Counting

Counting is the basis of all mathematical thinking.

It is important to understand both counting forward and counting backward.

At BHS, we follow this progression in counting. Once students master one level, they move to the next!

0 to 5	5 back to 0	0 to 10	Beginning and ending at different spots within 10 (example: count from 4, stopping at 8 or start at 8 and count back to 3)
0 to 20	20 back to 0	Beginning and ending at different spots within 20	0 to 30
30 back to 0	Beginning and ending at different spots within 30	Counting by 5's to 30	0 to 50
50 back to 0	Beginning and ending at different spots within 50	Counting by 5's to 50	Counting by 10's to 50
Counting by 2's to 50 (even numbers) 0, 2, 4, 6... Then back! 50, 48, 46...	Counting by 2's to 50 (odd numbers) 1, 3, 5, 7... Then back! 49, 47, 45...	0 to 100	100 back to 0
Beginning and ending at different spots within 100	Counting by 5's to 100	Counting by 10's to 100	Counting by 10's to 100 but with different starting points (example: 6, 16, 26...)
Counting by 2's to 100 (even) and back	Counting by 2's (odd) and back	Counting coins (5 cent and 10 cent)	Using counting to problem solve
Counting by 25	Counting by 3's	Counting by 4's	

Mental Math

WHAT IS IT? WHY DO WE LEARN IT?

- It's the math we "do in our head."
- It's a faster way to understand math concepts.
- It builds confidence!

1 MORE AND 1 LESS

What is one more than {a number}.
What is one less than {a number}.
How do you know?

SUBITIZING

When you instantly see 'how many.'

7

2 MORE AND 2 LESS

What is two more than {a number}.
What is two less than {a number}.
How do you know?

FRIENDS OF 10

also known as 'magic 10 facts' or 'making 10'

0+10	10+0
1+9	9+0
2+8	8+2
3+7	7+3
4+6	6+4
5+5	

FACTS WITH ZERO

What happens when you add or subtract 0?
8+0=8
4-0=4

PROBLEM SOLVING

Use these strategies to solve word problems in school or real life problems in the world!

We DO use math everyday!

DOUBLES

1+1=2	6+6=12
2+2=4	7+7=14
3+3=6	8+8=16
4+4=8	9+9=18
5+5=10	10+10=20

10 AND SOME MORE

What happens when you add on to 10? What happens when you subtract 10 from a number?

10+6=16
It's a group of 10 and 6 more!
12-10=2
Take the 10 away, there's 2 left!

BRIDGING UP AND DOWN THROUGH 10

When you use your knowledge of 10 to add on.

8+4=___
8+2=10, so 8+4= 12

16-7=___
16-6=10, so 16-7=9

RELATING FACTS

When you use more than one mental math strategy or apply it to a larger number.

TWO EXAMPLES:
3+2=5, so I know that 13+2=15, and 33+2=35
Doubles plus/minus one: I know that 6+6=12, so 6+5=11 and 6+7=13

Mental Math Strategies

Distributive Property

(appropriate for ALL FOUR operations)

Purpose: to partition one (or both) of the numbers involved into friendlier parts with which to work

When to use: when other strategies don't immediately appear more efficient, and when there is minimal regrouping

****CAUTION:** It is common, following the partitioning, that parts of the number get forgotten

Grade 3	**123 + 146** (think 120 + 140 and 3 + 6) = 269 **123 + 146** (think 123 + 100 + 40 + 6) = 269 **146 – 33** (think 146 – 30 – 3 OR 140 – 30 and 6 – 3 = 113) **3 x 4** (think of 3 as 2 and 1): 2 x 4 + 1 x 4 = 8 + 4= 12
Grade 4	**2.3 + 4.6** (think 2 + 4 and 0.3 + 0.6) = 6.9 **4.64 - 3.33** (think 4 - 3 and 0.64 - 0.33) = 1.31 No regrouping **6 x 8** (think of 6 as 5 and 1): 5 x 8 + 1 x 8 = 40 + 8 =48 **5 x 23** (think 5 x 20 and 5 x 3) = 115 **36 ÷ 5** (think of 36 as 30 and 5 and 1: 30 ÷ 5, 5 ÷ 5, 1 ÷ 5) = 7 R1
Grade 5	**8 x 53** (think of 53 as 50 and 3): 8 x 50 and 3 x 3: 400 + 9 = 409 **636 ÷ 6** (think of 636 as 600 +36: 600 ÷ 6 and 36 ÷ 6): 100 + 6 = 106 **Continue practicing this strategy with adding and subtracting whole numbers and decimals.

Front End

(appropriate for ALL FOUR operations)

Purpose: to mentally determine the answer by working from the highest place value to the lowest place value

When to use: for adding and subtracting; strategy is appropriate when there is minimal or no regrouping

****KEY:** DO NOT think of single digits; keep the value of the digits in mind

Grade 3	**23 + 46** (20 + 40 = 60) (3 + 6 = 9) = **69** **236 + 162** (200 + 100 = 300) (30 + 60 = 90) (6 + 2 = 8) = **398**	**76 – 45** (70 – 40 = 30) (6 – 5 = 1) = **31** **346 - 25** (40 – 20 = 20) (6 – 5 = 1) = **321**		
Grade 4	**2.3 + 4.6** (2 + 4 = 6) (0.3 + 0.6 = 0.9) = **6.9** **2.36 + 4.62** (2 + 4 = 6) (0.3 + 0.6 = 0.9) (0.06 + 0.02) = **6.92**	**24.6 – 3.4** (24 + 3 = 27) (0.6 + 0.4 = 1.0) = **28** **24.36 - 3.24** (24 - 3 = 21) (0.3 - 0.2 = 0.1) (0.06 - 0.04 = 0.02) = **21.12**	**4 x 36** (4 x 30 = 120) (4 x 6 = 24) = **144**	**45 ÷ 6** (think of 45 as 30 +12+3) (30 ÷ 6 = 5) (12 ÷ 6 = 2) remainder 3 =**7R3**
Grade 5	**2.368 + 15.431** (2 + 15, 0.3 +0.4, 0.06+0.03, 0.008+ 0.001) = **17.799**	**82.897 - 61.542** (82-61, 0.8-0.5, 0.09 – 0.04, 0.007 – 0.002 = **21.355**	**37 x 8** (30 x 8 = 240) (7 x 8 = 56) = **296**	**636 ÷ 6** (600 ÷ 6 = 100) (36 ÷ 6 = 6) =**106**

Compensation

ADDITION, SUBTRACTION, and MULTIPLICATION

Purpose: to turn ONE of the numbers involved into an easier/friendlier number to work with

When to use: when one of the numbers is very near an 'easy/friendly' number.

****KEY:** MUST remember to adjust final answer to compensate for initial change made to question

Grade 3	**36 + 28** (add on 30 not 28): **36 + 30 = 66** (now subtract 2):**66 - 2 = 64** **36 – 28** (subtract 30 instead):**36 – 30 = 6** (now add 2 'back on'): **6 + 2 = 8** **198 + 236** (use 200 instead): **200 + 236 = 436** (now remove 2): **436 – 2 = 434** **236 – 197** (use 200 instead): **236 – 200 = 36** (add 3 'back on'): **36 + 3 = 39**
Grade 4	**9 x 4** (think 10 groups of 4): **10 x 4 = 40** (less 1 group of 4): **40 – 4 = 36** **4 x 39** (think 4 groups of 40): **4 x 40 = 160** (less the extra 4): **160 – 4 = 156** **1.98 + 2.99** (add 0.02 to 1.98): **2 + 2.99 = 4.99** (less 0.02): **4.99– 0.02 = 4.97** **3.00 – 1.98** (add 0.02 to 1.98): **3.00 – 2 = 1** (add 'back' 0.02): **1 + 0.02 = 1.02** *Continue to practice this strategy with addition and subtraction of whole numbers.
Grade 5	**29 x 15** (think 30 sets of 15): **30 x 15 = 450** (less one set): **450 – 15 = 435** **3.564 – 1.998** (add 0.002 to 1.998): **3.564 – 2 = 1.564** (add 0.002 to compensate for initial change made to subtrahend): **1.564 + 0.002 = 1.566** *Continue to practice this strategy with addition and subtraction of whole numbers.

Bridging Through Tens/ Making Ten
Counting up/down Through Tens
ADDITION and SUBTRACTION ONLY

Purpose: to utilize familiar benchmarks to support mental computations
When to use: when no other addition or subtraction strategy immediately appears more efficient

Grade 3	Say the number sequence forward and backward from 0-1000 by: 5s, 10s, or 100s... -Continue to use this mental math strategy for basic facts **84 – 28** Think: 84 – 4 = 80, less 20 is 60, less 4 is 56 **34 + 28** Think: 28 + 2 is 30, plus 30 is 60, and 2 more is 62 OR: think of the question as 40 + 22 = 62 **693 + 248** Think: 7 more is 700, 200 more is 900, 41 more is 941. OR: think of the question as: 700 + 241
Grade 4	**4.6 + 7. 9** Think: 7.9 + 0.1 = 8, add on 4.5 to get 12.5 OR: think of the question as 4.5 + 8 = 12.5 **16.99 – 5.03** Think: 5.03 plus 0.97 equals 6, plus 11 more is 17, less 0.01) = 0.97 + 11 – 0.01 = 11.96
Grade 5	**56. 99 + 32.8** Think of the question as: 57 + 32.79 = 89.79 OR: 33 + 56.79 = 89.79

Constant Difference/ Balancing Strategy
SUBTRACTION ONLY

Purpose: 1) to turn the subtrahend into an easier/"friendlier" number OR
2) to change the minuend so that 'regrouping' is avoided.

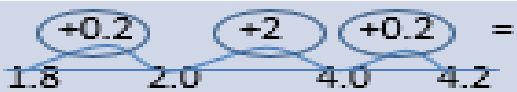
When to use: 1) when the subtrahend is very near a 'friendly ten' or a whole number (when working with decimals and fractions) OR 2) when regrouping is required and the minuend can easily be changed so that regrouping is no longer necessary

Grade 3	**333 – 199** (add 1 to each number) **334 – 200 =134** **500 – 285** (subtract 1 from each number): **499 - 284 = 215**
Grade 4	**4.2 – 1.8** (add 0.2 to each number) **4.4 – 2 = 2.4** **5.63 – 3.99** (add 0.01 to each number) **5.64 – 4.00 = 1.64** **6 – 2.38** (subtract 0.01 from each number) **5.99 – 2.37 = 3.62** **4.2 – 1.8** (subtract 0.3 from each number) **3.9 – 1.5 = 2.4**
Grade 5	**4.358 – 2.999** (add 0.001 to each number) **4.359 – 3 = 1.359** **8.004 – 3.785** (subtract 0.005 from each number) **7.999 – 3.780 = 4.219**

Thinking Addition –
SUBTRACTION ONLY

Purpose: to use more familiar addition facts/strategies to solve subtraction questions

When to use: when no other strategy appears more efficient for the numbers involved

Grade 3	**333- 129** 
Grade 4	4.2 – 1.8  OR:  $6.00 - $2.38 
Grade 5	Continue to practice strategy with whole numbers and decimals to thousandths.

Doubling/Halving
Repeated Doubling/Halving
MULTIPLICATION ONLY

Double/Double
Halving/Halving
DIVISION ONLY

Purpose: *to change the numbers in a question to those which can be dealt with mentally (ie: make one number a 'decade number', or turn the numbers into those of a known fact)*

When to use: *particularly useful when one number has a 5 in the ones place, and doubling will create a decade number, or when working with fractions and decimals and one number has one half or five tenths as part of it. (doubling this will create a whole number...much easier to work with)*

***NOTE: these strategies can be generalized to tripling, etc.*

Grades 1 to 3	Describe and apply mental math strategies such as doubles for the basic addition and subtraction facts to 18.	
Grade 4	Describe and apply mental math strategies such as using doubling or halving; using repeated doubling to determine basic multiplication facts to 9 x 9 and related division facts. **6 x 35** (half the 6, double the 35) **3 x 70 = 210**	**48 ÷ 8** (half each number): **24 ÷ 4** (half each again): **12 ÷ 2 = 6**
Grade 5	**15 x 16** (double the 15, half the 16) **30 x 8 = 240** **25 x 32** (double the 25, half the 32) **50 x 16** (repeat doubling/halving) **100 x 8 = 800**	

Numbers 1–120

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

What are the vowel teams for each long vowel team?

ā

ai
pain. snail

ay
play, day

a_e
game, snake

rule breakers

eigh
sleigh, eight

ei
rein, skein

ea
great

ey
they

ē

ee
keep, see

ea
eat, please

e_e
theme, eve

ey
key, money

rule breakers

y
baby, party

e
she, me

ie
cookie

ī

ie
tie, pie

igh
high, light

i_e
smile, time

rule breakers

y
my, try, cry

ō

oa
boat, loaf

oe
toe, poem

o_e
bone, stove

rule breakers

ow
show, know

o
go, no, so

ū

u_e
mule, cute

/oo/

ui
juice, suit

ue
glue, true

ou
you

ew
new, grew

oo
cool, moo

Prefixes

retry	**mis**understood
disagree	**un**real
recount	**un**equal
distrust	**re**read
mishandle	**mis**place

Suffixes

quick**ly**	smart**est**
like**able**	joy**ful**
sad**ness**	harm**less**
ambiti**ous**	move**ment**
action	horri**ble**

SIGHT WORDS

Kindergarten				
the	is	it	he	or
see	can	by	with	for
and	an	my	have	on
to	look	play	me	as
like	I	a	be	has
in	man	you	we	they
Grade 1				
are	not	all	do	some
his	this	no	us	because
at	but	am	up	so
that	of	go	day	here
from	said	her	saw	very
had	she	was	if	two
than	what	into	asked	over	there	don't
one	when	mother	back	now	before	would
did	who	get	how	about	make	too
him	just	went	going	after	were	could
I'm	will	come	then	out	came	where
little	big	them	your	our	away	put

By the end of Grade 2, students should be able to identify quickly and spell all 103 words.

WORD FAMILIES

Kindergarten Word Families			
Word Family	**Word (Read)**	**Read the sentence**	**Spelling (Dictated sentence)**
in	fin	1. The fish has a fin.	
it	hit	2. I hit the ball hard.	
at	cat	3. I see a black cat.	
an	pan	4. The pan was hot.	
ap	lap	5. The dog sat on my lap.	
op	top	6. I can spin the top.	
ot	cot	7. The cat had a nap on the cot.	
ip	hip	8. I hurt my hip.	
ug	hug		
ing	king		

Grade One Word Families			
Word Family	**Word (Read)**	**Read the sentence**	**Spelling (Dictated sentence)**
all	tall	1. The man is tall.	
ill	bill	2. I have a five-dollar bill.	
ell	bell	3. He ran the bell.	
est	nest	4. The blue bird is in the nest.	
ick	sick	5. The little girl was sick.	
ock	block	6. He rode the bike around the block.	
ack	snack	7. Can I have an orange for a snack.	
uck	duck	8. The duck is swimming in the pond.	
ight	fight	9. The cat and dog had a fight.	
ate	date	10. Write the date on the paper.	
ide	slide		

Grade Two Word Families			
Word Family	**Word (Read)**	**Read the sentence**	**Spelling (Dictated sentence)**
ump	slump	1. Please don't slump in your chair.	
ash	trash	2. Take out the trash tonight.	
ice	mice	3. I saw three mice.	
ame	tame	4. The brown horse is hard to tame.	
ale	tale	5. The dog hurt his tale.	
ake	make	6. I like to make cookies.	
oke	joke	7. Do you want to hear a knock, knock joke?	
ate	late	8. Don't be late for lunch!	
ine	line	9. Please write your name on the line.	
ain	train	10. I like the red train.	
eat	seat	11. Please sit in your seat.	
ay	pay	12. Tomorrow is pay day.	
ore	chore	13. Did you remember to do you chore?	
unk	trunk	14. Put the box in the trunk.	
ink	stink	15. My feet stink!	
ank	plank	16. Can you walk the plank?	
aw	raw		

READING COMPREHENSION

HOW TO HELP YOUR CHILD UNDERSTAND WHAT THEY READ

Literal

- Find a part that tells about _____.
- What happened at the beginning/middle/end of the story?
- Who was in the story? Where did it take place?
- What problem did ____ (name of character) have? How did he/she solve it?
- What are the most important things to remember about _____ (this book/topic)?
- What facts did you learn from this book?

Inferential

- _____ (name of character) is very happy in this story but it doesn't say that. How can you tell he/she is happy?
- After reading this book, why do you think someone might want to be a (name occupation of character)?
- How are the characters the same? How are they different?
- Tell me what _____ (word from book) means. How did you know?
- What does the title tell you about this story?
- Look at this photograph. What does it tell you?
- Why do you think this (point to word in book) is written in such big, black letters? Is the character speaking in a quiet voice or a loud voice?

Persoanl/Critical

- Has anything like this ever happened to you? Could this ever happen to you? Why or why not?
- What would you say if you were the character in this book?
- What did you already know about _____(topic)? What did you
- learn that was new?
- Did you like this book? Why or why not?
- Show me your favourite picture. Why is it your favourite?
- Is this a story or an information book? How can you tell?
- Why might someone want to write an information book about _____ (topic)?

If your child struggles with comprehension, try ...

- Making mental pictures of what is happening
- Backing up and rereading from the spot where they lost track of what was happening
- Asking questions as they read
- Making connections between the book and their own life
- Thinking about what they already know to help them understand what is happening
- Predicting what will happen next and revising guesses as they go along
- Thinking about literary elements: genre, plot, character, setting, problem/resolution
- Learning how to read non-fiction text by using the table of contents, index, headings and captions
- Understanding different characters' point of views
- Increasing vocabulary
- Recognizing characteristics of different authors
- Retelling what happened in the beginning, middle and end
- Asking "Would I recommend this book to a friend? Why?"
- Thinking about how characters changed from the beginning of the book to the end and why
- Using nonfiction text to do research