**When I use multiplication, the total number of objects is the product. The numbers multiplied are the factors.**

**Multiplication involves a specific number of groups with the same number of objects in each group.**

**CCGPS3.OA.1**

**5 x 4 = 20**

**factors**

**5 groups of 4 = product**

I purchased 5 boxes of cookies. Each box had 4 cookies. How many cookies in all?

**Repeated addition 4 + 4 + 4 + 4 + 4**

**I know division gives me a quotient (the total number of objects).**

**Division answers “how many in each group?” *or* “how many groups can I make?”.**

**CCGPS3.OA.2**

|  |
| --- |
| **How many in each group?**  There are 12 cookies on the counter. If you are sharing the cookies equally among three bags, how many cookies will go in each bag?  **12 ÷ 3 = 4**  **quotient** |
| **How many groups can I make?**  There are 12 cookies on the counter. If you put 3 cookies in each bag, how many bags will you fill?      **12 – 3 – 3 – 3 – 3 = 0**  **Repeated subtraction** |

**I can use various strategies to solve multiplication and division word problems.**

**CCGPS3.OA.2**

**There are 12 cookies on the baking sheet. My mom put 6 cookies in each row. How many rows are there?**

|  |  |  |
| --- | --- | --- |
| **Using Arrays**  http://www.athens.edu/vinsobm/lesson_19_files/image005.jpg | **Using Equal Groups**  xxxxxx  xxxxxx | **Using a Number Line** |
| **Using Repeated Addition**  **6 + 6 = 12**  **2 x 6 = 12** | | |

**Max loves bananas. His grandmother has 24 bananas. If she gives Max 4 bananas each day, how many days will the bananas last?**

|  |  |
| --- | --- |
| **Using Drawings**  **I drew 24 bananas then used my highlighter to show groups of 4. I counted the groups.**  **24 ÷ 4 = 6**  **OOOOOOOO OOOOOOOO**  **OOOOOOOO** | **Using Repeated Subtraction**  **24-4 = 20**  **20-4 = 16**  **16-4 = 12**  **12-4 = 8**  **8-4 = 4**  **4-4 = 0**  **I subtracted 4 from 24 until I got 0. Then I counted how many times I subtracted.** |

**I can determine the unknown number that makes a multiplication or division equation true.**

**CCGPS3.OA.3**

|  |  |  |
| --- | --- | --- |
| **Unknown Product**  **3 x 5 = \_\_\_**  **8 x 2 =**  **There are 2 bags with 8 apples in each. How many apples in all?** | **Group Size Unknown**  **3 x \_\_\_ = 18**  **18 ÷ 3 = c**  **If 18 apples are arranged into 3 equal rows, how many apples will be in each row?** | **Number of Groups Unknown**  **\_\_\_\_ x 4 = 40**  **40 ÷ 4 =**  **If 40 apples are arranged into equal rows of 4 apples, how many rows will there be?** |

**CCGPS3.OA.4**

**I can apply properties of operations as strategies to multiply and divide.**

**CCGPS3.OA.5**

**Commutative Property of Multiplication**

**6 x 4 = 24**

**4 x 6 = 24**

**Associative Property of Multiplication**

**7 x 5 x 2 =**

**Multiply 5 x 2 = 10 then multiply**

**10 x 7 = 70 so……………**

**7 x 5 x 2 = 70**

**Zero Property of Multiplication**

**0x7=0**

**7x0=0**

**Identity Property of Multiplication**

**1x7=7**

**7x1=7**

**Distributive Property**

**(breaking numbers apart)**

**7 x 6 = \_\_\_\_**

**7x5=35 7x3=21 5x6=30**

**7x1= 7 7x3=21 2x6=12**

**35+7=42 21+21=42 30+12=42**

**I could break apart 7x6 several ways…**

**I can determine if equations are true or false.**

|  |  |
| --- | --- |
| **TRUE**  **0 x 7 = 7 x 0**  **1 x 5 = 5 x 1**  **5 x 2 x 3 = 10 x 3**  **4 x 2 < 10 x 2** | **FALSE**  **8 ÷ 4 = 4 ÷ 8**  **2 x 2 x 2 = 2 x 0**  **0 x 6 > 0 x 10**  **5 x 5 = 20 ÷ 2** |

**CCGPS3.OA.5**

**I understand that division is an unknown factor problem.**

Unknown factor

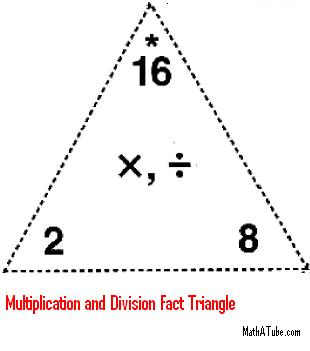
**32 ÷ 8 = \_\_\_\_\_**

**Find the number that is multiplied by 8 that equals 32.**

**CCGPS3.OA.6**

**CCGPS3.OA.6 con’t**

**FACT FAMILY TRIANGLE**



**8 x 2 = 16**

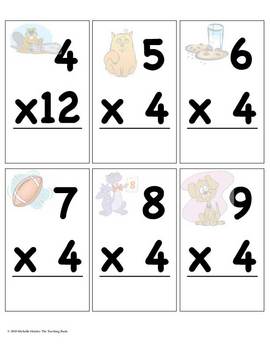
**2 x 8 = 16**

**16 ÷ 2 = 8**

**16 ÷ 8 = 2**

**I know that multiplication and division are inverse operations.**

**I know from memory all multiplication facts.**



**CCGPS3.OA.7**

**I can solve two-step word problems using the four operations.**

**Mike runs 2 miles a day. His goal is to run 25 miles. After 5 days, how many miles does Mike have left to run in order to meet his goal? Write an equation and find the solution.**

**2 × 5 + *m* = 25**

**Goal**

**Number of days ran**

**Miles per day**

**Using a letter for the unknown:**

**how many miles are left?**

**CCGPS3.OA8**

**I can assess the reasonableness of answers using mental computation and estimation strategies including rounding.**



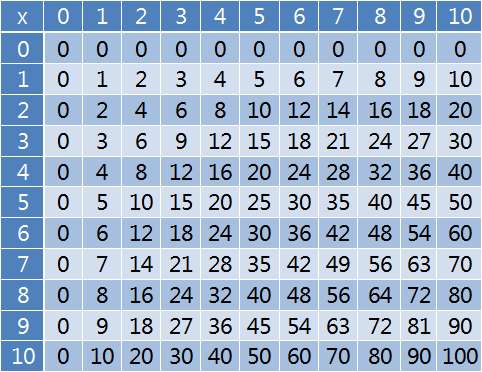
**I can identify arithmetic patterns in an addition or multiplication table.**

**and**

**I can explain them using properties of operations.**

**CCGPS3.OA.9**

**Arithmetic Patterns = patterns that change by the same rate. Example: 2,4,6,8,…. Increases by 2 each time.**



**On a multiplication chart, On an addition chart,**

**the products in each row the sums in each row**

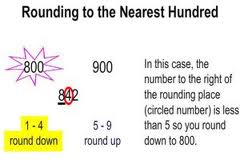
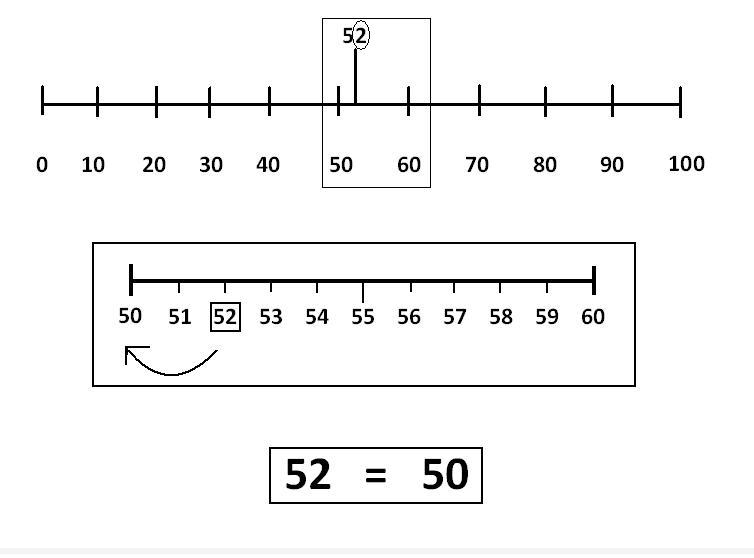
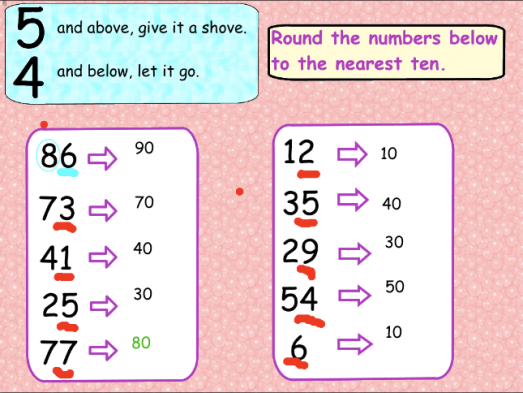
**and column increase by the and each column**

**same amount. increase by the same**

**same amount.**

**CCGPS3.OA.9**

**I can use place value understanding to round whole numbers to the nearest 10 or 100.**



**CCGPS3.NBT.1**

**I can fluently add and subtract within 1000.**

**There are178 fourth graders and 225 fifth graders on the playground. What is the total number of students on the playground?**

**CCGPS3.NBT.2**

**CCGPS3.NBT.2 con’t**

|  |  |  |
| --- | --- | --- |
| **Using Place Value**  **100+200 = 300**  **70+20 = 90**  **8+5 = 13**  **300+90+13=403** | **Using the standard algorithm**  **1 1**  **178**  **+ 225**  **403** | **Using the relationship between addition and subtraction**  **Add 2 to 178 to equal 180.**  **Add 180+220 to get 400.**  **Add the 3 left over to get 403.** |

**I can multiply one digit whole numbers by multiples of 10.**

**4 x 10 = 40 4**

**x 10**

**40**

**CCGPS3.NBT.3**

**CCGPS3.NF.1**

**I know a fraction is the quantity formed when a whole is partitioned into equal parts.**

**of the square is purple.**

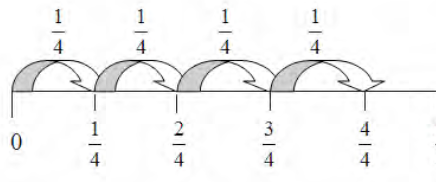
**There are three ‘s colored.**

**CCGPS3.NF.1 con’t**

**I understand these concepts relating to fractions.**

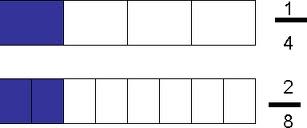
|  |
| --- |
| **These are equal thirds. These are not equal thirds.** |
| **The number of equal parts tells how many make a whole.**  1/4  1/4  **= = 1 whole**  1/4  1/4 |
| **As the number of equal pieces in the whole increases, the size of the fractional pieces decreases.** |
| **The size of the fractional part is relative to the whole.**  **of the students in the classroom is different**  **than of the students in the school.** |
| **The numerator is the count of equal parts.**  **The denominator is the number of equal parts.**  http://www.mathsisfun.com/images/fraction.gif |

**I understand and can represent a fraction as a number on the number line between whole numbers.**



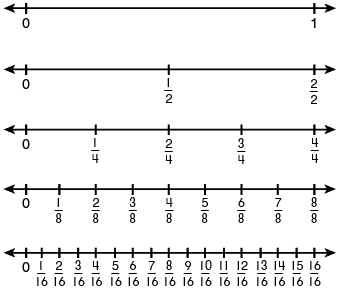
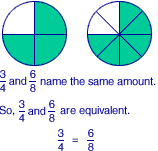
**CCGPS3.NF.2a,b**

**I understand two fractions are equivalent because they are the same size.**



**CCGPS3.NF.3a**

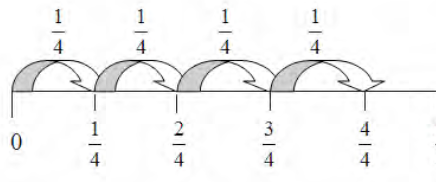
**I can create equivalent fractions and explain why by using a visual model.**



**CCGPS3.NF.3b**

**I can recognize fractions that are equivalent to whole numbers.**

= 1

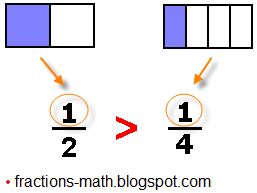
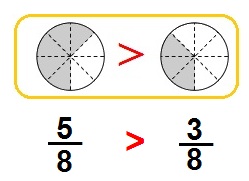
****

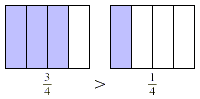
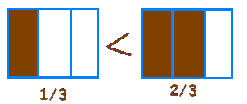
**CCGPS3.NF.3c**

**I can compare two fractions with the same numerator or denominator.**

**I recognize that comparisons are valid when the two fractions refer to the same whole.**

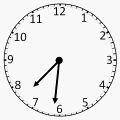
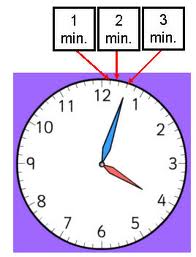
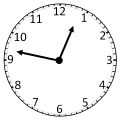
**CCGPS3.NF.3d**



**= 5 =**

**I can tell and write time to the nearest minute.**

[](http://www.google.com/imgres?num=10&hl=en&safe=off&biw=1366&bih=571&tbm=isch&tbnid=Bzf_gqVsKDl04M:&imgrefurl=http://lawrencevillelocksmith.com/telling-time&page=3&docid=PTN2xZYyA8XfAM&itg=1&imgurl=http://www.studyzone.org/testprep/math4/e/timeto3.jpg&w=268&h=350&ei=CagMUKf6Hoay8ASq-ujICg&zoom=1&iact=hc&vpx=937&vpy=195&dur=5796&hovh=257&hovw=196&tx=100&ty=138&sig=102449167859536566375&page=3&tbnh=139&tbnw=106&start=59&ndsp=29&ved=1t:429,r:6,s:59,i:281)

**CCGPS3.MD.1**

**I can solve word problems involving addition and subtraction of time intervals (elapsed time).**

**CCGPS3.MD.1**

**Tonya wakes up at 6:45 a.m. It takes her 5 minutes to shower, 15 minutes to get dressed, and 15 minutes to eat breakfast. What time will she be ready for school?**

****

**CCGPS3.MD.1**

**I can measure and estimate liquid volumes using liters (l).**

**CCGPS3.MD.2**

**I can measure and estimate masses of objects using grams (g) and kilograms (kg).**



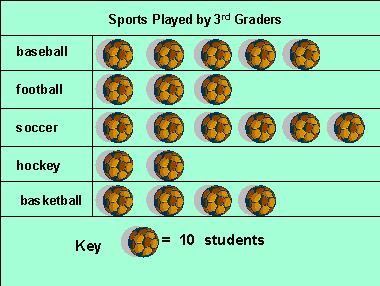
**CCGPS3.MD.2**

**I can add, subtract, multiply, and divide to solve one-step word problems involving masses or volumes.**

**÷ × + -**

**CCGPS3.MD.2**

**I can draw a scaled picture graph and a scaled bar graph.**

****

Data

Categories

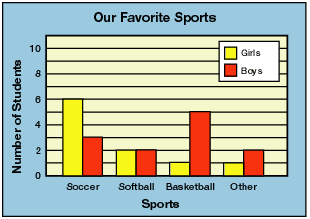
Title

Key

Check the key! Sometimes there are Multiple Units.

**CCGPS3.MD.3**

**CCGPS3.MD.3 con’t**



Key

Data

Scale Label

Scale

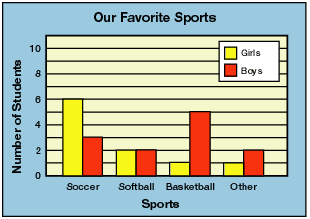
Title

Category Label

Categories

**I can use the information on picture and bar graphs to solve one and two-step problems.**

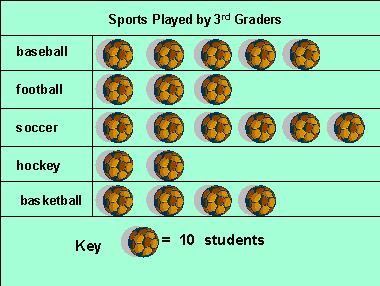
**CCGPS3.MD.3**

****

What interval was used for this scale?

How many girls like soccer?

How many more boys than girls like basketball?

****

Find the total number of 3rd graders surveyed.

How many 3rd graders played hockey?

How many students are represented by one ball?

**I can generate measurement data by length using a ruler marked with halves and fourths of an inch.**

**and**

**I can show the data on a line plot graph.**

**CCGPS3.MD.4**

****

How many total objects were measured?

How many objects measured more than 1 ½ inches?

How many objects measured 2 inches?

**I recognize area as an attribute of plane figures and understand area measurement.**

1 square unit

4

4

**CCGPS3.MD.5a,b**

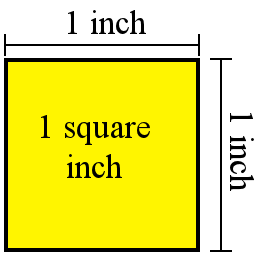
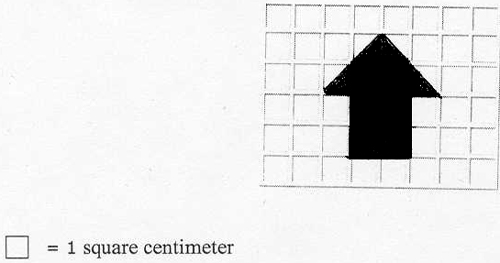
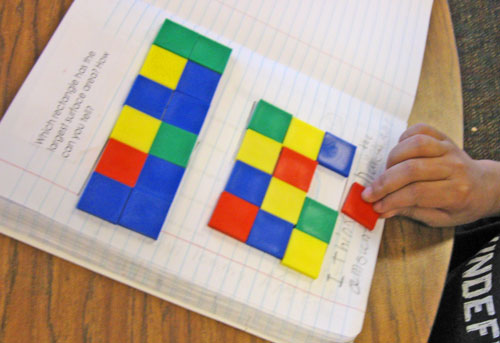
**Area = 16 square units**

8

2

**Area = 16 square units**

**I can measure area by counting unit squares in metric, customary, or non-standard units.**

**CCGPS3.MD.6**

**I can relate area to the operations of multiplication and addition.**

**CCGPS3.MD.7a,b,c,d**

**To find the area……Count the squares or multiply 4 x 4 =16.**

|  |
| --- |
| **Drew wants to tile the bathroom floor using 1 foot tiles. How many square foot tiles will he need?**  **Use the distributive property to find the area.**    **5 x 6 = 30 and 2 x 6 = 12**  **30 + 12 = 42**  **6 feet**  **8 feet**  **8x6 = 48** |

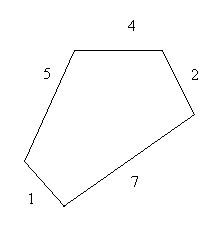
****

|  |  |
| --- | --- |
| **LINEAR Measurement**  **Measuring length**  **-inches**  **-centimeters**  **-yards**  **-meters**  **-feet** | **AREA**  **Measurement**  **Measuring square units**  **-square centimeters**  **-square inches** |

**I can solve problems involving the perimeters of polygons.**

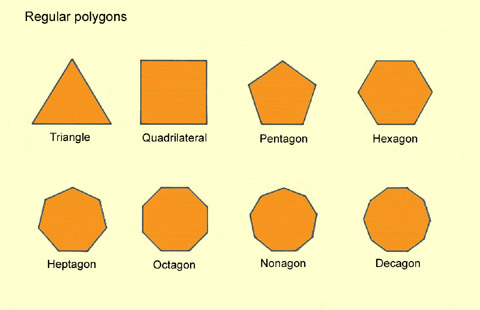
**Perimeter**

**The distance around a shape**



**Polygon**

**A flat shape with closed straight sides**



**CCGPS3.MD.8**

**I recognize shapes occur in different categories based on attributes.**

**CCGPS3.G.1**

|  |
| --- |
| **Quadrilateral**  **A closed, flat shape with four straight sides**  http://euler.slu.edu/escher/upload/thumb/6/68/Quadrilaterals.svg/300px-Quadrilaterals.svg.png |
| **Parallelogram**  **A quadrilateral that has two pairs of parallel sides**  http://upload.wikimedia.org/wikipedia/commons/f/f7/Parallelogram_(PSF).pnghttp://etc.usf.edu/clipart/41700/41730/FC_Para-gram_41730_md.gif |

**I can partition shapes into parts with equal areas and express each part as a unit fraction of the whole.**

**CCGPS3.G.2**

**This figure was partitioned into four equal parts. Each part is of the total area.**

**A circle divided into halves, thirds, fourths,**

**sixths and eighths.**

