Grades 5 & 6

Required Religion Books:

Grade 5 – Diethelm, Walter, O.S.B.- *St. Pius X: The Farm Boy Who Became Pope*
Grade 6 - C.S. Lewis- *The Lion, the Witch and the Wardrobe*

Required Literature Books:

Grade 5- Clements, Andrew- *Frindle*

Grade 6- Weeks, Sarah-*Pie*

Students, you must read the required literature book and be ready to discuss when we return to school. You will be given a comprehension test at the beginning of the year.

Choose one nonfiction book and one fiction book of your choice to read also. I will assign the project to work on when we return to school. You are encouraged to read more. The following reading list has many interesting options!

Grades 5 & 6 - Nonfiction

Albee, Sarah- *Accidental Archeologists: True Stories of Unexpected DIscoveries*

Aronson, Marc- *Trapped: How the World Rescued 33 Miners From 2,000 Feet Below the Chilean Desert*

Burleigh, Robert- *O Captain, My Captain*

Castaldo, Nancy- *Beastly Brains: Exploring How Animals Think, Talk and Feel*

Ganda, Martin- *I Will Always Write Back: How One Letter Changed Two Lives*

Grandin, Temple- *Calling All Minds*

Hernandez, Laurie- *I Got This: To Gold and Beyond*

Ignotofsky, Rachel- *Women in ...*series

Kean, Sam- *The Disappearing Spoon (*young adult adaptation)

Lambert, Joseph-*Annie Sullivan and The Trials of Helen Keller*

Rauch, George- *An Unlikely Warrior: A Jewish Soldier in Hitler's Army*

Schanzer, Rosalyn- *Witches: The Absolutely True Tale of Disaster in Salem*

Scientists in the Field *series- Various Authors*

Shackelton, Kate-*Survivors of the Holocaust: True Stories of Six Extraordinary Children*

Sidman, Joyce- *The Girl Who Drew Butterflies: How Maria Merian's Art Changed Science*

Sweet, Melissa- *Some Writer! The Story of E.B. White*

Thimmesh, Catherine- *Team Moon: How 400,000 People Landed Apollo 11 on the Moon*
Tougias, Michael J.- *A Storm Too Soon: A True Story of Disaster, Survival and an Incredible Rescue*

Tunnell, Michae*l- Candy Bomber: The Story of the Berlin Airlift's "Chocolate Pilot"*

Woodson, Jacqueline- *Brown Girl Dreaming*

Grades 5 & 6 - Fiction

Alcott, Louisa May- *Little Women*

Barnhill, Kelly- *The Girl Who Drank the Moon*

Lauren Baratz-Logstead- *I Love You, Michael Collins*

Bertman, Jennifer Chambliss- *Book Scavenger* series

Birdsall, Jeanne- *The Penderwick* series

Brown, Peter- *The Wild Robot* series

Louise- *Harriet the Spy*

Gibbs, Stuart- *Fun Jungle, Moonbase Alpha* and *Spy School* series

Gidwitz, Adam- *Inquisitor's Tale*

Green, Tim-*The Big Game*

Gruener, Ruth- *Out of Hiding*

Hood, Susan- *Lifeboat*

Hunt, Lynda Mullal*y- Fish in a Tree*

Korman, Gordon- *What's His Face*

MacLachlan, Patricia- *The Truth of Me*

Martin, Ann- *Rain Reign*

Medina, Meg- *Merci Suarez Changes Gears*

Meloy, Colin- *Wildwood*

Minks, Margaret- *Payback on Poplar Lane*

Parker Rhodes, Jewell- *Ghost Boys*

Patterson, James and Alexander Kwame- *Becoming Muhammad Ali*

Pincus, Greg- *The Homework Strike*

Ponti, James- *Framed, Vanished* and/or *Trapped*

Reynolds, Jason- *Ghost* series

Woods, Brenda -The Unsung Hero of Birdsong, USA

Grade 5 Supply List

For classroom:
1 package of loose leaf paper
2 packages of glue sticks
4 boxes of tissues
3 packages of sanitizing wipes
2 rolls of paper towels
1 box of Ziploc sandwich bags
1 package of plastic forks
1 liquid handwashing soap

For students:
1 (3 ring) binder w/ loose leaf paper
5 composition notebooks
6 pocket folders
6 jumbo stretchy book covers
6 packages of index cards and Ziploc bags or file box for storage of cards
Pencil case - pouches preferred
4 dozen #2 Pencils (NOT mechanical)
Pens – blue or black – **NON-CLICKING**
1 (child) scissors
2 package markers (thick and thin)
24 count box of crayons
24 count box of colored pencils
1 package whiteboard markers
1 package highlighters
Simple 8 digit pocket calculator

Other supplies needed
1 Pair wired earbuds with standard 2.5mm plug for use with Chromebooks (kept at school)
1 family photo
Bible - *St. Joseph N.C.V. New Testament* Vest Pocket Edition *Youth Catechism of Catholic Church*

At home: (NOT included in Staples pre-ordered kits)
Spanish/English Dictionary
Loose leaf graph and printer paper
Ruler and protractor
Working printer with ink

Name: _____

MATHEMATICS

SUMMER

PRACTICE

PACKET

— — — — —

GRADE 5

Directions: *Please complete the attached worksheets over the summer and bring the packet to school on the first day.*

SHOW ALL YOUR WORK ~ NO WORK ~ NO CREDIT *(if more space is needed for your work, attach an extra paper, clearly numbered with page and example number)*

DO NOT USE A CALCULATOR

Place Value to Thousands

▷ You can show 158,706 in a place-value chart. The value of each digit in a number depends on its place in the number.

In 158,706 the value of:

1 is 1 hundred thousand or 100,000.

5 is 5 ten thousands or 50,000.

8 is 8 thousands or 8000.

7 is 7 hundreds or 700.

0 is 0 tens or 0.

6 is 6 ones or 6.

Each period has three digits.

Thousands Period			Ones Period		
hundreds	tens	ones	hundreds	tens	ones
1	5	8,	7	0	6
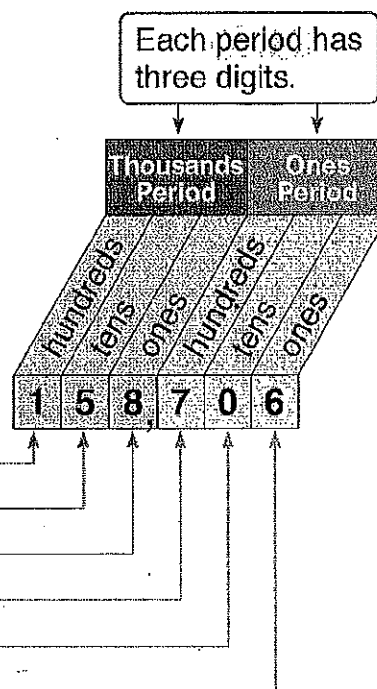
▷ Standard Form: 158,706

Word Name:
one hundred fifty-eight thousand, seven hundred six

Remember:
Four-digit numbers may be written with or without a comma. In numbers *larger* than 9999, use a comma to separate the periods.

Write the place of the underlined digit. Then write its value.

1. 22<u>4</u>2   2. 6<u>3</u>,666   3. <u>1</u>99,999   4. 88<u>0</u>,888

Place a comma where needed in each. Then write the period name for the underlined digit.

5. 3 4 2 5 <u>9</u>   6. <u>1</u> 6 4 3 2   7. 2 0 <u>0</u> 0 6 0   8. <u>8</u> 0 5 0 2 7

Write the number in standard form.

9. forty-five thousand, seven hundred sixty-two   10. five thousand, six

11. nine hundred thousand, seven   12. ten thousand, nineteen

Write the word name for each number.

13. 7046   14. 37,008   15. 231,075   16. 923,780

Compare and Order Whole Numbers

Compare 363,420 and 381,787.

> **To compare whole numbers:**
> - Align the digits by place value.

363,420
381,787

> - Start at the left and find the first place where the digits are different.

363,420
381,787   3 = 3

> - Compare the value of these digits to find which number is greater.

363,420
381,787   8 > 6

Remember:
< means "is less than."
> means "is greater than."
= means "is equal to."

So 381,787 > 363,420.

You could also say 363,420 < 381,787.

Order from greatest to least: 69,520; 19,478; 160,434; 63,215

> **To order whole numbers:**
> - Align the digits by place value.
> - Compare the digits in each place, starting with the greatest place.

69,520	69,520	69,520
19,478	19,478	19,478
160,434	160,434	160,434
↑63,215	63,215	63,215

There are no hundred thousands in the other numbers. 160,434 is the greatest.

6 = 6 and 1 < 6
19,478 is the least.

3 < 9
63,215 < 69,520

In order from greatest to least the numbers are:
160,434; 69,520; 63,215; 19,478

The order from least to greatest: 19,478; 63,215; 69,520; 160,434

Compare. Write <, =, or >.

1. 1563 ? 1519

2. 67,234 ? 67,234

3. 479,059 ? 479,065

Write in order from least to greatest.

4. 9458; 9124; 948; 972

5. 3951; 3068; 369; 3547

6. 99,407; 91,568; 90,999; 93,697

7. 216,418; 215,783; 213,614; 221,986

Round Whole Numbers

To round a number to a given place:

- Find the place you are rounding to.

- Look at the digit to its right.
  If the digit *is less than 5*, round down.
  If the digit is *5 or more*, round up.
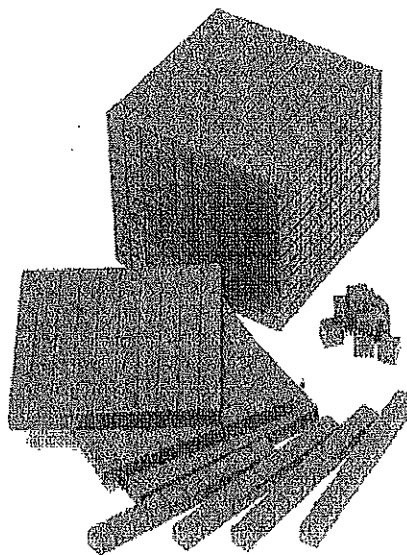
▷ Round 13,528 to the nearest *ten*.

13,528
↓
13,530

| $8 > 5$ |
| Round **up** |
| to 13,530. |

▷ Round 13,528 to the nearest *hundred*.

13,528
↓
13,500

| $2 < 5$ |
| Round **down** |
| to 13,500. |

▷ Round 13,528 to the nearest *thousand*.

13,528
↓
14,000

| $5 = 5$ |
| Round **up** |
| to 14,000. |

Round to the nearest ten.

| **1.** 27 | **2.** 25 | **3.** 51 | **4.** 86 | **5.** 174 | **6.** 397 |
| **7.** 469 | **8.** 875 | **9.** 2587 | **10.** 4351 | **11.** 9289 | **12.** 3542 |

Round to the nearest hundred.

13. 158	**14.** 426	**15.** 375	**16.** 896	**17.** 719	**18.** 950
19. 1047	**20.** 3888	**21.** 5942	**22.** 6891	**23.** 3098	**24.** 8762
25. 37,405	**26.** 62,345	**27.** 88,088	**28.** 65,097	**29.** 58,706	**30.** 66,636

Round to the nearest thousand.

31. 9155	**32.** 7983	**33.** 4550	**34.** 6237	**35.** 8396
36. 33,888	**37.** 15,942	**38.** 93,192	**39.** 87,983	**40.** 46,237
41. 326,150	**42.** 145,706	**43.** 357,029	**44.** 563,498	**45.** 807,476
46. 821,593	**47.** 450,513	**48.** 435,127	**49.** 205,120	**50.** 761,604

Add and Subtract Whole Numbers

To add or subtract whole numbers:

- Estimate.

- Align the numbers. Add or subtract, starting with the ones. Regroup when necessary.
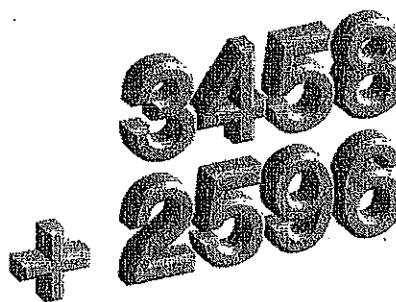
▷ Add: 3458 + 2596 = _?_ .

Round to estimate: 3000 + 3000 = 6000.

Add the ones. Regroup.	Add the tens. Regroup.	Add the hundreds. Regroup.	Add the thousands.
1 3 4 5 8 +2 5 9 6 4	1 1 3 4 5 8 +2 5 9 6 5 4	1 1 1 3 4 5 8 +2 5 9 6 0 5 4	1 1 1 3 4 5 8 +2 5 9 6 6 0 5 4
14 ones = 1 ten 4 ones	15 tens = 1 hundred 5 tens	10 hundreds = 1 thousand 0 hundreds	**Think** 6054 is close to the estimate of 6000.

▷ Subtract: 2842 − 1645 = _?_ .

Round to estimate: 3000 − 2000 = 1000.

More ones needed. Regroup. Subtract.	More tens needed. Regroup. Subtract.	Subtract.
3 12 2 8 4̸ 2̸ −1 6 4 5 7	13 7 8̸ 12 2 8̸ 4̸ 2̸ −1 6 4 5 9 7	13 7 8̸ 12 2 8̸ 4̸ 2̸ −1 6 4 5 1 1 9 7
4 tens 2 ones = 3 tens 12 ones	8 hundreds 3 tens = 7 hundreds 13 tens	**Think** 1197 is close to the estimate of 1000.

Estimate by rounding. Then add or subtract. (Watch for + or −.)

1. 215 + 687

2. 4306 + 3849

3. 6287 + 318

4. 659 − 286

5. 7583 − 2948

6. 3717 − 839

Multiply One Digit

Multiply: $7 \times 816 = $ ___?___ .

First, estimate by rounding: 7×816.

$$7 \times 800 = 5600$$

7 X 816

Then multiply.

Multiply the ones. Regroup.	Multiply the tens. Add the regrouped tens. Regroup again.	Multiply the hundreds. Add the regrouped hundreds.
$\begin{array}{r} 4 \\ 8\,1\,6 \\ \times\ \ \ 7 \\ \hline 2 \end{array}$	$\begin{array}{r} 1\ 4 \\ 8\,1\,6 \\ \times\ \ \ 7 \\ \hline 1\,2 \end{array}$	$\begin{array}{r} 1\ 4 \\ 8\,1\,6 \\ \times\ \ \ 7 \\ \hline 5\,7\,1\,2 \end{array}$
7×6 ones = 42 ones 42 ones = 4 tens 2 ones	7×1 ten = 7 tens 7 tens + 4 tens = 11 tens = 1 hundred 1 ten	7×8 hundreds = 56 hundreds 56 hundreds + 1 hundred = 57 hundreds = 5 thousands 7 hundreds

Think
5712 is close to the estimate of 5600.

Estimate by rounding. Then multiply.

1. $\begin{array}{r} 25 \\ \times\ 3 \end{array}$
2. $\begin{array}{r} 62 \\ \times\ 4 \end{array}$
3. $\begin{array}{r} 58 \\ \times\ 5 \end{array}$
4. $\begin{array}{r} 42 \\ \times\ 6 \end{array}$
5. $\begin{array}{r} 19 \\ \times\ 7 \end{array}$

6. $\begin{array}{r} 956 \\ \times\ \ 5 \end{array}$
7. $\begin{array}{r} 619 \\ \times\ \ 8 \end{array}$
8. $\begin{array}{r} 534 \\ \times\ \ 4 \end{array}$
9. $\begin{array}{r} 519 \\ \times\ \ 5 \end{array}$
10. $\begin{array}{r} 348 \\ \times\ \ 9 \end{array}$

Find the product.

11. $\begin{array}{r} 87 \\ \times\ 6 \end{array}$
12. $\begin{array}{r} 93 \\ \times\ 7 \end{array}$
13. $\begin{array}{r} 79 \\ \times\ 8 \end{array}$
14. $\begin{array}{r} 41 \\ \times\ 5 \end{array}$
15. $\begin{array}{r} 32 \\ \times\ 4 \end{array}$

16. $\begin{array}{r} 759 \\ \times\ \ 3 \end{array}$
17. $\begin{array}{r} 825 \\ \times\ \ 4 \end{array}$
18. $\begin{array}{r} 329 \\ \times\ \ 6 \end{array}$
19. $\begin{array}{r} 478 \\ \times\ \ 8 \end{array}$
20. $\begin{array}{r} 976 \\ \times\ \ 9 \end{array}$

21. 9×49
22. 8×93
23. 7×358
24. 5×953

One-Digit Quotients

Divide: $73 \div 9 = \underline{\ ?\ }$.

| Decide where to begin the quotient. | Divisor → $9\overline{)73}$ ← Dividend $9\overline{)73}$ | **Think** $9 > 7$ **Not enough tens** $9 < 73$ **Enough ones** |

The quotient begins in the ones place.

Estimate: About how many 9s are in 73?

$8 \times 9 = 72$
$9 \times 9 = 81$ ← 73 is between 72 and 81. Try 8.

| Divide the ones. | Multiply. | Subtract and compare. | Write the remainder. |

$$\begin{array}{r} 8 \\ 9\overline{)7\ 3} \end{array}$$

$$\begin{array}{r} \times\ 8 \\ 9\overline{)7\ 3} \\ 7\ 2 \end{array}$$

$$\begin{array}{r} 8 \\ 9\overline{)7\ 3} \\ -7\ 2 \\ \hline 1 \end{array}$$
$1 < 9$

$$\begin{array}{r} 8\ R1 \\ 9\overline{)7\ 3} \\ -7\ 2 \\ \hline 1 \end{array}$$ ← Remainder

| Check by multiplying and adding. |

8 ← **Quotient**
$\times\ \ 9$ ← **Divisor**
$\overline{7\ 2}$
$+\ \ 1$ ← **Remainder**
$\overline{7\ 3}$ ← **Dividend**

| The remainder must be less than the divisor. |

Divide and check.

1. $5\overline{)47}$ 2. $4\overline{)39}$ 3. $3\overline{)25}$ 4. $7\overline{)59}$ 5. $8\overline{)76}$

6. $6\overline{)51}$ 7. $9\overline{)87}$ 8. $6\overline{)49}$ 9. $7\overline{)60}$ 10. $4\overline{)23}$

11. $4\overline{)31}$ 12. $6\overline{)38}$ 13. $5\overline{)33}$ 14. $8\overline{)79}$ 15. $7\overline{)68}$

Find the quotient and the remainder.

16. $58 \div 6$ 17. $65 \div 8$ 18. $29 \div 4$ 19. $62 \div 7$

20. $32 \div 7$ 21. $49 \div 5$ 22. $75 \div 8$ 23. $89 \div 9$

24. $26 \div 3$ 25. $51 \div 9$ 26. $47 \div 6$ 27. $53 \div 8$

Whole Number Operations III

Two-Digit Quotients

Divide: $82 \div 3 = \underline{\ ?\ }$.

| Decide where to begin the quotient. | $3\overline{)82}$ | **Think** $3 < 8$ **Enough tens** |

The quotient begins in the tens place.

Estimate: About how many 3s are in 8?

$2 \times 3 = 6$ ◄── Try 2.
$3 \times 3 = 9$

Divide the tens.	Multiply.	Subtract and compare.	Bring down the ones.
$\begin{array}{r} 2 \\ 3\overline{)8\ 2} \end{array}$	$\begin{array}{r} {\times} 2 \\ 3\overline{)8\ 2} \\ {\raise1pt\hbox{$\scriptstyle\llcorner$}} 6 \end{array}$	$\begin{array}{r} 2 \\ 3\overline{)8\ 2} \\ -6 \\ \hline 2 \leftarrow\boxed{2<3} \end{array}$	$\begin{array}{r} 2 \\ 3\overline{)8\ 2} \\ -6\ \downarrow \\ \hline 2\ 2 \end{array}$

Repeat the steps to divide the ones.

Divide the ones.	Multiply.	Subtract and compare.	Check.
$\begin{array}{r} 2\ 7 \\ 3\overline{)8\ 2} \\ -6\ \downarrow \\ \hline 2\ 2 \end{array}$	$\begin{array}{r} {\times} \\ 2\ 7 \\ 3\overline{)8\ 2} \\ -6\ \downarrow \\ \hline 2\ 2 \\ {\raise1pt\hbox{$\scriptstyle\llcorner$}} 2\ 1 \end{array}$	$\begin{array}{r} 2\ 7\ R1 \\ 3\overline{)8\ 2} \\ -6\ \downarrow \\ \hline 2\ 2 \\ -2\ 1 \\ \hline 1 \leftarrow\boxed{1<3} \end{array}$	$\begin{array}{r} 27 \\ \times\ 3 \\ \hline 81 \\ +\ 1 \\ \hline 82 \end{array}$

Divide and check.

1. $2\overline{)58}$
2. $4\overline{)84}$
3. $6\overline{)96}$
4. $3\overline{)79}$
5. $7\overline{)89}$

6. $7\overline{)85}$
7. $5\overline{)73}$
8. $4\overline{)69}$
9. $6\overline{)93}$
10. $8\overline{)97}$

Find the quotient and the remainder.

11. $47 \div 3$
12. $85 \div 2$
13. $77 \div 5$
14. $59 \div 4$

15. $83 \div 6$
16. $91 \div 8$
17. $81 \div 7$
18. $74 \div 6$

Fractions

A fraction is a number that names one or more *equal parts* of a whole or region, or of a set.
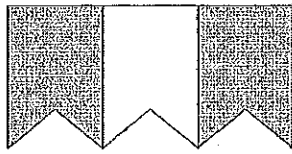
2 of the 3 equal parts of the banner are green.
$\frac{2}{3}$ of the banner is shaded.
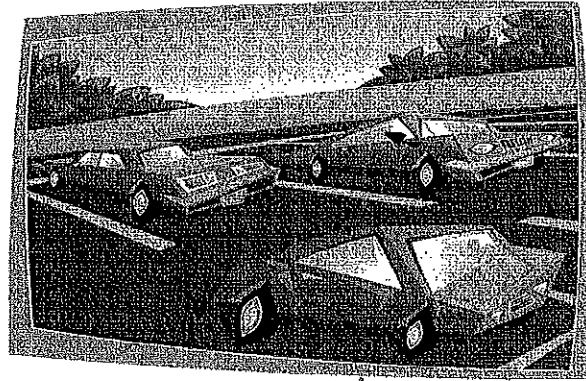
2 of the 3 cars in this parking lot face right.
$\frac{2}{3}$ of the cars face right.

P
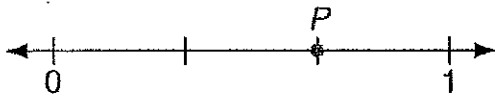
3 equal segments are between 0 and 1.
Point *P* is $\frac{2}{3}$ of the way between 0 and 1.

The numerator tells the number of equal parts being considered.

$\frac{2}{3}$

The denominator tells the number of equal parts in the whole or set.
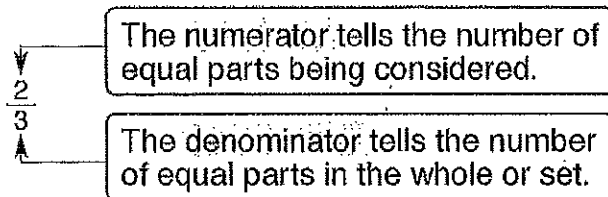
Standard Form: $\frac{2}{3}$

Word Name: two thirds

Write the fraction for the shaded part or point on the number line.

1.

2.

3.   *P*
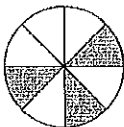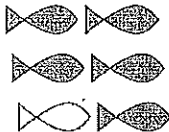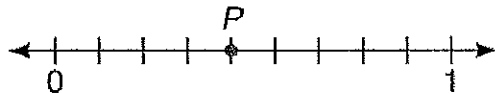
Draw a model to show each fraction.

4. $\frac{5}{7}$ as part of a whole

5. $\frac{7}{8}$ as part of a set

6. $\frac{3}{10}$ as a point on a number line

Write the fraction in standard form.

7. six elevenths

8. four twentieths

9. The numerator is 6, the denominator is 13.

Write the word name for each fraction.

10. $\frac{1}{2}$

11. $\frac{2}{7}$

12. $\frac{5}{9}$

13. $\frac{6}{11}$

14. $\frac{7}{8}$

15. $\frac{8}{13}$

Equivalent Fractions

Equivalent fractions name the *same part* of a whole,
a region, or a set.

One half ($\frac{1}{2}$) of the whole
is shaded blue.

Two fourths ($\frac{2}{4}$) of the whole
is shaded blue.

Four eighths ($\frac{4}{8}$) of the
whole is shaded blue.

$$\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$$

$\frac{1}{2}$, $\frac{2}{4}$, and $\frac{4}{8}$ are
equivalent fractions since
they name the same part
of the whole.

Equivalent Fractions Chart

1												1 whole
$\frac{1}{2}$						$\frac{1}{2}$						2 halves
$\frac{1}{3}$			$\frac{1}{3}$				$\frac{1}{3}$					3 thirds
$\frac{1}{4}$			$\frac{1}{4}$			$\frac{1}{4}$			$\frac{1}{4}$			4 fourths
$\frac{1}{5}$		$\frac{1}{5}$		$\frac{1}{5}$		$\frac{1}{5}$		$\frac{1}{5}$				5 fifths
$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$		6 sixths
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$					8 eighths
$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$				9 ninths
$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$			10 tenths
$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	12 twelfths

$$1 = \frac{2}{2} = \frac{3}{3} = \frac{4}{4} = \frac{5}{5} = \frac{6}{6} = \frac{8}{8} = \frac{9}{9} = \frac{10}{10} = \frac{12}{12}$$

Use the chart above to find equivalent fractions.

1. $\frac{1}{2} = \frac{?}{6}$ 2. $\frac{1}{3} = \frac{?}{6}$ 3. $\frac{1}{4} = \frac{?}{8}$ 4. $\frac{1}{5} = \frac{?}{10}$

5. $\frac{1}{3} = \frac{?}{9}$ 6. $\frac{1}{4} = \frac{?}{12}$ 7. $\frac{8}{10} = \frac{?}{5}$ 8. $\frac{6}{9} = \frac{?}{12}$

Use the chart above to compare. Write <, =, or >.

9. $\frac{3}{4} \underline{\ ?\ } \frac{6}{8}$ 10. $\frac{1}{3} \underline{\ ?\ } \frac{4}{9}$ 11. $\frac{7}{10} \underline{\ ?\ } \frac{4}{6}$ 12. $\frac{6}{12} \underline{\ ?\ } \frac{5}{10}$

13. $\frac{2}{8} \underline{\ ?\ } \frac{1}{5}$ 14. $\frac{3}{5} \underline{\ ?\ } \frac{1}{2}$ 15. $\frac{4}{6} \underline{\ ?\ } \frac{8}{12}$ 16. $\frac{3}{5} \underline{\ ?\ } \frac{8}{10}$

Write the missing number to complete the equivalent fraction.

17. $\frac{2}{5} = \frac{?}{10}$ 18. $\frac{3}{4} = \frac{6}{?}$ 19. $\frac{2}{10} = \frac{?}{5}$ 20. $\frac{3}{5} = \frac{?}{10}$ 21. $\frac{2}{6} = \frac{?}{12}$

22. $\frac{3}{6} = \frac{6}{?}$ 23. $\frac{3}{4} = \frac{?}{12}$ 24. $\frac{4}{8} = \frac{?}{12}$ 25. $\frac{2}{3} = \frac{6}{?}$ 26. $\frac{6}{9} = \frac{8}{?}$

Add and Subtract Fractions: Like Denominators

Add: $\frac{2}{4} + \frac{1}{4} = \underline{\ ?\ }$
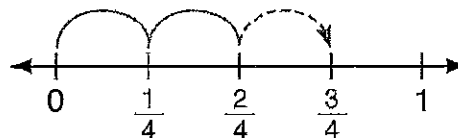
▷ To **add fractions** with *like* denominators:

- Add the numerators.

  $\frac{2}{4} + \frac{1}{4} = \frac{\ }{\ }\ \ 3$

- Write the sum over the common denominator.

  $\frac{2}{4} + \frac{1}{4} = \frac{3}{4}$

Think
$2 + 1 = 3$
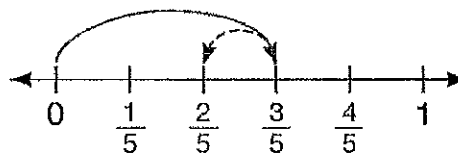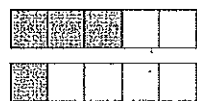
Subtract: $\frac{3}{5} - \frac{1}{5} = \underline{\ ?\ }$

▷ To **subtract fractions** with *like* denominators:

- Subtract the numerators.

  $\frac{3}{5} - \frac{1}{5} = \frac{\ }{\ }\ \ 2$

- Write the difference over the common denominator.

  $\frac{3}{5} - \frac{1}{5} = \frac{2}{5}$

Think
$3 - 1 = 2$

Study these examples.

$\begin{array}{r} \frac{5}{9} \\ + \frac{2}{9} \\ \hline \frac{7}{9} \end{array}$ **Think** $\dfrac{5+2}{9}$

$\begin{array}{r} \frac{8}{9} \\ - \frac{2}{9} \\ \hline \frac{6}{9} \end{array}$ **Think** $\dfrac{8-2}{9}$

Use fraction strips or number lines to model each sum or difference. Then write an addition or a subtraction sentence.

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

Add or subtract.

5. $\frac{5}{9} + \frac{3}{9}$ 　　6. $\frac{5}{8} + \frac{2}{8}$ 　　7. $\frac{8}{10} - \frac{5}{10}$ 　　8. $\frac{4}{5} - \frac{2}{5}$

9. $\begin{array}{r} \frac{7}{10} \\ + \frac{2}{10} \\ \hline \end{array}$ 　10. $\begin{array}{r} \frac{1}{5} \\ + \frac{3}{5} \\ \hline \end{array}$ 　11. $\begin{array}{r} \frac{4}{9} \\ + \frac{4}{9} \\ \hline \end{array}$ 　12. $\begin{array}{r} \frac{7}{8} \\ - \frac{3}{8} \\ \hline \end{array}$ 　13. $\begin{array}{r} \frac{10}{12} \\ - \frac{8}{12} \\ \hline \end{array}$

Tenths and Hundredths

A number less than one can be written
either as a fraction or as a decimal.
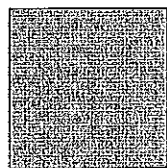
one whole
$1 = 1.0$
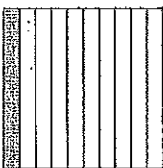
one tenth
$\frac{1}{10} = 0.1$
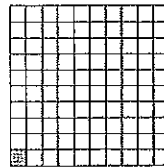
one hundredth
$\frac{1}{100} = 0.01$

1 tenth =
10 hundredths

A decimal point
separates the whole number
part from the decimal part.

0 shows no ones.

0 shows no tenths.
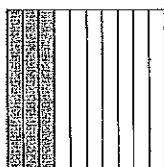
0.3
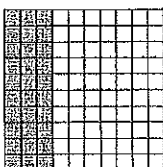
0.30

$0.3 = 0.30$

Equivalent decimals show
the same amount.

Write a fraction and a decimal for each.

1.
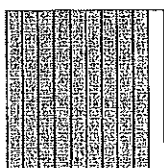
2.
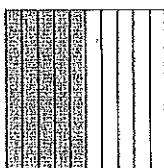
3.
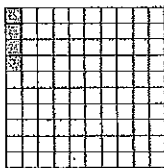
4.
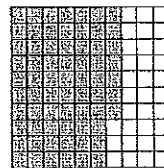
Write as a decimal.

5. $\frac{2}{10}$ **6.** $\frac{5}{10}$ **7.** $\frac{9}{100}$ **8.** $\frac{6}{100}$ **9.** $\frac{17}{100}$ **10.** $\frac{23}{100}$

Compare. Write <, =, or >.

11. 0.5 _?_ 0.50   **12.** 0.06 _?_ 0.6   **13.** 0.9 _?_ $\frac{9}{10}$ **14.** 0.8 _?_ $\frac{8}{100}$

Write an equivalent decimal.
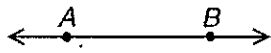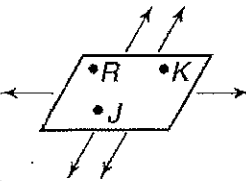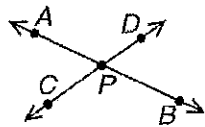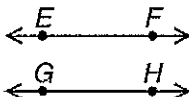
15. 0.4   **16.** 0.7   **17.** 0.20   **18.** 0.10   **19.** 0.3   **20.** 0.9

Geometric Concepts

Description	Figure	Symbol	Read As
A point is an exact location in space, usually represented by a dot.	•P	P	point P
A line is a set of points in a plane that forms a straight path and extends indefinitely in opposite directions.	A — B	$\overleftrightarrow{AB}$ or $\overleftrightarrow{BA}$	line AB
A line segment is part of a line with two endpoints.	C — D	$\overline{CD}$ or $\overline{DC}$	line segment CD or DC
A ray is part of a line that starts at an endpoint and extends indefinitely in one direction.	E — F	$\overrightarrow{EF}$	ray EF
A plane is a flat surface that extends indefinitely in all directions.	•R •K •J	RJK	Plane RJK
Intersecting lines are lines that meet at a common point.	A D C P B	$\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ intersect at P.	Line AB and line CD intersect at point P.
Parallel lines are lines in the same plane that never intersect.	E F G H	$\overleftrightarrow{EF} \parallel \overleftrightarrow{GH}$	Line EF is parallel to line GH.

Identify each figure. Then name it using symbols.

1. O — P

2. X — Y

3. R — S

4. Q B T
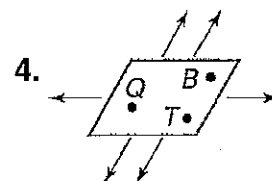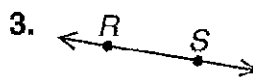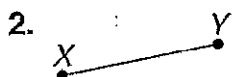
Draw and label each figure. You may use dot paper.

5. $\overline{DM}$ 6. $\overleftrightarrow{XY}$ 7. $\overrightarrow{FE}$ 8. point Z   9. plane SQR

10. lines EM and DR intersecting at X   11. parallel lines XR and YT

Identify Polygons

▷ A polygon is a closed plane figure formed by line segments. The line segments are called sides. Pairs of sides meet at a point called a vertex (plural: vertices).

vertices
side
angle

7 sides
7 angles

▷ Polygons are classified by the number of sides or vertices (or angles).
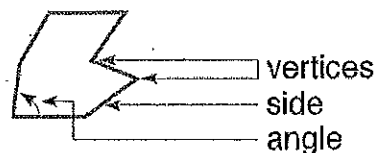
triangle
3 sides
3 vertices
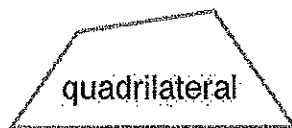
quadrilateral
4 sides
4 vertices

pentagon
5 sides
5 vertices

hexagon
6 sides
6 vertices

Decide if each figure is a polygon. Write *Yes* or *No*.

1.

2.

3.

4.

Name each polygon.

5.

6.

7.

8.
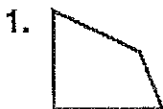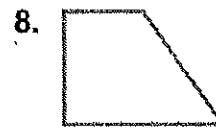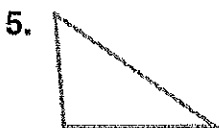
Complete the table.

Figure	Name	Number of Sides	Number of Vertices
9.	?	?	?
10. ?	?	?	5
11. ?	?	6	?
12.	?	?	?

Customary Units of Length

The inch (in.), foot (ft), yard (yd), and mile (mi) are customary units of length.

12 inches (in.) = 1 foot (ft)
36 inches = 1 yard (yd)
3 feet = 1 yard
5280 feet = 1 mile (mi)
1760 yards = 1 mile
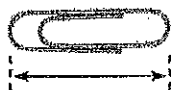
about 1 in. long
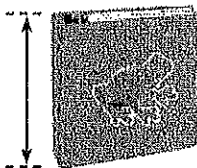
about 1 ft tall

about 1 yd wide
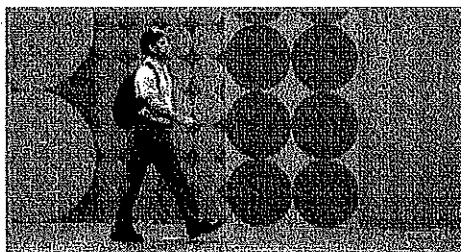
The distance a person can walk in 20 minutes is about 1 mile.

▷ Before you can compare measurements in different units, you need to rename units.

Compare: 4 ft _?_ 52 in.

You can make a table.

ft	1	2	3	4	5
in.	12	24	36	48	60

4 ft = 48 in.   48 < 52   So 4 ft < 52 in.

Which unit would you use to measure? Write *in., ft, yd,* or *mi.*

1. length of an eraser
2. width of a board
3. distance between 2 cities
4. height of a desk
5. length of a soccer field
6. width of a quarter

Write the letter of the best estimate.

7. length of a pencil   **a.** 4 yd   **b.** 4 in.   **c.** 4 ft

8. height of a basketball player   **a.** 6 ft   **b.** 6 in.   **c.** 6 yd

Compare. Use <, =, or >.

9. 8 ft _?_ 96 in.   10. 6 yd _?_ 2 ft   11. 1 mi _?_ 3000 yd

Customary Units of Capacity and Weight

▷ The cup (c), pint (pt), quart (qt), and gallon (gal) are customary units of liquid capacity.

> 2 cups = 1 pint (pt)
> 2 pints = 1 quart (qt)
> 2 quarts = 1 half gallon
> 4 quarts = 1 gallon (gal)

1 c

1 pt

1 qt

1 half gal

1 gal

▷ The ounce (oz) and pound (lb) are customary units of weight.

> 16 ounces (oz) = 1 pound (lb)
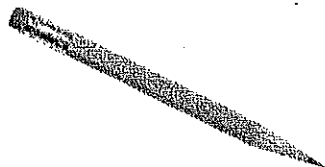
about 1 oz
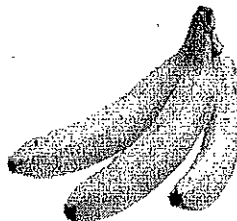
about 1 lb

Which unit would you use to measure? Write *c, pt, qt,* or *gal.*

1. juice in a pitcher
2. ice cream in a carton
3. paint in a can
4. water in a swimming pool
5. milk in a recipe
6. water in a bucket

Which unit would you use to measure the weight of each? Write *oz* or *lb.*

7. a toaster
8. a television
9. a dog
10. an envelope
11. a feather
12. a bag of oranges

Complete each table.

13.

pt	1	2	?	4	5	6
c	2	?	6	?	?	?

14.

oz	16	32	?	64	?	96	?	?
lb	1	2	3	?	5	?	7	8

Metric Units of Length

The centimeter (cm), decimeter (dm), meter (m), and kilometer (km) are metric units of length.

$$1\ m\ =\ 100\ cm$$
$$1\ m\ =\ 10\ dm$$
$$1\ km\ =\ 1000\ m$$
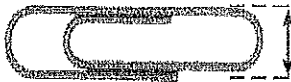
about 1 cm wide
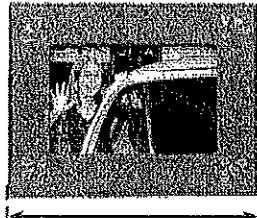
about 1 dm long
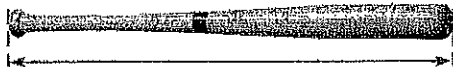
about 1 m long
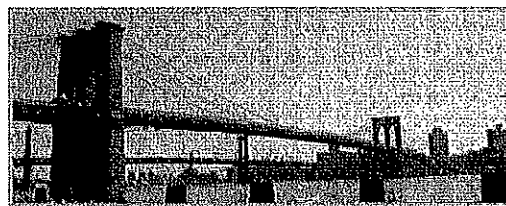
The Brooklyn Bridge in New York is about 1 km long.

Which metric unit of length is best to measure each?
Write *cm, m,* or *km*.

1. length of a car
2. depth of the ocean
3. height of a person
4. width of a tape
5. thickness of a sandwich

Write the letter of the best estimate.

6. length of an umbrella   **a.** 1 m   **b.** 1 dm   **c.** 1 km

7. width of a postage stamp   **a.** 0.22 cm   **b.** 2.2 cm   **c.** 22 cm

Complete each table.

8.

dm	1	2	3	?	5	6
cm	10	?	?	40	?	?

9.

km	1	2	?	4	5
m	1000	?	3000	?	?

Compare. Write <, =, or >.

10. 5 m _?_ 48 dm
11. 100 cm _?_ 2 m
12. 1000 m _?_ 1 km

Metric Units of Capacity and Mass

▷ The milliliter (mL) and liter (L)
are metric units of liquid capacity.

1000 milliliters (mL) = 1 liter (L)

20 drops of water
is about 1 mL.

about 1 L

▷ The gram (g) and kilogram (kg)
are metric units of mass.

1000 grams (g) = 1 kilogram (kg)

A paper clip has
a mass of about 1 g.

A hardcover dictionary
has a mass of about 1 kg.

Which metric unit is best to measure the capacity of each? Write *mL* or *L*.

1. a bucket
2. a perfume bottle
3. a test tube
4. a bathtub
5. a can of juice
6. an eyedropper

Which metric unit is best to measure the mass of each? Write *g* or *kg*.

7. a computer
8. a peanut
9. an electric iron
10. a sugar cube
11. a comb
12. a bowling ball

Complete each table.

13.

L	1	2	?	?	?	?	?	8
mL	1000	?	?	4000	?	?	?	?

14.

kg	1	?	3	?	?	?	?	8
g	1000	?	?	4000	?	?	?	?

Make Pictographs

Make a pictograph to organize the data at the right.

▷ To make a pictograph:

- List each kind of book.

- If necessary, round the data to nearby numbers.

    298 ⟶ 300   54 ⟶ 50

- Choose a symbol or picture to represent the number of books for each kind to make the *key*. Let ▯ = 100 books.

- Draw symbols to represent the data for each kind of book.

- Label the pictograph. Write the *title* and the *key*.

Books in the Jackson Public Library	
Kind	**Number of Books**
Science	298
Medicine	54
Biography	195
Art	147
Fiction	554
History	256

This is about 150 art books.

Books in the Jackson Public Library	
Science	▯ ▯ ▯
Medicine	▮
Biography	▯ ▮
Art	▯ ▮
Fiction	▯ ▯ ▯ ▯ ▯ ▮
History	▯ ▯ ▮
Key: Each ▯ stands for 100 books.	
Each ▮ stands for 50 books.	

Make a pictograph for each set of data.

1.

Students Taking Part in After-School Activities	
Activities	**Number of Students**
Clubs	50
Sports	63
Chorus	38
School Paper	14
Student Council	7

2.

| Compact Disc Sales	
Music	**Compact Discs Sold**
Classical	105
Country	886
Jazz	212
Rap	384
Rock	790
R & B/Soul	450

Make Bar Graphs

Organize the data at the right
in a horizontal bar graph.

▷ To make a horizontal bar graph:

- Use the data from the table
  to choose an appropriate scale.

- Draw and label the scale on the
  horizontal axis. Start at 0.

- Draw and label the vertical axis.
  List the name of each item.

- Draw horizontal bars
  to represent the data.

- Write the title of the
  bar graph.

▷ You can make a
vertical bar graph
by placing the scale
along the vertical axis
and the items along
the horizontal axis.

Heights of Some U.S. Waterfalls	
Name	Height in Feet
Akaka	442
Bridalveil	620
Lower Yellowstone	310
Niagara	182
Silver Strand	1170

Scale:
200-ft interval
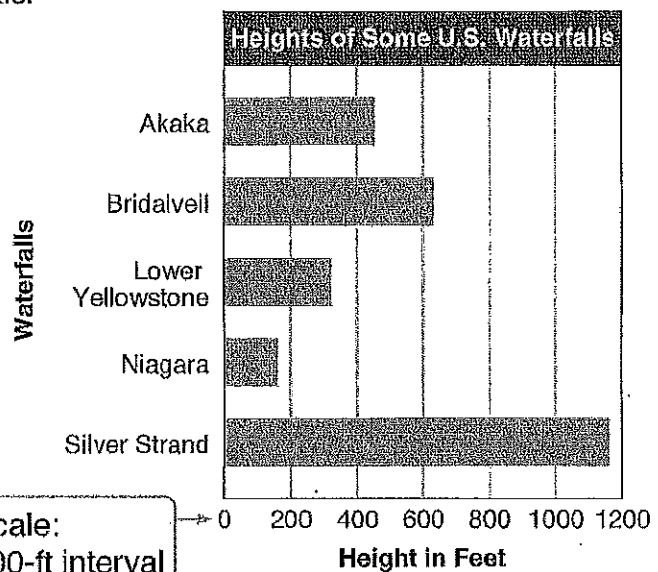
Make a horizontal bar graph
for the data listed below.

1.

Results of Canned Food Drive	
Class	Number of Cans
3A	125
3B	102
4A	96
4B	85
5A	141
5B	115

Make a vertical bar graph
for the data listed below.

2.

Favorite Sports Activity	
Sport	Number of Students
Baseball/Softball	25
Basketball	18
Gymnastics	14
Soccer	28
Tennis	12

Equally/Not Equally Likely Outcomes

For each of the spinners *A* and *B* there are three different possible results or outcomes: red, blue, green.

▷ Spinner *A* is divided into 3 equal sections, and each section is a different color. Since there is 1 equal section of each color, each color has the same chance of occurring. The outcomes are equally likely.

Since there is 1 red section out of a total of 3 sections, the probability of landing on red is 1 out of 3.
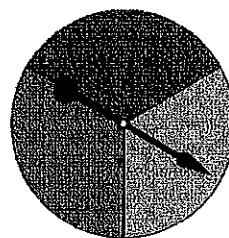
Spinner A

▷ Spinner *B* is divided into 6 equal sections. Since there is *not* an equal number of sections for each color, each color does not have the same chance of occurring. The outcomes are not equally likely.

Since there are 3 red sections, the spinner is more likely to land on red than on green or blue.
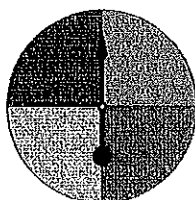
Since there are 3 red sections out of a total of 6 sections, the probability of landing on red is 3 out of 6.
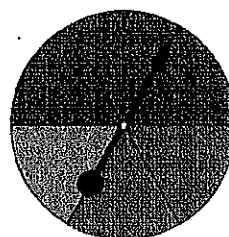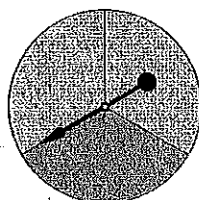

Spinner B

List the different outcomes. Then write whether the outcomes are *equally likely* or *not equally likely*.
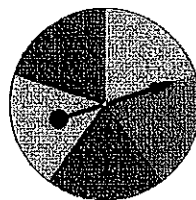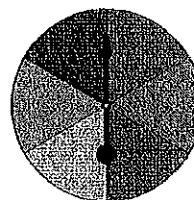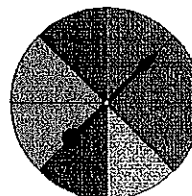
1.
2.
3.
4.

Use the spinner on the right to find the probability of landing on:

5. red

6. blue

7. green

8. yellow

List Outcomes

▶ You can make an organized list to show all possible outcomes of an experiment.

In an experiment, Tamara spins the two given spinners. Find all possible outcomes. How many possible outcomes are there?

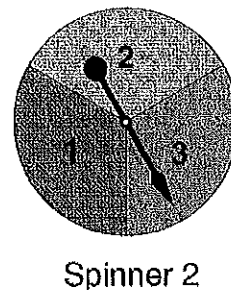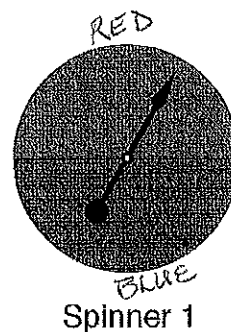- Look at the spinners to find the possible outcomes.

  Spinner 1: Blue (B) or Red (R)

  Spinner 2: 1, 2, or 3

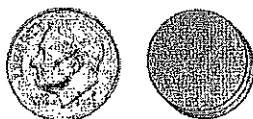- Make an organized list of the possible pairs of outcomes. Then count the number of outcomes.

B, 1	R, 1
B, 2	R, 2
B, 3	R, 3

So there are 6 possible outcomes.

RED / BLUE

Spinner 1

Spinner 2

Make a list of all possible outcomes for each experiment.
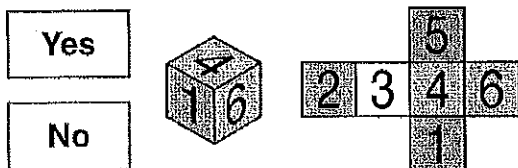**Then write the total number of outcomes.**

1. toss a coin and toss a green/red counter

2. toss a coin and spin the spinner

3. pick a card without looking and roll a number cube

   Yes

   No

4. spin the spinner and pick a cube without looking