

Dear Middle School Parents and **Math Students**,

I am so looking forward to spending time with your child this year! Students will begin each class with a prayer and the reminder that “We are in the presence of God!”; therefore, students and I will be expected to act accordingly.

Students will be responsible for **attending class with**

- 1) **math text book**
- 2) **math folder** (containing **homework**, notebook, and loose leaf paper)
- 3) **pencil**

**Homework** procedure is as follows

- assigned **everyday**
- if **absent**, student must check **my web site for posted homework** or **call a friend**
- if **without homework**, students will earn **0%** and a "**BLUE**" note sent home to be signed by a **parent**
- **third** time without homework will result in **before school detention 7:30am** the following day

**Grades \*\*\***

- homework, class participation, quiz (**every Friday**)
- January Exam (covering Sept.- Jan. material – **double weighted**)
  - **6<sup>th</sup> – Jan. 13& 14**    **7<sup>th</sup> – Jan. 7 & 8**    **8<sup>th</sup> – Jan. 14 & 15**
- June Exam (covering Sept. – June material) – use **Math Folder, NOTEBOOK & web pages** for **STUDY GUIDE**
- Any grade earned lower than 80% student must correctly “**Re-Do**” to raise grade **but** this must be attached to original graded paper and put into the Re-Do file the **very next morning by 8:30am.** All work must be shown for each corrected problem; no work = no credit. This is their responsibility; I will not remind or ask for Re-Dos.

**Extra Help**

- **every morning 7:50-8:15**
- **after school by prior appointment**

\*If you need to talk to me for any reason please call the office at 433-6422, or write me a note delivered by your student **before homeroom** or e-mail me at [\*\*bauermj@desalecatholicsschool.org\*\*](mailto:bauermj@desalecatholicsschool.org)

**Thank you,**  
Mary Jo Bauer

---

**\*\*\*Progress Reports –Students will be given a report once a month. They must return it with a parent’s signature the very next math class. Students should make sure any missing work would be also handed in at that time.** Progress reports will be given on the following dates:

**Sept. 29    Oct.13    Oct. 29    Nov. 30    Dec. 21    Jan. 21    March 1    March 29**  
**April 29    June 1**

## M A T H H O M E W O R K

<https://www.pearsonsuccessnet.com/> user name-mjbauer password-maryjo  
click on student center under your book/then plug page # at top/enter  
(6<sup>th</sup>-blue book1 7<sup>th</sup>-green book2 8<sup>th</sup> -Pre-Algebra or Book3 RED)

Monday June 7

6<sup>th</sup> p242 #17-23

7<sup>th</sup> 7D Juliana 7C= Zack S.

8<sup>th</sup> 8C JJ 8D Chelsea

Tuesday June 8

6<sup>th</sup> - p281 #3-12

7<sup>th</sup> - 7D=Colin 7C=Bella

8<sup>th</sup> - 8C=Travis 8D=Chris

Wednesday June 9 9:40 Mass- All Math books will be collected today!

6<sup>th</sup> - All classes

7<sup>th</sup> - print web page notes

8<sup>th</sup> - start making flash cards

Thursday June 10

6<sup>th</sup> - All classes

7<sup>th</sup> - study Math notes

8<sup>th</sup> - for exam

Friday June 11 \$1 dress down for FANA

6<sup>th</sup> - hand out Computer

7<sup>th</sup> - hand out off

8<sup>th</sup> - hand out

Enjoy your wkend!! Exams start Tues. June 15<sup>th</sup> Please Study!!!

# M A T H

## Memorize - Attack - Technique - Habits!!!

Dear Math Students,

Please enjoy, but more importantly use the following helps to reach your highest potential in math this year!!!

### PERCENTS

*To the tune of "When You're Happy..."*

Always put % over 100,

Reduce, now you have a fraction!

Use Michael's rule to find a decimal-I-I-I

Move 2 places right for % (snap-snap!)

\*Michael's Rule -the numerator of a fraction drops down into the division house and the denominator becomes the divisor!!!

**Change % to a decimal:** Move 2 places LEFT from % (remove % replace with decimal)

**Change decimal to a %:** Move 2 places RIGHT from decimal (remove decimal replace with %)

IT IS RIGHT TO HAVE 100%

"To FIND % of any number, change % to a decimal and MULTIPLY"

% and Proportions:  $\frac{\%}{100} = \frac{\text{is (part)}}{\text{of (whole)}}$

% of Change: **First Subtract** to find the amount of  $\frac{\text{change}}{\text{original}} = \frac{X}{100}$  (cross multiply to solve)

Was this an increase or decrease?

### GRAPHS

- LINE shows change over TIME!! (line-time)
- BAR- compares
- Frequency reported 3 ways: Line Plot      Frequency Table      Histogram
- MEAN - Average
- Mode - Most **often** used data
- Median - Middle data number **AFTER** data has been written in order least to greatest
- Range - Greatest data figure minus the least figure
- Outlier-data item far apart from all data (It is so far out there that it makes the data lie-- affects the mean!!)
- Stem-and-Leaf Plots - Leaf is the **last** digit to the right; Stem is the remaining digit or digits.
- Circle - to find % =  $\frac{X}{360} = \frac{\text{part}}{\text{whole}}$       to find degrees  $X = \frac{\text{part}}{\text{whole}} \times 360$

## Common Fraction---Decimal-----%

$$1/2 = .5 = 50\%$$

$$1/8 = .125 = 12.5\%$$

$$1/20 = .05 = 5\%$$

$$3/8 = .375 = 37.5\%$$

$$1/25 = .04 = 4\%$$

$$1/3 = \overline{.3} = 33.\overline{3}\%$$

$$5/8 = .625 = 62.5\%$$

$$1/50 = .02 = 2\%$$

$$2/3 = .\overline{6} = 66.\overline{6}\%$$

$$7/8 = .875 = 87.5\%$$

$$1/100 = .01 = 1\%$$

$$1/4 = .25 = 25\%$$

$$1/6 = \overline{.16} = 16.\overline{6}\%$$

$$3/4 = .75 = 75\%$$

$$5/6 = \overline{.83} = 83.\overline{3}\%$$

$$1/5 = .2 = 20\%$$

$$1/10 = .1 = 10\%$$

$$2/5 = .4 = 40\%$$

$$3/10 = .3 = 30\%$$

$$3/5 = .6 = 60\%$$

$$7/10 = .7 = 70\%$$

$$4/5 = .8 = 80\%$$

$$9/10 = .9 = 90\%$$

## 1<sup>st</sup> 25 PERFECT SQUARES

$$1^2 = 1$$

$$13^2 = 169$$

$$2^2 = 4$$

$$14^2 = 196$$

$$3^2 = 9$$

$$15^2 = 225$$

$$4^2 = 16$$

$$16^2 = 256$$

$$5^2 = 25$$

$$17^2 = 289$$

$$6^2 = 36$$

$$18^2 = 324$$

$$7^2 = 49$$

$$19^2 = 361$$

$$8^2 = 64$$

$$20^2 = 400$$

$$9^2 = 81$$

$$21^2 = 441$$

$$10^2 = 100$$

$$22^2 = 484$$

$$11^2 = 121$$

$$23^2 = 529$$

$$12^2 = 144$$

$$24^2 = 576$$

$$25^2 = 625$$

Remember to find the  
Square root ( $\sqrt{\quad}$ ) what #  
multiplied by itself gave  
you that #--or use the  
chart but go right to left!!

## DECIMALS

- **add or subtract** - **LINE UP DECIMALS**
- **multiply** - add up all the decimal places in entire problem then move that many places in the answer, adding zeros if needed (playing jacks!)
- **divide** - **move decimal in divisor** to end of # then move that same amount right in the dividend, adding zeros if needed
- **Terminating decimal** - when dividing decimals the quotient stops (zero remainder)
- **Repeating Decimal** - when a digit or sequence of digits repeats in the quotient (**a bar is placed over the 1st repeating #**)

## EQUATIONS

An equation is an expression with a variable, #'s, and an equal sign

**Go to the side with the variable** (letter that takes the place of a number)

**"Da-Da" (side with variable) Do the opposite--inverse operation**

Why? Your **goal is to isolate the variable** to find what # it equals

## INEQUALITIES

Statements that compare TWO expressions (using  $<$ ,  $>$ , or  $\leq$ ,  $\geq$ )

- When **dividing or multiplying by a negative # REVERSE** the direction of the inequality
- **Always graph** solutions to inequalities - Explanation: "Each of the #'s on my solution graph can replace X and are (write in words your solution including the signs  $<$ ,  $>$ ,  $\leq$ ,  $\geq$ )

## INTEGERS

Like signs: **ADD**    Unlike signs: **SUBTRACT**

Take the sign of the # with the greater Absolute value

(Absolute Value is **POSITIVE** distance from zero on the # line)

$$|-5| = +5 \quad |+5| = +5$$

When **SUBTRACTING**: First **ADD** the **OPPOSITE** then use above rule!!!

**Multiplying and Dividing**: Multiply or divide normally then find the answer sign by saying:

**Like signs Positive**

**Unlike Negative !!**

—

\*only when multiplying and dividing---**add** the **negative** signs if=**even** # then ans. Is **Positive**

If=**odd** # ans. **Is Negative**

## EXPONENTS

Exponent -is a positive or negative # placed above and to the right of a quantity to express repeated multiplication. ex:  $4^3 = (4)(4)(4)=64$  or  $x^3 = (x)(x)(x)$  or  $(2/3)^3=(2/3)(2/3)(2/3)=8/27$

The Quantity is called the BASE the raised # is the POWER

**Negative Exponents** may be dropped under 1 in a fraction to remove negative sign

Ex:  $4^{-2} = 1/16$

$-4^2 = -(4 \times 4) = -16$  BUT  $(-4^2) = (-4) \times (-4) = +16$

Any Base with the power of zero =1

Any power to the base of 1=1 ex:  $1^8=1 \times 1 \times 1 \times 1 \times 1 \times 1 \times 1 \times 1=1$

So Base of 1 no matter what the exponent ALWAYS =1

BUT  $(-1)^{\text{even exponent}} = +1$   $(-1)^{\text{odd exponent}} = -1$

Whatever the exponent is touching gets raised to the power:

ex:  $2^3=(2)(2)(2)=8$   $(2+3)^2=(2+3)(2+3)=(5)(5)=25$

**Multiply** -if base is the same ---keep base **ADD** exponents

ex:  $2^5 \times 2^2 = 2^{5+2} = 2^7$

**Divide** -if base is the same----keep the base **SUBTRACT** exponents

ex:  $2^5$  divided by  $2^2 = 2^{5-2} = 2^3$

**IF Base is Different**---Simplify 1<sup>st</sup> ex:  $6^2$  divided by  $2^3 = 2^3 \times 3^2 = 8 \times 9 = 72$   
 $36$  divided by  $8 = 4.5$

If a # is taken to another power  $(4^2)^3$ ---keep original base

**Multiply** exponents---  $4^6$

**Perfect Squares**-a # that is the square( $4^2=16$ ) of a whole # is a perfect square

SQUARE ROOT( $\sqrt{\quad}$ ) of a # is another # that when multiplied by itself is = to the given #

Ex:  $\sqrt{25}=5$   $\sqrt{a^2}=a$  BUT to Simplify  $\sqrt{32}$ -find 2 factors one a perfect square

$\sqrt{16 \times 2}$  now take  $\sqrt{\quad}$  of perfect sq so= $4\sqrt{2}$

$\sqrt{24}=\sqrt{4 \times 6}=2\sqrt{6}$  to check square # outside x inside!!!

\* perfect squares are found on p.5 of web site

## FRACTIONS

To **ADD or Subtract** you need **COMMON Denominators**

HOW? Ask these key questions:

1. Can the smaller denominator divide evenly into the larger?

**If YES use the Larger**

2. Is one of the denominators **PRIME**

**If Yes Multiply together to get common denominator**

3. If all above answers are **NO -- Find LCM** (start multiplying the larger denominator until you find a product that is also a multiple of the smaller denominator)

To **Multiply or Divide** fractions you **need Improper Box** -

- To multiply try to cross reduce then multiply Numerator X Numerator  
Denominator X Denominator **ALWAYS ALWAYS ALWAYS REDUCE!!!!**
- To Divide: **Copy Multiply Flip (Reciprocal)**  
**ALWAYS ALWAYS ALWAYS REDUCE!!!!**

## RATIONAL VS. IRRATIONAL NUMBERS

**Rational:** may be written in the form of  $a/b$  (fraction) this includes terminating decimals, repeating decimals and square roots of perfect squares, and %

*Hint: First 25 perfect squares would be a great tool to memorize p3 web site*

**Irrational:**

- **doesn't repeat** or terminate
- the square root of any # that is **not** a perfect square

## GEOMETRY

**Angles:**

- ACUTE "so cute"  $< 90^\circ$
- RIGHT =  $90^\circ$
- OBTUSE  $> 90^\circ < 180^\circ$
- STRAIGHT =  $180^\circ$

2 angles with a **sum of  $90^\circ$  are Complementary**

2 angles with **a sum of  $180^\circ$  are Supplementary**

**Triangles:**

- Scalene= no congruent (=) sides
- Isosceles= 2 congruent (=) sides
- Equilateral = 3 congruent (=) sides
- Right Triangle = 1 right angle
- Acute Triangle = 3 acute angles
- Obtuse Triangle = 1 obtuse angle

180 degrees in every triangle so.....

(to the tune of "Are You Sleeping?")

Given 2 ANGLES of a triangle,

Want the 3<sup>rd</sup>?

Want the 3<sup>rd</sup>?

Add them both together,

Subtract from 180,

Boombala!

You found the 3<sup>rd</sup>!

**BUT**

Given 2 LENGTHS of a triangle,

Want the 3<sup>rd</sup>?

Want the 3<sup>rd</sup>?

Use Pythagorean Theorem,

$$a^2 + b^2 = c^2$$

Hypotenuse is C side,

Opposite Right angle,

Find the square root!

Total degrees in any polygon =  $(n-2)180^\circ$  (where n = the number of sides in the polygon)

Perimeter: distance around a figure  $s$ =side

$$P=s+s+s+s \text{ (depending on how many sides the figure has)}$$

Circumference: distance around a circle

$$C=\pi D \text{ (D = diameter or } 2 \times \text{radius)}$$

Area: number of square units inside a figure (\*answer must be labeled "square units")

- Rectangle (Quadrilateral)  $A=bh$  (b=base h=height)

Hint: Put your finger on the Right angle & you will be on the height & the base

- Triangle  $A = \frac{1}{2} bh$

Hint: every triangle = 1/2 of a quadrilateral (4 sided polygon)

- Square  $A= s^2$

- Trapezoid  $A= \frac{1}{2} (b_1+ b_2)h$

- Circle  $A= \pi r^2$  (r=radius) leave in terms of  $\pi$  unless stated (use  $\pi$  key on calculator or = 3.14)

Volume: # of cubic units needed to fill inside a figure (\*answer must be labeled "cubic units")

$$V=lwh$$

For 3 dimensional figures

- Prism (surface area)  $SA = 2(bh)+2(bh)+2(bh)$

$$V = lwh$$

- Cylinder (surface area)  $SA= 2\pi r^2 + \pi Dh$

(where D=diameter, h=height and r=radius)

$$V= \pi r^2 h$$

(where r=radius and h=height)

## TRANSVERSAL

A line that intersects two co-planar lines in different points

Types of angles formed by a transversal:

- Adjacent - next to each other and their sum =  $180^\circ$

- Vertical -across from each other and they are equal

- Alternate interior - inside angles on opposite side of transversal and they are equal

- Corresponding -never adjacent-inside & outside on the same side of the transversal are equal

Hint: if Transversal is cut in half, angles would match up

## GRAPHING

Ordered pairs (x, y)

- x on horizontal axis -- goes right or left Look Right or Left then Shoot!
- y on vertical axis -- goes up or down

**Four Quadrants** - must be written in Roman numerals

- I - top right hand
- II - top left hand
- III - bottom left hand
- IV - bottom right hand

**Linear Equation**  $y = mx + b$  (where  $m$ =slope and  $b$ =y intercept)

- **Slope** =  $\frac{\text{change in } y}{\text{change in } x} = \frac{\text{rise}}{\text{run}}$

## TRANSFORMATIONS

- **Translation:** Slide *Hint: x's move right (+) to left(-), y's move up (+) then down (-)*
- **Reflection:** reflected (flip) *Hint: the axis you reflect over stays the same, the other negates*
- **Rotation:** turn
  - $360^\circ$  - stays the same
  - $180^\circ$  - both negate
  - $90^\circ$  - first negate y, then x and y change places
  - $270^\circ$  - first negate x, then x and y change places

## POLYNOMIALS

One term or the sum or difference of two or more terms *Hint: terms are separated by a + or -*

- **Adding:** combine terms Terms are separated with + or - sign
- **Subtracting:** negate all signs after the subtraction sign
- **Multiplying:** Multiply co-efficient and use properties of exponents  
FOIL (First Outer Inner Last) or set up like a (normal) vertical multiplication problem
- **Factor:** find GCF and pull it out!

## PROBABILITY

The chance of a favorable outcome

If you see the word "or" then **ADD** *Hint: "add the oar" to the row boat*

If you see the word/symbol "and" "then" ":" then you should **MULTIPLY**

**HUGE TIP FOR SUCCESS:** Memorize your common fractions to decimals chart(p4 web site)

Enjoy Math and Learn from your mistakes!!!

Teaching Project----Written **Plan and POSTER- are due**

You will be given 2 grades = written and teaching

Written grade =format (you have included all parts ex: material, procedure etc) = +10%  
2 typed copies = +10%  
Content (you have correct math concepts and computations = +70%  
Quiz ans. are included and evaluation (which is done after teaching)=+10%  
-----  
100%

Teaching grade = poster (correct info clearly displayed) = +10%  
Presentation (strong voice, clear instruction, creativity) = +30%  
Content (comprehension of math concepts, able to ans. questions =60%  
-----  
100%

- **You must be present to teach the day you are assigned!** If you are sick you must call me 433-6422 ext #423 and leave a message before 7:30 am the morning you will teach—know you will be forcing your friend who is scheduled the next day to take your place a day early \*\*\*you must then teach the next day in your friend’s spot. **Failure to call = a grade of 0% and you must still teach the next day**

Written format: Name                      Date (date you will teach)

**Sections** (List each Chapter and sections and name) ex: 3-4 Graphing  
3-5 Translation  
3-6 Reflection

**Materials** - List anything you would need (overhead, chalkboard, crayons, whatever you need to teach your lesson)

**Procedure** - This is where **I get your content grade** so in bullet form list what you will say - must include any examples/definitions you will use, any board questions you might use, any games and or songs. When you switch to a new section simply note that by printing the chapter and section and then continue to bulletin your procedure. **You must also include what your poster looks like and says.** Use **only one large poster** board but divide into equal parts according to the # of sections you will teach (you may also use the back - this will be a great aid for you the day you teach!)

**Quiz** - You must have at least a total of 10 questions (at least one from each section). Page # , # of questions and **answers (previously** copied from my teacher’s edition)

**HW** - please write page and # of questions (total=10) but do not need the answers \*\*

**Evaluation** - 1.I learned from teaching that

2. Next time I will

**Please leave room so you can fill the  
Answer to both questions in after you  
have taught your lesson**

**\*\*The day you teach, your homework is to correct your class’s quiz and then the next morning add the grades to the poster in math class. You must also correct any redos! And then adjust grades!**