

Introduction to IPDAE's Matrix Suite for ABE and GED

Webinar



Activity Book

Institute for the Professional Development of Adult Educators

WEBINAR ACTIVITY BOOK

Incorporating Mathematics into ESOL Instruction

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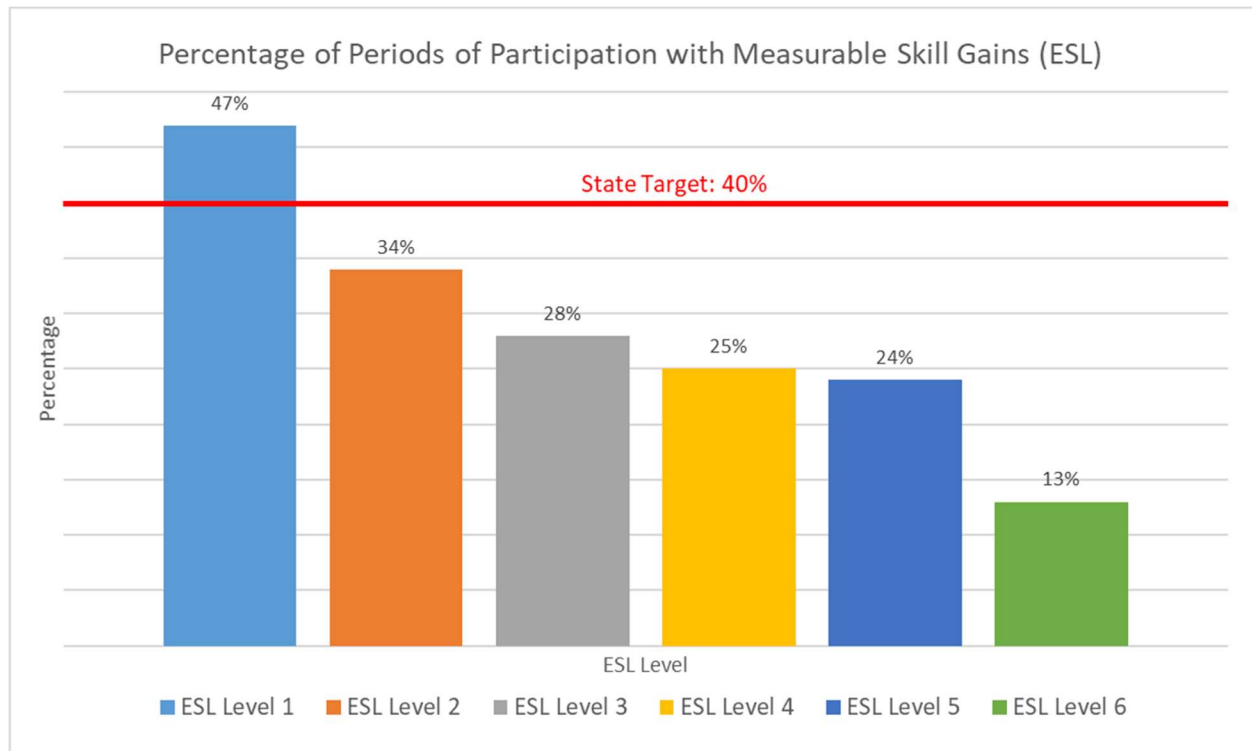
Agenda

- I. Why?
- II. Simplified Process Strategy for Moving Your Data
- III. Strategy Step 1
- IV. Strategy Step 2
- V. Strategy Step 3
- VI. The Electronic Matrix
- VII. Generalized Framework for Incorporating Matrix Suite Resources
- VIII. WIOA Requirements and CTE
- IX. Sustaining the Effort
- X. Evaluation

Guiding Questions

Slide(s)	Guiding Questions	My Thoughts
3	Based on the 2018 NRS Data, which levels of Adult ESOL has met the Measurable Skills Gain Target?	
4	What is the statewide Measurable Skills Gain Target for ABE in 2018? Did we meet this target?	
4	What is the statewide Measurable Skills Gain Target for ESOL in 2018? Did we meet this target?	
5	Describe the post-testing rate for both ABE and ESOL in comparison to the statewide target.	
6	Summarize the process strategy described in this webinar in 2-3 sentences.	
7-35	Describe each component of the Matrix Suite. Reflect on how you think each component may be incorporated into your daily practice.	

Matrix Suite Rationale



State target for Measurable Skill Gains in ABE: 42%

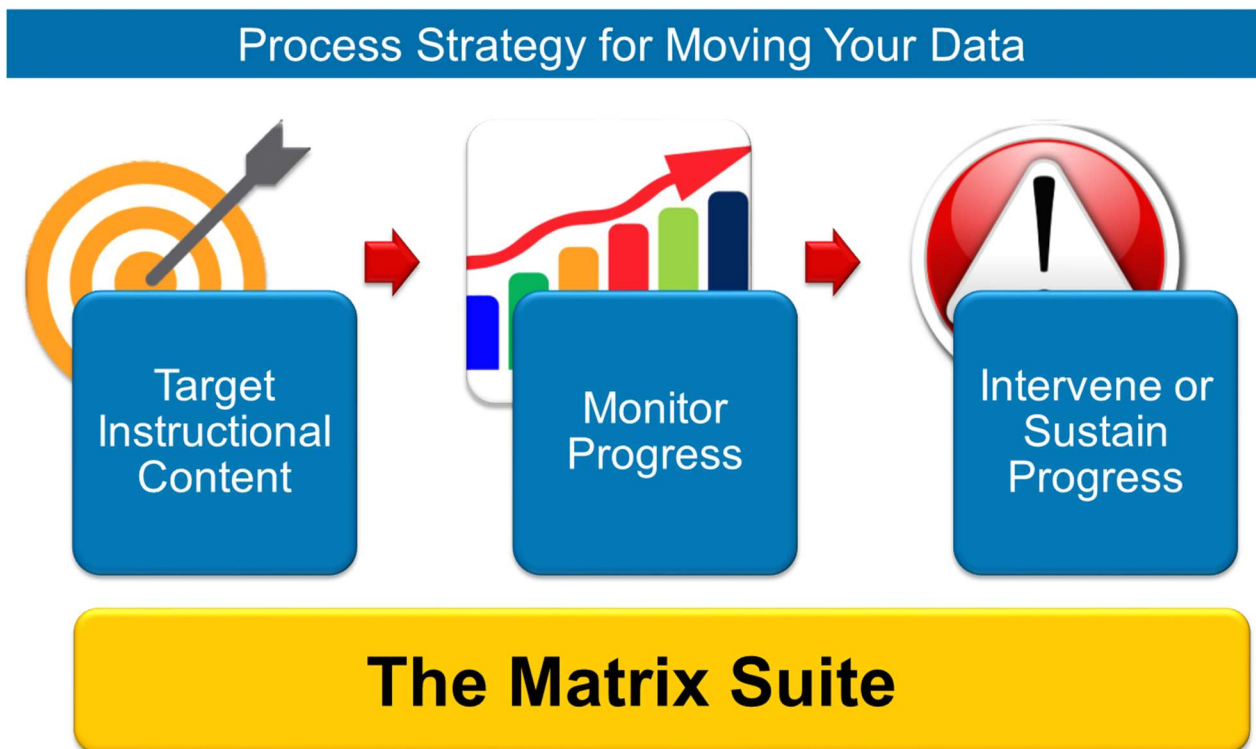
State target for Measurable Skill Gains in ESL: 40%

Entering Educational Functioning\Level	Percentage of Periods of Participation with Measurable Skill Gains	+/- Difference in Measurable Skill Gains
ABE Total	34%	-8%
ESL Total	28%	-12%
Grand Total	30%	-10%

State target for Post Testing Rate: **70%**

Entering Educational Functioning\Level	Post Testing Rate	+/- Difference in Post Testing Rate
ABE Total	41%	-29%
ESL Total	52%	-18%
Grand Total	47%	-24%

Process Strategy for Moving Your Data



Strategy 1



Use the Core Matrices listed below to identify the content that you have to teach and the scope of the entire ABE and GED Curriculum. Each matrix is designed to cover each level of NRS, categorized by domains. Each cell represents a skill, big idea, topic, concept and/or a combination of these, summarized, ordered and chunked altogether to fit a single page spread.

Core Matrices

- ABE Mathematics
- ABE Reading
- ABE Language Arts
- ABE Writing
- GED Mathematical Reasoning Performance Level Descriptors (PLD) Matrix

Adult Basic and Adult Secondary Education Reading Curriculum Matrix					
Domain	NRS Level 1	NRS Level 2	NRS Level 3	NRS Level 4	NRS Levels 5/6
Reading Foundations					
Phonological Awareness	<p>Identify and label the beginning and ending sounds in words and syllables (e.g., cat, cup, bat).</p>				
Phonics and Word Recognition	<p>Identify and label the beginning and ending sounds in words and syllables (e.g., cat, cup, bat).</p>				
Reading Comprehension					
Key Ideas and Details (Anchor Standards 1, 2, 3)	<p>Identify and label the beginning and ending sounds in words and syllables (e.g., cat, cup, bat).</p>				
Craft and Structure (Anchor Standards 4, 5, 6)					
Integration of Knowledge and Ideas (Anchor Standards 7, 8)					
Analyze Themes/Topics in Multiple Texts (Anchor Standard 9)					
Read and Comprehend Complex Text (Anchor Standard 10)					

Adult Basic and Adult Secondary Education Language Curriculum Matrix

[illegible]

Adult Basic and Adult Secondary Education Writing Curriculum Matrix					
Domain	NRS 1	NRS 2	NRS 3	NRS 4	NRS 5/6
<p>TEXT TYPES & PURPOSES</p> <p>Writing Anchor 1: Writing arguments</p>	INTRODUCTION: TONE AND GROUP RELATIVE INFORMATION				
	Write opinion pieces on topics or issues, supporting a claim or position with relevant facts and quotations.	Write opinion pieces on topics or issues, supporting a claim or position with relevant facts and quotations.	Write opinion pieces on topics or issues, supporting a claim or position with relevant facts and quotations.	Write opinion pieces on topics or issues, supporting a claim or position with relevant facts and quotations.	Write opinion pieces on topics or issues, supporting a claim or position with relevant facts and quotations.
	USE FACTS, ANALYZE DETAILS, CLAIMS & COUNTERCLAIMS TO SUPPORT TONE				
	Provide reasons that support the opinion.	Provide reasons that support the opinion.	Provide reasons that support the opinion.	Provide reasons that support the opinion.	Provide reasons that support the opinion.
	USE CORRECT TRANSITION WORDS				
	Use linking words and phrases.	Use linking words and phrases.	Use linking words and phrases.	Use linking words and phrases.	Use linking words and phrases.
	PROVIDE CONCLUSION				
	Provide a concluding statement or sentence.	Provide a concluding statement or sentence.	Provide a concluding statement or sentence.	Provide a concluding statement or sentence.	Provide a concluding statement or sentence.
	USE PRECISE LANGUAGE & MAIN-TEXT STYLE TONE				
	Use precise language to describe a person, place, or thing.	Use precise language to describe a person, place, or thing.	Use precise language to describe a person, place, or thing.	Use precise language to describe a person, place, or thing.	Use precise language to describe a person, place, or thing.
<p>Writing Anchor 2: Writing informative/explanatory texts</p>	INTRODUCTION: TONE & GROUP RELATIVE INFORMATION				
	Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant details.	Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant details.	Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant details.	Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant details.	Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant details.
	USE FACTS, ANALYZE DETAILS, CLAIMS & COUNTERCLAIMS TO SUPPORT TONE				
	Provide reasons that support the opinion.	Provide reasons that support the opinion.	Provide reasons that support the opinion.	Provide reasons that support the opinion.	Provide reasons that support the opinion.
	USE CORRECT TRANSITION WORDS				
	Use linking words and phrases.	Use linking words and phrases.	Use linking words and phrases.	Use linking words and phrases.	Use linking words and phrases.
	PROVIDE CONCLUSION				
	Provide a concluding statement or sentence.	Provide a concluding statement or sentence.	Provide a concluding statement or sentence.	Provide a concluding statement or sentence.	Provide a concluding statement or sentence.
	USE PRECISE LANGUAGE AND MAINTAIN STYLE/TONE				
	Use precise language to describe a person, place, or thing.	Use precise language to describe a person, place, or thing.	Use precise language to describe a person, place, or thing.	Use precise language to describe a person, place, or thing.	Use precise language to describe a person, place, or thing.
<p>Writing Anchor 3: Writing narratives</p> <p>Writing Anchor 4: Producing writing</p> <p>Writing Anchor 5: Developing & strengthening writing</p> <p>Writing Anchor 6: Using technology</p> <p>Writing Anchor 7: Conducting research</p> <p>Writing Anchor 8: Evaluating sources for integration</p> <p>Writing Anchor 9: Drawing evidence to support analysis, reflection & research</p>	INTRODUCTION: TONE & GROUP RELATIVE INFORMATION				
	Write narrative texts to tell a story or recount an experience in a coherent and appropriate manner, using a variety of tenses, time sequences, and points of view.	Write narrative texts to tell a story or recount an experience in a coherent and appropriate manner, using a variety of tenses, time sequences, and points of view.	Write narrative texts to tell a story or recount an experience in a coherent and appropriate manner, using a variety of tenses, time sequences, and points of view.	Write narrative texts to tell a story or recount an experience in a coherent and appropriate manner, using a variety of tenses, time sequences, and points of view.	Write narrative texts to tell a story or recount an experience in a coherent and appropriate manner, using a variety of tenses, time sequences, and points of view.
	USE FACTS, ANALYZE DETAILS, CLAIMS & COUNTERCLAIMS TO SUPPORT TONE				
	Provide reasons that support the opinion.	Provide reasons that support the opinion.	Provide reasons that support the opinion.	Provide reasons that support the opinion.	Provide reasons that support the opinion.
	USE CORRECT TRANSITION WORDS				
	Use linking words and phrases.	Use linking words and phrases.	Use linking words and phrases.	Use linking words and phrases.	Use linking words and phrases.
	PROVIDE CONCLUSION				
	Provide a concluding statement or sentence.	Provide a concluding statement or sentence.	Provide a concluding statement or sentence.	Provide a concluding statement or sentence.	Provide a concluding statement or sentence.
	USE PRECISE LANGUAGE AND MAINTAIN STYLE/TONE				
	Use precise language to describe a person, place, or thing.	Use precise language to describe a person, place, or thing.	Use precise language to describe a person, place, or thing.	Use precise language to describe a person, place, or thing.	Use precise language to describe a person, place, or thing.

Matrix Versions

Several versions of the core matrices have been developed to fit many different purposes. Below are some widely-used versions of the core matrices.

- ABE Mathematics Crosswalk to GED Matrix
- GED Mathematical Reasoning Major Works Matrix
- Matrix Blank Wireframe Versions
- Matrix Plain Versions
- IPDAE Low Profile Versions

ABE Mathematics Crosswalk to GED Matrix					
ABE Domains	NRS Level 5/6	Major Works	Area	GED Domains	
Number and Operations: Base Ten				1. Rational Numbers	
Number and Operations: Fractions					
Ratios and Proportional Relationships					
Geometry				2. Measurement	
Statistics and Probability					
The Real Number System					
Algebra				3. Expression and Equations	
Functions					
				4. Graphs and Functions	

GED Mathematical Reasoning Major Works Matrix

Domain	Level 1 Below Passing Limited/Inconsistent	Level 2 Passing (HS Equivalency) Satisfactory	Level 3 College Ready Strong	NRS Level 4 College Ready + Credit Outstanding
1. Rational Numbers	Factors & Multiples Rates	Rational Numbers	Rational Numbers	
	Rational Numbers	Applications of Ratios and Proportions	Applications of Ratios and Proportions	
		Real Numbers on a Number Line	Real Numbers on a Number Line	
		Rational Exponents	Rational Exponents	
2. Measurement	Area and Perimeter of Triangles and Rectangles	Area and Perimeter of Polygons and Composite Figures		
		Unknown Side Lengths of Polygons	Unknown Side Lengths of Polygons	Radius, Diameter and Circumference of Circles
		Compute Volume and Surface Area of Prisms, Pyramids, Cylinders and Spheres	Compute Volume and Surface Area of Composite Figures	Compute volume and surface area of composite figures.
		Unknown Side Lengths and Heights of Prisms, Pyramids and Cones	Radius, Diameter, Height, Volume and Surface Area of Cylinders	Radius, Diameter, Height, Volume and Surface Area of Cylinders
3. Expression and Equations	Tables and Scatter Plots	Median, Mode and Weighted Average	Permutations and Combinations	Simple and Compound Probability
	Circle and Bar Graphs	Dot Plots, Histograms and Box Plots		
	Linear Expressions	Linear Expressions	Permutations and Combinations	Simple and Compound Probability
	Polynomial Expressions	Factoring Polynomials	Simple and Compound Probability	
4. Graphs and Functions	Rational Expressions	Evaluating Polynomial Expressions	Polynomial Expressions	Solving Quadratic Equations
	Linear Equations	Writing & Solving Quadratic Equations	Solving Quadratic Equations	Graphing & Solving Linear Inequalities
	Systems of Equations	Linear Equations	Graphing & Solving Linear Inequalities	
		Graphing Functions	Graphing Functions	
4. Graphs and Functions	Representing Functions	Representing Functions	Graphing Linear Equations	Graphing Linear Equations
	Slope	Slope	Slope	Equations of Parallel and Perpendicular Lines
	The Coordinate Plane	Writing Linear Equations	Writing Linear Equations	
	Linear and Quadratic Functions	Linear and Quadratic Functions	Comparing Functions	Comparing Functions

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					
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					

Adult Basic Education Mathematics Curriculum Matrix									
Domain	NRS Level 1	NRS Level 2	NRS Level 3	NRS Level 4	NRS Level 5/6				
1. Number and Operations: Base Ten	Place Value of 2-Digit Numbers Addition and Subtraction of 2-Digit Numbers Comparison of 2-Digit Numbers	Round Whole Numbers to the Nearest Tens and Ones Multiply 2-Digit Numbers by 1-Digit Numbers Divide 2-Digit Numbers by 1-Digit Numbers	Standard Algorithms Addition and Subtraction of 3-Digit Numbers Multiply 3-Digit Numbers by 1-Digit Numbers Divide 3-Digit Numbers by 1-Digit Numbers	Place Value of 4-Digit Numbers Addition and Subtraction of 4-Digit Numbers Multiply 4-Digit Numbers by 1-Digit Numbers Divide 4-Digit Numbers by 1-Digit Numbers	Place Value of 5-Digit Numbers Addition and Subtraction of 5-Digit Numbers Multiply 5-Digit Numbers by 1-Digit Numbers Divide 5-Digit Numbers by 1-Digit Numbers				
2. Operations and Algebraic Thinking	Area and Perimeter of Rectangles Volume of Rectangular Prisms Fractions and Decimals Addition and Subtraction of Fractions and Decimals	Area and Perimeter of Rectangles Volume of Rectangular Prisms Fractions and Decimals Addition and Subtraction of Fractions and Decimals	Area and Perimeter of Rectangles Volume of Rectangular Prisms Fractions and Decimals Addition and Subtraction of Fractions and Decimals	Area and Perimeter of Rectangles Volume of Rectangular Prisms Fractions and Decimals Addition and Subtraction of Fractions and Decimals	Area and Perimeter of Rectangles Volume of Rectangular Prisms Fractions and Decimals Addition and Subtraction of Fractions and Decimals				
3. Measurement and Data	Length, Mass, and Capacity Temperature Time Area and Perimeter of Rectangles Volume of Rectangular Prisms	Length, Mass, and Capacity Temperature Time Area and Perimeter of Rectangles Volume of Rectangular Prisms	Length, Mass, and Capacity Temperature Time Area and Perimeter of Rectangles Volume of Rectangular Prisms	Length, Mass, and Capacity Temperature Time Area and Perimeter of Rectangles Volume of Rectangular Prisms	Length, Mass, and Capacity Temperature Time Area and Perimeter of Rectangles Volume of Rectangular Prisms				
4. Geometry	Points, Lines, and Angles Triangles Quadrilaterals Circles Area and Perimeter of Rectangles Volume of Rectangular Prisms	Points, Lines, and Angles Triangles Quadrilaterals Circles Area and Perimeter of Rectangles Volume of Rectangular Prisms	Points, Lines, and Angles Triangles Quadrilaterals Circles Area and Perimeter of Rectangles Volume of Rectangular Prisms	Points, Lines, and Angles Triangles Quadrilaterals Circles Area and Perimeter of Rectangles Volume of Rectangular Prisms	Points, Lines, and Angles Triangles Quadrilaterals Circles Area and Perimeter of Rectangles Volume of Rectangular Prisms				
5. Number and Operations: Fractions	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions				
6. Expressions and Equations	Variables and Expressions Equations and Inequalities Factoring and Solving Equations and Inequalities	Variables and Expressions Equations and Inequalities Factoring and Solving Equations and Inequalities	Variables and Expressions Equations and Inequalities Factoring and Solving Equations and Inequalities	Variables and Expressions Equations and Inequalities Factoring and Solving Equations and Inequalities	Variables and Expressions Equations and Inequalities Factoring and Solving Equations and Inequalities				
7. The Number System	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions				
8. Ratios and Proportional Relationships	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions				
9. Statistics and Probability	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions				
10. Functions	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions	Place Value of Fractions Addition and Subtraction of Fractions Multiplication and Division of Fractions				

Domain	NIS Level 1			NIS Level 2			NIS Level 3			NIS Level 4		
1. Number and Operations: Base Ten	Place Value of 2-Digit Numbers	Add and Subtract 2-Digit Numbers	Place Value of 2-Digit Numbers	Add and Subtract 2-Digit Numbers	Round Whole Numbers to the Nearest Tens or Hundreds	Use Properties of Operations to Perform Multi-Digit Arithmetic	Read and Write Multi-Digit Numbers in Standard Form	Read and Write Multi-Digit Numbers in Standard Form	Use Place Value to Understand Decimals			
	Compare 2-Digit Numbers	Model Addition and Subtraction of 2-Digit Numbers	Compare 2-Digit Numbers	Subtraction of 2-Digit Numbers	Use Properties of Operations to Perform Multi-Digit Arithmetic	Use Properties of Operations to Perform Multi-Digit Arithmetic	Use Properties of Operations to Perform Multi-Digit Arithmetic	Use Properties of Operations to Perform Multi-Digit Arithmetic	Use Properties of Operations to Perform Multi-Digit Arithmetic			
2. Operations and Algebraic Thinking	Solve Addition and Subtraction Problems within 100	Solve Addition and Subtraction Problems within 100	Solve Addition and Subtraction Problems within 100	Solve Addition and Subtraction Problems within 100	Solve Addition and Subtraction Problems within 100	Solve Addition and Subtraction Problems within 100	Solve Addition and Subtraction Problems within 100	Solve Addition and Subtraction Problems within 100	Solve Addition and Subtraction Problems within 100			
	Use the Equal Sign	Use the Equal Sign	Use the Equal Sign	Use the Equal Sign	Use the Equal Sign	Use the Equal Sign	Use the Equal Sign	Use the Equal Sign	Use the Equal Sign			
3. Measurement and Data	Represent Lengths of Objects	Represent Lengths of Objects	Represent Lengths of Objects	Represent Lengths of Objects	Represent Lengths of Objects	Represent Lengths of Objects	Represent Lengths of Objects	Represent Lengths of Objects	Represent Lengths of Objects			
	Represent Lengths of Objects	Represent Lengths of Objects	Represent Lengths of Objects	Represent Lengths of Objects	Represent Lengths of Objects	Represent Lengths of Objects	Represent Lengths of Objects	Represent Lengths of Objects	Represent Lengths of Objects			
4. Geometry	Classify Shapes	Classify Shapes	Classify Shapes	Classify Shapes	Classify Shapes	Classify Shapes	Classify Shapes	Classify Shapes	Classify Shapes			
	Classify Shapes	Classify Shapes	Classify Shapes	Classify Shapes	Classify Shapes	Classify Shapes	Classify Shapes	Classify Shapes	Classify Shapes			
5. Number and Operations: Fractions	Represent Fractions	Represent Fractions	Represent Fractions	Represent Fractions	Represent Fractions	Represent Fractions	Represent Fractions	Represent Fractions	Represent Fractions			
	Represent Fractions	Represent Fractions	Represent Fractions	Represent Fractions	Represent Fractions	Represent Fractions	Represent Fractions	Represent Fractions	Represent Fractions			
6. Expressions and Equations	Write Expressions	Write Expressions	Write Expressions	Write Expressions	Write Expressions	Write Expressions	Write Expressions	Write Expressions	Write Expressions			
	Write Expressions	Write Expressions	Write Expressions	Write Expressions	Write Expressions	Write Expressions	Write Expressions	Write Expressions	Write Expressions			

Resource Activities

Resource activities are simplified content review for each ABE subject area that has three main components: (1) content, (2) practice, and (3) Answer Key with Additional Resources. Below are the highlights of the resource activities:

- Alignment to CCRS
- Alignment to Standardized Assessment
- Research Base
- Content Development
- Visual/Graphic Element
- Hands-On Approach
- Vocabulary Emphasis
- Reflective Prompts
- Developed by Florida Practitioners
- Simple yet versatile
- FREE and Reproducible

Components of the Resource Activities:

- Concept
- Practice Activities
- Answer Key
- Additional Resources
- References/Credits

The appendices of this activity book contains a sampler of resource activities.

Strategy 2



Matrix resources may be used to monitor student progress. For example, the plain versions of the core matrices may be used as individual or group profiles of students. Teachers may use the matrices to develop learning trajectories or targets. The matrices may also be used as pacing and/or resource guides. The resource activity practice sheets may be used as an informal or formal assessment tool to determine mastery of concepts. There is a resource activity for each cell of a particular matrix. The next pages will give you some examples of these applications.

There are several applications of the matrices in planning, classroom instruction and assessment. Below are some examples:

Students or groups of students based on their mastery level and individual profile assessment report can use a plain version of the matrix and color groups of competencies based on mastery level. For example: Students can color non-proficient cells in red, partially proficient cells in yellow and proficient cells in green. See example below.

The check marks in the example above indicated that a change in mastery level has improved in non-proficient cells based on informal or formal teacher-made assessments.

2. Resource Guide

Students or teachers can use the matrices as a resource guide by writing instructional materials/resources, websites, online/desktop programs, work/textbook pages, readings/articles, manipulatives, web apps, and/or applets. See example below:

Adult Basic Education Mathematics Curriculum Matrix									
Domain	NRS Level 1		NRS Level 2		NRS Level 3		NRS Level 4		NRS Level 5/6
1. Number and Operations: Base Ten					Multiplication Table				
2. Operations and Algebraic Thinking			Worksheet 10.1		MathDude.com				
3. Measurement and Data			P. 24-28						
4. Geometry					Geoboards				
5. Number and Operations: Fractions			Fraction Tiles		KhanAcademy.com				
6. Fractions and Equations			PurpleMath.com		Worksheet 12.5				
7. The Number System			IXL.com		Scale Drawings & Floor Plans				
8. Ratio and Proportional Relationships					Algebra Tiles				
9. Statistics and Probability					P. 65-75				
10. Functions									

3. Pacing Guide

Teachers and students can write dates on each matrix to mark the start dates as to when each content is to be covered. The entire matrix can then represent the entire mapping of concepts to be covered in chronological order. This way, the teacher can decide and prioritize cells to teach prior to the next scheduled post-test. See example below:

[illegible]

The pacing guide can also include special events, length of assigned course work within a particular program, scheduled speakers or educational trips. Students and teachers can then develop a calendar based on the dates indicated on the matrix.

TABE® Overlays are varying layers of each matrix, aligned to the TABE® Blueprint and color-coded based on emphasis level on the test. Light shaded cells are low emphasis. Medium shaded cells are medium or moderate emphasis. Dark shaded cells are high emphasis items on the TABE® Test. There is a TABE® Overlay for each subject area and each level of TABE® Test. The next pages show examples of TABE® Overlays.

[illegible]

[illegible][illegible]

Level A

[illegible]

All Levels


[illegible]

[illegible]

Practice activities is a section of the resource activities that assess the content of the resource activity. Each question is carefully developed to mimic the TABE Test and parallel to the items of this test.

- Alignment to CCRS
- Alignment to Standardized Assessments
- Real-Life Word Problems
- Standard Item Types
- Standard Item Format
- Graphs and Illustrations
- Technology Enhanced Capabilities

Individualized Student Plans



INDIVIDUALIZED INSTRUCTIONAL STUDENT PLAN
ABE Mathematics: TABE Level A

STUDENT NAME: _____ **I.D.:** _____

CURRENT TESTING INFORMATION:	POST-TESTING INFORMATION:
Test Date: _____ Current Test Level: _____ Current Test Form: _____ Scale Score: _____ NRS Level: _____	TABE Level: A CCR Level: E

LOW EMPHASIS
MEDIUM EMPHASIS
HIGH EMPHASIS

DOMAIN: Geometry **SCORED PROFICIENCY:**

15% ☐ Non-Proficiency

☐ Partial Proficiency

☐ Proficiency

MASTERY DATE: _____

NRS	Group:	Standard Description:	Mastery Date:
5/6	GEOMETRY: CONGRUENCE	<i>Experiment with transformations in the plane.</i> Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.	
5/6	GEOMETRY: SIMILARITY, RIGHT TRIANGLES, & TRIGONOMETRY	<i>Prove theorems involving similarity.</i> Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.	
5/6	GEOMETRY: GEOMETRIC MEASUREMENT & DIMENSION	<i>Explain volume formulas and use them to solve problems.</i> Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.	
5/6	GEOMETRY: MODELING WITH GEOMETRY	<i>Apply geometric concepts in modeling situations.</i> Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).	

DOMAIN: Numbers & Quantity **SCORED PROFICIENCY:**

13% ☐ Non-Proficiency

☐ Partial Proficiency

☐ Proficiency

MASTERY DATE: _____

NRS	Group:	Standard Description:	Mastery Date:
5/6	NUMBER & QUANTITY: THE REAL NUMBER SYSTEM	<i>Extend the properties of exponents to rational exponents.</i> Rewrite expressions involving radicals and rational exponents using the properties of exponents.	
5/6	NUMBER & QUANTITY: QUANTITIES	<i>Reason quantitatively and use units to solve problems.</i> Use units as a way to understand problems and to guide the solution of multi-step problems. Choose and interpret units consistently in formulas. Choose and interpret the scale and the origin in graphs and data displays. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	

The Individualized Student Plans are learning management and tracking tools designed to help the teacher monitor student mastery of individual TABE skills or competencies that show partial or no mastery. These student plans are derived from the TABE Blueprints. The color coding on these student plans also show the emphasis level for each objective. There is an Individualized Student Plan for each subject area and for every level of the TABE Test.

Below are some highlights of the Individualized Student Plans:

- Derived from TABE 11&12 Test and Blueprints
- Test Level
- Emphasis Level
- Domain Percentage

- Standard Group
- Checklist Format
- Live Document
- Promotes Student Buy-In

Strategy 3



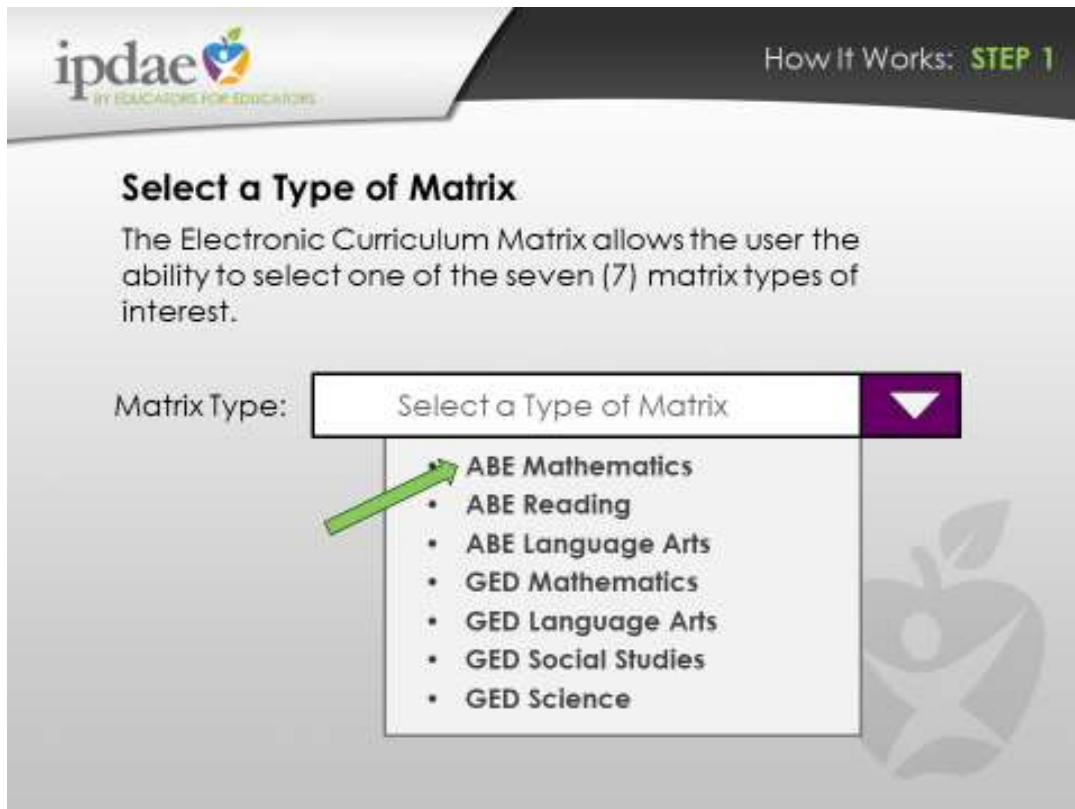
The last step of the process is to intervene or remediate when students show continual struggle with certain skills/concepts. Using the Individualized Student Plans combined with other matrix resources, the teacher can make a decision whether to move on or gather additional study guides and practice exercises for students.

Accessing the Electronic Matrices

Below are the steps on how to access the electronic copies of the matrices and the resource activities from the IPDAE website, www.floridaipdae.org.

The Electronic Curriculum Matrix is an online lookup tool that dynamically returns information and resources that are correlated to adult education framework standards.

The Electronic Curriculum Matrix removes the hassle of having to figure out what aligns with what. It provides users with simple selectable criteria options that make finding results easy.



The screenshot shows the IPDAE website interface. At the top left is the IPDAE logo with the tagline 'BY EDUCATORS FOR EDUCATORS'. At the top right, it says 'How It Works: STEP 1'. The main heading is 'Select a Type of Matrix'. Below this, a text box explains: 'The Electronic Curriculum Matrix allows the user the ability to select one of the seven (7) matrix types of interest.' Below the text is a dropdown menu labeled 'Matrix Type:'. The dropdown menu is open, showing a list of seven options: 'ABE Mathematics', 'ABE Reading', 'ABE Language Arts', 'GED Mathematics', 'GED Language Arts', 'GED Social Studies', and 'GED Science'. A green arrow points to the 'ABE Mathematics' option. The background of the page features a faint watermark of an apple with a star inside.

ipdae
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How It Works: **STEP 1**

Select a Type of Matrix

The Electronic Curriculum Matrix allows the user the ability to select one of the seven (7) matrix types of interest.

Matrix Type: Select a Type of Matrix ▼

- ABE Mathematics
- ABE Reading
- ABE Language Arts
- GED Mathematics
- GED Language Arts
- GED Social Studies
- GED Science

Matrix Type:

ABE Mathematics

Select a Domain

The selections will automatically adjust to filter and display valid options based on the previous selections.

Domain:

Select a Domain

1. Number & Operations: Base Ten
2. Operations & Algebraic Thinking
3. Measurement & Data
4. Geometry
5. Number & Operations: Fractions
6. Expressions & Equations
7. The Number System
8. Ratios & Proportional Relationships

Matrix Type:

ABE Mathematics

Domain:

3. Measurement & Data

Select a NRS Level

The selections will automatically adjust to filter and display valid options based on the previous selections.

NRS Level:

Select a NRS Level

- NRS Level 1
- NRS Level 2
- NRS Level 3
- NRS Level 4
- NRS Level 5/6

Matrix Type:

ABE Mathematics

Domain:



3. Measurement & Data

NRS Level:

NRS Level 1

Search Results:

Results of information and resources are listed for download.

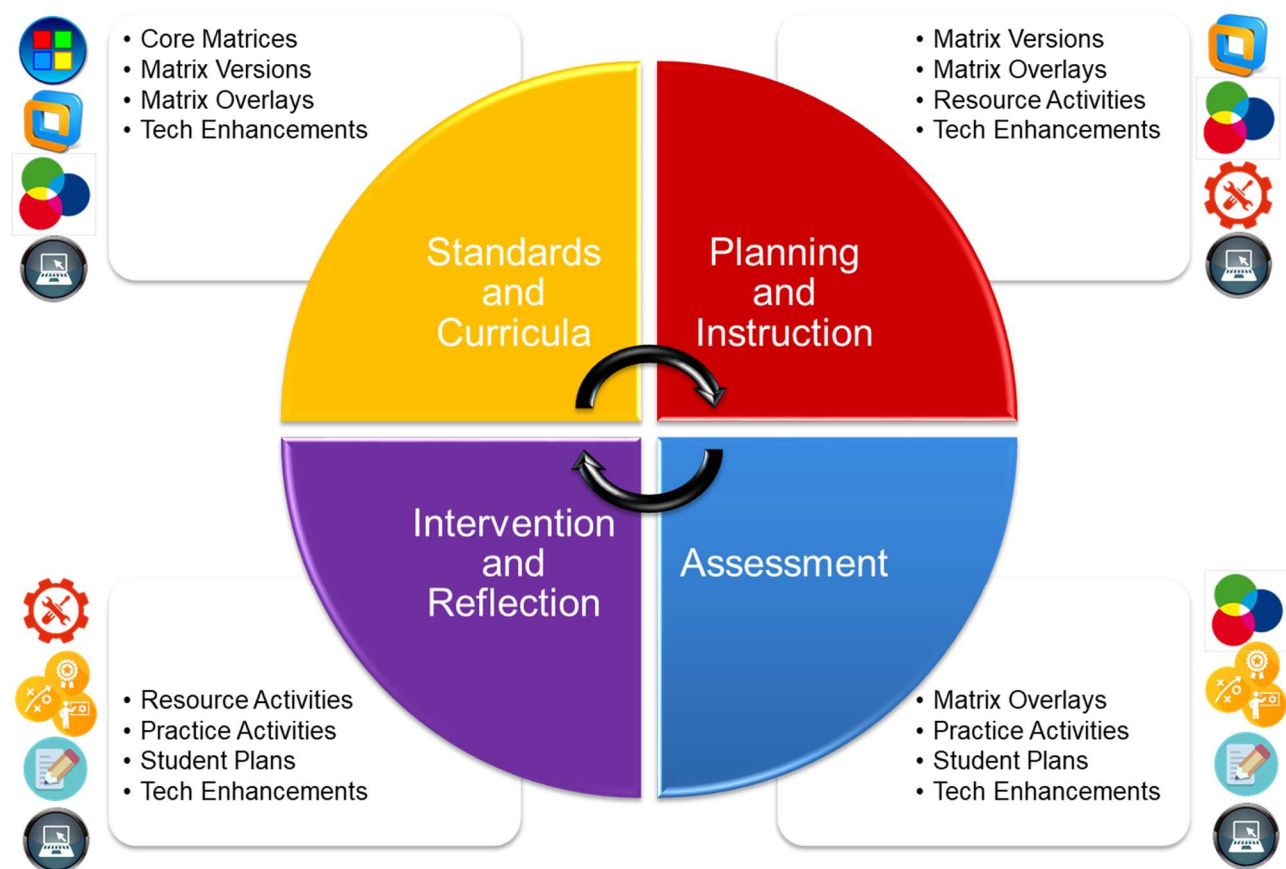
Standards	Resources
<ul style="list-style-type: none"> Organize, Represent, and Interpret 3 Categories of Data 	 Resource Activity Download
<ul style="list-style-type: none"> Indirectly Measure Lengths through Iteration 	 Resource Activity Download



Generalized Framework for Implementation

Below is a generalized framework as to how you can incorporate the various matrix resources into your daily work starting from unpacking the standards, to planning, to classroom instruction, to assessment, to reflection and intervention.

Each icon in the four corners of the framework represents a matrix resource.



Legend

- Core Matrices



- Matrix Versions



- Matrix Overlays



- Technology Enhancements



- Resource Activities



- Practice Activities



- Individualized Student Plans



WIOA Requirements and CTE

Below are some ways the Matrix Suite is addressing the WIOA and CTE requirements for adult education in the state of Florida:

1. Incorporating Level 5/6 to ABE Matrices
2. Development of the Crosswalk to GED
3. Development of the CTE Overlays

Below is an example of a CTE Overlay:

CTE Overlay (Carpentry)									
Domain	NRS Level 1	NRS Level 2	NRS Level 3	NRS Level 4	NRS Level 5/6				
1. Number and Operations: Base Ten	Students understand the place value of each digit in a number.	Students understand the place value of each digit in a number.	Students understand the place value of each digit in a number.	Students understand the place value of each digit in a number.	Students understand the place value of each digit in a number.				
2. Operations and Algebraic Thinking	Students understand the relationship between multiplication and division.	Students understand the relationship between multiplication and division.	Students understand the relationship between multiplication and division.	Students understand the relationship between multiplication and division.	Students understand the relationship between multiplication and division.				
3. Measurement and Data	Students understand the relationship between measurement and data.	Students understand the relationship between measurement and data.	Students understand the relationship between measurement and data.	Students understand the relationship between measurement and data.	Students understand the relationship between measurement and data.				
4. Geometry	Students understand the relationship between geometry and measurement.	Students understand the relationship between geometry and measurement.	Students understand the relationship between geometry and measurement.	Students understand the relationship between geometry and measurement.	Students understand the relationship between geometry and measurement.				
5. Number and Operations: Fractions	Students understand the relationship between fractions and measurement.	Students understand the relationship between fractions and measurement.	Students understand the relationship between fractions and measurement.	Students understand the relationship between fractions and measurement.	Students understand the relationship between fractions and measurement.				
6. Expressions and Equations	Students understand the relationship between expressions and equations.	Students understand the relationship between expressions and equations.	Students understand the relationship between expressions and equations.	Students understand the relationship between expressions and equations.	Students understand the relationship between expressions and equations.				
7. The Number System	Students understand the relationship between the number system and measurement.	Students understand the relationship between the number system and measurement.	Students understand the relationship between the number system and measurement.	Students understand the relationship between the number system and measurement.	Students understand the relationship between the number system and measurement.				
8. Ratios and Proportional Relationships	Students understand the relationship between ratios and proportions.	Students understand the relationship between ratios and proportions.	Students understand the relationship between ratios and proportions.	Students understand the relationship between ratios and proportions.	Students understand the relationship between ratios and proportions.				
9. Statistics and Probability	Students understand the relationship between statistics and probability.	Students understand the relationship between statistics and probability.	Students understand the relationship between statistics and probability.	Students understand the relationship between statistics and probability.	Students understand the relationship between statistics and probability.				
10. Functions	Students understand the relationship between functions and measurement.	Students understand the relationship between functions and measurement.	Students understand the relationship between functions and measurement.	Students understand the relationship between functions and measurement.	Students understand the relationship between functions and measurement.				

Sustaining the Effort

Below are some ways IPDAE is sustaining the Matrix Suite Initiative:

- Face-to-Face Workshops
- Webinars
- Communities of Practice
- Transfer of Learning
- Assistance Center
- EDM
- New and/or Updated Instructional Resources
- Administrator Portal Reports
- Electronic Matrices

Appendix A: Resource Activity Sampler (Math)

Visual Models of Equivalent Fractions

Content Area:	ABE Mathematics
Domain:	Number and Operations: Fractions
Standard:	CCR.MA.ABE.5.2.2.a Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.

Concept:

Let's use fraction tiles to examine equivalent fractions. Study the fraction tiles below.



Notice the size of the tile decrease as the denominator increases in number. Let's combine fraction tiles of the same color and size and see what fractions we form.



If we combine two pieces of the $\frac{1}{3}$ fraction tiles we form a fraction that represents $\frac{2}{3}$.



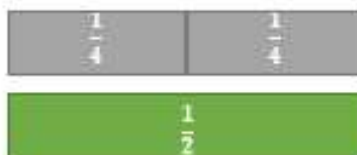
If we combine three pieces of the $\frac{1}{4}$ fraction tiles we form a fraction that represents $\frac{3}{4}$.



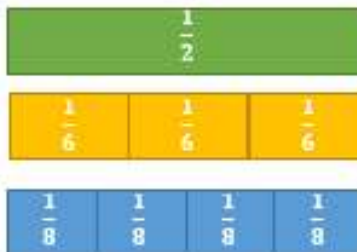
If we combine five pieces of the $\frac{1}{6}$ fraction tiles we form a fraction that represents $\frac{5}{6}$.

Fractions are called **equivalent fractions** if they have the same size. Let's combine some fraction tiles to see examples of equivalent fractions.

If we compare the size of two pieces of the $\frac{1}{4}$ fraction tiles placed side by side and a $\frac{1}{2}$ fraction tile, we can see that they are of equal size. In this case, $\frac{2}{4}$ is equivalent to $\frac{1}{2}$, or $\frac{2}{4} = \frac{1}{2}$. See illustration below.



Let's see what other tiles we can compare to figure out some equivalent fractions. If we compare the sizes of three pieces of the $\frac{1}{6}$ fraction tiles placed side by side, four pieces of the $\frac{1}{8}$ fraction tiles placed side by side and a $\frac{1}{2}$ fraction tile, we can see that they all have equal sizes. In this case, $\frac{3}{6}$, $\frac{4}{8}$ and $\frac{1}{2}$ are equivalent fractions. We can also write $\frac{3}{6} = \frac{4}{8} = \frac{1}{2}$. See illustration below.

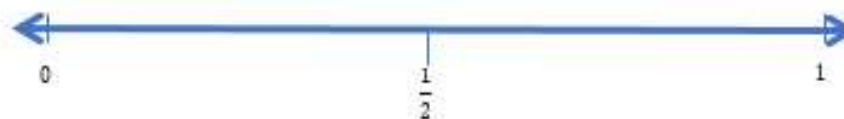


Use your fraction tiles to form other equivalent fractions. Write other examples of equivalent fractions in the area below.

This time, let's look at how fractions are laid out on a number line from 0 to 1.

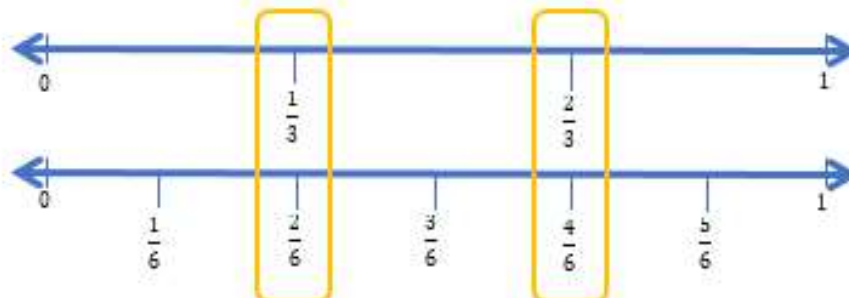


Below are representations of fractions with denominators 2, 3, 4, 6, and 8 on a number line.



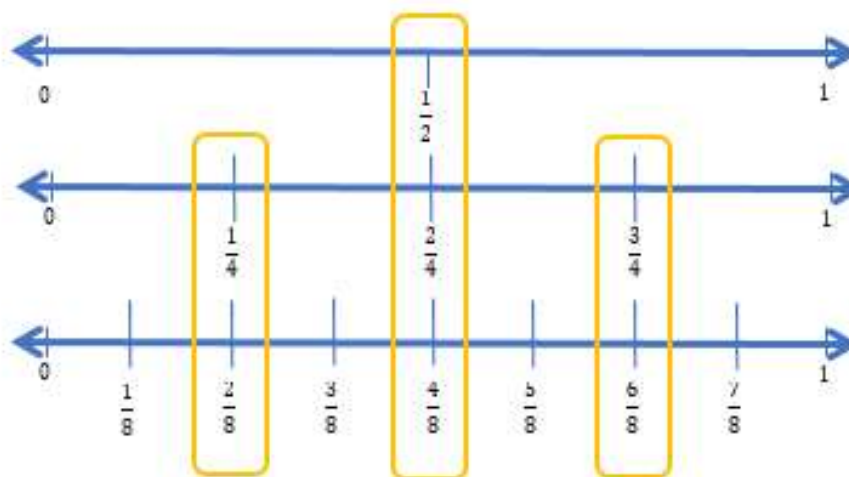
Pay attention to the position of certain fractions on the number line. Do you see any fractions that are on the same spot on a number line from 0 to 1?

Let's put the number lines partitioned into 3 parts and 6 parts on top of each other.



Notice that the fractions $\frac{1}{3}$ and $\frac{2}{6}$ are the same distance away from zero on the number line. We call the fractions $\frac{1}{3}$ and $\frac{2}{6}$ **equivalent fractions**.

Let's put the number lines partitioned into 2 parts, 4 parts and 8 parts on top of each other.



From the illustration above, we can see that $\frac{1}{2}$ and $\frac{2}{4}$ are equivalent fractions. The same is true with $\frac{1}{2}$ and $\frac{4}{8}$. We can also see that $\frac{1}{4}$ and $\frac{2}{8}$ are equivalent fractions.

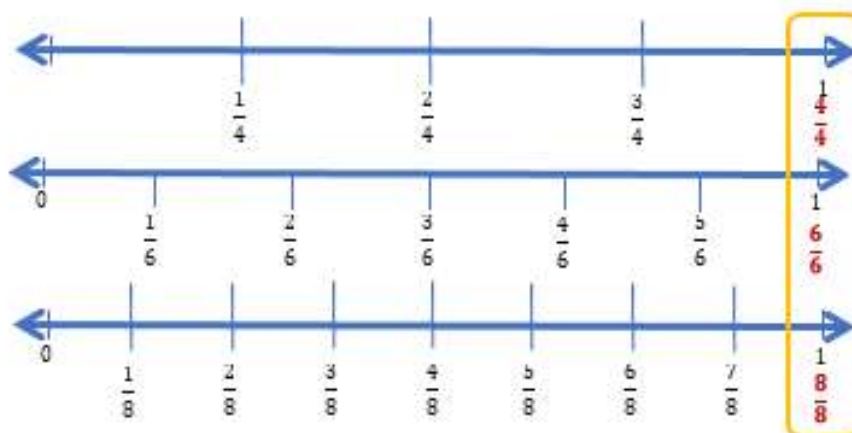
This time, let's closely examine fractions that equivalent to a whole. Looking at the fraction tiles below, we can generate some fractions that are equivalent to a whole.



We can say that the following examples form the same size as a whole and are fractions equivalent to a whole or 1.

- Two pieces of the $\frac{1}{2}$ fraction tiles which represents $\frac{2}{2}$
- Three pieces of the $\frac{1}{3}$ fraction tiles which represents $\frac{3}{3}$
- Four pieces of the $\frac{1}{4}$ fraction tiles which represents $\frac{4}{4}$
- Six pieces of the $\frac{1}{6}$ fraction tiles which represents $\frac{6}{6}$
- Eight pieces of the $\frac{1}{8}$ fraction tiles which represents $\frac{8}{8}$

Looking at a few number lines, we can also see the same pattern of fractions equivalent to 1.



Practice:

1. Which of the following fractions is equivalent to $\frac{3}{4}$?

- A. $\frac{6}{8}$
- B. $\frac{2}{3}$
- C. $\frac{5}{6}$
- D. $\frac{4}{4}$

2. Which of the following fractions is NOT equivalent to $\frac{1}{4}$?

- A. $\frac{2}{8}$
- B. $\frac{3}{12}$
- C. $\frac{2}{6}$
- D. $\frac{4}{16}$

3. Which of the following fractions is equivalent to 1?

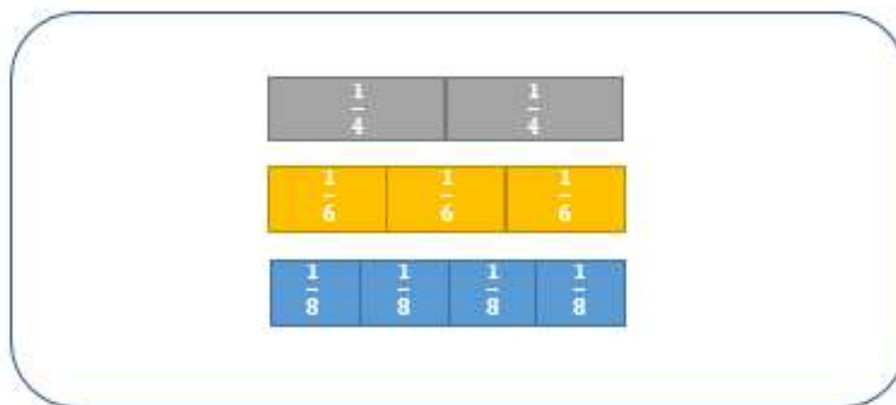
- A. $\frac{4}{3}$
- B. $\frac{5}{6}$
- C. $\frac{7}{8}$
- D. $\frac{8}{8}$

4. Use fraction tiles to trace or draw two different combinations of tiles equivalent to $\frac{1}{2}$. Use the area below for your drawing.



Answer Key:

1. A
2. C
3. D
4. Any combination of 2 rows is correct.



Additional Resources:

This activity resource is best implemented with the use of fraction number line and fraction tiles.

Appendix B: Individualized Student Plan (Math Level E)

INDIVIDUALIZED INSTRUCTIONAL STUDENT PLAN

ABE Mathematics: TABE Level E

STUDENT NAME:

I.D.:

CURRENT TESTING INFORMATION:

Test Date:
Current Test Level:
Current Test Form:
Scale Score:
NRS Level:

POST-TESTING INFORMATION:

TABE Level: E
CCR Level: B

LOW EMPHASIS

MEDIUM EMPHASIS

HIGH EMPHASIS

DOMAIN: Number & Operations in Base Ten
28%

SCORED PROFICIENCY: ☐ Non-Proficiency
☐ Partial Proficiency
☐ Proficiency

MASTERY DATE:

NRS	Domain:	Standard Description:	Mastery Date:
2	UNDERSTAND PLACE VALUE.	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 that 100 can be thought of as a bundle of ten tens — called a “hundred.” Understand that the numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones). Count within 1000; skip-count by 5s, 10s, and 100s. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons.	
2	USE PLACE VALUE UNDERSTANDING & THE PROPERTIES OF OPERATIONS TO ADD & SUBTRACT.	Add up to four two-digit numbers using strategies based on place value and properties of operations. 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.	
2	USE PLACE VALUE UNDERSTANDING & PROPERTIES OF OPERATIONS TO PERFORM MULTI-DIGIT ARITHMETIC.	Use place value understanding to round whole numbers to the nearest 10 or 100. 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. 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.	

DOMAIN: Operations & Algebraic Thinking
22%

SCORED PROFICIENCY: ☐ Non-Proficiency
☐ Partial Proficiency
☐ Proficiency

MASTERY DATE:

NRS	Category:	Standard Description:	Mastery Date:
2	REPRESENT & SOLVE PROBLEMS INVOLVING	Add and subtract within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing.	

INDIVIDUALIZED INSTRUCTIONAL STUDENT PLAN

ABE Mathematics: TABE Level E

	ADDITION & SUBTRACTION	with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	
2	ADD & SUBTRACT WITH 20.	Fluently add and subtract within 20 using mental strategies. Know from memory all sums of two one-digit numbers.	
2	REPRESENT & SOLVE PROBLEMS INVOLVING MULTIPLICATION & DIVISION.	Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. Interpret whole-number quotients of whole numbers, e.g., interpret $56/8$ 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. Multiply and divide 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. Determine the unknown whole number in a multiplication or division equation relating three whole numbers.	
2	UNDERSTAND PROPERTIES OF MULTIPLICATION & THE RELATIONSHIP BETWEEN MULTIPLICATION & DIVISION.	Apply properties of operations as strategies to multiply and divide. Understand and apply the commutative property of multiplication. Understand and apply the associative property of multiplication. Understand and apply the distributive property. Understand division as an unknown-factor problem.	
2	MULTIPLY & DIVIDE WITHIN 100.	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 $40/5 = 8$) or properties of operations. Know from memory all products of two one-digit numbers. 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. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations.	

DOMAIN: Measurement & Data
28%

SCORED PROFICIENCY: ☐ Non-Proficiency
☐ Partial Proficiency
☐ Proficiency

MASTERY DATE:

NRS	Group:	Standard Description:	Mastery Date:
2	MEASURE & ESTIMATE LENGTHS IN STANDARD UNITS.	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. Estimate lengths using units of inches, feet, centimeters, and meters. Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.	
2	RELATE ADDITION & SUBTRACTION TO LENGTH.	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.	
2	SOLVE PROBLEMS INVOLVING MEASUREMENT & ESTIMATION OF INTERVALS OF TIME.	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. Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).	

INDIVIDUALIZED INSTRUCTIONAL STUDENT PLAN

ABE Mathematics: TABE Level E

	LIQUID VOLUMES, & MASSES OF OBJECTS.	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.	
2	REPRESENT & INTERPRET DATA.	<p>Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories.</p> <p>Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.</p> <p>Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories.</p> <p>Solve one- and two-step how many more and how many less problems using information presented in scaled bar graphs.</p> <p>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.</p>	
2	GEOMETRIC MEASUREMENT: UNDERSTAND CONCEPTS OF AREA & RELATE TO AREA OF MULTIPLICATION & ADDITION.	<p>Recognize area as an attribute of plane figures and understand concepts of area measurement.</p> <p>A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.</p> <p>Relate area to the operations of multiplication and addition.</p> <p>Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.</p> <p>Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.</p> <p>Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.</p> <p>Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.</p>	
2	GEOMETRIC MEASUREMENT: RECOGNIZE PERIMETER AS AN ATTRIBUTE OF PLANE FIGURES & DISTINGUISH BETWEEN LINEAR & AREA MEASURES.	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.	

DOMAIN: Geometry
10%

SCORED PROFICIENCY: ☐ Non-Proficiency
☐ Partial Proficiency
☐ Proficiency

MASTERY DATE:

NRS	Category:	Standard Description:	Mastery Date:
2	REASON WITH SHAPES & THEIR ATTRIBUTES.	<p>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.</p> <p>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).</p> <p>Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.</p>	

INDIVIDUALIZED INSTRUCTIONAL STUDENT PLAN

ABE Mathematics: TABE Level E

	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.	
	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.	

DOMAIN: Number & Operations - Fractions 12%	SCORED PROFICIENCY: <input type="checkbox"/> Non-Proficiency <input type="checkbox"/> Partial Proficiency <input type="checkbox"/> Proficiency
MASTERY DATE:	

NRS	Domain:	Standard Description:	Mastery Date:
2	DEVELOP UNDERSTANDING OF FRACTIONS AS NUMBERS.	<p>Understanding & Representing Fractions</p> <p>Understand a fraction $\frac{1}{b}$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction $\frac{a}{b}$ as the quantity formed by a parts of size $\frac{1}{b}$.</p> <p>Understand a fraction as a number on the number line.</p> <p>Represent fractions on a number line diagram.</p> <p>Represent a fraction $\frac{1}{b}$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $\frac{1}{b}$ and that the endpoint of the part based at 0 locates the number $\frac{1}{b}$ on the number line.</p> <p>Represent a fraction $\frac{a}{b}$ on a number line diagram by marking off a length $\frac{1}{b}$ from 0. Recognize that the resulting interval has size $\frac{a}{b}$ and that its endpoint locates the number $\frac{a}{b}$ on the number line.</p> <p>Equivalent Fractions</p> <p>Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.</p> <p>Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.</p> <p>Recognize and generate simple equivalent fractions, e.g., $\frac{1}{2} = \frac{2}{4}$, $\frac{4}{6} = \frac{2}{3}$. Explain why the fractions are equivalent, e.g., by using a visual fraction model.</p> <p>Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.</p> <p>Comparing Fractions</p> <p>Compare two fractions with the same numerator or the same denominator by reasoning about their size.</p> <p>Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.</p>	