

**Colonial Intermediate Unit 20
Paraprofessional Assessment Preparation Booklet**



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Harcourt School Publishers for their on-line Math Glossary
http://www.hbschool.com/glossary/math2/index_temp.html

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Test Format and Expectations for Meeting Assessment Criteria:

Part One of the Test – Multiple Choice:	Reading –	Thirty multiple choice questions
	Writing –	Thirty multiple choice questions
	Math –	Thirty multiple choice questions

Each section includes 18 questions that measure basic knowledge and 12 questions that focus on the application of skills in a classroom situation. In order to receive a passing score, examinees must correctly answer 24 questions in each section.

Part Two of the Test – Open-ended: Participants will select one of three open-ended questions and respond in narrative form. Answers should be clear and contain examples of how to motivate students to reach proficiency. This section receives a pass/fail score.

Purpose of the Assessment: To validate the examinee’s knowledge of and ability to assist in instructing reading, writing, and/or mathematics.

Part One - Math

Definition of Key Terms

- **Product** - The answer to a multiplication problem

Example

$$6 \times 2 = 12$$

$$\begin{array}{r} 6 \\ \times 2 \\ \hline 12 \end{array}$$

The product is 12

- ***Numerator**

The top part of a fraction

Example:

$$\frac{3}{4} \leftarrow \text{numerator}$$

- ***Denominator**

The number below the bar in a fraction.
It tells the total number of equal parts

Example:

$$\frac{3}{4} \leftarrow \text{denominator}$$

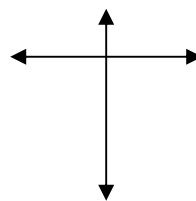
- **•Common factor** - A number that is a factor of two or more numbers.

factors of 6: 1, 2, 3, 6

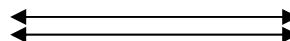
factors of 12: 1, 2, 3, 4, 6, 12

The common factors of 6 and 12 are 1, 2, 3, and 6

- **Perpendicular** - Two lines that intersect to form four right angles



- **Parallel** – Lines that do not intersect



- **Place Value** - Place value determines the value of a digit in a number, based on the location of the digit.

	PLACE VALUE									
	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
1,623,051 →	1	6	2	3	0	5	1			
0.053 →							0	5	3	
32.4 →						3	2	4		

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- ♦ Definition from Math on Call. (1998). Wilmington, MA : Houghton Mifflin.

Application

- **Basic addition, subtraction, multiplication, & division**
- **Add fractions with the same denominator**
- **Reducing fractions to lowest terms**
- **◆ Multiply Fractions** $\frac{2}{3} \times \frac{4}{5} = \frac{(2 \times 4)}{(3 \times 5)} = \frac{8}{15}$

Remember: Don't simplify if both fractions are in lowest terms.

- **Divide Fractions** $\frac{2}{4} \div \frac{2}{5} =$ becomes $\frac{2}{4} \times \frac{5}{2} = \frac{10}{8} = 1\frac{1}{4}$

- **Multiply in equations with variables**

$$5b \times 4b = 20b^2$$

- **◆ Write numbers in scientific notation**

$$0.0035 = 3.5 \times 10^{-3}$$

Examples:

$10000 = 1 \times 10^4$	$24327 = 2.4327 \times 10^4$
$1000 = 1 \times 10^3$	$7354 = 7.354 \times 10^3$
$100 = 1 \times 10^2$	$482 = 4.82 \times 10^2$

- **Multiply fractions and reduce to lowest terms**

$$\frac{1}{2} \times \frac{4}{5} = \frac{4}{10} \text{ or } \frac{2}{5}$$

- **Find common factors of 2 numbers**
The number must go into both evenly.

$$\begin{array}{c} 21 \\ \swarrow \searrow \\ 3 \times 7 \end{array} \quad \text{and} \quad \begin{array}{c} 35 = 7 \\ \swarrow \searrow \\ 7 \times 5 \end{array}$$

Answer: 7 is the common factor of 21 and 35

Example

$$\frac{1}{8} + \frac{2}{8} = \frac{3}{8}$$

$$\frac{1}{4} + \frac{1}{4} = \frac{2}{4} \text{ or } \frac{1}{2}$$

1. Simplify the fraction if it's not in lowest terms.
2. Multiply the numerators to get new numerator.
3. Multiply the denominators to get new new denominator.
4. Simplify or reduce the resulting fraction, if possible.

1. Invert (flip over) the second fraction.
2. Multiply the new numerators and the new denominators.
3. Reduce fraction to lowest terms

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Application

- **◆ Finding prime factorization using factor trees** – A composite number written as the product of prime numbers. You can find the prime factorization of a number using a factor tree.
 1. Express composite number as a product of two numbers.
 2. Continue to express each number as a product of 2 numbers until factor you have a row of prime numbers.

- **◆ Median** – The middle number of a set of numbers when the numbers are arranged from **least to greatest**.
The mean of two numbers when the set has two middle numbers.

- **Complete word problems**

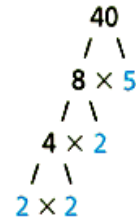
- **Figure out patterns**

- **How to figure out total weight**
16 ounces = 1 pound
8 ounces = half a pound
1 quart = 2 pints

- **Apply the associative property** - Addends are grouped or factors are grouped; does not change the sum or the product.

Example

What is the prime factorization of 40?



So, $40 = 2 \times 2 \times 2 \times 5$.

factor tree

Answer- $2^3 \times 5$

The **median** of 1, 3, 4, 6, and 7 is **4**

1, 3, **4**, 6, 7
↑
median

Jessie started her homework at 10:45 p.m. She took a 20 minute nap and finished her homework at 2:00 a.m. How long did she spend actually doing her homework

Answer: 3 hours and 15 minutes – 20 minutes = 2 hours and 55 minutes

20 40 80 160

(Double each number to get the next one.)

How many ounces in a pound?

$12 + (5 + 9) = (12 + 5) + 9$
 $(9 \times 8) \times 3 = 9 \times (8 \times 3)$

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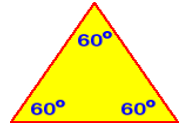
Application

- Find measurement of unknown angle of a triangle when the other 2 are known.

All the angles of a triangle = 180°

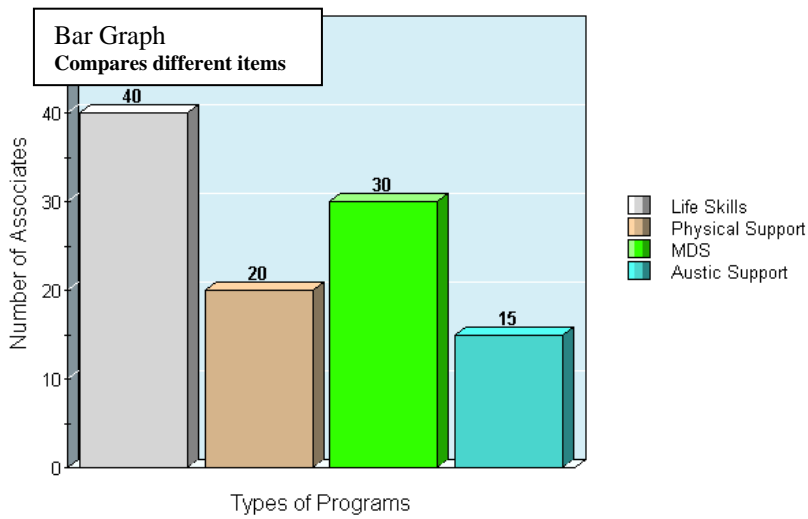
Example

$60^\circ + 60^\circ + 60^\circ = 180^\circ$



- Using the correct graph

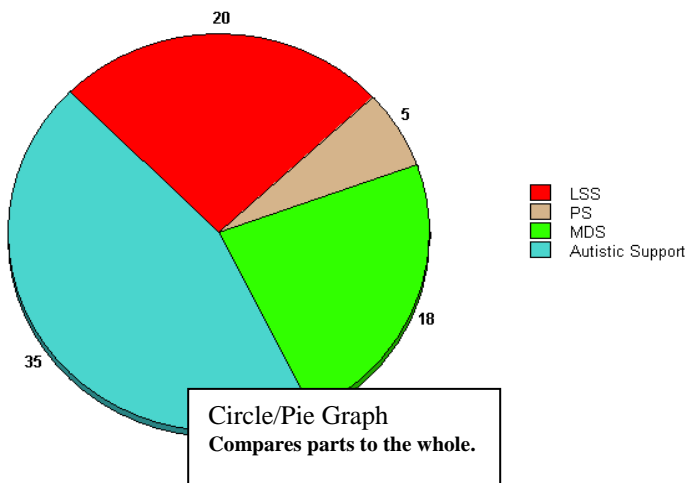
Number of Associates Passing Assessment



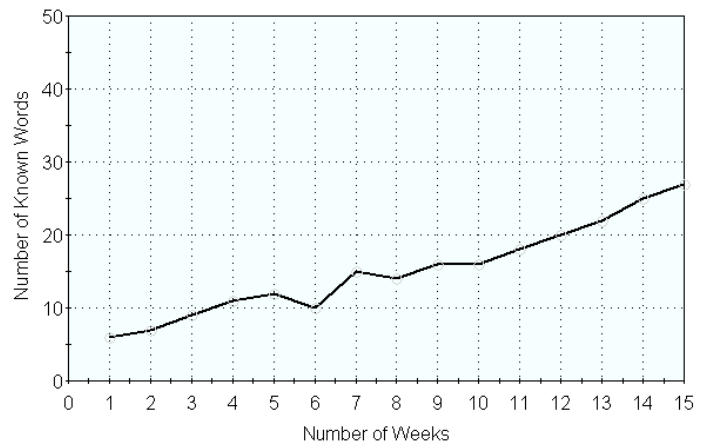
FREQUENCY TABLE	
Day	Number of Students (Frequency)
Monday	15
Tuesday	13
Wednesday	5
Thursday	9
Friday	17

* Frequency Table
How often something occurs.

Number of students taking the PASA



Words Johnny Knows



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Line Graph
Shows changes over time.

Application

*Graphing

- x-axis – horizontal line
- y-axis – vertical line

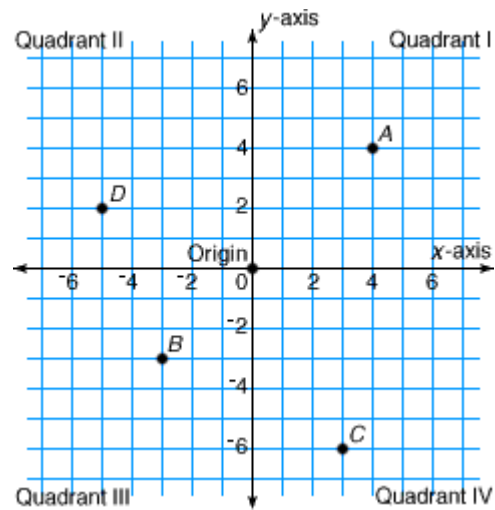
For example

$$A = (4x, 4y)$$

$$B = (-3x, -3y)$$

$$C = (3x, -6y)$$

$$D = (?x, ?y)$$

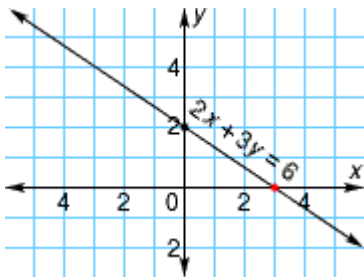


*Graphing Linear Equations

x-intercept

The x -coordinate of the point where the graph of a line crosses the x -axis.

Example:

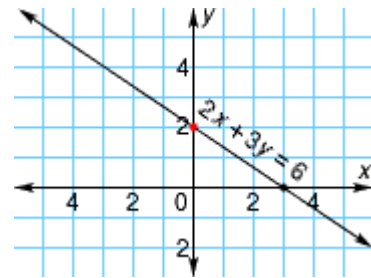


The x -intercept is 3.

y-intercept

The y -coordinate of the point where the graph of a line crosses the y -axis.

Example:



The y -intercept is 2.

Strategies

- **100's Chart** – A tool for students to see the patterns and relationships with numbers
- **Drawing pictures** or **creating charts** to solve word problems
- **Protractor** – A tool for measuring angles instructing reading, writing, and/or mathematics.

Part One: Reading

Definition of key terms

Synonyms – words that mean the same thing

Antonyms – words that mean the opposite

Homonyms – words that sound alike but have different spellings

Simile – comparison using *like* or *as*

Metaphor – a comparison not using *like* or *as*

Hyperbole – a comparison using exaggeration

Characters – people in a story or play

Setting – where and when a story takes place

Problem – obstacle the main character has to overcome

Plot – events that happen in a story or play

Solution – how the characters solve the problem

Theme – the moral of a story

Prior knowledge – what we know about a given topic

Vowels – a,e,i,o,u and sometimes y

Consonants – all other letters

Diphthong – vowel combinations – **ow, oy, ou, oi**

Phonics – the relationship between letters and sounds

CVC pattern – Consonant, Vowel, Consonant letter pattern; makes a short vowel sound

CVCe pattern – Consonant, Vowel, Consonant with an /e/ at the end; makes a long vowel sound.

Application

- You must be able to find all the above definitions in text
- Find examples of opinion
- Find the main idea of a passage
- Use a map
- Identify the key words you would use to find information in an encyclopedia

Example

observe/see

like/hate

meet/meat

Your eyes are like diamonds

Her fingernails were thorns on his cheek

I am hungry as a horse

Wilbur from *Charlotte's Web*

a farm

Wilbur will be killed

Charlotte writes words in her web

Wilbur is saved at the fair

Friendship

what we already know about pigs, farms, spiders

cat

cat

boy

/b/ makes a *bah* sound

cat, bat, let

make, cake, like

Strategies for Reading Success

- Figuring out unknown words
 - Context clues* – using the words in a paragraph or sentence to figure out the definition of a word
 - Guess a word that makes sense*

- Use visual clues-pictures

- Use graphic organizers to help students organize information
 - Venn Diagram*
 - Time Line*
 - Pie Chart*
 - Story Map*

- How to read a passage
 1. *Read the questions first – focus students on what they need to learn*
 2. *Then read the passage*
 3. *Answer questions*

- Comprehension Strategies – ways to help readers understand a passage
 - Predict* – What will happen next?
 - Make Connections* – What does it remind you of?
 - Visualize* – What does it look like?
 - Summarize* – What happened so far?
 - Ask questions* – Why did the character do that?
 - Clarify word and ideas* – What does this mean?
 - Inference* – What conclusions can you draw from the passage?

- Fluency Strategies – Strategies to improve reading speed and accuracy
 - Choral Reading* – Group reads together out loud
 - Echo Reading* – Teacher reads a sentence or phrase then the class reads the sentence or phrase
 - Repeated Reading* – Reading the same piece more than once

Part One – Writing

Definition of Key Terms

Propaganda – Sharing information for the purpose of influencing the attitudes and ideas of others.

Thesaurus – a book that lists words related to each other in meaning, usually giving synonyms and antonyms

Author’s Purpose – Why the author wrote the passage.

Topic Sentence – What the paragraph is about.

Types of Sentences:

Interrogative sentence – Asks a question

Imperative sentence – Issue a request or command

Declarative sentence – States an idea

Sentence Fragment – An incomplete sentence.

Glossary – An alphabetic list of terms

Sequence – Order of events in a story

Comma splice – two independent clauses connected by *only* a comma; also called a run – on sentence.

Colloquialism – Informal expression; slang

Analogy - Comparison between two things that are similar in some respect.

Formal writing – Writing without contractions

Example

Information used to win sympathy and support for war

look – observe, view, glance, stare, gaze

To inform the reader, to entertain the reader, or to influence the reader
Usually the first sentence in a passage.

Where are you going?

Do your homework!

I like ice cream.

Incorrect On my way to the store.

Correct On my way to the store, I saw a clown.

Usually found in the back of textbooks

What happened first, second, third etc....

The sun is hot, put on some sunscreen.

Correct The sun is hot, so put on some sunscreen.

What’s up?

hot is to cold as fire is to ice

hot:cold::fire:ice

don’t – do not

Application

- Find examples of the above in reading passages
- Find sentences that develop the topic sentence
- Complete sentences
- Complete analogies
- Correct grammar errors – (especially subject- verb agreement)

Strategies:

- Strategies that help students organize ideas for an essay
 - Brainstorm*
 - Develop an Outline- use the section and sub-section headings.*
 - Use Graphic Organizers*
- The Writing Process includes:
 - Prewriting*
 - Drafting*
 - Revising*
 - Editing*
 - Publishing*

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