practice:

Multiply. Remember to write the dollar sign in money problems.

$$\begin{array}{r} 1. \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \\ \times \quad 5 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \\ \times \\ 7 \end{array}$$

$$4. \quad \begin{array}{r} 501 \\ \times 6 \\ \hline \end{array}$$

$$5. \quad \begin{array}{r} \$117 \\ \times \quad 9 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \\ \times \\ 3 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \\ \times \quad 7 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 723 \\ \times \quad 8 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 916 \\ \times \quad 4 \\ \hline \end{array}$$

• Estimating Arithmetic Answers

- To estimate an answer we often round numbers first.
- When we estimate, we find an answer that is “close to” the exact number.
- Estimating can help you see whether your exact answers make sense.

$$\begin{array}{r}
 486 \\
 + 319 \\
 \hline
 800
 \end{array}
 \rightarrow
 \begin{array}{r}
 500 \\
 + 300 \\
 \hline
 800
 \end{array}
 \quad
 \begin{array}{r}
 64 \\
 \times 4 \\
 \hline
 240
 \end{array}
 \rightarrow
 \begin{array}{r}
 60 \\
 \times 4 \\
 \hline
 240
 \end{array}
 \quad
 \begin{array}{r}
 53 \div 5 \\
 \hline
 50
 \end{array}
 \rightarrow
 \begin{array}{r}
 50 \div 5 \\
 \hline
 10
 \end{array}$$

Practice:

1. Estimate Exact

$$\begin{array}{r}
 61 \\
 68 \\
 + \underline{47} \\
 \hline
 \end{array}$$

2. Estimate Exact

$$\begin{array}{r}
 519 \\
 + \underline{354} \\
 \hline
 \end{array}$$

3. Estimate Exact

$$\begin{array}{r}
 473 \\
 - \underline{250} \\
 \hline
 \end{array}$$

4. Estimate Exact

$$\begin{array}{r}
 72 \\
 - \underline{67} \\
 \hline
 \end{array}$$

5. Estimate Exact

$$\begin{array}{r}
 39 \\
 \times \underline{7} \\
 \hline
 \end{array}$$

6. Estimate Exact

$$\begin{array}{r}
 465 \\
 \times \underline{8} \\
 \hline
 \end{array}$$

7. Estimate Exact

$$\overline{)4 \overline{)63}}$$

8. Estimate Exact

$$\overline{)6 \overline{)55}}$$

9. Carlos estimated the product of 6 and 6384 by multiplying 6 by 6000. Was Carlos’ estimate more than, equal to, or less than the actual product? Why?

Carlos’ estimate was _____ the actual product because he rounded 6384 down to _____ before multiplying.

• Rate Problems with a Given Total

- Rate problems are equal-group problems. To find a missing number in an equal-groups problem (when the total is given), we can divide.

Example: Marquez can read 4 pages in 1 minute. How long will it take him to read 32 pages?

$$\begin{array}{r} \text{missing number} \\ \text{known number) } \overline{\text{total}} \\ \hline 4 \text{ pages) } \overline{32 \text{ pages}} \end{array}$$

8 minutes to read 32 pages

Practice:

1. Samantha can sign 15 thank-you cards in 1 minute. How long will it take Samantha to sign cards for the 45 people in her dance troop?

) _____ minutes

2. Farley went skiing with his family. If he travels at 6 feet per second, how long will it take him to travel 48 feet?

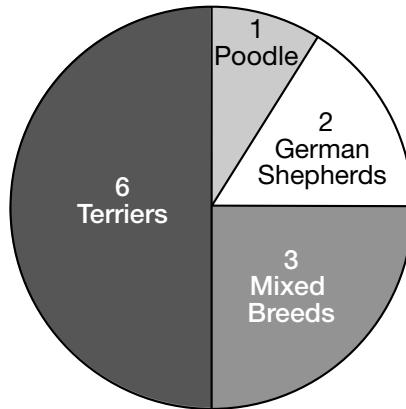
) _____ seconds

3. Destiny makes \$7 an hour working at the animal shelter. If her paycheck at the end of the day is \$42, how many hours did she work?

) _____ hours

• Displaying Data Using Graphs

- A **survey** is an effort to gather specific information about a group, or a population.
- A **pictograph** uses pictures to display information.
- A **bar graph** displays numerical information with shaded rectangles or bars.
- A **line graph** displays numerical information as points connected by line segments. Line graphs are often used to show information that changes over time.
- **Circle graphs** or pie graphs are often used to display information about parts of a whole.
- A **legend** is often shown on a graph to describe the meaning of symbols.

Example:**Type of Dogs at the Dog Park****Practice:**

Use the circle graph in the example to answer problems 1–3.

1. How many German Shepherds and Poodles are at the Dog Park? _____
2. What is the total number of dogs represented by the circle graph? _____
3. Which type of dog does the largest slice of the graph represent? _____
4. Create a bar graph to represent the same information as the circle graph.
5. Is it easier to read the results from the bar graph or the circle graph? Explain why.
