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DEVELOPMENT OF ADULT EDUCATORS

An Introduction to the ABE Mathematics Curriculum Matrix

Concept and Applications

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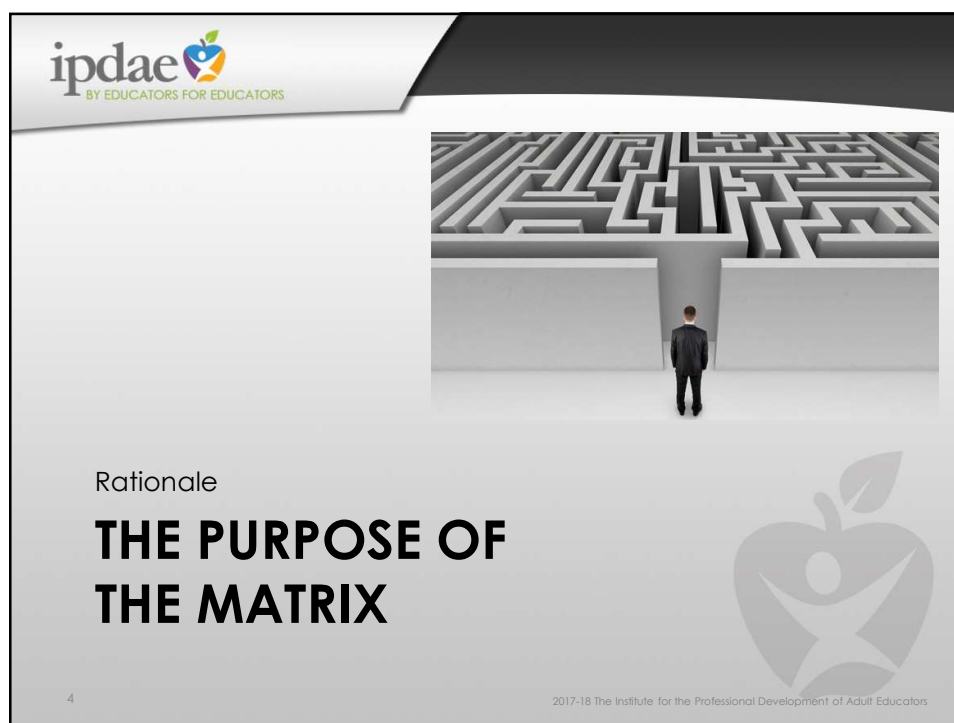
This training event is supported with federal funds as appropriated to the Florida Department of Education, Division of Career and Adult Education for the provision of state leadership professional development activities.




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Agenda

- I. The Purpose of the Matrix
- II. The College and Career Readiness Standards
- III. The ABE Mathematics Curriculum Frameworks
- IV. The ABE Mathematics Curriculum Matrix
- V. The Purpose of the Matrix
- VI. Matrix Alignment to TABE 11 & 12
- VII. Various Matrix Overlays
- VIII. The Interactive Online Curriculum Matrix
- IX. Additional Curriculum Matrix Resources






Challenges of Educators

Workbook p. 1

Adult Educators across the state are facing very similar challenges in the teaching of ABE Mathematics:

- Inconsistent background in math
- Unfamiliarity to certain math skills and concepts
- Limited understanding of the standards (CCRS)
- Lack of planning time
- Limited access to professional development
- Limited knowledge of math teaching strategies
- Limited resources for properly teaching math skills
- Massive and often multiple math content/curricula
- Catering to a very diverse group of students in terms of ability, background and goals

5
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Reflections of an Educator

Workbook p. 1


In terms of teaching math, a typical adult educator struggles with the following questions:

- Where do I start?
- Which skills and concepts do my students need more mastery? How do I know now? How will I know in the future?
- How much time do I have to teach this topic?
- What topics should I teach next? What is the end goal?
- Is this skill assessed on standardized tests? How?
- How much of this content is assessed on standardized tests?
- What is the best textbook out there? Or websites to use?

6
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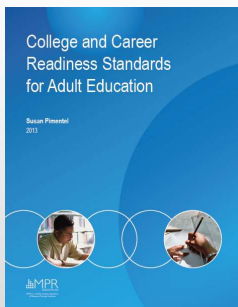



The ABE Mathematics Curriculum Matrix helps adult educators deal with the challenges of their work and answer the most important questions to be more efficient in their practice.




7

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The Teaching of Mathematics According to:

**THE COLLEGE AND
CAREER READINESS
STANDARDS**



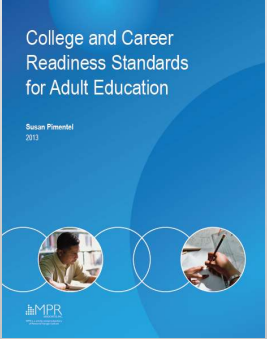
8



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The Key Shifts in the Standards

1. Focus
2. Coherence
3. Rigor
 - a. Conceptual Understanding
 - b. Procedural Fluency
 - c. Application



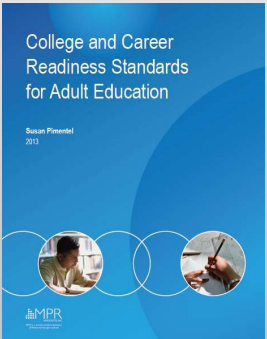




Focus

Focusing strongly where the standards focus

Instructors need to:

- narrow significantly and to deepen the manner in which they teach mathematics
- focus deeply on the major work of each level
- select priority content which addresses clear understanding



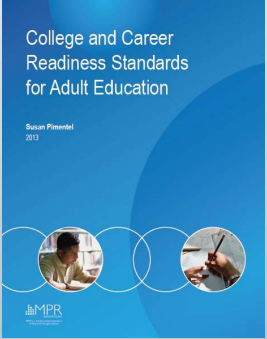




Coherence

Designing learning around coherent progressions level to level

Instructors need to:

- create coherent progressions in the content within and across levels
- establish strong conceptual understanding of core content
- use standards at higher levels as extensions of previous learning rather than signaling a new concept or idea



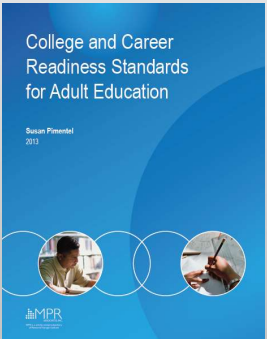


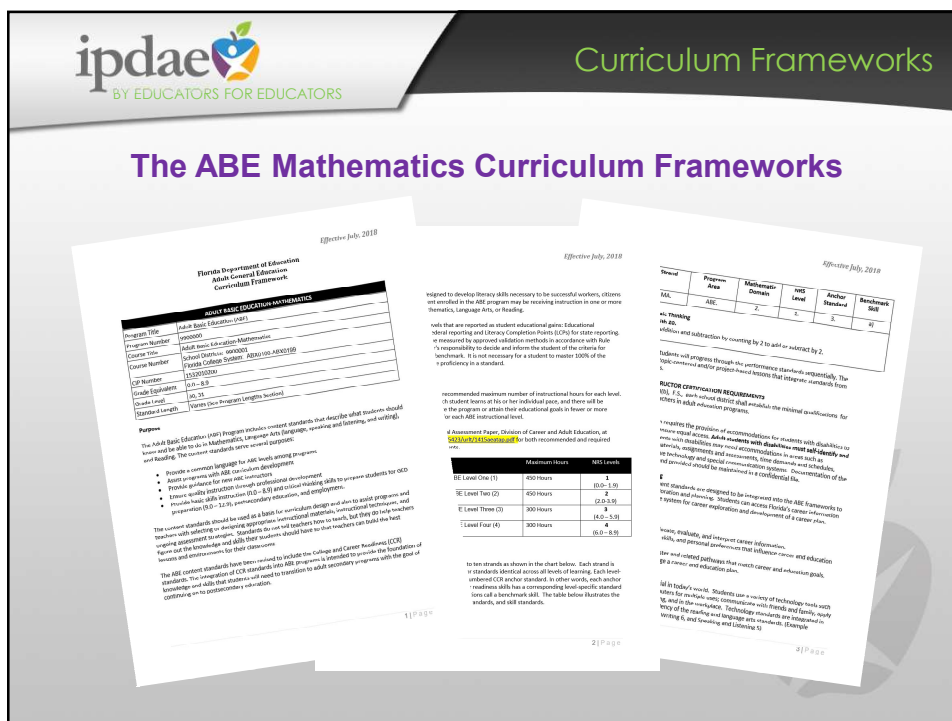
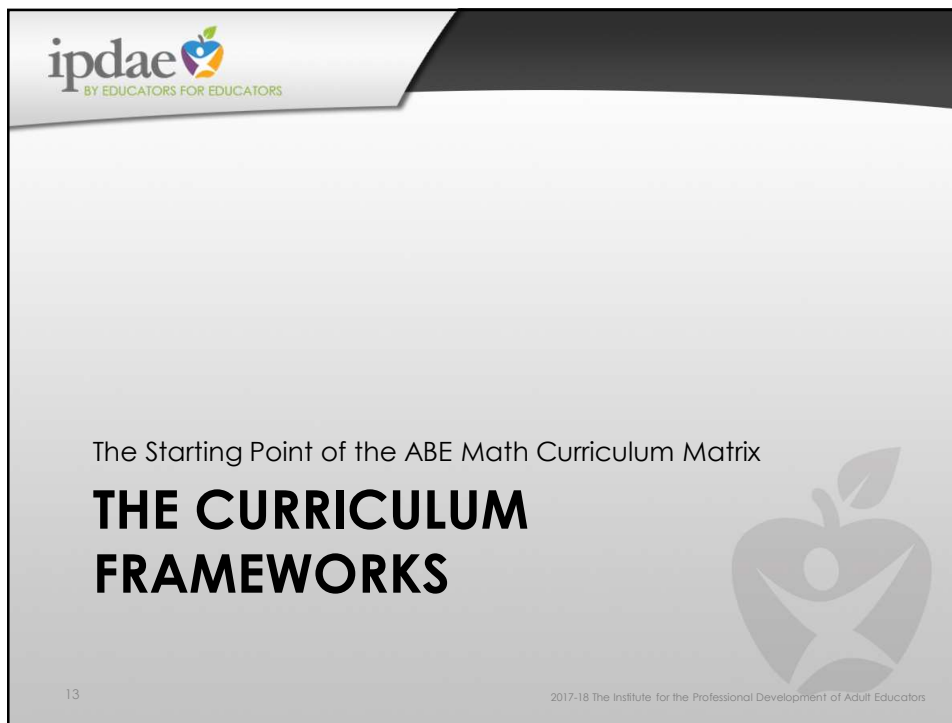
Rigor


Pursuing conceptual understanding, procedural skill and fluency, and application—all with equal intensity

Instructors need to:

- focus equally on conceptual understanding of key concepts, procedural skill and fluency, and rigorous application of mathematics in real-world contexts.
- teach more than “how to get the answer”
- employ concepts from several perspectives








Purpose

The Adult Basic Education (ABE) Program includes content standards that describe what students should know and be able to do in Mathematics. The content standards serve several purposes:

- Provide a common language for ABE levels among programs
- Assist programs with ABE curriculum development
- Provide guidance for new ABE instructors
- Ensure quality instruction through professional development
- Provide basic skills instruction (0.0 – 8.9) and critical thinking skills to prepare students for GED preparation (9.0 – 12.9), postsecondary education, and employment.



Purpose

Workbook p. 2


The content standards should be used as a basis for curriculum design and also to assist programs and teachers with selecting or designing:

- appropriate instructional materials
- instructional techniques, and
- ongoing assessment strategies.

Standards DO NOT tell teachers how to teach, but they do help teachers figure out the knowledge and skills their students should have so that teachers can build the best lessons and environments for their classrooms.

16

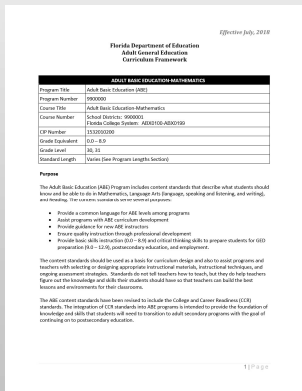
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Curriculum Frameworks

The ABE Mathematics Curriculum Frameworks

- 31 Pages
- 10 Mathematics Domains
- 79 Content Standards
- 294 Content Benchmarks
- 4 Career and Education Planning Standards
- 4 Digital Literacy (Technology) Standards
- 7 Workforce Preparation Activities






Curriculum Frameworks

The ABE Mathematics Domains

ADULT BASIC EDUCATION MATHEMATIC DOMAINS					
Domain Number	NRS Reporting Grade Equivalent (GE)	NRS Level 1 0.0 – 1.9	NRS Level 2 2.0 – 3.9	NRS Level 3 4.0 – 5.9	NRS Level 4 6.0 – 8.9
1	Number and Operations: Base Ten	0.0 – 1.9	2.0 – 3.9	4.0 – 5.9	
2	Operations and Algebraic Thinking	0.0 – 1.9	2.0 – 3.9	4.0 – 5.9	
3	Measurement and Data	0.0 – 1.9	2.0 – 3.9	4.0 – 5.9	
4	Geometry	0.0 – 1.9	2.0 – 3.9	4.0 – 5.9	6.0 – 8.9
5	Number and Operations: Fractions		*3.0 – 3.9	4.0 – 5.9	
6	Expressions and Equations			4.0 – 5.9	6.0 – 8.9
7	The Number System			4.0 – 5.9	6.0 – 8.9
8	Ratios and Proportional Relationships			4.0 – 5.9	6.0 – 8.9
9	Statistics and Probability			4.0 – 5.9	6.0 – 8.9
10	Functions				*7.0 – 8.9



Curriculum Frameworks

The ABE Mathematics Standards

MATHEMATICS (MA) Basic Literacy <small>GE: 0.0-3.9</small> Anchor Standards and Benchmark Skills	
NRS LEVEL 1 <small>GE: 0.0 – 1.9</small>	NRS LEVEL 2 <small>GE: 2.0 – 3.9</small>
CCR.MA.ABE.1. Number and Operations: Base Ten	
1.1 Understand place value of two-digit numbers. a) Understand that the two digits of a two-digit number represent amounts of tens and ones. b) Compare two two-digit numbers recording the results of comparisons with the symbols greater than (>), equal to (=), and less than (<).	2.1 Understand place value of three-digit numbers. a) Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones. b) Count within 1000 by 5s, 10s, and 100s. c) Read and write numbers to 1000 using numerals, number names, and expanded form. d) Compare two three-digit numbers using greater than (>), equal to (=), and less than (<) symbols to record the results of comparisons.


ABE Level

Domain


Anchor Standards

Benchmark Skills

This formatting and arrangement of math standards and benchmark skills span **25 pages** of the ABE Mathematics Curriculum Frameworks.



The ABE Mathematics Curriculum Matrix was developed directly from the ABE Mathematics Curriculum Frameworks released by the Florida Department of Education.



20

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Scenario	1990 (year 1)	1990 (year 2)	1990 (year 3)	1990 (year 4)	1990 (year 5)
1. Economic development
2. Environmental impact
3. Social and cultural
4. Energy
5. Economic development
6. Environmental impact
7. Social and cultural
8. Energy
9. Economic development
10. Environmental impact
11. Social and cultural
12. Energy

THE ABE MATHEMATICS CURRICULUM MATRIX

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How to Download

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WEBINARS

View our recorded webinars that provide information and training on various topics.

- Taking Care of Yourself: Making the Transition from Corrections to Work, Education & Daily Life : An Overview (Presented on 6/13/2018)
- ABE Math Curriculum Framework Map - Part 2 (Presented on 6/6/2018)**
- ABE Math Curriculum Framework Map - Part 1 (Presented on 5/30/2018)**
- TABE 11 and 12 Update (Presented on 5/16/2018)
- AGE to Post-Secondary Transition (Presented on 1/31/2018)

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ABE Math Curriculum Framework Map - Part 1

Presentation Date: 5/30/2018 at 3:00pm
Duration: 1 Hour

Description:
The math curriculum map, developed in partnership with the Florida Department of Education, is a user-friendly version of the ABE Mathematics Curriculum Frameworks. Using this map, teachers will be able to seamlessly navigate through various skills and content required by the College and Career Readiness Standards. This webinar will show teachers how to use this versatile tool in planning for instruction and remediation.

Presentation Documents:

- Presentation (PDF)
- Handout: ABE Math Curriculum Matrix (PDF)**
- Handout: ABE Math Curriculum Matrix Part 1 Activity Book (PDF)
- Handout: ABE Math 2018 (PDF)
- Handout: High Impact Indicators (PDF)

ABE Math Curriculum Framework Map - P...


ABE Math Curriculum Framework Map Part 1

This webinar will show teachers how to use this versatile tool in planning for instruction and remediation.

Login to receive credit for viewing webinar

24

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Versions of Matrix


Workbook p. 2

Original Version

Domain	NRS Level 1	NRS Level 2	NRS Level 3	NRS Level 4
1. Number and Operations: Base Ten	Read, understand, and represent a digit through ten.	Read, understand, and represent a digit through ten.	Read, understand, and represent a digit through ten.	Read, understand, and represent a digit through ten.
2. Operations and Algebraic Thinking	Use addition and subtraction to solve problems.	Use addition and subtraction to solve problems.	Use addition and subtraction to solve problems.	Use addition and subtraction to solve problems.
3. Measurement and Data	Use measurement to solve problems.	Use measurement to solve problems.	Use measurement to solve problems.	Use measurement to solve problems.
4. Geometry	Use geometry to solve problems.	Use geometry to solve problems.	Use geometry to solve problems.	Use geometry to solve problems.
5. Number and Operations: Fractions	Use fractions to solve problems.	Use fractions to solve problems.	Use fractions to solve problems.	Use fractions to solve problems.
6. Expressions and Equations	Use expressions and equations to solve problems.	Use expressions and equations to solve problems.	Use expressions and equations to solve problems.	Use expressions and equations to solve problems.
7. The Number System	Use the number system to solve problems.	Use the number system to solve problems.	Use the number system to solve problems.	Use the number system to solve problems.
8. Ratios and Proportional Relationships	Use ratios and proportional relationships to solve problems.	Use ratios and proportional relationships to solve problems.	Use ratios and proportional relationships to solve problems.	Use ratios and proportional relationships to solve problems.
9. Statistics and Probability	Use statistics and probability to solve problems.	Use statistics and probability to solve problems.	Use statistics and probability to solve problems.	Use statistics and probability to solve problems.
10. Functions	Use functions to solve problems.	Use functions to solve problems.	Use functions to solve problems.	Use functions to solve problems.

25

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Versions of Matrix

Workbook p. 2

Plain (Grayscale) Version

Domain	NRS Level 1	NRS Level 2	NRS Level 3	NRS Level 4
1. Number and Operations: Base Ten	Read, understand, and represent a digit through ten.	Read, understand, and represent a digit through ten.	Read, understand, and represent a digit through ten.	Read, understand, and represent a digit through ten.
2. Operations and Algebraic Thinking	Use addition and subtraction to solve problems.	Use addition and subtraction to solve problems.	Use addition and subtraction to solve problems.	Use addition and subtraction to solve problems.
3. Measurement and Data	Use measurement to solve problems.	Use measurement to solve problems.	Use measurement to solve problems.	Use measurement to solve problems.
4. Geometry	Use geometry to solve problems.	Use geometry to solve problems.	Use geometry to solve problems.	Use geometry to solve problems.
5. Number and Operations: Fractions	Use fractions to solve problems.	Use fractions to solve problems.	Use fractions to solve problems.	Use fractions to solve problems.
6. Expressions and Equations	Use expressions and equations to solve problems.	Use expressions and equations to solve problems.	Use expressions and equations to solve problems.	Use expressions and equations to solve problems.
7. The Number System	Use the number system to solve problems.	Use the number system to solve problems.	Use the number system to solve problems.	Use the number system to solve problems.
8. Ratios and Proportional Relationships	Use ratios and proportional relationships to solve problems.	Use ratios and proportional relationships to solve problems.	Use ratios and proportional relationships to solve problems.	Use ratios and proportional relationships to solve problems.
9. Statistics and Probability	Use statistics and probability to solve problems.	Use statistics and probability to solve problems.	Use statistics and probability to solve problems.	Use statistics and probability to solve problems.
10. Functions	Use functions to solve problems.	Use functions to solve problems.	Use functions to solve problems.	Use functions to solve problems.

26

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Versions of Matrix

Workbook p. 2

Presentation Version

Domain	NRS Level 1	NRS Level 2	NRS Level 3	NRS Level 4
1. Number and Operations: Base Ten
2. Operations and Algebraic Thinking
3. Measurement and Data
4. Geometry
5. Number and Operations: Fractions
6. Expressions and Equations
7. The Number System
8. Ratios and Proportional Relationships
9. Statistics and Probability
10. Functions

27

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Layout of the Matrix

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Domains

NRS Levels


Domain	NRS Level 1	NRS Level 2	NRS Level 3	NRS Level 4
1. Number and Operations: Base Ten
2. Operations and Algebraic Thinking
3. Measurement and Data
4. Geometry
5. Number and Operations: Fractions
6. Expressions and Equations
7. The Number System
8. Ratios and Proportional Relationships
9. Statistics and Probability
10. Functions

163 Content Cells

The intersection between a domain and level is referred as a **region** in the matrix.

28

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ABE Levels

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What are NRS Levels?

NRS stands for National Reporting System. The NRS divides Adult Basic Education into 4 levels:


- Level 1 – Literacy (Grade Equivalent 0 to 1)
- Level 2 – Beginning Basic (Grade Equivalent 2 to 3)
- Level 3 – Low Intermediate (Grade Equivalent 4 to 5)
- Level 4 – High Intermediate (Grade Equivalent 6 to 8)

Levels 5 and 6 are levels that belong to Adult Secondary Education (GED Prep):

- Level 5 – Low Adult Secondary Education (Grade 9 – 10)
- Level 6 – High Adult Secondary Education (Grade 11 – 12)

29

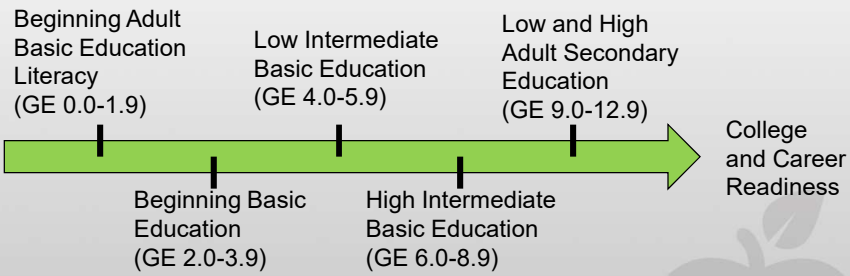
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It's a Continuum


Mathematics



The diagram illustrates a continuum of mathematics education levels. A horizontal green arrow points from left to right, with five vertical tick marks. Above the arrow, from left to right, are: 'Beginning Adult Basic Education Literacy (GE 0.0-1.9)', 'Low Intermediate Basic Education (GE 4.0-5.9)', and 'Low and High Adult Secondary Education (GE 9.0-12.9)'. Below the arrow, from left to right, are: 'Beginning Basic Education (GE 2.0-3.9)' and 'High Intermediate Basic Education (GE 6.0-8.9)'. At the far right end of the arrow, the text 'College and Career Readiness' is written.

30

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Statistics NRS Level 3

Discuss Statistical Questions Involving Variability in Data	Discuss Statistical Questions Involving Center, Spread and Overall Shape	Discuss the Measure of Center and Variation for a Numerical Data Set	Display Numerical Data in Plots on a Number Line: Dot Plots, Histograms, Box Plots
-------------------------------------------------------------	--------------------------------------------------------------------------	----------------------------------------------------------------------	------------------------------------------------------------------------------------

3.1 Develop understanding of statistical variability.

- Discuss a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.
- Discuss a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
- Discuss that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.

3.2 Summarize and describe distributions.

- Display numerical data in plots on a number line, including:
 - Dot plots (graph of data using dots).
 - Histograms (bar graph using ranges of data).
 - Box plots (graph uses rectangles with lines extending from the top and bottom).


This slide shows how each cell in the Curriculum Matrix was derived directly from the ABE Math Curriculum Frameworks.

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CCRS

Conceptual Understanding

Domain	NRS Level 1	NRS Level 2	NRS Level 3	NRS Level 4
Number and Operations: Base Ten				
Operations and Algebraic Thinking				
3. Measurement and Data				
4. Geometry				
5. Number and Operations: Fractions				
6. Expressions and Equations				
7. The Number System				
8. Ratios and Proportional Relationships				
9. Statistics and Probability				
10. Functions				



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CCRS

Procedural Fluency


Domain	NRS Level 1	NRS Level 2	NRS Level 3	NRS Level 4
1. Number and Operations: Base Ten	<p>1.NBT.A.1 Understand that each digit in a two-digit number represents tens and ones. For example, 10 can be thought of as a bundle of ten sticks (called a ten) made from ten ones sticks; similarly, the number 15 is composed of one ten and five ones.</p> <p>1.NBT.A.2 Compose and decompose tens into ones and ones into tens. For example, 10 ones can be composed to form a ten; 1 ten can be decomposed into 10 ones. Students may use objects to represent the tens and ones.</p> <p>1.NBT.A.3 Understand that the number of tens in a number is the same as the number of groups of ten objects. For example, 15 objects can be arranged into 1 ten and 5 ones, or 3 groups of 5 objects.</p>	<p>1.NBT.B.4 Add and subtract within 20. For example, 10 + 10 = 20, 15 + 5 = 20, 20 - 10 = 10, 10 - 5 = 5. Students may use objects to represent the numbers.</p> <p>1.NBT.B.5 Fluently add and subtract within 20. For example, 10 + 10 = 20, 15 + 5 = 20, 20 - 10 = 10, 10 - 5 = 5. Students may use objects to represent the numbers.</p>	<p>1.NBT.C.6 Add and subtract within 100. For example, 10 + 10 = 20, 15 + 5 = 20, 20 - 10 = 10, 10 - 5 = 5. Students may use objects to represent the numbers.</p> <p>1.NBT.C.7 Fluently add and subtract within 100. For example, 10 + 10 = 20, 15 + 5 = 20, 20 - 10 = 10, 10 - 5 = 5. Students may use objects to represent the numbers.</p>	
2. Operations and Algebraic Thinking	<p>2.OA.A.1 Represent and solve problems involving addition and subtraction. For example, use objects to represent the problem: 10 + 10 = 20, 15 + 5 = 20, 20 - 10 = 10, 10 - 5 = 5.</p> <p>2.OA.A.2 Fluently add and subtract within 20. For example, 10 + 10 = 20, 15 + 5 = 20, 20 - 10 = 10, 10 - 5 = 5. Students may use objects to represent the numbers.</p>	<p>2.OA.B.4 Add and subtract within 20. For example, 10 + 10 = 20, 15 + 5 = 20, 20 - 10 = 10, 10 - 5 = 5. Students may use objects to represent the numbers.</p> <p>2.OA.B.5 Fluently add and subtract within 20. For example, 10 + 10 = 20, 15 + 5 = 20, 20 - 10 = 10, 10 - 5 = 5. Students may use objects to represent the numbers.</p>	<p>2.OA.C.8 Add and subtract within 100. For example, 10 + 10 = 20, 15 + 5 = 20, 20 - 10 = 10, 10 - 5 = 5. Students may use objects to represent the numbers.</p> <p>2.OA.C.9 Fluently add and subtract within 100. For example, 10 + 10 = 20, 15 + 5 = 20, 20 - 10 = 10, 10 - 5 = 5. Students may use objects to represent the numbers.</p>	
3. Measurement and Data	<p>3.MD.A.1 Measure length using a ruler. For example, use a ruler to measure the length of an object in inches or centimeters.</p> <p>3.MD.A.2 Measure the length of an object using standard units. For example, use a ruler to measure the length of an object in inches or centimeters.</p>	<p>3.MD.A.3 Estimate and measure length using standard units. For example, use a ruler to measure the length of an object in inches or centimeters.</p> <p>3.MD.A.4 Measure the perimeter of a shape. For example, use a ruler to measure the perimeter of a shape in inches or centimeters.</p>	<p>3.MD.A.5 Measure the area of a shape. For example, use a ruler to measure the area of a shape in square inches or square centimeters.</p> <p>3.MD.A.6 Measure the volume of a shape. For example, use a ruler to measure the volume of a shape in cubic inches or cubic centimeters.</p>	
4. Geometry	<p>4.G.A.1 Draw a geometric shape and measure its length. For example, use a ruler to measure the length of a line segment.</p> <p>4.G.A.2 Measure the length of an object using standard units. For example, use a ruler to measure the length of an object in inches or centimeters.</p>	<p>4.G.A.3 Estimate and measure length using standard units. For example, use a ruler to measure the length of an object in inches or centimeters.</p> <p>4.G.A.4 Measure the perimeter of a shape. For example, use a ruler to measure the perimeter of a shape in inches or centimeters.</p>	<p>4.G.A.5 Measure the area of a shape. For example, use a ruler to measure the area of a shape in square inches or square centimeters.</p> <p>4.G.A.6 Measure the volume of a shape. For example, use a ruler to measure the volume of a shape in cubic inches or cubic centimeters.</p>	
5. Number and Operations: Fractions	<p>5.NF.A.1 Add and subtract fractions with like denominators. For example, 1/2 + 1/2 = 1, 1/2 - 1/2 = 0.</p> <p>5.NF.A.2 Multiply a fraction by a whole number. For example, 2 x 1/2 = 1, 3 x 1/3 = 1.</p>	<p>5.NF.B.1 Add and subtract fractions with unlike denominators. For example, 1/2 + 1/3 = 5/6, 1/2 - 1/3 = 1/6.</p> <p>5.NF.B.2 Multiply a fraction by a fraction. For example, 1/2 x 1/3 = 1/6, 2/3 x 3/4 = 1/2.</p>	<p>5.NF.C.1 Add and subtract fractions with unlike denominators. For example, 1/2 + 1/3 = 5/6, 1/2 - 1/3 = 1/6.</p> <p>5.NF.C.2 Multiply a fraction by a fraction. For example, 1/2 x 1/3 = 1/6, 2/3 x 3/4 = 1/2.</p>	
6. Expressions and Equations	<p>6.EE.A.1 Write and evaluate numerical expressions. For example, 2 + 3 + 4 = 9, 3 + 4 = 7, 2 + 3 = 5.</p> <p>6.EE.A.2 Write and evaluate numerical expressions. For example, 2 + 3 + 4 = 9, 3 + 4 = 7, 2 + 3 = 5.</p>	<p>6.EE.B.1 Write and evaluate numerical expressions. For example, 2 + 3 + 4 = 9, 3 + 4 = 7, 2 + 3 = 5.</p> <p>6.EE.B.2 Write and evaluate numerical expressions. For example, 2 + 3 + 4 = 9, 3 + 4 = 7, 2 + 3 = 5.</p>	<p>6.EE.C.1 Write and evaluate numerical expressions. For example, 2 + 3 + 4 = 9, 3 + 4 = 7, 2 + 3 = 5.</p> <p>6.EE.C.2 Write and evaluate numerical expressions. For example, 2 + 3 + 4 = 9, 3 + 4 = 7, 2 + 3 = 5.</p>	
7. The Number System	<p>7.NS.A.1 Add and subtract integers. For example, 2 + 3 = 5, 3 - 2 = 1, 2 - 3 = -1.</p> <p>7.NS.A.2 Multiply and divide integers. For example, 2 x 3 = 6, 3 x 2 = 6, 2 ÷ 2 = 1, 3 ÷ 3 = 1.</p>	<p>7.NS.B.1 Add and subtract integers. For example, 2 + 3 = 5, 3 - 2 = 1, 2 - 3 = -1.</p> <p>7.NS.B.2 Multiply and divide integers. For example, 2 x 3 = 6, 3 x 2 = 6, 2 ÷ 2 = 1, 3 ÷ 3 = 1.</p>	<p>7.NS.C.1 Add and subtract integers. For example, 2 + 3 = 5, 3 - 2 = 1, 2 - 3 = -1.</p> <p>7.NS.C.2 Multiply and divide integers. For example, 2 x 3 = 6, 3 x 2 = 6, 2 ÷ 2 = 1, 3 ÷ 3 = 1.</p>	
8. Ratios and Proportional Relationships	<p>8.RP.A.1 Understand ratio concepts and use ratio language. For example, the ratio of wings to beak is 2 to 1.</p> <p>8.RP.A.2 Represent a ratio as a fraction. For example, the ratio of wings to beak is 2 to 1, which can be written as 2/1.</p>	<p>8.RP.B.1 Understand ratio concepts and use ratio language. For example, the ratio of wings to beak is 2 to 1.</p> <p>8.RP.B.2 Represent a ratio as a fraction. For example, the ratio of wings to beak is 2 to 1, which can be written as 2/1.</p>	<p>8.RP.C.1 Understand ratio concepts and use ratio language. For example, the ratio of wings to beak is 2 to 1.</p> <p>8.RP.C.2 Represent a ratio as a fraction. For example, the ratio of wings to beak is 2 to 1, which can be written as 2/1.</p>	
9. Statistics and Probability	<p>9.SP.A.1 Represent data with a dot plot. For example, use a dot plot to represent the number of pages in a book.</p> <p>9.SP.A.2 Represent data with a dot plot. For example, use a dot plot to represent the number of pages in a book.</p>	<p>9.SP.B.1 Represent data with a dot plot. For example, use a dot plot to represent the number of pages in a book.</p> <p>9.SP.B.2 Represent data with a dot plot. For example, use a dot plot to represent the number of pages in a book.</p>	<p>9.SP.C.1 Represent data with a dot plot. For example, use a dot plot to represent the number of pages in a book.</p> <p>9.SP.C.2 Represent data with a dot plot. For example, use a dot plot to represent the number of pages in a book.</p>	
10. Functions	<p>10.F.A.1 Understand a function. For example, a function is a rule that assigns to each input exactly one output.</p> <p>10.F.A.2 Understand a function. For example, a function is a rule that assigns to each input exactly one output.</p>	<p>10.F.B.1 Understand a function. For example, a function is a rule that assigns to each input exactly one output.</p> <p>10.F.B.2 Understand a function. For example, a function is a rule that assigns to each input exactly one output.</p>	<p>10.F.C.1 Understand a function. For example, a function is a rule that assigns to each input exactly one output.</p> <p>10.F.C.2 Understand a function. For example, a function is a rule that assigns to each input exactly one output.</p>	

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CCRS

Application of Mathematics


Domain	NRS Level 1	NRS Level 2	NRS Level 3	NRS Level 4
1. Number and Operations: Base Ten	<p>1.NBT.A.1 Understand that each digit in a two-digit number represents tens and ones. For example, 10 can be thought of as a bundle of ten ones (called a "ten").</p> <p>1.NBT.A.2 Compose and decompose tens into ones and ones into tens. For example, 10 ones can be composed to form a ten, and 1 ten can be decomposed into 10 ones.</p> <p>1.NBT.B.4 Add within 100, including adding two two-digit numbers. For example, 35 + 32 = 67. Use concrete models or drawings to represent the numbers and the operation.</p>	<p>1.NBT.B.4 Add within 100, including adding two two-digit numbers. For example, 35 + 32 = 67. Use concrete models or drawings to represent the numbers and the operation.</p> <p>1.NBT.B.5 Subtract within 100, including subtracting two two-digit numbers. For example, 50 - 34 = 16. Use concrete models or drawings to represent the numbers and the operation.</p> <p>1.NBT.C.6 Add and subtract word problems within 100, including those involving unknowns in all positions. For example, "John has 35 apples, and Mary has 32 apples. How many apples do they have in all?"</p>	<p>1.NBT.B.4 Add within 100, including adding two two-digit numbers. For example, 35 + 32 = 67. Use concrete models or drawings to represent the numbers and the operation.</p> <p>1.NBT.B.5 Subtract within 100, including subtracting two two-digit numbers. For example, 50 - 34 = 16. Use concrete models or drawings to represent the numbers and the operation.</p> <p>1.NBT.C.6 Add and subtract word problems within 100, including those involving unknowns in all positions. For example, "John has 35 apples, and Mary has 32 apples. How many apples do they have in all?"</p>	
2. Operations and Algebraic Thinking	<p>2.OA.A.1 Represent and solve problems involving addition and subtraction. For example, use objects, drawings, and equations to represent a problem.</p> <p>2.OA.A.2 Fluently add and subtract within 100. For example, 35 + 32 = 67.</p> <p>2.OA.B.4 Add and subtract word problems within 100, including those involving unknowns in all positions. For example, "John has 35 apples, and Mary has 32 apples. How many apples do they have in all?"</p>	<p>2.OA.A.1 Represent and solve problems involving addition and subtraction. For example, use objects, drawings, and equations to represent a problem.</p> <p>2.OA.A.2 Fluently add and subtract within 100. For example, 35 + 32 = 67.</p> <p>2.OA.B.4 Add and subtract word problems within 100, including those involving unknowns in all positions. For example, "John has 35 apples, and Mary has 32 apples. How many apples do they have in all?"</p>	<p>2.OA.A.1 Represent and solve problems involving addition and subtraction. For example, use objects, drawings, and equations to represent a problem.</p> <p>2.OA.A.2 Fluently add and subtract within 100. For example, 35 + 32 = 67.</p> <p>2.OA.B.4 Add and subtract word problems within 100, including those involving unknowns in all positions. For example, "John has 35 apples, and Mary has 32 apples. How many apples do they have in all?"</p>	
3. Measurement and Data	<p>3.MD.A.1 Measure length using a ruler. For example, measure the length of an object in inches or centimeters.</p> <p>3.MD.A.2 Measure the length of an object using a ruler. For example, measure the length of an object in inches or centimeters.</p> <p>3.MD.A.3 Estimate and measure length. For example, estimate the length of an object in inches or centimeters.</p>	<p>3.MD.A.1 Measure length using a ruler. For example, measure the length of an object in inches or centimeters.</p> <p>3.MD.A.2 Measure the length of an object using a ruler. For example, measure the length of an object in inches or centimeters.</p> <p>3.MD.A.3 Estimate and measure length. For example, estimate the length of an object in inches or centimeters.</p>	<p>3.MD.A.1 Measure length using a ruler. For example, measure the length of an object in inches or centimeters.</p> <p>3.MD.A.2 Measure the length of an object using a ruler. For example, measure the length of an object in inches or centimeters.</p> <p>3.MD.A.3 Estimate and measure length. For example, estimate the length of an object in inches or centimeters.</p>	
4. Geometry	<p>4.G.A.1 Draw a geometric shape and its properties. For example, draw a rectangle with a length of 5 units and a width of 3 units.</p> <p>4.G.A.2 Classify two-dimensional shapes by attributes. For example, classify a rectangle as a quadrilateral.</p> <p>4.G.A.3 Partition a shape into equal parts. For example, partition a circle into two equal halves.</p>	<p>4.G.A.1 Draw a geometric shape and its properties. For example, draw a rectangle with a length of 5 units and a width of 3 units.</p> <p>4.G.A.2 Classify two-dimensional shapes by attributes. For example, classify a rectangle as a quadrilateral.</p> <p>4.G.A.3 Partition a shape into equal parts. For example, partition a circle into two equal halves.</p>	<p>4.G.A.1 Draw a geometric shape and its properties. For example, draw a rectangle with a length of 5 units and a width of 3 units.</p> <p>4.G.A.2 Classify two-dimensional shapes by attributes. For example, classify a rectangle as a quadrilateral.</p> <p>4.G.A.3 Partition a shape into equal parts. For example, partition a circle into two equal halves.</p>	
5. Number and Operations: Fractions	<p>5.NF.A.1 Understand and explain the relationship between a fraction and a decimal. For example, 1/2 = 0.5.</p> <p>5.NF.A.2 Add and subtract fractions with like denominators. For example, 1/2 + 1/2 = 1.</p> <p>5.NF.A.3 Multiply and divide fractions. For example, 1/2 x 1/2 = 1/4.</p>	<p>5.NF.A.1 Understand and explain the relationship between a fraction and a decimal. For example, 1/2 = 0.5.</p> <p>5.NF.A.2 Add and subtract fractions with like denominators. For example, 1/2 + 1/2 = 1.</p> <p>5.NF.A.3 Multiply and divide fractions. For example, 1/2 x 1/2 = 1/4.</p>	<p>5.NF.A.1 Understand and explain the relationship between a fraction and a decimal. For example, 1/2 = 0.5.</p> <p>5.NF.A.2 Add and subtract fractions with like denominators. For example, 1/2 + 1/2 = 1.</p> <p>5.NF.A.3 Multiply and divide fractions. For example, 1/2 x 1/2 = 1/4.</p>	
6. Expressions and Equations			<p>6.EE.A.1 Write and solve equations. For example, write an equation for a problem and solve it.</p> <p>6.EE.A.2 Use variables to represent quantities in a problem. For example, use a variable to represent an unknown quantity.</p> <p>6.EE.A.3 Solve equations. For example, solve an equation for a variable.</p>	
7. The Number System			<p>7.NS.A.1 Add and subtract integers. For example, 3 + 2 = 5.</p> <p>7.NS.A.2 Multiply and divide integers. For example, 3 x 2 = 6.</p> <p>7.NS.A.3 Add and subtract rational numbers. For example, 1/2 + 1/2 = 1.</p>	
8. Ratios and Proportional Relationships			<p>8.RP.A.1 Understand and explain the relationship between a ratio and a proportion. For example, 1/2 = 2/4.</p> <p>8.RP.A.2 Find the unit rate for a ratio. For example, find the unit rate for a ratio of 1/2 to 2/4.</p> <p>8.RP.A.3 Solve problems involving ratios and proportions. For example, solve a problem involving a ratio of 1/2 to 2/4.</p>	
9. Statistics and Probability			<p>9.SP.A.1 Understand and explain the relationship between a data set and a probability distribution. For example, a data set of 100 and a probability distribution of 1/100.</p> <p>9.SP.A.2 Find the mean and standard deviation for a data set. For example, find the mean and standard deviation for a data set of 100.</p> <p>9.SP.A.3 Solve problems involving statistics and probability. For example, solve a problem involving a data set of 100.</p>	
10. Functions			<p>10.F.A.1 Understand and explain the relationship between a function and a graph. For example, a function of 100 and a graph of 100.</p> <p>10.F.A.2 Find the domain and range for a function. For example, find the domain and range for a function of 100.</p> <p>10.F.A.3 Solve problems involving functions. For example, solve a problem involving a function of 100.</p>	



Domain	NRS Level 1	NRS Level 2	NRS Level 3
1. Number and Operations: Base Ten	Place Value of 2-Digit Numbers Add and Subtract 2-Digit Numbers	Place Value of 3-Digit Numbers Add and Subtract 3-Digit Numbers Multiply 2-Digit Numbers by 1-Digit Numbers Divide 2-Digit Numbers by 1-Digit Numbers	Place Value of 4-Digit Numbers Add and Subtract 4-Digit Numbers Multiply 3-Digit Numbers by 1-Digit Numbers Divide 3-Digit Numbers by 1-Digit Numbers
2. Operations and Algebraic Thinking	Solve Addition and Subtraction Problems within 20 Understand the relationship between addition and subtraction Use addition to solve subtraction problems	Solve Addition and Subtraction Problems within 100 Understand the relationship between addition and subtraction Use addition to solve subtraction problems	Solve Addition and Subtraction Problems within 1,000 Understand the relationship between addition and subtraction Use addition to solve subtraction problems
3. Measurement and Data	Measure Length, Mass, and Capacity Classify Shapes by Attributes	Measure Length, Mass, and Capacity Classify Shapes by Attributes	Measure Length, Mass, and Capacity Classify Shapes by Attributes
4. Geometry	Identify and Describe Basic Geometric Shapes Classify Shapes by Attributes	Identify and Describe Basic Geometric Shapes Classify Shapes by Attributes	Identify and Describe Basic Geometric Shapes Classify Shapes by Attributes
5. Number and Operations: Fractions	Represent Fractions on a Number Line Add and Subtract Fractions	Represent Fractions on a Number Line Add and Subtract Fractions	Represent Fractions on a Number Line Add and Subtract Fractions
6. Expressions and Equations	Use Addition and Subtraction to Solve Word Problems Understand the relationship between addition and subtraction	Use Addition and Subtraction to Solve Word Problems Understand the relationship between addition and subtraction	Use Addition and Subtraction to Solve Word Problems Understand the relationship between addition and subtraction
7. The Number System	Use Addition and Subtraction to Solve Word Problems Understand the relationship between addition and subtraction	Use Addition and Subtraction to Solve Word Problems Understand the relationship between addition and subtraction	Use Addition and Subtraction to Solve Word Problems Understand the relationship between addition and subtraction


APPLICATIONS OF THE MATRIX

35
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Applications

- The matrix can be used in planning (daily, weekly, or by unit). Start with the upper leftmost content cell within each region of the matrix then teaching outwards to cover the entire region.

Domain	NRS Level 1	
1. Number and Operations: Base Ten	Place Value of 2-Digit Numbers	Add and Subtract 2-Digit Numbers
	Compare 2-Digit Numbers	Model Addition and Subtraction of 2-Digit Numbers
2. Operations and Algebraic Thinking	Solve Addition and Subtraction Problems within 20	The Equal Sign
	Commutative and Associative Property of Addition	Solving Addition and Subtraction Equations




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Applications

- The matrix can be used to track class progress or individual student's progress, which is important in adjusting the pace of the lesson and design/selection or learning materials/activities.

Domain	NRS Level 1	NRS Level 2	NRS Level 3
1. Number and Operations: Base Ten	Place Value of 2-Digit Numbers Add and Subtract 2-Digit Numbers Compare 2-Digit Numbers Understand Addition and Subtraction of 2-Digit Numbers	Place Value of 3-Digit Numbers Add and Subtract 3-Digit Numbers Compare 3-Digit Numbers Understand Addition and Subtraction of 3-Digit Numbers Round Whole Numbers to the Nearest Tens or Hundreds Multiply 1-Digit Numbers by 1-Digit Multiples of 10	Place Value of 4-Digit Numbers Add and Subtract 4-Digit Numbers Compare 4-Digit Numbers Understand Addition and Subtraction of 4-Digit Numbers Round Whole Numbers to the Nearest Tens, Hundreds, or Thousands Multiply 1-Digit Numbers by 2-Digit Multiples of 10 Divide 2-Digit Numbers by 1-Digit Numbers
2. Operations and Algebraic Thinking	Use Addition and Subtraction Facts within 100 Use Multiplication Facts within 100 Use Division Facts within 100 Use Addition and Subtraction Facts within 1000 Use Multiplication Facts within 1000 Use Division Facts within 1000	Use Addition and Subtraction Facts within 1000 Use Multiplication Facts within 1000 Use Division Facts within 1000 Use Addition and Subtraction Facts within 10000 Use Multiplication Facts within 10000 Use Division Facts within 10000	Use Addition and Subtraction Facts within 10000 Use Multiplication Facts within 10000 Use Division Facts within 10000 Use Addition and Subtraction Facts within 100000 Use Multiplication Facts within 100000 Use Division Facts within 100000
3. Measurement and Data	Measure Lengths on a Number Line Measure Angles Measure Area Measure Volume Measure Mass Measure Temperature Measure Time	Measure Lengths on a Number Line Measure Angles Measure Area Measure Volume Measure Mass Measure Temperature Measure Time	Measure Lengths on a Number Line Measure Angles Measure Area Measure Volume Measure Mass Measure Temperature Measure Time
4. Geometry	Classify 2-Dimensional Shapes Classify 3-Dimensional Solids Classify Angles Classify Lines and Rays Classify Polygons Classify Circles	Classify 2-Dimensional Shapes Classify 3-Dimensional Solids Classify Angles Classify Lines and Rays Classify Polygons Classify Circles	Classify 2-Dimensional Shapes Classify 3-Dimensional Solids Classify Angles Classify Lines and Rays Classify Polygons Classify Circles
5. Number and Operations: Fractions	Represent Fractions on a Number Line Add and Subtract Fractions Compare Fractions Multiply Fractions Divide Fractions	Represent Fractions on a Number Line Add and Subtract Fractions Compare Fractions Multiply Fractions Divide Fractions	Represent Fractions on a Number Line Add and Subtract Fractions Compare Fractions Multiply Fractions Divide Fractions
6. Expressions and Equations	Write and Solve Equations Write and Solve Inequalities Write and Solve Word Problems Write and Solve Systems of Equations	Write and Solve Equations Write and Solve Inequalities Write and Solve Word Problems Write and Solve Systems of Equations	Write and Solve Equations Write and Solve Inequalities Write and Solve Word Problems Write and Solve Systems of Equations
7. The Number System	Use the Number System Use the Number System Use the Number System Use the Number System	Use the Number System Use the Number System Use the Number System Use the Number System	Use the Number System Use the Number System Use the Number System Use the Number System



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Applications

- The matrix can be used together with test results to map students strong and weak areas which could lead to developing class, small group or individual student learning profiles.


Domain	NRS Level 1	NRS Level 2	NRS Level 3
1. Number and Operations: Base Ten	Place Value of 2-Digit Numbers Add and Subtract 2-Digit Numbers Compare 2-Digit Numbers Understand Addition and Subtraction of 2-Digit Numbers	Place Value of 3-Digit Numbers Add and Subtract 3-Digit Numbers Compare 3-Digit Numbers Understand Addition and Subtraction of 3-Digit Numbers Round Whole Numbers to the Nearest Tens or Hundreds Multiply 1-Digit Numbers by 1-Digit Multiples of 10	Place Value of 4-Digit Numbers Add and Subtract 4-Digit Numbers Compare 4-Digit Numbers Understand Addition and Subtraction of 4-Digit Numbers Round Whole Numbers to the Nearest Tens, Hundreds, or Thousands Multiply 1-Digit Numbers by 2-Digit Multiples of 10 Divide 2-Digit Numbers by 1-Digit Numbers
2. Operations and Algebraic Thinking	Use Addition and Subtraction Facts within 100 Use Multiplication Facts within 100 Use Division Facts within 100 Use Addition and Subtraction Facts within 1000 Use Multiplication Facts within 1000 Use Division Facts within 1000	Use Addition and Subtraction Facts within 1000 Use Multiplication Facts within 1000 Use Division Facts within 1000 Use Addition and Subtraction Facts within 10000 Use Multiplication Facts within 10000 Use Division Facts within 10000	Use Addition and Subtraction Facts within 10000 Use Multiplication Facts within 10000 Use Division Facts within 10000 Use Addition and Subtraction Facts within 100000 Use Multiplication Facts within 100000 Use Division Facts within 100000
3. Measurement and Data	Measure Lengths on a Number Line Measure Angles Measure Area Measure Volume Measure Mass Measure Temperature Measure Time	Measure Lengths on a Number Line Measure Angles Measure Area Measure Volume Measure Mass Measure Temperature Measure Time	Measure Lengths on a Number Line Measure Angles Measure Area Measure Volume Measure Mass Measure Temperature Measure Time
4. Geometry	Classify 2-Dimensional Shapes Classify 3-Dimensional Solids Classify Angles Classify Lines and Rays Classify Polygons Classify Circles	Classify 2-Dimensional Shapes Classify 3-Dimensional Solids Classify Angles Classify Lines and Rays Classify Polygons Classify Circles	Classify 2-Dimensional Shapes Classify 3-Dimensional Solids Classify Angles Classify Lines and Rays Classify Polygons Classify Circles
5. Number and Operations: Fractions	Represent Fractions on a Number Line Add and Subtract Fractions Compare Fractions Multiply Fractions Divide Fractions	Represent Fractions on a Number Line Add and Subtract Fractions Compare Fractions Multiply Fractions Divide Fractions	Represent Fractions on a Number Line Add and Subtract Fractions Compare Fractions Multiply Fractions Divide Fractions
6. Expressions and Equations	Write and Solve Equations Write and Solve Inequalities Write and Solve Word Problems Write and Solve Systems of Equations	Write and Solve Equations Write and Solve Inequalities Write and Solve Word Problems Write and Solve Systems of Equations	Write and Solve Equations Write and Solve Inequalities Write and Solve Word Problems Write and Solve Systems of Equations
7. The Number System	Use the Number System Use the Number System Use the Number System Use the Number System	Use the Number System Use the Number System Use the Number System Use the Number System	Use the Number System Use the Number System Use the Number System Use the Number System

ipdae BY EDUCATORS FOR EDUCATORS		Applications			
Domain	NRS Level 1	NRS Level 2	NRS Level 3	NRS Level 3	NRS Level 3
1. Number and Operations: Base Ten	Place Value of 2-Digit Numbers Add and Subtract 2-Digit Numbers Compare 2-Digit Numbers	Place Value of 3-Digit Numbers Add and Subtract 3-Digit Numbers Round Addition and Subtraction of 3-Digit Numbers	Place Value of 3-Digit Numbers Add and Subtract 3-Digit Numbers Round Addition and Subtraction of 3-Digit Numbers	Place Value of 3-Digit Numbers Add and Subtract 3-Digit Numbers Round Addition and Subtraction of 3-Digit Numbers	Place Value of 3-Digit Numbers Add and Subtract 3-Digit Numbers Round Addition and Subtraction of 3-Digit Numbers
2. Operations and Algebraic Thinking	Solve Addition and Subtraction Problems within 100 Solving Addition and Subtraction Equations	Solve Addition and Subtraction Problems within 100 Solving Multiplication and Division Equations	Solve Addition and Subtraction Problems within 100 Solving Multiplication and Division Equations	Solve Addition and Subtraction Problems within 100 Solving Multiplication and Division Equations	Solve Addition and Subtraction Problems within 100 Solving Multiplication and Division Equations
3. Measurement and Data	Represent, Represent, and Interpret 3 Categories of Data Indirectly Measure Lengths, Widths and Bar Graphs	Represent, Represent, and Interpret 3 Categories of Data Indirectly Measure Lengths, Widths and Bar Graphs	Represent, Represent, and Interpret 3 Categories of Data Indirectly Measure Lengths, Widths and Bar Graphs	Represent, Represent, and Interpret 3 Categories of Data Indirectly Measure Lengths, Widths and Bar Graphs	Represent, Represent, and Interpret 3 Categories of Data Indirectly Measure Lengths, Widths and Bar Graphs
4. Geometry	Analyze, Compare, and Classify 2-Dimensional Shapes Classify 2-Dimensional Shapes	Analyze, Compare, and Classify 2-Dimensional Shapes Classify 2-Dimensional Shapes	Analyze, Compare, and Classify 2-Dimensional Shapes Classify 2-Dimensional Shapes	Analyze, Compare, and Classify 2-Dimensional Shapes Classify 2-Dimensional Shapes	Analyze, Compare, and Classify 2-Dimensional Shapes Classify 2-Dimensional Shapes
5. Number and Operations: Fractions	Represent Fractions with Denominators 10, 100, and 1000 Add and Subtract Fractions	Represent Fractions with Denominators 10, 100, and 1000 Add and Subtract Fractions	Represent Fractions with Denominators 10, 100, and 1000 Add and Subtract Fractions	Represent Fractions with Denominators 10, 100, and 1000 Add and Subtract Fractions	Represent Fractions with Denominators 10, 100, and 1000 Add and Subtract Fractions

These group or individual student profiles also help in developing **formative assessments** to determine mastery of each standard.

ipdae BY EDUCATORS FOR EDUCATORS		Applications			
Domain	NRS Level 1	NRS Level 2	NRS Level 3	NRS Level 3	NRS Level 3
1. Number and Operations: Base Ten	Place Value of 2-Digit Numbers Add and Subtract 2-Digit Numbers Compare 2-Digit Numbers	Place Value of 3-Digit Numbers Add and Subtract 3-Digit Numbers Round Addition and Subtraction of 3-Digit Numbers	Place Value of 3-Digit Numbers Add and Subtract 3-Digit Numbers Round Addition and Subtraction of 3-Digit Numbers	Place Value of 3-Digit Numbers Add and Subtract 3-Digit Numbers Round Addition and Subtraction of 3-Digit Numbers	Place Value of 3-Digit Numbers Add and Subtract 3-Digit Numbers Round Addition and Subtraction of 3-Digit Numbers
2. Operations and Algebraic Thinking	Solve Addition and Subtraction Problems within 100 Solving Addition and Subtraction Equations	Solve Addition and Subtraction Problems within 100 Solving Multiplication and Division Equations	Solve Addition and Subtraction Problems within 100 Solving Multiplication and Division Equations	Solve Addition and Subtraction Problems within 100 Solving Multiplication and Division Equations	Solve Addition and Subtraction Problems within 100 Solving Multiplication and Division Equations
3. Measurement and Data	Represent, Represent, and Interpret 3 Categories of Data Indirectly Measure Lengths, Widths and Bar Graphs	Represent, Represent, and Interpret 3 Categories of Data Indirectly Measure Lengths, Widths and Bar Graphs	Represent, Represent, and Interpret 3 Categories of Data Indirectly Measure Lengths, Widths and Bar Graphs	Represent, Represent, and Interpret 3 Categories of Data Indirectly Measure Lengths, Widths and Bar Graphs	Represent, Represent, and Interpret 3 Categories of Data Indirectly Measure Lengths, Widths and Bar Graphs
4. Geometry	Analyze, Compare, and Classify 2-Dimensional Shapes Classify 2-Dimensional Shapes	Analyze, Compare, and Classify 2-Dimensional Shapes Classify 2-Dimensional Shapes	Analyze, Compare, and Classify 2-Dimensional Shapes Classify 2-Dimensional Shapes	Analyze, Compare, and Classify 2-Dimensional Shapes Classify 2-Dimensional Shapes	Analyze, Compare, and Classify 2-Dimensional Shapes Classify 2-Dimensional Shapes
5. Number and Operations: Fractions	Represent Fractions with Denominators 10, 100, and 1000 Add and Subtract Fractions	Represent Fractions with Denominators 10, 100, and 1000 Add and Subtract Fractions	Represent Fractions with Denominators 10, 100, and 1000 Add and Subtract Fractions	Represent Fractions with Denominators 10, 100, and 1000 Add and Subtract Fractions	Represent Fractions with Denominators 10, 100, and 1000 Add and Subtract Fractions
6. Expressions and Equations	Represent Fractions with Denominators 10, 100, and 1000 Add and Subtract Fractions	Represent Fractions with Denominators 10, 100, and 1000 Add and Subtract Fractions	Represent Fractions with Denominators 10, 100, and 1000 Add and Subtract Fractions	Represent Fractions with Denominators 10, 100, and 1000 Add and Subtract Fractions	Represent Fractions with Denominators 10, 100, and 1000 Add and Subtract Fractions
7. The Number System	Represent Fractions with Denominators 10, 100, and 1000 Add and Subtract Fractions	Represent Fractions with Denominators 10, 100, and 1000 Add and Subtract Fractions	Represent Fractions with Denominators 10, 100, and 1000 Add and Subtract Fractions	Represent Fractions with Denominators 10, 100, and 1000 Add and Subtract Fractions	Represent Fractions with Denominators 10, 100, and 1000 Add and Subtract Fractions



- The matrix can be used to emphasize big ideas or **learning trajectories** in the standards.



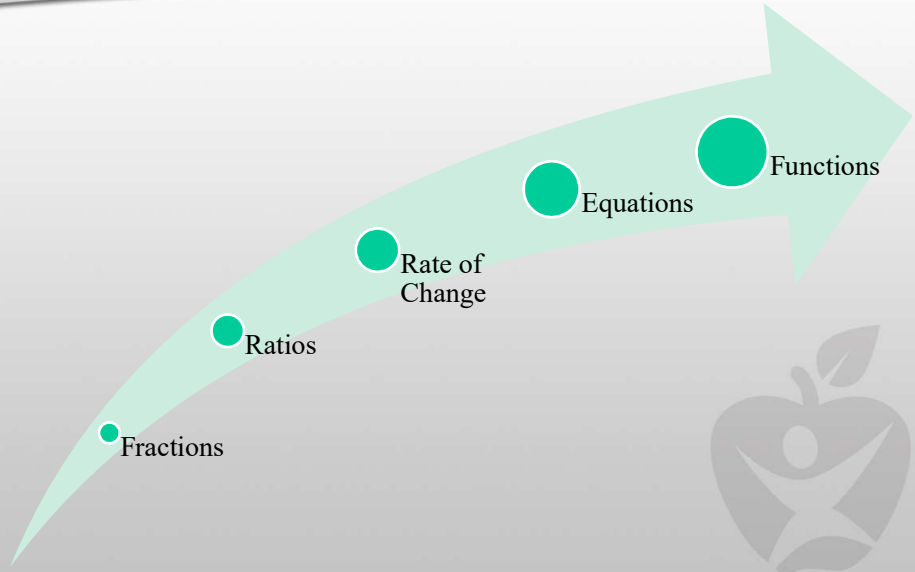
Learning Trajectories

*A **learning trajectory** is generally defined as a content-specific learning path, a developmental progression, and/or a building of conceptual components.*

G. Mojica (2011). A trajectory toward understanding. University of North Carolina - Chapel Hill, School of Education, NC.
<http://thewell.web.unc.edu/2011/10/31/trajectory-toward-understanding/>



Example




Fractions

Ratios

Rate of Change

Equations

Functions




Applications

• The matrix can be used to emphasize big ideas or learning trajectories towards GED **High Impact Indicators** and **Performance Level Descriptors**.

Domain	NRS Level 1	NRS Level 2	NRS Level 3
1. Number and Operations: Base Ten	Place value of a digit number Add and subtract 2-digit numbers Compare 2-digit numbers Round addition and subtraction of 2-digit numbers	Place value of a digit number Add and subtract 2-digit numbers Multiply 2-digit numbers by 2 Divide 2-digit numbers by 2 Divide 2-digit numbers by 2	Place value of a digit number Add and subtract 2-digit numbers Multiply 2-digit numbers by 2 Divide 2-digit numbers by 2 Divide 2-digit numbers by 2
2. Operations and Algebraic Thinking	Write addition and subtraction problems within 100 Compare and contrast properties of addition Solving addition and subtraction equations	Write addition and subtraction problems within 100 Compare and contrast properties of addition Solving addition and subtraction equations	Write addition and subtraction problems within 100 Compare and contrast properties of addition Solving addition and subtraction equations
3. Measurement and Data	Organize, represent, and interpret data sets Understand measurement Represent whole number data on a number line	Organize, represent, and interpret data sets Understand measurement Represent whole number data on a number line	Organize, represent, and interpret data sets Understand measurement Represent whole number data on a number line
4. Geometry	Classify, compare, and compose 2-dimensional shapes Classify 2-dimensional composite shapes	Classify, compare, and compose 2-dimensional shapes Classify 2-dimensional composite shapes	Classify, compare, and compose 2-dimensional shapes Classify 2-dimensional composite shapes

Q.4: Calculate dimensions, perimeter, circumference, and area of two-dimensional figures


Q.5: Calculate dimensions, surface area, and volume of three-dimensional figures



Applications

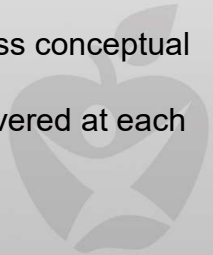
High Impact Indicators are skills/objectives that are useful for educators to emphasize in the classroom because they are essential for students in order to perform well on the GED Test.


- They represent particular foundational skills that are the basis for the development of other skills covered in the GED® Assessment Targets and have broad usefulness that can be applied in multiple contexts.
- They are a good fit for classroom instruction because they are not complicated but are important for students to know and use.
- GED® testing data suggests that educators may not be currently focusing on these skills in their GED® test preparation.



Benefits to the Teacher/Student


- Summarizes the ABE math standards in a more visual representation
- Shows an overall picture of the ABE math standards
- Shows the logical grouping and possible sequencing of the standards
- Emphasizes out how each standards relate to one another
- Organizes the standards in ABE levels across conceptual categories/domains
- Shows how much content/objectives are covered at each ABE level or domain







Benefits to the Teacher/Student

- Serves as a quick guide for teachers so that they are able to prioritize and differentiate teaching to the most important skills to adult students based on the student's ability, curriculum and standardized assessment.
- Enumerates every skill/concept/topic that has to be covered in the ABE Math Classroom.
- Highlights every standard that is tested in standardized assessments such as the TABE 11 & 12.





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Aligning to Standardized Assessment Targets

TEST FOR ADULT BASIC EDUCATION (TABE) 11 & 12

47

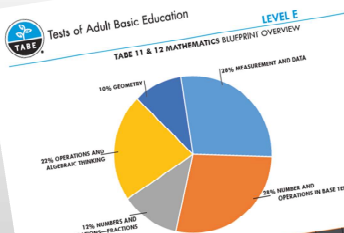
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TABE 11 & 12


The TABE Level E Assessment Blueprint



Tests of Adult Basic Education
LEVEL E
TABE 11 & 12 MATHEMATICS BLUEPRINT OVERVIEW

STANDARD	STANDARD DESCRIPTION	ALC-CE LEVEL	TABE 11/12 EMPHASIS LEVEL
21A01	Understand how the base ten system of a three-digit number represents amounts of hundreds, tens, and ones; e.g., 100 equals 10 tens, 10 tens equals 1 hundred, 1 ten and 10 ones equal 1 hundred. Understand the following: 100 is 10 times as many as 10; 10 is 10 times as many as 1. (1.NF.B.3, 1.NF.B.4, 1.NF.B.5)	Low	Medium
21A02	Count from 100 to 1,000 by ones and by tens. Skip-count by fives and tens. Recognize that 100 is 10 times as many as 10; 10 is 10 times as many as 1. (1.NF.B.3, 1.NF.B.4, 1.NF.B.5)	Low	Medium
21A03	Read and write numbers 100 to 1,000 using base ten numerals, number names, and expanded form. Understand that 100 is 10 times as many as 10; 10 is 10 times as many as 1. (1.NF.B.3, 1.NF.B.4, 1.NF.B.5)	Low	Medium
21A04	Compare two three-digit numbers based on the meanings of the hundreds, tens, and ones; use >, =, and < symbols to record the results of comparisons. (1.NF.B.3, 1.NF.B.4, 1.NF.B.5)	Low	Medium
21A05	Add and subtract within 1,000, using concrete models or a place value chart to represent the numbers and the operation. Understand that adding and subtracting within 1,000 involves adding and subtracting within 100, and that adding and subtracting within 100 involves adding and subtracting within 10. (1.NF.B.3, 1.NF.B.4, 1.NF.B.5)	Low	Medium

STANDARD DESCRIPTION	ALC-CE LEVEL	TABE 11/12 EMPHASIS LEVEL
1. A fraction $\frac{1}{b}$ is the quantity formed by 1 part when a whole is into b equal parts; understood as a fraction $\frac{a}{b}$ is the quantity formed by a parts. (2.FF.A.3, 2.FF.A.4)	Medium	Medium
2. A fraction as a number on the number line; represent fractions on a number line. (2.FF.A.3, 2.FF.A.4)	Medium	Medium
3. Decompose fractions in equal cases, and compare fractions by numerator. (2.FF.A.3, 2.FF.A.4)	Medium	Medium
4. Add and subtract within 100 using concrete models or a place value chart to represent the numbers and the operation. Understand that adding and subtracting within 100 involves adding and subtracting within 10, and that adding and subtracting within 10 involves adding and subtracting within 1. (2.FF.A.3, 2.FF.A.4)	Low	Medium
5. Measure length using a ruler marked with inches. Measure the length of an object to the nearest inch. (2.MD.A.2)	Low	Medium
6. Measure the length of an object in units of a chosen measuring unit. Express the measurement of an object in units of a chosen measuring unit. (2.MD.A.2)	Low	Medium
7. Measure the length of an object in units of a chosen measuring unit. Express the measurement of an object in units of a chosen measuring unit. (2.MD.A.2)	Low	Medium
8. Measure the length of an object in units of a chosen measuring unit. Express the measurement of an object in units of a chosen measuring unit. (2.MD.A.2)	Low	Medium
9. Measure the length of an object in units of a chosen measuring unit. Express the measurement of an object in units of a chosen measuring unit. (2.MD.A.2)	Low	Medium
10. Measure the length of an object in units of a chosen measuring unit. Express the measurement of an object in units of a chosen measuring unit. (2.MD.A.2)	Low	Medium




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TABE 11 & 12

Comparing the Matrix to the TABE Assessment Blueprints

Domain	NRS Level 1		NRS Level 2		
1. Number and Operations: Base Ten	Place Value of 2-Digit Numbers	Add and Subtract 2-Digit Numbers	Place Value of 3-Digit Numbers	Add and Subtract 3-Digit Numbers	Round Whole Numbers to the Nearest Tens or Hundreds
	Compare 2-Digit Numbers	Model Addition and Subtraction of 2-Digit Numbers	Compare 3-Digit Numbers	Model Addition and Subtraction of 3-Digit Numbers	Multiply 1-Digit Numbers by 2-Digit Multiples of 10
					Use Properties of Operations to Perform Multi-Digit Arithmetic
					Mentally Add and Subtract 10 or 100 to 3-Digit Numbers

NUMBER AND OPERATIONS IN BASE TEN (28%)	STANDARD	STANDARD DESCRIPTION	AE-CCR LEVEL	TABE 11/12 EMPHASIS LEVEL
	2.NBT.1	Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases: (2.NBT.1.a, 2.NBT.1.b)	B	Low
	3.NBT.1	Use place value understanding to round whole numbers to the nearest 10 or 100.	B	Medium
	2.NBT.2	Count within 1000; skip-count by 5s, 10s, and 100s.	B	Medium
	3.NBT.2	Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.	B	Low
	2.NBT.3	Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.	B	Low
	3.NBT.3	Multiply one-digit whole numbers by multiples of 10 in the range 10 - 90 (e.g., 9×80 , 5×60) using strategies based on place value and properties of operations.	B	Medium
	2.NBT.4	Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons.	B	Medium
	2.NBT.6	Add up to four two-digit numbers using strategies based on place value and properties of operations.	B	Medium
	2.NBT.7	Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.	B	Medium



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TABE 11 & 12

Comparing the Matrix to the TABE Assessment Blueprints

2. Operations and Algebraic Thinking	Solve Addition and Subtraction Problems within 20 Commutative and Associative Property of Addition	The Equal Sign Solving Addition and Subtraction Equations	Solve Addition and Subtraction Problems within 100 Commutative and Associative Property of Multiplication	Solve Multiplication and Division Problems within 100 Solve Multiplication and Division Equations	Multiplication Facts within 100 Distributive Property of Multiplication	Solve 2-Step Problems or Equations Model Multiplication and Division within 100
--------------------------------------	-----------------------------------------------------------------------------------------------------------	------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------	----------------------------------------------------------------------------------------

OPERATIONS AND ALGEBRAIC THINKING (22%)


STANDARD	STANDARD DESCRIPTION	AE-CCR LEVEL	TABE 11/12 EMPHASIS LEVEL
2.OA.1	Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	B	Medium
3.OA.1	Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as 5×7 .	B	Medium
3.OA.2	Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe a context in which a number of shares or a number of groups can be expressed as $56 \div 8$.	B	Low
3.OA.3	Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	B	Low
3.OA.4	Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations $8 \times ? = 48$, $5 = \square \div 3$, $6 \times 6 = \square$.	B	Low
3.OA.5	Apply properties of operations as strategies to multiply and divide. Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.)	B	Low
3.OA.6	Understand division as an unknown-factor problem. For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8.	B	Medium
3.OA.7	Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.	B	Low
3.OA.8	Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	B	Medium
3.OA.9	Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed	B	Low



TABE 11 & 12

Comparing the Matrix to the TABE Assessment Blueprints

3. Measurement and Data	Organize, Represent, and Interpret 3 Categories of Data	Indirectly Measure Lengths through Iteration	Analyze and Generate Picture Graphs and Bar Graphs	Analyze and Generate Line Plots	Measure and Estimate Lengths in Standard Units	Solve Problems Involving Time, Volume and Mass
			Represent Whole Number Lengths on a Number Line	Measuring and Estimating Areas of Plane Figures	Solve Problems Involving Perimeter of Polygons	Use Areas to Model Addition and Multiplication
MEASUREMENT AND DATA (28%)	STANDARD	STANDARD DESCRIPTION		AE-CCR LEVEL	TABE 11/12 EMPHASIS LEVEL	
	3.MD.1	Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.		B	Medium	
	2.MD.2	Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.		B	Low	
	3.MD.2	Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.		B	Medium	
	2.MD.3	Estimate lengths using units of inches, feet, centimeters, and meters.		B	Low	
	3.MD.3	Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step how many more and how many less problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.		B	Low	
	2.MD.4	Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.		B	Low	
	3.MD.4	Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units – whole numbers, halves, or quarters.		B	Low	
	3.MD.5	Recognize area as an attribute of plane figures and understand concepts of area measurement. (3.MD.5.b)		B	Low	
	2.MD.6	Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.		B	Low	
3.MD.7	Relate area to the operations of multiplication and addition. (3.MD.7.a, 3.MD.7.b, 3.MD.7.c, 3.MD.7.d)		B	High		
3.MD.8	Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.		B	Medium		
2.MD.10	Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put together, take-apart, and compare problems using information presented in a bar graph.		B	Low		




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TABE 11 & 12

Comparing the Matrix to the TABE Assessment Blueprints

	Analyze, Compare, and Compose 3-Dimensional Shapes	2- and 3-Dimensional Composite Shapes	Analyze, Draw and Compare Shapes Having Specified Attributes	Identify Common Polygons and 3-Dimensional Figures	Categorize Shapes with Common Attributes	Partition Shapes into Parts with Equal Areas
4. Geometry						

	STANDARD	STANDARD DESCRIPTION	AE-CCR LEVEL	TABE 11/12 EMPHASIS LEVEL
GEOMETRY (10%)	2.G.1	Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.	B	Medium
	3.G.1	Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.	B	Medium
	3.G.2	Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part as $\frac{1}{4}$ of the area of the shape.	B	Low
	2.G.3	Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.	B	Low



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TABE 11 & 12

Comparing the Matrix to the TABE Assessment Blueprints

5. Number and Operations: Fractions		Represent Fractions with Denominators 2, 3, 4, 6, or 8 on a Number Line	Recognize Equivalent Fractions on a Number Line	Use Visual Models to Represent Equivalent Fractions	Compare Fractions with the Same Numerator or Denominator

NUMBER AND OPERATIONS
—FRACTIONS (12%)

STANDARD	STANDARD DESCRIPTION	AE-CCR LEVEL	TABE 11/12 EMPHASIS LEVEL
3.NF.1	Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$.	B	Medium
3.NF.2	Understand a fraction as a number on the number line; represent fractions on a number line diagram. (3.NF.2.a, 3.NF.2.b)	B	Medium
3.NF.3	Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. (3.NF.3.a, 3.NF.3.b, 3.NF.3.c, 3.NF.3.d)	B	High







THE VARIOUS MATRIX OVERLAYS IN DEVELOPMENT

54

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 Overlays				
Adult Basic Education (Mathematics) Curriculum Matrix				
Domain	NRS Level 1	NRS Level 2	NRS Level 3	NRS Level 4
1. Number and Operations: Base Ten	Use place value to add, subtract, multiply, and divide whole numbers and decimals up to 100,000.	Use place value to add, subtract, multiply, and divide whole numbers and decimals up to 1,000,000.	Use place value to add, subtract, multiply, and divide whole numbers and decimals up to 100,000,000.	Use place value to add, subtract, multiply, and divide whole numbers and decimals up to 1,000,000,000.
2. Operations and Algebraic Thinking	Use addition and subtraction to solve problems involving whole numbers and decimals.	Use addition and subtraction to solve problems involving whole numbers and decimals.	Use addition and subtraction to solve problems involving whole numbers and decimals.	Use addition and subtraction to solve problems involving whole numbers and decimals.
3. Measurement and Data	Use measurement and data to solve problems.	Use measurement and data to solve problems.	Use measurement and data to solve problems.	Use measurement and data to solve problems.
4. Geometry	Use geometry to solve problems.	Use geometry to solve problems.	Use geometry to solve problems.	Use geometry to solve problems.
5. Number and Operations: Fractions	Use fractions to solve problems.	Use fractions to solve problems.	Use fractions to solve problems.	Use fractions to solve problems.
6. Expressions and Equations	Use expressions and equations to solve problems.	Use expressions and equations to solve problems.	Use expressions and equations to solve problems.	Use expressions and equations to solve problems.
7. The Number System	Use the number system to solve problems.	Use the number system to solve problems.	Use the number system to solve problems.	Use the number system to solve problems.
8. Ratios and Proportional Relationships	Use ratios and proportional relationships to solve problems.	Use ratios and proportional relationships to solve problems.	Use ratios and proportional relationships to solve problems.	Use ratios and proportional relationships to solve problems.
9. Statistics and Probability	Use statistics and probability to solve problems.	Use statistics and probability to solve problems.	Use statistics and probability to solve problems.	Use statistics and probability to solve problems.
10. Functions	Use functions to solve problems.	Use functions to solve problems.	Use functions to solve problems.	Use functions to solve problems.

 Overlays				
Learning Trajectory Overlays				
Domain	NRS Level 1	NRS Level 2	NRS Level 3	NRS Level 4
1. Number and Operations: Base Ten	Use place value to add, subtract, multiply, and divide whole numbers and decimals up to 100,000.	Use place value to add, subtract, multiply, and divide whole numbers and decimals up to 1,000,000.	Use place value to add, subtract, multiply, and divide whole numbers and decimals up to 100,000,000.	Use place value to add, subtract, multiply, and divide whole numbers and decimals up to 1,000,000,000.
2. Operations and Algebraic Thinking	Use addition and subtraction to solve problems involving whole numbers and decimals.	Use addition and subtraction to solve problems involving whole numbers and decimals.	Use addition and subtraction to solve problems involving whole numbers and decimals.	Use addition and subtraction to solve problems involving whole numbers and decimals.
3. Measurement and Data	Use measurement and data to solve problems.	Use measurement and data to solve problems.	Use measurement and data to solve problems.	Use measurement and data to solve problems.
4. Geometry	Use geometry to solve problems.	Use geometry to solve problems.	Use geometry to solve problems.	Use geometry to solve problems.
5. Number and Operations: Fractions	Use fractions to solve problems.	Use fractions to solve problems.	Use fractions to solve problems.	Use fractions to solve problems.
6. Expressions and Equations	Use expressions and equations to solve problems.	Use expressions and equations to solve problems.	Use expressions and equations to solve problems.	Use expressions and equations to solve problems.
7. The Number System	Use the number system to solve problems.	Use the number system to solve problems.	Use the number system to solve problems.	Use the number system to solve problems.

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Overlays

Thematic and Career Cluster Overlays

ADULT BASIC EDUCATION MATHEMATIC DOMAINS

Domain Number	Domain Name	Overarching Theme: Geometry (Domain 6)			
		Starting with a Point	Lines	Planes	Space
1	Number and Operations: Base Ten	Whole Number Operations			
2	Operations and Algebraic Thinking			Properties of Addition and Multiplication (Area Method of Addition and Multiplication)	Relating Volumes to Multiplication and Addition to Solve Real-World Problems
3	Measurement and Data		Representing and Analyzing Data (Line Plots)	Area, Circle Graphs and Bar Graphs	Volumes and Surface Areas
5	Number and Operations: Fractions			Parts of a Whole and Unit Fractions	
6	Expressions and Equations	Evaluating Expressions and Solutions to Linear Equations	Linear Equations and Equivalent Expressions	Squares, Square Roots and Simultaneous Linear Equations	Cubes and Cube Roots
7	The Number System		The Number Line and Number Operations		
8	Ratios and Proportional Relationships		Double Number Line Diagrams and Graphs of Proportional Relationship	Tape Diagrams	
9	Statistics and Probability		Box Plots and Measures of Central Tendency	Dot Plots (Scatter Plots) and Histograms	
10	Functions		Linear Functions		
		Business, Management and Administration	Communications and Information Systems	Engineering, Manufacturing and Technology	Food and Health Sciences
Career Cluster					

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Overlays

GED High Impact Indicators and Performance Level Descriptors

Domain	NRS Level 1	NRS Level 2	NRS Level 3
1. Number and Operations: Base Ten	Read value of 2-digit numbers and understand 2-digit numbers. Compare 2-digit numbers. Understand addition and subtraction of 2-digit numbers.	Read value of 3-digit numbers and understand 3-digit numbers. Compare 3-digit numbers. Understand addition and subtraction of 3-digit numbers.	Read value of 4-digit numbers and understand 4-digit numbers. Compare 4-digit numbers. Understand addition and subtraction of 4-digit numbers.
2. Operations and Algebraic Thinking	Write addition and subtraction problems within 100. Understand and describe property of addition. Understand and describe property of subtraction.	Write addition and subtraction problems within 100. Understand and describe property of addition. Understand and describe property of subtraction.	Write addition and subtraction problems within 100. Understand and describe property of addition. Understand and describe property of subtraction.
3. Measurement and Data	Use unit squares and connect cubes to measure length. Use unit squares and connect cubes to measure length.	Use unit squares and connect cubes to measure length. Use unit squares and connect cubes to measure length.	Use unit squares and connect cubes to measure length. Use unit squares and connect cubes to measure length.
4. Geometry	Identify 2D and 3D shapes. Identify 2D and 3D shapes.	Identify 2D and 3D shapes. Identify 2D and 3D shapes.	Identify 2D and 3D shapes. Identify 2D and 3D shapes.




Overlays

TABLE 11 & 12 Blueprint Overlays

Domain	NRS Level 1		NRS Level 2			
1. Number and Operations: Base Ten	Place Value of 2-Digit Numbers	Add and Subtract 2-Digit Numbers	Place Value of 3-Digit Numbers	Add and Subtract 3-Digit Numbers	Round Whole Numbers to the Nearest Tens or Hundreds	Use Properties of Operations to Perform Multi-Digit Arithmetic
	Compare 2-Digit Numbers	Model Addition and Subtraction of 2-Digit Numbers	Compare 3-Digit Numbers	Model Addition and Subtraction of 3-Digit Numbers	Multiply 1-Digit Numbers by 2-Digit Multiples of 10	Mentally Add and Subtract 10 or 100 to 3-Digit Numbers
2. Operations and Algebraic Thinking	Solve Addition and Subtraction Problems within 20	The Equal Sign	Solve Addition and Subtraction Problems within 100	Solve Multiplication and Division Problems within 100	Multiplication Facts within 100	Solve 2-Step Problems or Equations
	Commutative and Associative Property of Addition	Solving Addition and Subtraction Equations	Commutative and Associative Property of Multiplication	Solve Multiplication and Division Equations	Distributive Property of Multiplication	Model Multiplication and Division within 100
3. Measurement and Data	Organize, Represent, and Interpret 3 Categories of Data	Indirectly Measure Lengths through Iteration	Analyze and Generate Picture Graphs and Bar Graphs	Analyze and Generate Line Plots	Measure and Estimate Lengths in Standard Units	Solve Problems Involving Time, Volume and Mass
			Represent Whole Number Lengths on a Number Line	Measuring and Estimating Areas of Plane Figures	Solve Problems Involving Perimeter of Polygons	Use Areas to Model Addition and Multiplication
4. Geometry	Analyze, Compare, and Compose 3-Dimensional Shapes	2- and 3-Dimensional Composite Shapes	Analyze, Draw and Compare Shapes Having Specified Attributes	Identify Common Polygons and 3-Dimensional Figures	Categorize Shapes with Common Attributes	Partition Shapes into Parts with Equal Areas



VALUE TO PROGRAMS AND ADMINISTRATORS

60
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For Programs and Institutions


- Standards-Based Instruction Initiatives
- Program Evaluation and School Improvement
- Teacher Observation and/or Evaluation
- Instructional Resource Alignment, Development and/or Evaluation
- Curriculum Planning and Pacing
- Professional Development
- Student Recruitment and Retention
- Teacher Empowerment and Retention
- Career Pathways Planning and Counseling
- Cross-Curricular Collaboration







61

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THE INTERACTIVE ONLINE CURRICULUM MATRIX



62

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Hyperlinks to Standards and Resources

Coming Soon!

1.2 Use place value understanding and the properties of operations to add and subtract within 100.

- a) Add within 100, including adding a two digit number and a one-digit number, two-digit numbers, and multiples of 10.
- b) Understand that in adding two-digit numbers, one adds tens and tens, ones and ones, and sometimes it is necessary to compose (create) a ten.
- c) Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count.
- d) Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences).
- e) Use concrete models, drawings, and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. Relate the strategy to a written method and explain the reasoning used.



Lessons Links Toolkits Videos Webinars Workshops

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ADDITIONAL CURRICULUM MATRIX RESOURCES

64

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ABE Math Curriculum Matrix
Part 1

May 30, 2018

www.floridaipdae.org



This training event is supported with federal funds as appropriated to the Florida Department of Education, Division of Career and Adult Education for the provision of state leadership professional development activities.

<https://www.youtube.com/watch?v=hKs-obd0ufl>

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65

2017-18 The Institute for the Professional Development of Adult Educators

ABE Math Curriculum Matrix
Part 2

June 6, 2018

www.floridaipdae.org

This training event is supported with federal funds as appropriated to the Florida Department of Education, Division of Career and Adult Education for the provision of state leadership professional development activities.

<https://www.youtube.com/watch?v=gZ1MEKVppZY>

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66

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ABE Math Curriculum Framework Map - Part 1

Presentation Date: 5/30/2018 at 3:00pm
Duration: 1 Hour

Description:
The math curriculum map, developed in partnership with the Florida Department of Education, is a user-friendly version of the ABE Mathematics Curriculum Matrix. Using this map, teachers will be able to seamlessly navigate through various skills and standards aligned by the College and Career Readiness Standards. This webinar will show teachers how to use this versatile tool in planning for instruction and remediation.

Presentation Documents:

- Presentation (PDF)
- Handout: ABE Math Curriculum Matrix (PDF)
- Handout: ABE Math Curriculum Matrix Part 1 Activity Book (PDF)
- Handout: ABE Math 2018 (PDF)
- Handout: High Impact Indicators (PDF)

ABE Math Curriculum Framework Map - Part 1

This webinar will show teachers how to use this versatile tool in planning for instruction and remediation.

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Thank You