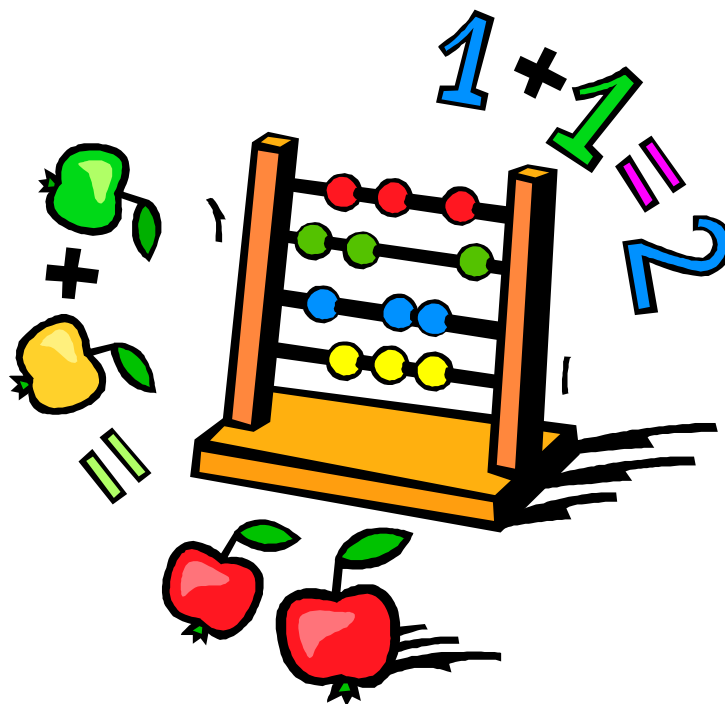


End of Grade 3 I.R.P.

# Beginning of Grade 4

## Diagnostic Math Assessment

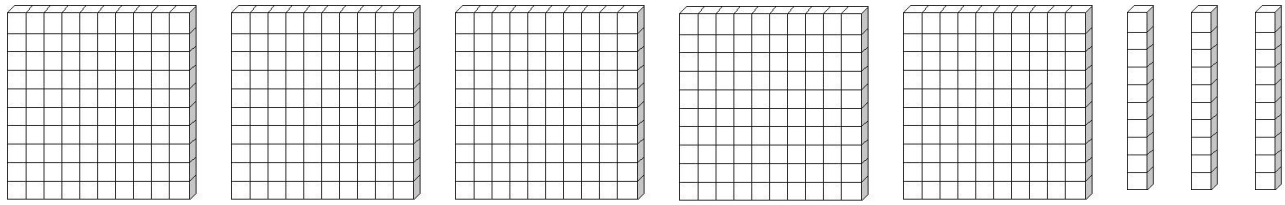
Last updated: February 5, 2008



WNCP  
Edition

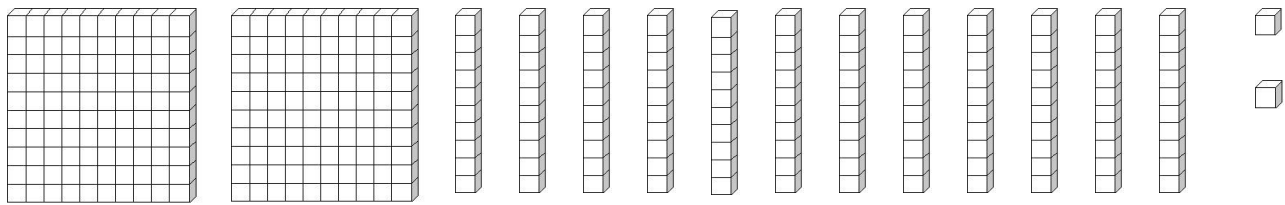


1) What number is shown by the blocks?



- A 35
- B 53
- C 503
- D 530

2) What number is shown by the blocks?



- A 16
- B 222
- C 322
- D 342

3) What is the value of the underlined digit?

986

- A Eight
- B Eighty
- C Eighty-six
- D Eight hundred

4) Which set of numbers are ordered from **greatest** to **least**?

A 605, 709, 711, 714

B 605, 714, 711, 709

C 714, 711, 605, 709

D 714, 711, 709, 605

5) Which picture shows  $\frac{2}{5}$  of the animals are dogs?



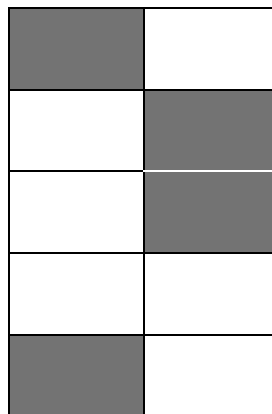
6) Which fraction of the shape is shaded?

A  $\frac{10}{10}$

B  $\frac{6}{10}$

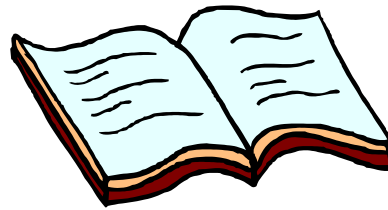
C  $\frac{4}{6}$

D  $\frac{4}{10}$



7) Timmy was on page 257.  
Then he read 36 more pages.  
How many pages did Timmy read in all?

- A 221
- B 283
- C 293
- D 2813



8) Bob had 43 hockey cards.  
Grant had 49 hockey cards.  
**About** how many do they have together?

- A 100
- B 90
- C 80
- D 70

9) Donna got a new bag of 200 marbles.  
She now has 638 marbles.  
How many did she start with?

- A 338
- B 438
- C 538
- D 838

10) In Lisa's garden, there are five rows of tomato plants.  
There are four plants in each row.  
How many plants are there in all?

- A 15
- B 20
- C 25
- D 30

11) A hockey team has 6 children on each team.  
How many teams can be made with 30 children?

- A 5
- B 6
- C 24
- D 36



12) If the pattern continues, what are the next three numbers?

375, 400, 425, \_\_, \_\_, \_\_

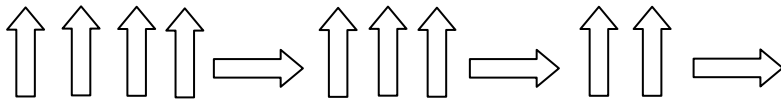
- A 450, 475, 500
- B 450, 525, 550
- C 400, 375, 350
- D 500, 575, 650

13) If the pattern continues, what number comes next?

9, 13, 17, 21, \_\_\_

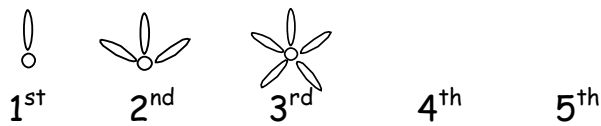
- A 22
- B 24
- C 25
- D 29

14) What symbol comes next in the pattern?



- A
- B
- C
- D

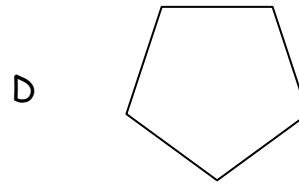
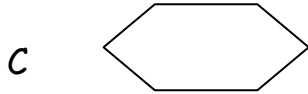
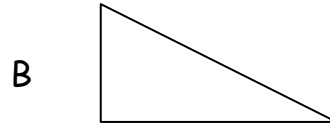
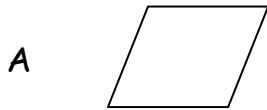
15) How many petals will be on the 5<sup>th</sup> flower?



- A 7
- B 8
- C 9
- D 10

Flower	Petals
1 <sup>st</sup>	1
2 <sup>nd</sup>	3
3 <sup>rd</sup>	5
4 <sup>th</sup>	
5 <sup>th</sup>	?

16) Which shape is a pentagon?



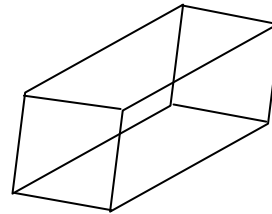
17) How many faces are on a rectangular prism?

A 2

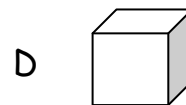
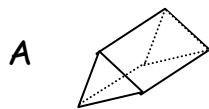
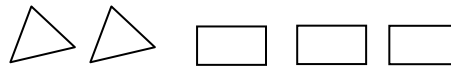
B 4

C 6

D 8



18) Which solid has these faces?



19) Which is the best unit to measure the length of a pencil?

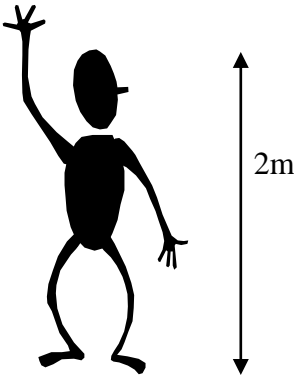
- A Millimetre
- B Centimetre
- C Metre
- D Kilometre



20) Steve's dad is 2m tall.

What is his height in centimetres?

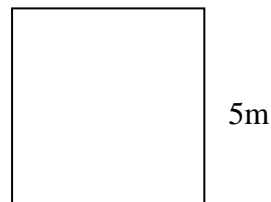
- A 20 cm
- B 200 cm
- C 1000 cm
- D 2000 cm



21) One side of the square is 5m.

What is the perimeter (distance around the square)?

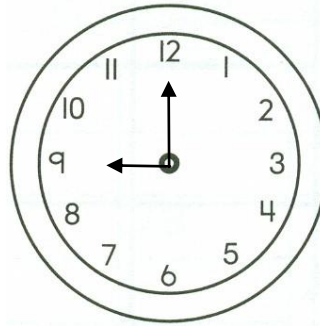
- A 10m
- B 15m
- C 20m
- D 25m





22) School starts at 9:00 a.m.  
Recess begins 90 minutes later.  
What time does recess begin?

- A 9:30 am
- B 10:00 am
- C 10:30 am
- D 11:00 am



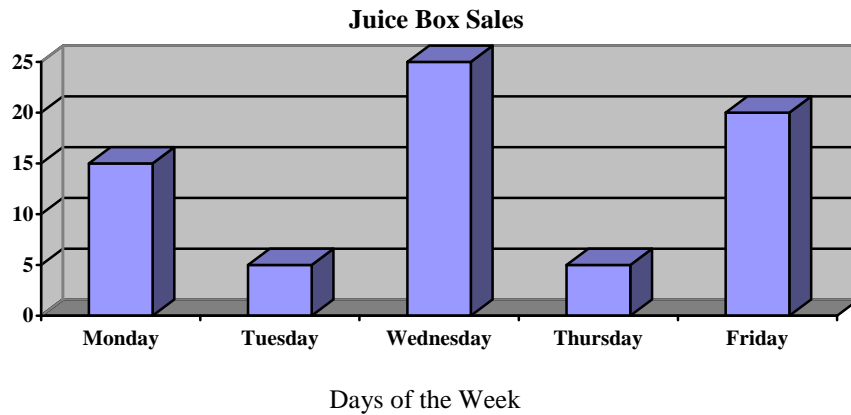
23) Bill has 90 cents.  
He bought a notebook for 15 cents.  
How much money does he have left?

- A 15 cents
- B 75 cents
- C 90 cents
- D 105 cents



24) How many more juice boxes were sold on Friday than on Monday?

- A 20
- B 15
- C 10
- D 5



25) Favourite colour in a grade 4 class.

Blue     + + + +     + + + +

Green    | |

Orange   + + + +     |

Red       | | |

Purple    + + + +     |

How many more students liked Blue than Red?

A 3

B 7

C 10

D 13

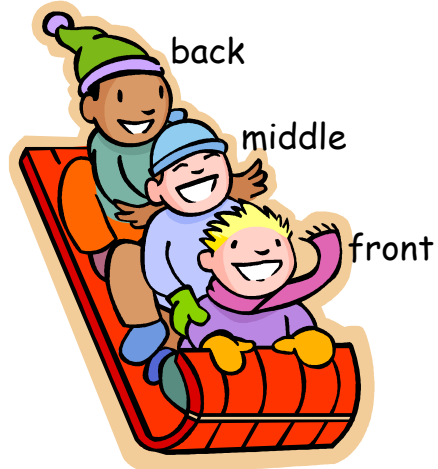
■ End of Multiple Choice Questions ■

## Problem Solving - Written Response

26) Three boys, Rick, Paul, and George, can sit on a sled.

- One boy is in the front
- One boy is in the middle
- One boy is in the back

Show all the possible ways they can sit on the sled by changing seats.  
Please show all your work.



27) Alex had 80 cards.

- He gave 20 to Ravi
- He gave  $\frac{1}{2}$  of the remaining cards to Susan.

How many cards did he give Susan?

Show your work.

**BASIC MATH COMPUTATION from Grade 3****Show all your work**

$27 + 32 =$	$54 - 31 =$	$38 + 27 =$	$85 - 20 =$
$137 + 240 =$	$42 - 18 =$	$286 + 175 =$	$3 \times 0 =$
$3 \times 4 =$	$5 \times 5 =$	$10 \div 2 =$	$18 \div 3 =$
$5 \times 2 =$	$7 + \underline{\quad} = 13$	$8 + 2 + \underline{\quad} = 14$	$23 + 14 + 32 =$

## Answer Key

### Strand

1. D (Number) Base Ten Blocks
2. C (Number) Base Ten Blocks
3. B (Number) Place Value
4. D (Number) Ordering
5. A (Number) Fractions
6. D (Number) Fractions
7. C (Number) Operations
8. B (Number) Estimation
9. B (Number) Operations
10. B (Number) Operations
11. A (Number) Operations
12. A (Patterns and Relationships)
13. C (Patterns and Relationships)

### Strand

14. B (Patterns and Relationships)
15. C (Patterns and Relationships)
16. D (Shape and Space) Polygons
17. C (Shape and Space) Solids
18. A (Shape and Space) Solids
19. B (Shape and Space) Units of Measurement
20. B (Shape and Space) Measurement
21. C (Shape and Space) Measurement
22. C (Shape and Space) Time
23. B (Number) Operations - Money
24. D (Statistics and Probability) Bar Graph
25. B (Statistics and Probability) Data Analysis

## Open-Ended Problems

26. Six combinations.

R	P	G
R	G	P
P	G	R
P	R	G
G	P	R
G	R	P

1	2	3	4
1 combo other than the one listed in the question	2 combos	3-4 combos	5-6 combos

27. He gave 30 cards to Susan.

1	2	3	4
- A start beyond copying that shows some understanding (ie. $80 + 20$ )	- Successfully reached a sub-goal - (ie. $80-20$ )	- Appropriate strategy applied but ignored a condition (ie. Evidence of a strategy to find half of 60 may be incorrect or not far enough	- Correct answer with appropriate strategy - Could have a copy or calculation error

## Basic Math Computations

59	23	65	65
377	24	461	0
12	25	5	6
10	6	4	69

# Quick Scale: Grade 3 Numeracy

This Quick Scale is a summary of the criteria described in detail in the Rating Scale that follows. These criteria may apply at any time of the year, depending when specific skills or concepts are introduced.

Aspect	Not Yet Within Expectations	Meets Expectations (Minimal Level)	Fully Meets Expectations	Exceeds Expectations
<b>Snapshot</b>	The student may be unable to complete the task in a reasonable amount of time without one-to-one help.	The work satisfies most parts of the basic task correctly if the task resembles one recently explored in class, but work is flawed or incomplete. May need some assistance.	The student completes all parts of the basic task accurately in a familiar situation and explains the result. May need occasional consultation.	The student completes all parts of the task accurately and efficiently and explains the result; may develop an extension or alternative method.
<b>Concepts and Applications*</b> <ul style="list-style-type: none"> <li>▪ recognizing mathematics *e.g., money, measurement, chance, data)</li> <li>▪ selecting and applying concepts and skills</li> <li>▪ estimates, predictions</li> </ul>	<ul style="list-style-type: none"> <li>▪ has difficulty applying mathematical concepts to everyday problems</li> <li>▪ needs one-to-one support to select and apply appropriate concepts, skills, and strategies</li> <li>▪ estimates and predictions are often guesses; may be wildly illogical</li> </ul>	<ul style="list-style-type: none"> <li>▪ with prompting, identifies ways to apply everyday mathematics to everyday problems similar to those previously explored</li> <li>▪ for problems similar to those recently experienced, selects and applies some appropriate concepts, skills, and strategies</li> <li>▪ in familiar situations, most estimates and predictions are within the bounds of logic</li> </ul>	<ul style="list-style-type: none"> <li>▪ can identify ways to use mathematical concepts and skills to solve everyday problems</li> <li>▪ for problems similar to those recently experienced, selects and applies appropriate concepts, skills, and strategies</li> <li>▪ in familiar situations, makes logical estimates and predictions</li> </ul>	<ul style="list-style-type: none"> <li>▪ may independently find ways to apply mathematics to everyday problems</li> <li>▪ selects and applies appropriate concepts, skills, and strategies to solve problems; efficient; may take an innovative approach</li> <li>▪ makes logical estimates and predictions in both familiar and novel situations</li> </ul>
<b>Strategies and Approaches</b> <ul style="list-style-type: none"> <li>▪ procedures</li> <li>▪ analyze problems</li> <li>▪ verify solutions (estimates, calculators, inverse operations, mental math)</li> </ul>	<ul style="list-style-type: none"> <li>▪ requires ongoing help to follow modelled procedures and complete tasks</li> <li>▪ unable to analyze simple problems to develop a plan</li> <li>▪ unable to verify answers</li> </ul>	<ul style="list-style-type: none"> <li>▪ attempts to follow modelled procedures, but may confuse order or make an inappropriate choice</li> <li>▪ may need help to analyze simple problems and make a plan</li> <li>▪ needs help to verify answers</li> </ul>	<ul style="list-style-type: none"> <li>▪ follows modelled procedures</li> <li>▪ analyzes problems to develop a plan</li> <li>▪ with prompting, verifies answers or results using mental math, calculators, estimations, or inverse operations</li> </ul>	<ul style="list-style-type: none"> <li>▪ follows modelled procedures; may find an alternative procedure</li> <li>▪ analyzes problems to develop an efficient plan</li> <li>▪ independently verifies answers or results using mental math, calculators, estimation, or inverse operations</li> </ul>
<b>Accuracy</b> <ul style="list-style-type: none"> <li>▪ calculations</li> <li>▪ using tools (e.g., standard and nonstandard measures)</li> <li>▪ recording (e.g., measures, patterns)</li> </ul>	<ul style="list-style-type: none"> <li>▪ may include major errors in recording or calculations</li> </ul>	<ul style="list-style-type: none"> <li>▪ may include some recording or calculation errors; comparisons are generally reasonable</li> </ul>	<ul style="list-style-type: none"> <li>▪ recording and calculations are generally accurate; may be minor errors</li> </ul>	<ul style="list-style-type: none"> <li>▪ accurate recording and calculations, including units, may use mental math</li> </ul>
<b>Representation and Communication</b> <ul style="list-style-type: none"> <li>▪ representing numbers</li> <li>▪ presenting work</li> <li>▪ demonstrating procedures; explaining results</li> </ul>	<ul style="list-style-type: none"> <li>▪ difficulty reading and writing numerals over 100</li> <li>▪ work may be unclear, confusing</li> <li>▪ unable to explain or demonstrate tasks</li> </ul>	<ul style="list-style-type: none"> <li>▪ reads and writes numerals to 1000; some errors</li> <li>▪ work is hard to follow in places</li> <li>▪ with prompting, repeats parts of explanations or demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>▪ reads and writes numerals to 1000</li> <li>▪ work is generally clear and easy to follow</li> <li>▪ explains processes and results in own words; may repeat demonstrations the teacher has given</li> </ul>	<ul style="list-style-type: none"> <li>▪ fluently reads and writes numerals over 1000</li> <li>▪ work is clear, detailed, and well-organized</li> <li>▪ explains processes and results in own words, using mathematical language; demonstrates strategies and processes</li> </ul>

\* You may want to list key curriculum concepts or skills for a particular task.

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