

May, 2023

Dear Parents/Guardians,

The attached math enrichment packet is meant to provide your child with a review of the skills he learned in Fourth Grade. Your child is expected to to turn the completed packet in to Coach Reeves on the first day of the 2023-2024 school year. Please encourage your child to schedule time throughout the summer to work on the packet; do not wait until the end of summer to begin.

Reminders for your child:

- · Read and follow all directions.
- Show work for ANY/ALL problems in an organized manner and number each problem to receive full credit.

Have a great summer!

Sincerely,

Mrs. Hamer

Compare and Order Numbers

Compare 31,072 and 34,318. Write <, >, or =.

Step 1 Align the numbers by place value using grid paper.

Step 2 Compare the digits in each place value. Start at the greatest place.

Are the digits in the ten thousands place the same?

Move to the thousands place.

Are the digits in the thousands place the same?

1 thousand is less than 4 thousands.

start here



Step 3 Use the symbols <, >, or = to compare the numbers.

< means is less than.

> means is greater than.

= means is equal to.

There are two ways to write the comparison.

31,072 34.318

)34.318 or 34.318(

31.072

1. Use the grid paper to compare 21,409 and 20,891.

Write <. >, or = 21,409 20,891



Compare. Write <, >, or =.

2. \$53,621 \$53,760

3. 82,550 80,711

Order from greatest to least.

4. 16,451: 16,250: 17,014

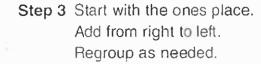
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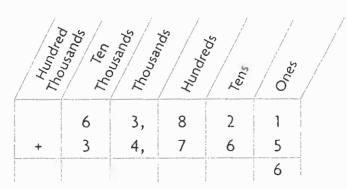
5. 561,028; 582,073; 549,006

Add Whole Numbers

Find the sum. 63,821 + 34,765

- Step 1 Round each addend to estimate. 60,000 + 30,000 =
- Step 2 Use a place-value chart to line up the digits by place value.

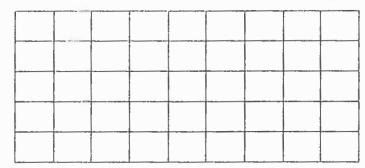




The sum is _____. Since 98,586 is close to the estimate 90,000, the answer is reasonable.

Estimate. Then find the sum.

1. Find 238,503 + 341,978. Use the grid to help.



Estimate:

- 2. Estimate: _____
 - 3. Estimate: _____
- 4. Estimate:

52,851 + 65,601

54,980 + 24,611

- 604.542 + 87,106
- **5.** Estimate: ______ **7.** Estimate: _____

147,026 + 106,792

-5 Haughton Little Norte of Publishing Company

278,309 + 422,182

540,721 + 375,899

Multiply Tens, Hundreds, and Thousands

You can use a pattern to multiply with tens, hundreds, and thousands.

Count the number of zeros in the factors.

$$4 \times 6 = 24$$

← basic fact

$$4 \times 60 = 240$$

- When you multiply by tens, the last digit in the product is 0.

$$4 \times 600 = 2.400$$

- When you multiply by hundreds, the last _____ digits in the product are 0.

$$4 \times 6.000 = 24.000$$

4 × 6,000 = 24,000 ← When you multiply by thousands, the last _____ digits in the product are 0.

When the basic fact has a zero in the product, there will be an extra zero in the final product:

$$5 \times 4 = 20$$
, so $5 \times 4.000 = 20.000$

Complete the pattern.

$$2.8 \times 4 = 32$$

$$4.4 \times 7 = 28$$

Find the product.

5.
$$7 \times 300 = 7 \times$$
 hundred

- hundreds

5.
$$7 \times 300 = 7 \times$$
 _____ hundreds **6.** $5 \times 8,000 = 5 \times$ ____ thousands

= _____ thousands

Multiply Using Expanded Form

You can use expanded form or a model to find products.

Multiply. 3×26

Think and Write

Step 1 Write 26 in expanded form.

$$26 = 20 + 6$$

$$3 \times 26 = 3 \times (20 + 6)$$

Step 2 Use the Distributive Property.

$$3 \times 26 = (3 \times 20) + (\times)$$

Step 3 Multiply the tens. Multiply the ones.

$$3 \times 26 = (3 \times 20) + (3 \times 6)$$

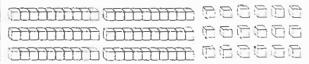
60 +18

Step 4 Add the partial products.

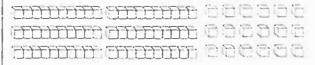
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So. 3 \times 26 = _____
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Use a Model

Step 1 Show 3 groups of 26.



Step 2 Break the model into tens and ones.



 $(3 \times 2 \text{ tens})$ $(3 \times 6 \text{ ones})$

 (3×20) (3×6)

Step 3 Add to find the total product.

Record the product. Use expanded form to help.

4. 3 × 279 = ____

2-15

Multiply 2-Digit Numbers with Regrouping

Use place value to multiply with regrouping.

Multiply, 7 × 63

Step 1 Estimate the product.

$$7 \times 60 =$$

Step 2 Multiply the ones. Regroup 21 ones as tens—one. Record the 1 one below the ones column and the—tens above the tens column.

 7×3 ones =

Step 3 Multiply the tens. Then, add the regrouped tens. Record the tens.

44 tens = 4 hundreds 4 tens

7 × 6 tens =

Add the 2 regrouped tens.

42 tens = 2 tens =

So, $7 \times 63 = 441$. Since 441 is close to the estimate of 420, it is

Estimate. Then record the product.

- 42
 \$98
 37
 \$54

 46
 \$26
 \$40
 \$40
 \$40

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 45
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- 5. Estimate:
 7. Estimate:
 8. Estimate:

 37
 93
 86
 59

 × 5
 × 4
 × 9
 × 7

Estimate Products

You can use rounding and compatible numbers to estimate products.

Use mental math and rounding to estimate the product.

Estimate. $62 \times 23

Step 1 Round each factor to the nearest ten.

62 rounds to S23 rounds to

Step 2 Rewrite the problem using the rounded numbers.

 $60 \times 20

Step 3 Use mental math.

 $6 \times S2 =$ $6 \times \$20 =$ $60 \times $20 =$

So, 62 × \$23 is about _____.

Use mental math and compatible numbers to estimate the product.

Estimate. 24×78

Step 1 Use compatible numbers, 25 × 80

Step 2 Use $25 \times 4 = 100$ to help find 25×8 . 25 < 8 =

24 2 78 $25 \times 80 = 2.000$

Step 3 Since 80 has 1 zero, write 1 zero to the right of the product.

So, 24 > 78 is about _____

Estimate the product: Choose a method.

4.
$$67 \times 21$$

Multiply Using Partial Products

Multiply 25 \times 43. Record the product.

tens ones

4 3

Think: I can use partial products to find 25 \times 43.

× 2 5

- Step 1 Multiply the tens by the tens. 20×4 tens = 80 tens, or 800.
- Step 2 Multiply the ones by the tens.
 20 × 3 ones = 60 ones, or 60.
- Step 3 Multiply the tens by the ones. $5 \times 4 \text{ tens} = 20 \text{ tens} \text{ or } 200.$
- Step 4 Multiply the ones by the ones. 5×3 ones = 15 ones, or 15.
- **Step 5** Add the partial products. 800 + 60 + 200 + 15 = 1.075.

So. 25 × 43 = _____

Record the product.

Estimate Quotients Using Compatible Numbers

Compatible numbers are numbers that are easy to compute mentally. In division, one compatible number divides evenly into the other. Think of the multiples of a number to help you find compatible numbers.

Estimate. 6)216

Step 1 Think of these multiples of 6:

6 12

12

18

24

30

36

42

54

48

Find multiples that are close to the first 2 digits of the dividend.

_____ tens and _____ tens are both close to _____ tens. You can use either or both numbers to estimate the whole-number quotient.

Step 2 Estimate using compatible numbers.

216 ÷ 6

216 ÷ 6

So, 216 6 is between ____ and ____

Step 3 Decide whether the estimate is closer to 30 or 40.

216 is closer to 240, so use ____ as the estimate.

Use compatible numbers to estimate the whole-number quotient.

1. 3)252

2. 6)546

3. 4)2,545

4. 5)314

5. 2) 1,578

6. 8)289

Prime and Composite Numbers

A prime number is a whole number greater than 1 that has exactly two factors, 1 and the number itself.

A composite number is a whole number greater than 1 that has more than two factors.

You can use division to find the factors of a number and tell whether the number is prime or composite.

Tell whether 55 is prime or composite.

Use division to find all the numbers that divide into 55 without a remainder. Those numbers are the factors of 55.

$$55 \div 5 = 11$$
. so ___ and ___ are factors.

The factors of 55 are ____, ___, ___. and ____

Because 55 has more than two factors. 55 is a composite number.

Tell whether 61 is prime or composite.

Use division to find all the numbers that divide into 61 without a remainder. Those numbers are the factors of 61.

61 + 1 = 61, so ___ and ___ are factors.

There are no other numbers that divide into 61 evenly without a remainder.

The factors of 61 are ___ and ___.

Because 61 has exactly two factors. 61 is a prime number.

Tell whether the number is prime or composite.

- Think is 44 divisible 1. 44 by any number other than 1 and 44?
- Think Does 53 Dave 2. 53
 - other factors besides 1 and itself?

3. 12

4. 50

5. 24

6, 67

7. 83

8. 27

- 9. 34
- 10. 78

Compare Decimals

Alfie found 0.2 of a dollar and Gemma found 0.23 of a dollar. Which friend found more money?

To compare decimals, you can use a number line.

Step 1 Locate each decimal on a number line.



Step 2 The number farther to the right is greater.

, so _____ found more money.

To compare decimals, you can compare equal-size parts.

Step 1 Write 0.2 as a decimal in hundredths.

0.2 is 2 tenths, which is equivalent to ____ hundredths.

0.2 = ____

Step 2 Compare

23 hundredths _____ 20 hundredths.

So, _____ found more money.

Compare. Write <, >, or =.

1. 0.17 0.13 **2.** 0.8 0.08 **3.** 0.36 0.63

4. 0.4

0.69 6. 0.3 0.7 7. 0.45 0.37 8. 0.96

Classify Triangles by Angles

A triangle is a polygon with ____ sides

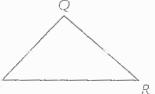
and ____ angles.

Each pair of sides joins at a vertex.

You can name a triangle by its vertices.

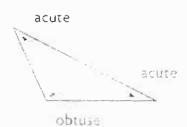


∆QRP ∆QPR ∆RPQ ∆ROP

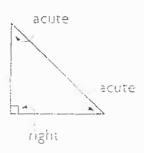


There are ____ types of triangles. All triangles have at least ____ acute angles.

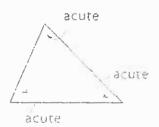
Obtuse triangle one obtuse angle



Right triangle one right angle



Acute triangle three acute angles



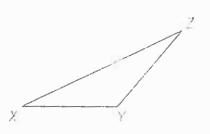
1. Name the triangle. Tell whether each angle is acute, right, or obtuse. A name for the triangle

is _____

Xis

. Yis _____.

Z is _____



Classify each triangle. Write acute, right, or obtuse.

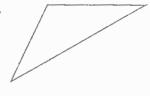
2.



3.



4.



Customary Units of Length

A ruler is used to measure length. A ruler that is 1 foot long shows 12 inches in 1 foot. A ruler that is 3 feet long is called a yardstick. There are 3 feet in 1 yard.

How does the size of a foot compare to the size of an inch?

Step 1 A small paper clip is about 1 inch long. Below is a drawing of a chain of paper clips that is about 1 foot long. Number each paper clip, starting with 1.



Step 2 Complete this sentence.

In the chain of paper clips shown, there are _____ paper clips.

Step 3 Compare the size of 1 inch to the size of 1 foot.

There are ____ inches in ____ foot.

So, 1 foot is _____ times as long as 1 inch.

Customary Units of Weight

Ounces and pounds are customary units of weight. A ton is a unit of weight that is equal to 2,000 pounds.

A slice of bread weighs about 1 ounce. Some loaves of bread weigh about 1 pound.

How does the size of 1 ounce compare to the size of 1 pound?

Step 1 You know a slice of bread weighs about 1 ounce. Below is a drawing of a loaf of bread that weighs about 1 pound. Number each slice of bread, starting with 1.



Step 2 Complete this sentence.

In the loaf of bread shown above, there are _____ slices of bread.

Step 3 Compare the size of 1 punce to the size of 1 pound.

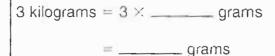
There are _____ ounces in _____ pound.

So. 1 pound is _____ times as heavy as 1 ounce.

Metric Units of Mass and Liquid Volume

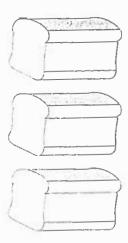
Mass is the amount of matter in an object. Metric units of mass include grams (g) and kilograms (kg). 1 kilogram represents the same mass as 1,000 grams.

One large loaf of bread has a mass of about 1 kilogram. Jacob has 3 large loaves of bread. About how many grams is the mass of the loaves?





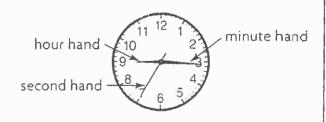
A large bowl holds about 2 liters of juice. Carmen needs to know the liquid volume in milliliters.



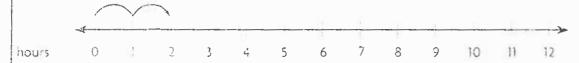
Units of Time

Some analog clocks have an hour hand, a minute hand, and a second hand.

There are 60 seconds in a minute. The second hand makes 1 full turn every minute. There are 60 minutes in an hour. The minute hand makes 1 full turn every hour. The hour hand makes 1 full turn every 12 hours.



You can think of the clock as unrolling to become a number line.



The hour hand moves from one number to the next in 1 hour.



The minute hand moves from one number to the next in 5 minutes.

Use the table at the right to change between units of time.

So, 1 hour is _____ times as long as 1 second.

1 day = 24 hours, so 3 days =
$$3 \times 24$$
 hours, or hours.

1 year = 12 months, so 5 years = 5×12 months, or ____ months.

Units of Time

1 minute = 60 seconds

1 hour = 60 minutes

1 day = 24 hours

1 week = 7 days

1 year = 12 months

1 year = 52 weeks

Perimeter

Perimeter is the distance around a shape. You can use grid paper to count the number of units around the outside of a rectangle to find its perimeter.

How many feet of ribbon are needed to go around the bulletin board?

3 ft

5 ft

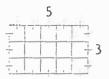
Step 1 On grid paper, draw a rectangle that has a length of 5 units and a width of 3 units.

Step 2 Find the length of each side of the rectangle. Mark each unit of length as you count.

Step 3 Add the side lengths.

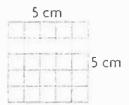
The perimeter is _____feet.

So. _____ of ribbon are needed to go around the bulletin board.



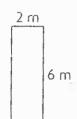
1. What is the perimeter of this square?

+ + + = centimeters

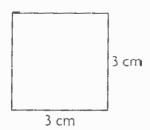


Find the perimeter of the rectangle or square.

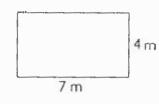
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з.



4.



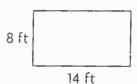
meters

centimeters

meters

Area

Area is the measure of the number of unit squares needed to cover a surface. A unit square is a square with a side length of 1 unit. It has an area of 1 square unit.



Find the area of the rectangle at the right.

You can use the formula Area = base × height.

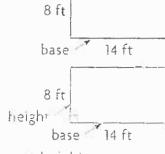
Step 1 Identify one side as the base.

The base is _____ feet.

Step 2 Identify a perpendicular side as the height.

The height is _____ feet.

Step 3 Use the formula to find the area.



Area = base × height

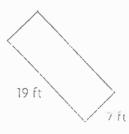
So, the area of the rectangle is square feet.

Find the area of the rectangle or square.

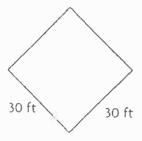
i.



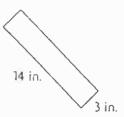
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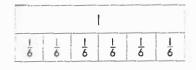


Add and Subtract Fractions

You can find and record the sums and the differences of fractions.

Add.
$$\frac{2}{6} + \frac{4}{6}$$

Step 1 Model it.



Step 2 Think: How many sixths are there in all?

There are sixths.

Step 3 Record it.

Write the sum as an addition equation.

Subtract.
$$\frac{6}{10} - \frac{2}{10}$$

Step 1 Model it.



Step 2 Think: There are 6 tenths. I take away 2 tenths. How many tenths are left?

There are tenths left.

tenths =

Step 3 Record it.

Write the difference as a subtraction equation.

Find the sum or difference.

1. 7 eighth-size parts – 4 eighth-size parts = _____

$$\frac{7}{8} - \frac{4}{8} =$$

2.
$$\frac{11}{12} - \frac{4}{12} =$$
 3. $\frac{2}{10} + \frac{2}{10} =$ **4.** $\frac{6}{8} - \frac{4}{8} =$

3.
$$\frac{2}{10} + \frac{2}{10} =$$

4.
$$\frac{6}{8} - \frac{4}{8} =$$

5.
$$\frac{2}{4} + \frac{2}{4} =$$
 6. $\frac{4}{5} - \frac{3}{5} =$ **7.** $\frac{1}{3} + \frac{2}{3} =$

6.
$$\frac{4}{5} - \frac{3}{5} =$$

7.
$$\frac{1}{3} + \frac{2}{3} =$$

Add and Subtract **Mixed Numbers**

Find the sum. $3\frac{1}{4} + 2\frac{1}{4}$

Add the whole number and fraction parts.

- Add the whole numbers: 3 + 2 = 5• Add the fractions: $\frac{1}{4} + \frac{1}{4} = \frac{2}{4}$



Write the sum as a mixed number, so the fractional

part is less than 1.
$$3\frac{1}{4} + 2\frac{1}{4} = 5\frac{2}{4}$$

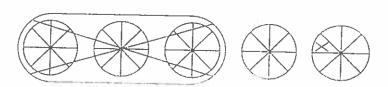


Find the difference, $4\frac{5}{8} - 3\frac{1}{8}$

Subtract the fraction and the whole number parts.

- Subtract the fractions: $\frac{5}{8} \frac{1}{8} = \frac{4}{8}$
- Subtract the whole numbers: 4 - 3 = 1

$$4\frac{5}{6} - 3\frac{1}{5} = 1\frac{1}{5}$$



Find the sum or difference,

2.
$$7\frac{2}{3}$$
 $- 3\frac{1}{3}$

3.
$$4\frac{7}{12} + 6\frac{5}{12}$$

4.
$$12\frac{3}{4}$$

$$- 6\frac{1}{4}$$

5.
$$2\frac{3}{8}$$
 + $8\frac{1}{8}$

6.
$$11\frac{9}{10}$$

$$-3\frac{7}{10}$$

7.
$$7\frac{3}{5}$$
 + $4\frac{3}{5}$

8.
$$8\frac{3}{6}$$
 $- 3\frac{1}{6}$

Multiply a Fraction by a Whole Number Using Models

You can use a model to multiply a fraction by a whole number.

Find the product of $4 \times \frac{3}{5}$.

Use fraction strips. Show 4 groups of $\frac{3}{5}$ each.

1 group of
$$\frac{3}{5} = \frac{1}{5}$$

2 groups of
$$\frac{3}{5} = \frac{1}{5}$$

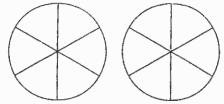
3 groups of
$$\frac{3}{5} = \frac{3}{5}$$

4 groups of
$$\frac{3}{5} = \frac{3}{5}$$

 $S_{0_1} 4 \times \frac{3}{5} = \frac{12}{5}$.

Multiply.







$$2 \times \frac{5}{6} =$$

$$3 \times \frac{7}{8} =$$

3.
$$6 \times \frac{2}{3} =$$

4.
$$2 \times \frac{9}{10} =$$
 5. $5 \times \frac{3}{4} =$

5.
$$5 \times \frac{3}{4} =$$

6.
$$4 \times \frac{5}{8} =$$

7.
$$7 \times \frac{2}{5} =$$

8.
$$8 \times \frac{4}{6} =$$