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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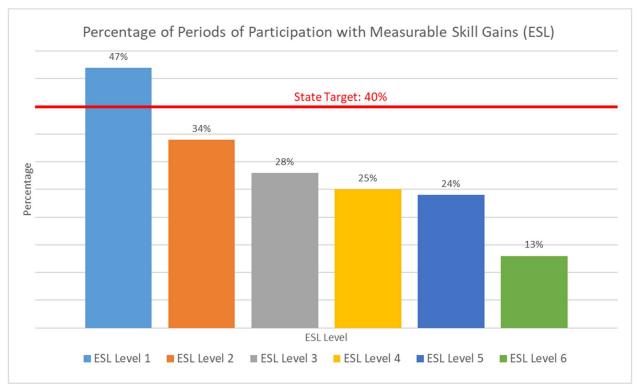
Agenda

- 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%

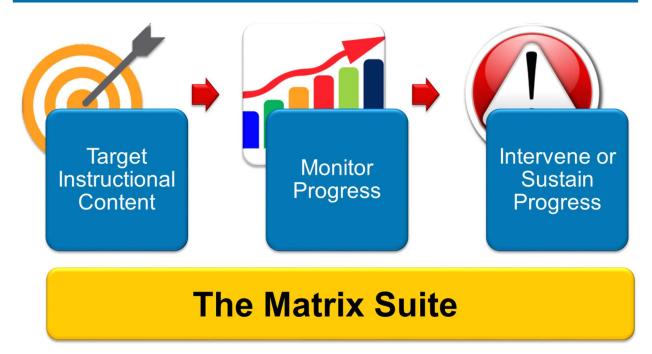
Entering Educational Functioning\Level	Percentage of Periods of Participation with Measurable Skill Gains	+/- Difference in Measurable Skill Gains
ABE Total	34%	-8%
ESL Total	28%	-12%
Grand Total	30%	-10%

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 Ba	Basid	sic Education Mathematics Curriculum Matrix	catio	n Ma	them	atics	Curr	iculu	ž	atrix				
Domain NRS Level 1	NRS I	evel 1		NRS	NRS Level 2			NRS L	NRS Level 3			NRS L	NRS Level 4			NRS Le	NRS Level 5/6	
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Writing Anchor 2: Writing informative/explanatory texts	VER CORRECT TRANSTITION WORKS									
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Writing Anchor 4: Producing writing			Pendana seting is which the dendingeneral and equations are appropriate torical and parameter		Positions datas and colorents and/org is adults the descriptions and approximate are appropriate to back pair pairs, and address.		Proting class and induced withing a shift the second proves, segmention, and only are appropriate to bob, perjust, and antibutes.		Positions data and advectors withing bundlish the development, regression, and optic are appropriate to task perpend, and address.	
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Using technology	Street Signates		Complete an Aleximon Juli application.	Course simpletion tables.	ماسيا و بعد آلديان البرده برقد الأحد فيزمره وحس	Tedents and actual information second solid	Grante eriginal motocologie notecjul programs autó as Norei and Eund.	ander, segniter, andere, enderen, spellering, and are destroyed indemodels from a webby of spectra.		
Writing Anchor 7: Conducting research	spatical Regime para parana general se spatieurae		Contact dust warech projects that built immediate across a rupe.		Conduct that reason projects that any unit of sources to build investigate.		-uniperior beginning and present over their terms of the second s		vanne adaptu Bosinghi Ingeni enge	
Writing Anchor &: Evaluating sources for integration	tion internetion them provided encountrie preserve a specification		dutters internation have success, take build rades, and successiones into categories.		kaite iskonalai kun serse, umaale a poqtoor, ee posti ki d'aare		Galler idensedies hen sammer, aane da ondiklig wei anwerg diesk nach partejpergitsee, wei de		Calue information from unaction, acress authibutes a seath success restriction that from of since, annial physicsness, and site.	
Writing Anchor &					Down incidences it are literary, as intermediated teach in suggest emology, reflection, and meaned.	Apply gradie devolt working standards, to Theoreman All-geoditional bases they used unburs do and otherware.	Over a district from the age of bits redirections, in appendix-district, reflection, and research.	Apply grade loop reading reaction is to literature ables within a fitness (these, and sceness risk without above	litere editore has literey a identificad taik is signer endot, viteriter, editoret.	Apply guest brack marking standards initian stands Adversarially meaning Pigmatine, secondarities, and secondary
reflection & research					Apply grade lines under danders in Manualisma and		Apply grade the device while grade the film way when the set		Appling with level working chemicals to lineary multi-test, integrating quantitation with qualitation products.	

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	ABE Mathematics Crosswalk to GED Matrix	O GED Ma	atrix		
ABE Domains			NRS Level 5/6	2	Major Works	Area	GED Domains
Number and Operations: Base Ten							
Number and Operations: Fractions						Bui	1. Rational Numbers
Ratios and Proportional Relationships						vlo2 me	
Geometry	Define Angles, Circles, Perspectioular Lines, Paallel Lines and Line Segments Prove Theorems Involving Sembarthy of Transfes	Use Congruence and Similarity Orienta for Trangles to Solve Problems	oordhijge in Ngures	Smi	Congruence Marthy, Right Trangles, and Trigonometry	Proble	
60000	Use the Volume Pormula for Cylinders to Solve Problems Apply the Concept of Density Based on Arm and Volume In Modeling Shurstons	Use the Volume Formula for Pyramidis to Solve Problems	to be the distance of the second s	000 000	cometric Measurement and Dimension Modeling with Geometry	əvitsi	
	Use Dimensional Analysisto Solve Mutil Step Problems Analyse and interpret Units	Interpreting Scales in Graphs and Data Displays Interpret the Origin in Graphs				itne	2. Measurement
Number and Quantity	Constantion for formulas Use Measurement Limitations to Adjust Level of Accuracy whon Booortha Chaomero	and Data Displays				Qu	
Statistics and Probability	Represent Data Using Dor Plots Summariae Otta Using Two Way Frequency Tables Integrat the Slope and the Intercept of a Lin car Model	Represent Data Using Natograms Intergrams Intergrams Relative Finguencies Intergrams Relative Finguencies Intergrams Angenal and Constronal) Distriguial Bahwan Contribution and Causistion	tup secord that thoreging the first and interferences subsystem (and interferences subsystem) and the first and th				
The Real Number System	Transform hig Rodical Lepression to Dip oncortal Expressions Expression with Parto nal Exponents to Rackal Expression 5					Buivlo	
	Identify Parts of an Expression		tind Entre or of Quadratic functions		Seeing Structures in Expressions	os u	3. Expression and Equations
Algebra	Perform the Rour Back Operations on Polynomials Write Equations and Inequalifies in One Variable to Solve Problems		I toporant tesi World Prolom Reprovertesi World Prolom Una Constructe to Falante Managatar Fanancia Construction Markine Una Constructe to Falante Managatar Construction Systement of Markine Programs Markan el Quanting Interest Reproduction Reproduction Theorem Construction Programs (and Neurol Systement Reproduction Theorem Construction Programs)		Anthmetic with Polynomials and Rational Expressions Creating Equations	robler	
	Explain Steps in Solving Equations	Construct Viable Arguments to Just fy Solution Method	Simple Rational and Radical SolveLinear Equations and Solve Quadrate Equations in Solve Systems of Linear Equations with Prenancus Incognities with Letters One Variable Equations (applicably and Journal (Advection) (applicable)		assoning with Equations and Inequalifies	d o	
		identify the Domain and Range V of a Function Estimate the Rate of Change of G a Function from Its Graph Over F a Sporthod from the Val	mit freedom Ling / investor / joukure / kniction / interest interest interest interest / interest interest / i	Cold Character and Income: the Average face of Change of a Fundton Over an Interval	Interpreting Functions	gebrai	A Combo of Linearian
ruicuoris	Write the Equation of a Function Decribing the Relations hip of Two Quantities Reco gnize Linear Functions	Reco gn'z e Explonentia	Keppet Puramèters in Linear		Building Functions	βΙΑ	4. Orapris and Functions
		Functions as Growth or Decay or Exponential Functions in Terms of Context	r (apponental Munchow in error of Contrast		Exponential Models		

9	ED Mathe	GED Mathematical Reasoning Major Works Matrix	g Major V	Vorks N	latrix
Domain	Level 1 Below Passing Limited/Inconsistent	Level 2 Passing (HS Equivalency) Satisfactory	Le [.] Colleg St	Level 3 College Ready Strong	NRS Level 4 College Ready + Credit Outstanding
1. Rational Numbers	Factors & Multiples Rates Rational Numbers	Factors & Multiples Rational Numbers Applications of Ratios and Proportions	Rational Numbers Applications of Ratios and Proportions		
		Real Numbers on a Number Line	Real Numbers on a Number Line	ber Line	
		Rational Exponents	Rational Exponents	ţ	
	Area and Perimeter of Triangles and Rectangles	Area and Perimeter of Polygons and Composite Figures	gures		
		Unknown Side Lengths of Polygons and cramterere and cramterence of craster	Un known Side Lengths of Polygons	Radius, Diameter and Circumference of Circles	
		Compute Volume and Surface Area of Prisms, Pyramids, Cylinders and Spheres	oheres		
		Compute Volume and Surface Area of Composite Figures	Compute volume and surface area of commosite ferires	Radius, Diameter,	Compute volume and surface area of romonotie ferrec
2. Measurement		Unknown Side Lengths and Heights of Prisms, Radius, Diameter, Pyramids and Cones Height, Volume and		Height, Volume and Surface Area of Cylinders	· ca sile strong du on to pass
		Surface Area of Cylinders	rea of ers		
	Tables and Circle and Bar Scatter Plots Graphs	Median, Mode and Dot Plots, Permutations and Weighted Average Box Plots Combinations	Permutations and Simi Combinations Prok	Simple and Compound Probability	Permutations and Compound Combinations Probability
	Linear Expressions Polynomial Expressions	s Polynomial Expressions Evaluating		Factorine Polynomials Polynomial Expressions Rational Expressions	
3. Expression and Equations				Solving Quadratic Equations	Sclving Quadratic Equations
		unear Equations Graphing & Solving Linear Inequalities		Graphing & Solving Linear Inequalities	Graphing & Solving Linear Inequalities
	Representing Functions	Representing Functions	Graphing Functions		
4. Graphs and	Slope	Slope Graphing Linear Equations of Parallel Equations and Perpendicular Lines	Slope	Graphing Linear Equations of Parallel Equations and Perpendicular Lines	Graphing Linear Equations of Parallel Equations and Perpendicular Lines
Functions	The Coordinate Plane Features of Functions	Writing Linear Equations	Writing Linear Equations		
	Linear and Quadratic Comparing Functions Functions	Linear and Quadratic Comparing Functions	ns Comparing Functions		Comparing Functions

Domain L'Number and Operations: Base Ton Age bait: Thering Age bait: Thering	NRS Level 1	Adult Basic Edu NRS Level 2	Adult Basic Education Mathematics Curriculum Matrix NRS Level 2 NRS Level 3 NRS Level 4 I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I	Curriculum Matrix NRS Level 4	NRS Level 5/6
4. Geometry S. Number and Operations. Freditors 6. E-provations and					
2. The Number System 2. The Number System & Ratios and Relativistics Probability Probability					
20 Functions					

Domain NRS Level 1 Number and Operation: Start Ref Number and Number and Operation: Start Ref Number and Number and Number and Number and Number and Number and Starts Number and Number and Number and Number and Number and Number and Number and Number and Number and Starts Number and Number and Number and Number and Number and Number and Number and Number and Number and Starts Number and Number and Number and Number and Number and Number and Starts Starts Number and Number and Starts Number and Number and Number and Number and Starts Number and Number and Number and Number and Starts Number and Number and Number and Number and Number and Number and Starts Starts Number and Number and Starts Number and Number and Number and Number and Number and Number and Starts Number and Number an
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					_						device scand	- Ite					tes of Solve Problems tradition water Quantities in Science Annual Montion	und Calles Graph Proportional Squares Balabisochigo - Unit Tate ac Ba Stopa	
NRS Level 4					_						and Argin Sam and Educion Argins of Triangles and Transversals	co and Explain and Apply the Pythagorean Theorem						N Rainte Sparse and Cube of the four of People Sparses of Cubes	
l					_						N. Produce Corgonomics and Sectority Using Models	og Becopite Coopuece and E and Similarity from					and Construct Equations and one Enqualities to Solves Problems	Solve Problems Using Algebraic Equations with Bartonal Coefficients	11
ļ			2	L							Solve Problems Incolding Kalle Dreadings of Generatic Figures	Kolve Friddiens Insolving R Augle Meas, Areas, SA and S Volume				8	he Mdd, Subtract, Factor, - Expand Linear Express	Beerte Equescion to Row Relationhips Between Quantities	Solve Smuthaneoux Unear Equations in One Variable
	by Use Place Value to Understand Decimals	Divide +Oigt Numbers by I) Read, With, and Compare Digit Numbers	Divide 4-Dign Numbers by 2 Dign Numbers Uning Multiple Strategies	Multiples of 5-Oight	and of the second	2 Prime and Composite Numbers within 200	identity inspirat Features of a Petrion from a fluip	lacogride Angles	 Understand Concepts of Augle Measurement 		Draw Folgeos is a Coordinate Plane	Red Areas of Polygood by Red the Length of a Side Campooling or Decomposing with the Same Fast or Second Constitutes		Becompose Reactions as Multiples of land Francisco	Multiply Forctions by a Whide Number	Solve Problems Involving Addition and Subtraction of Fractions	Us Substitution to Equival One Quantity at the Mull, Subtract, Factor, and Determine if an Equation or Dependent Variable of the Equand Linear Equivalence Exepanding is True Avorther Quantity	L Une Graph, Tables and Equation to Store Variable Beleforedige	
NIS Level 3	Bast and Write Multi-Orgit. Multiply -Edgit Numbers by Use Place Value to Numbers in Names and 1- to 2-Orgit Numbers. Understand Desiru Commission Econo.		Roard Decirate to Any Place	interpret the farrainder in	ALCOMPTON A	Field M Factor Pairs of Arry 2 Prime and Composite Digit Whole Number Mumbers within 300	Generate and Analyte Numeric and Generatic Patterns		Organia Unit Feartien Data (U/2, U/4, U/3) in a Une Mort Angle Measurement		p Solve Problems Involved Area, Surface Area, and Volume			Decorpose Fractions at Jam of Fractions with the same Decominator	Add and Subtract Mixed Numbers Using Equivalent Functions	Convert Fractions with Denominations 30 or 300 to Descinals	Use Substitution to Determine If an Equation on Inequality & True	Use Variation to Represent U Two Related Quantities in a fit Receivers	
	_	Round Multi-Orgin Numbers to Any Place Value	Back Operations with Muth- Perform Back Operations Ogt Nambers in Standard on Decimal Nambers Uding Matchini Muthole Scrawges	~	STATISTICS OF A DESCRIPTION	Solve Problems Involving Muhipitaties Comparisons	1	Sche Problem in Length, Tree, Volerre, Mass and Money Including Desirrals	Convert Measurements within a System	L	Solve Problems by Graphing Points on the Coordinate Plane	-	Une Nex to Flod the Surface Area of Figures	Generation Using Generation Numeration or Demonstration	Conjure Functions Using Benchmark Functions Such as 1/2	Solve Problems Involuting Multiplication and Division of Reactions	Merchy and Generate Equivalent Algebraic Expressions	Basco and Solve One- Variable Equations and Requalities	
	Generation Understanding of Place Value		Basic Operations with Mult Digit Numbers in Standard Algorithm	Solve Multi-Step Problems	the state of the s	Orick Access Using Meetal Computation and Estimation	With and Integration Nutractual Expressions	Solve Problems In Length, Time, Volume, Mass and Money Including Frantison	Apply Area and Perimeter Comulas for Factangles	Neuron and Statch Argins In Whide-Number Degrees	Particion Dauges into Parts. Ones and identify foirm, with fiqual Areas: Days		Represent D.Ornsteines Represention Viets	e Generate Equivaient Reactions	Use Models to Elucate Equivalent Fractions	Multiply and Device Rections	Write and Evaluate Ngelonic Expressions with Exponents	Perform the Order of Operations on Algebraic Expressions	
_	Use Roperties of Operations to Perform Mult Dist Arthroneic	y Mentally Add and Submact 10 or 100 to 3-0kgt Nambers		10.0	Support of	Model Multiplication and Division within 100		Solve Problems Includy Time, Volume and Mess	Use Areas to Model Addrise and Multiplication		Fartition Bagan into Parts with Equal Armes			Exercises with the Exercise Equivalent taken Munerate or Decominator					
NIS Level 2	Roard Whole Number to the Newest Texa or Handreds	Multiply 3-Oigt Numbers By 3-Digt Multiplex of 10		Multiplication Facts within		Distributive Property of Multiplication		Measure and Editrate Lengths in Standard Units	Solve Problems Insolving Perimeter of Polygous		Categorite Stapes with Common Attributes			Use Visual Models to Represent Equivalent Factions					
S.	Add and Submart 3-Oigt Numbers	Model Addition and Submittion of 3-Digit Numbers		Solve Multiplication and	DOL DOLD	Solve Multiplication and Division Equations		Analyze and Generate Line Rets	Meaning and Ectimating Areas of Plane Figures		waiyas, buw and Cumpane Jakenfry Common Polygoos. Dagwe Haining Spacified and 5-Omentional Figures. Mathematic			Becognia Equivalent Frantiers on a Number Line					
		Congare 3-Oigt Numbers		Salve MdDiton and	100	Lorenzation and Nuccitation Property of Multiplication			Represent Whole Number Lengths on a Number Une		koalgon, Dow and Congaw Dagon Haring Specified Kenthartes			Norewer Fonctions with the integrate Figurations () benotineed and Norden's 2, 3, 4, 4, 4, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,					
I	Add and Subtract 2-Oigh Numbers	Model Address and Subtraction of 2-Oigh Marchest		The Equal Sign		Solving Addition and Subtraction Equations		Indirectly Measure Lengths Autologe and Generate through treation			2-and 3-Okmeniscual Composite Stapes								
2	Place Value of 2-Ough Numbers	Compare 2-Digit Numbers		John Addition and		Commutative and Autoclative Property of Addition		Organites, Represent, and Interpret 3 Canegories of Data			Audyse, Campare, and Compose 3-Olimentional Bages								
Domain		1. Number and	Operations: Base Ten				Agebrak Thinking		3. Measurement and			4. Geometry			5. Number and Operations: Fractions			6. Expressions and Equations	

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.

Applications of the Matrix

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

1. Individual Student or Group Profiles

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 nonproficient cells in red, partially proficient cells in yellow and proficient cells in green. See example below.

Domain	NRS L	evel 1		NRS L	evel 2			NRS L	evel 3	
	Place Value of 2-Digit Numbers	Add and Subtract 2-Digit Numbers	Place Value of 3-Digit Numbers		Round Whole Numbers to the Nearest Tens or Hundreds	Use Properties of Operations to Perform Multi-Digit Arithmetic	Generalize Inderstanding of Plan View		Multiply 4-Digit Numbers by 1- to 2-Digit Numbers	Use Place Value to Understan Decimals
1. Number and Operations: Base Ten	Compare 2-Digit Numbers	Model Addition and Subtraction of 2-Digit Numbers	Compare 3-Digit Numbers	Model Addition and Subtraction of 3-Digit Numbers		Mentally Add and Subtract 10 or 100 to 3-Digit Numbers	Compare Any Multi-Digit Number	Round Multi-Digit Numbers to Any Place Value	Divide 4-Digit Numbers by 1- Digit Numbers	Read, Write, and Compare Decimalisto Thousandths
				1			Basic Operations with Multi- Digit Numbers in Standard Algorithm	Perform Basic Operations on Decimal Numbers Using Multiple Strategies	Round Decimals to Any Place	Divide 4-Digit Numbers by 2- Digit Numbers Using Multiple Strategies
	Solve Addition and Subtraction Problems within 20		Solve Addition and Subtraction Problems within 100	Divin A Problems within 200		Equations	Solve Multi-Step Problems Using Basir Operations	Interpret Multiplication as Comparison Statements	Problems	Multiples of 3-Digit Numbers Up to 300
2. Operations and Algebraic Thinking	Commutative and Associative Property of Addition	Solving Addition and Subtraction Equations	Commutative and Associative Property of Multiplication		Distributive Property of Multiplication	Model Multiplication and Division within 100	Com Lation and Estimation	Solve Problems Involving Multiplicative Comparisons	Digit Whole Number	Prime and Composite Number within 100
							Ex.ressions	Interpret Expressions without Evaluating Them	Generate and Analyze Numeric and Geometric Patterns	Identify Inexplicit Features of Pattern from a Rule
	Organize, Represent, and Interpret 3 Catagories 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	Solve Problems in Length, Time, Volume, Mass and Money Including Fractions	Solve Problems in Length, Time, Volume, Mass and Money Including Decimals	Information Presented in Line Plots	Recognize Angles
3. Measurement and Data			Represent Whole Number Lengths on a Number Line		Solve Problems Involving Perimeter of Polygons	Use Areas to Model Addition and Multiplication	Apply Area and Perimeter Formulas for Rectangles	a System	Organize Unit Fraction Data (1/2, 1/4, 1/8) in a Line Plot	Understand Concepts of Angl Measurement
							Whole-Number Degrees	Solve Addition and Subtraction Problems for Unknown Angles		
	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		Partition Shapes into Parts with Equal Areas		Solve Problems by Graphing Points on the Coordinate Plane	Solve Problems Involving Area, Surface Area, and Volume	Draw Polygons in a Coordinat Plane
4. Geometry							Draw and Inantify Angles, Perpendi Litar and Parallel Lines	Classify 2-Dimensional Figures into Categories Based on Properties	Find Areas of Polygons by Composing or Decomposing	Find the Length of a Side with the Same First or Second Coordinate
							Feet 3-Dimensional	Use Nets to Find the Surface Area of Figures		
				Recognibe Equivalent Fractions on a Number Line	Use Visual Models to Represent Equivalent Fractions	Compare Fractions with the Same Numerator or Denominator	Generate Equivalent Fractions	Compare Fractions Using Common Numerators or Denominators	Decompose Fractions as Sum of Fractions with the same Denominator	Decompose Fractions as Multiples of Unit Fractions
5. Number and Operations: Fractions								1/2	Add and Subtract Mixed Numbers Using Equivalent Fractions	Multiply Fractions by a Whole Number
							Mut yand Dwide Fractions	Solve Problems Involving Multiplication and Division of Fractions	Convert Fractions with Denominators 10 or 100 to Decimals	Solve Problems Involving Addition and Subtraction of Fractions

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 Edu	ication Mathematics Curriculum	Matrix	
Domain	NRS Level 1	NRS Level 2	NRS Level 3 NRS Level	4	NRS Level 5/6
fumber and orations: 8-ase Ten			Multiplication Table		
penations and braic Thinking	W	orksheet 10.			
		P. 24-28	MathDude.com		
Moasurement and da		г . 24-2 0			
G earnietr y			Geoboards		
Number and relations: Fractions	F	raction Tiles	KhanAcademy.con	n	I
Expressions and particles	P	urpleMath.co	m Worksheet 12.5		
The Number System		IXL.com	Scale Drawings & Floor P	lans	
Ratios and operational lationalities			Algebra T	iles	
Statistics and obability			P. 65-75		
function					

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:

			ŀ	Adult	Basi	c Edu	catio	n Ma	then	natic	s Cur	riculu	um M	latrix				
Domain	NRS	Level 1		NRS I	evel 2				evel 3			NRS	evel 4			NRS Le	evel 5/6	i .
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2. Operations and Algebraic Thinking	Solar Addition and Suithern Problem seaf-ten 20 Contru-trates and Autorisms Progeny of Addition		Deles Address and Ducktowskie Resilie ne within 100 Commutative and Australia Regionity of Maliguity (2)		Multiplismen Faith writer 30 Develoariae Frankry af Brydianiae	l Sina Dag Prilade ar Indian Hanna Karanan Karana Na J	Age Mult Selve Multi-Oreg Thrittents Ling Bail Question and Articens Using S Age with an efficiency (op webbin)	Voltaja to reget increjen Ukligitation ai Construction Ukligitation ai Construction Ukligitation ai Construction Ukligitation ai Construction Ukligitation ai Television ai Television ai television ai Television ai Television ai television ai Television ai Television ai television ai television ai television ai Television ai television ai television ai television ai Television ai television ai television ai television ai television ai Television ai television ai televisio ai televisio ai televisio ai televisio ai televis	Interpret the Tenan Arr In Pressure Tool All Teacort or Alky 2 Previous Canaryon and Alagha Ruman and Leasments Party res	And blen of 1 Case Number a to 100 "And blen of 1 Case Number a to 100 "And blen of 1 Case Number while 100 "And blen of 1 Case Number a to	5				dwethy Parts of an Expension Automotive Tour Back Operations on Autyromical Output (Science Science Operations	 Der Parbeiting Teurking sein die Regimenten Beurke Digmeisterne Und Der etranste tei Erstlauste Vollahrt, of Agebraic Machelle in Beurlite of Disastone Canation of Vollahre Age, maarte te Judi Py Schutten Marchael 	Diel Janus d' Quadranie Fanctions Managelane Farmulae to bolan Quantity officiale al Ingrecont Real-Month Problem Candrawas Linking Equations o made Altern	fe gescent fie al discription Construint s'U ang fiyet en
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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

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.

Level E

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ABE Domains	NRS Level 5/6	Area	GED Domains
		ling	Rational Numbers
Geometry	Nor and Content and Content of the second o	L 8 Quantitative Problem Solving	
Number and Quantity	La di Alfandia di	l antitative	Measurement
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Algebra	And the of a granue constant of physical physical and the physical	å Algebraic Problem Solving	Expression and Equation:
unctions	Last type lang Conduction by type to the second conduction of the second conducti	gebraic P	Graphs and Functions
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There is also a TABE Overlay for the Crosswalk to GED.

Practice Activities

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.

Below are some highlights of the Practice Activities:

- 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

1000	INF					μΔΝ	
			thematic				
UDE	NT NAME:				I.D.:		
URRE	NT TESTING INFORMAT Test Date:	ION:	P	OST-TESTIN	G INFORMATION: TABE Level: A		
	urrent Test Date. urrent Test Level: urrent Test Form: Scale Score: NRS Level:				CCR Level: E		
		LOW EMPHASIS	MEDIUM EN	MPHASIS	HIGH EMPHASIS	8	
DO	MAIN: Geometry 15%			SCOR	ED PROFICIENCY:	□ Non-Profic □ Partial Prof □ Proficiency	iciency
				MAS	ERY DATE:		
NRS	Group:		Stan	dard Descri	ption:		Mastery Date
5/6	GEOMETRY: CONGRUENCE		ons of angle, circ ie undefined not	le, perpendi	ular line, parallel line, line, distance along a		
5/6	GEOMETRY: SIMILARITY, RIGHT	Prove theorems invol	lving similarity.	for triangles	to solve problems and	to prove	
	TRIANGLES, & TRIGONOMETRY	relationships in geom		i tor triangles	to solve problems and	to prove	
5/6	GEOMETRY:	Explain volume form					
	GEOMETRIC MEASUREMENT & DIMENSION				s, and spheres to solve	problems.	
5/6	GEOMETRY: MODELING WITH	Apply geometric con				,	
	GEOMETRY	per square mile, BTU:			ne in modeling situatio	ns (e.g., persons	
DO	MAIN: Numbers & Qu	antity		score	ED PROFICIENCY:	Non-Profic	lancy
00	13%	antity				Partial Prof Proficiency	iciency
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5/6	NUMBER & QUANTITY: THE REAL NUMBER SYSTEM	Extend the properties Rewrite expressions i exponents.			oonents. exponents using the p	roperties of	
5/6	NUMBER & QUANTITY: QUANTITIES	Reason quantitativel Use units as a way to			<i>lems.</i> guide the solution of m	nulti-step	
		problems. Choose and interpret					
					aphs and data displays.		
		choose a level of accu quantities.	uracy appropriat	e to limitatio	ns on measurement wh	ien reporting	

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.

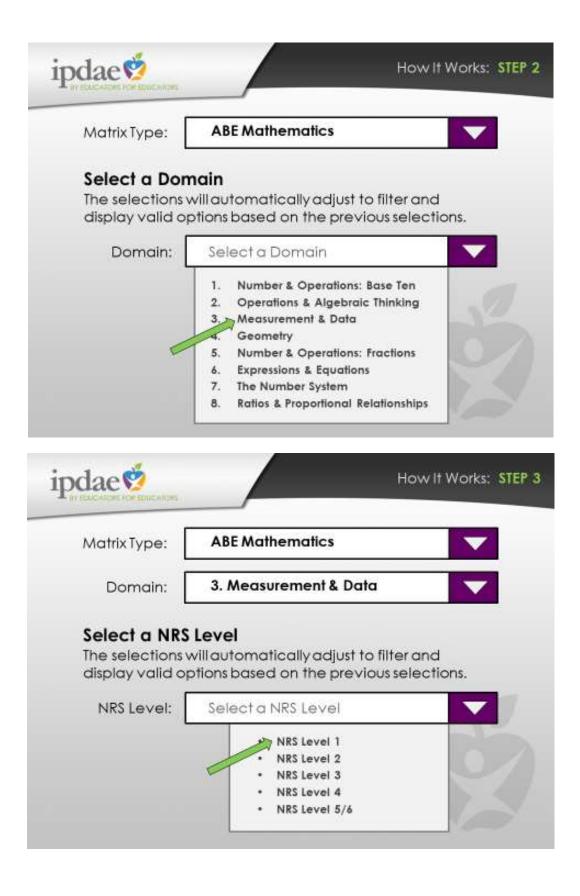
Accessing the Electronic Matrices

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

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.

Select a Type	e of Matrix	
	Curriculum Matrix allows the one of the seven (7) matrix	
		and the second se
Matrix Type:	Select a Type of Matrix	
Matrix Type:	Select a Type of Matrix ABE Mathematics	
Matrix Type:	ABE Mathematics ABE Reading	
Matrix Type:	ABE Mathematics ABE Reading ABE Language Arts	
Matrix Type:	 ABE Mathematics ABE Reading ABE Language Arts GED Mathematics 	19
Matrix Type:	ABE Mathematics ABE Reading ABE Language Arts	29

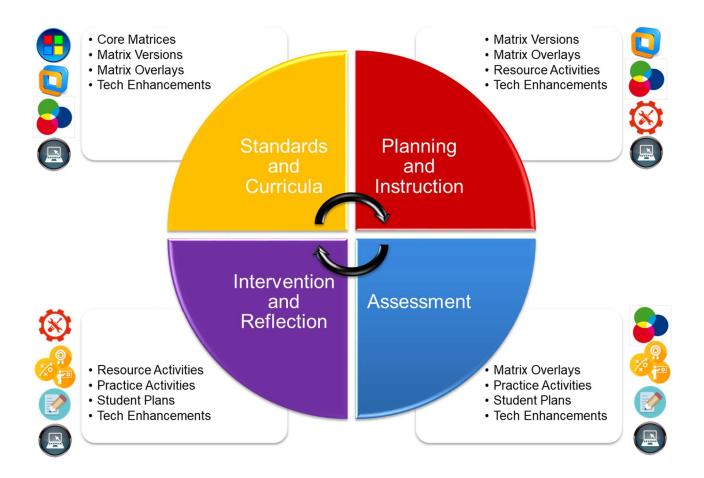


Matrix Type:	ABE Mathematics	
Domain:	3. Measurement & D	ata 🔽
NRS Level:		
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Search Res Results of infor	ults: mation and resources are I	isted for download. Resources
Results of infor	mation and resources are I	

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:

Domain	NRS Level 1		NRS Level 2			NRS Level 3			NRS Level 4				NRS Level 5/6					
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Functions.															Franker Generation & all Softe Ros Papel Society Constant Size Roy for Education Roy of Tanal Society	Manager Has Reports of Representations of Research	ting "chining	Area into its the Real and Quantity it Represents

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)



Activity Resource

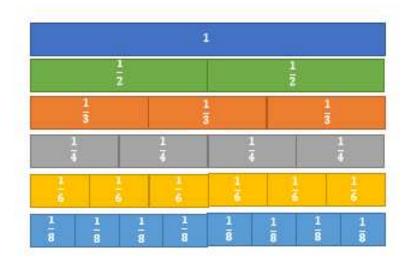


Visual Models of Equivalent Fractions

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.

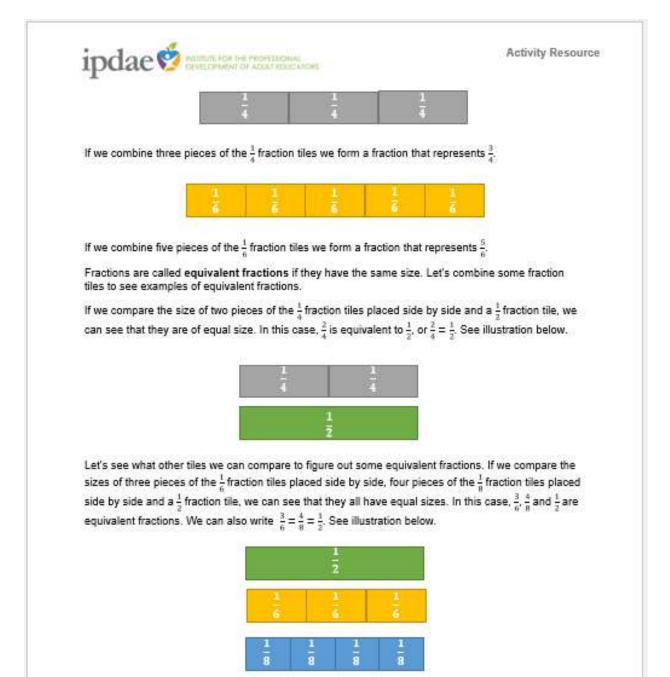
Concept:

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.

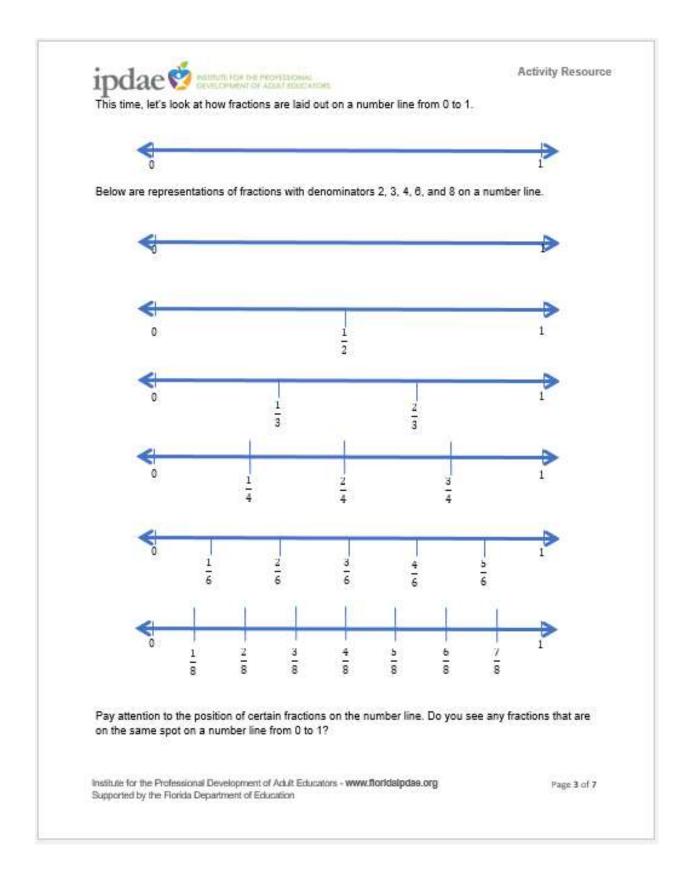


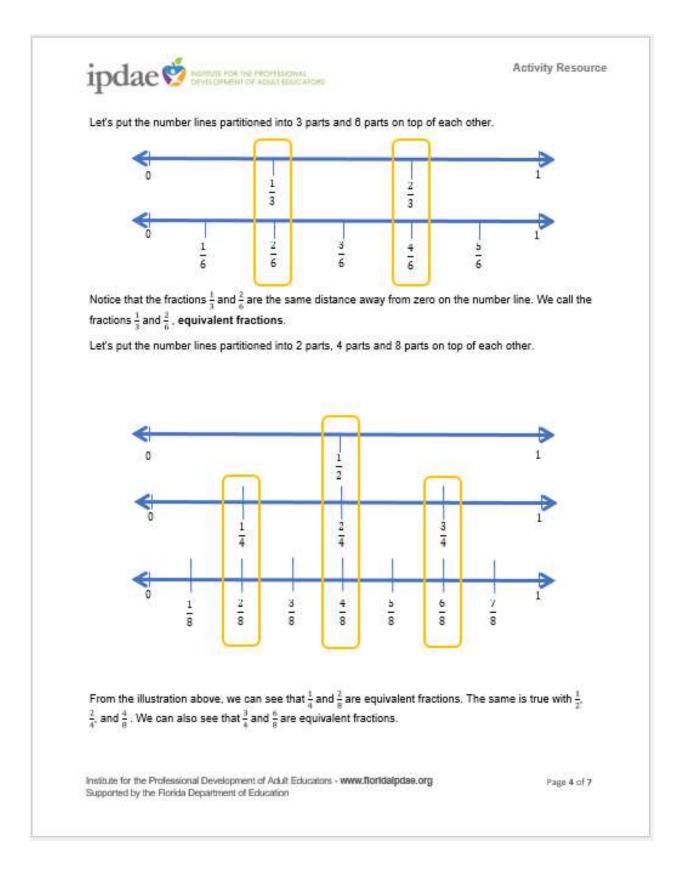


Use your fraction tiles to form other equivalent fractions. Write other examples of equivalent fractions in the area below.

Institute for the Professional Development of Adult Educators - www.floridalpdae.org. Supported by the Florida Department of Education

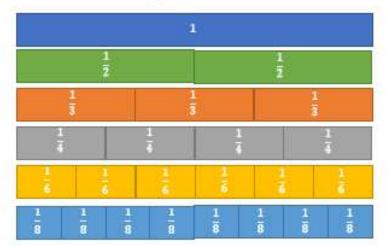
Page 2 of 7





Activity Resource

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 ¹/₂ fraction tiles which represents ²/₂

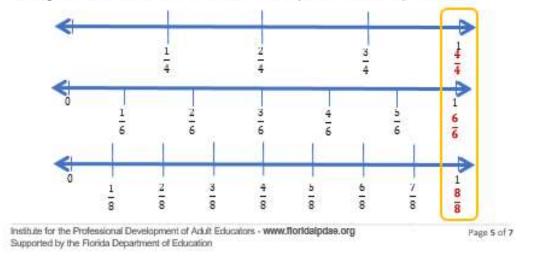
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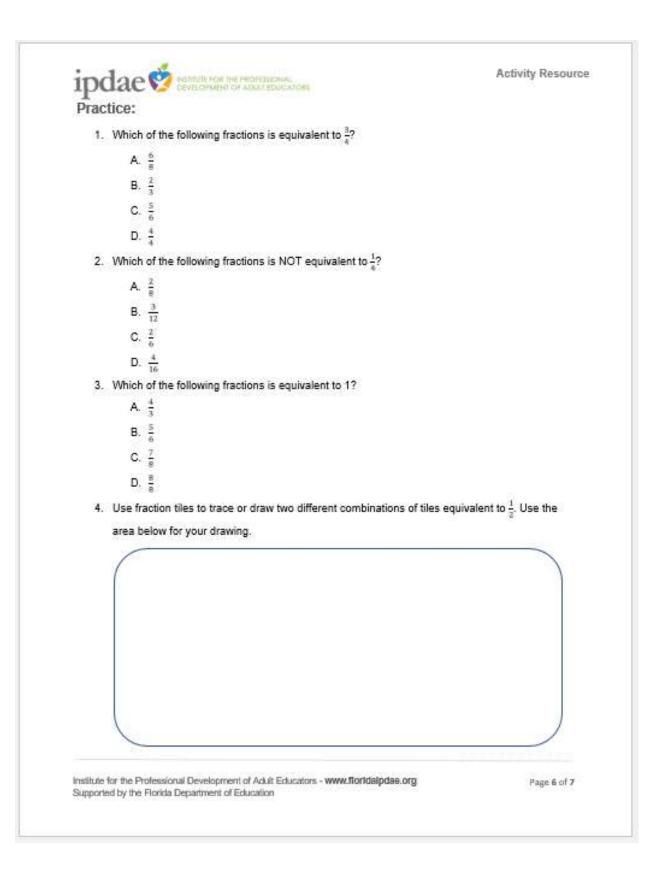
Three pieces of the ¹/₂ fraction tiles which represents ³/₂

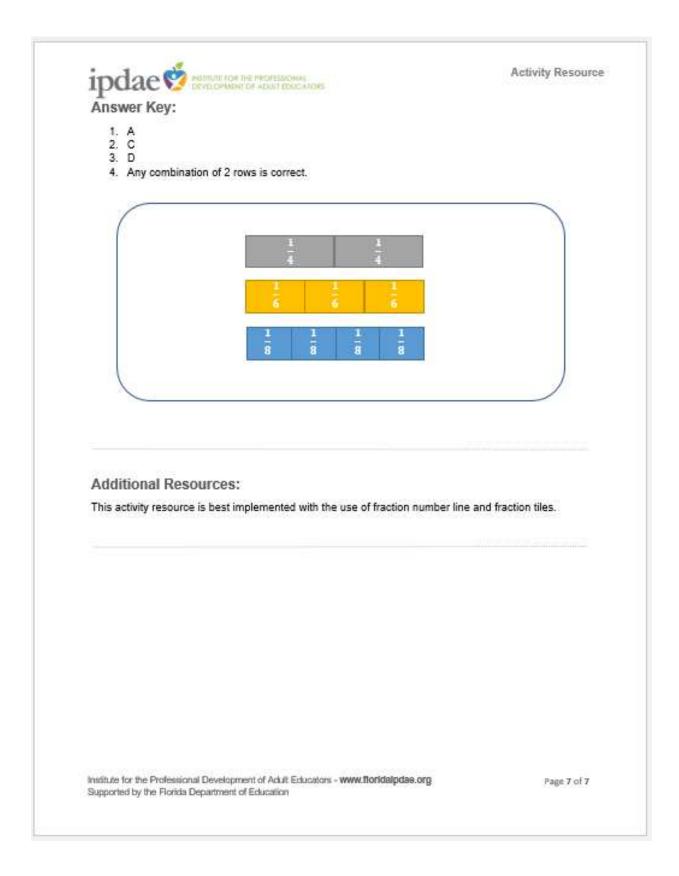
INSTITUTE FOR THE PROVALIGINAL DEVISIONMENT OF ADULT EDUCTION

- Four pieces of the ¹/₄ fraction tiles which represents ⁴/₄
- Six pieces of the ¹/₆ fraction tiles which represents ⁶/₆.
- Eight pieces of the ¹/_a fraction tiles which represents ⁸/_a

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







Appendix B: Individualized Student Plan (Math Level E)

~	IN ISU		DUCTIONAL CTUDENT		
	INDI	20 YO TO A GEORGE TO A 20 TO A	RUCTIONAL STUDENT F	LAN	
		ABE Mathem	atics: TABE Level E		
UDE	NT NAME:		I.D.:		
URRE	NT TESTING INFORMATIO	N:	POST-TESTING INFORMATION:		
	Test Date:		TABE Level: E		
	urrent Test Level: urrent Test Form: Scale Score: NRS Level:		CCR Level; B		
	u	XW EMPHASIS MED	NUM EMPHASIS HIGH EMPHASIS		
DO	202255	tions in Base Ten	SCORED PROFICIENCY:	🛛 Non-Profic	iency
	28%			Partial Proi Proficiency	
			MASTERY DATE:		
NRS	Domain:		Standard Description:		Mastery Date
2	UNDERSTAND PLACE		igits of a three-digit number represent am		Balinistell, Below
	VALUE		g., 706 equals 7 hundreds, 0 tens, and 6 or thought of as a buncle of ten tens — calle		
			rs 100, 200, 300, 400, 500, 600, 700, 800, 5	and the second	
			ven, eight, or nine hundreds (and 0 tens ar		
		Count within 1000; skip-count by 5s, 10s, and 100s.		_	
		Bead and write numbers to expanded form.	1000 using base-ten numerals, number na	mes, and	
			where based on meanings of the buncheds	ters and ones	
			ols to record the results of comparisons.		
2	USE PLACE VALUE		nbers using strategies based on place valu	e and properties	
	UNDERSTANDING & THE PROPERTIES OF	of operations. Add and subtract within 100	0, using concrete models or drawings and	strategies based	
	OPERATIONS TO ADD &		operations, and/or the relationship betw		
	SUBTRACT.		trategy 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 to		is a necessary	
2	USE PLACE VALUE	Use place value understandi	ng to round whole numbers to the nearest	t 10 or 100.	
	UNDERSTANDING & PROPERTIES OF	Fluently add and subtract within 1000 using strategies and algorithms based on place			
	OPERATIONS TO	value, properties of operation subtraction.	ins, and/or the relationship between addit	aaa ang	
	PERFORM MULTI-DIGIT ABITH METIC	Multiply one-cligit whole numbers by multiples of 10 in the range 10 - 90 (e.g., 9 x 80, 5			
	ABUIDALIS	x 60) using strategies based	on place value and properties of operation	¥.	
	MAIN: Operations & Alg	ebraic Thinking	SCORED PROFICIENCY:	□ Non-Profic	iency
DO				Partial Prof Proficiency	Construction of the second
DO	22%			1446	
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DOM	ZZ% Catagory:		MASTERY DATE: Standard Description:		Mastery Dat



INDIVIDUALIZED INSTRUCTIONAL STUDENT PLAN

ABE Mathematics: TABE Level E

J	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-cligit numbers.	
2	REPRESENT & SOLVE PROBLEMS INVOLVING	interpret products of whole numbers, e.g., interpret 5 x 7 as the total number of objects in 5 groups of 7 objects each.	
	MULTIPLICATION & DIVISION.	interpret whole-number quotients of whole numbers, e.g., interpret 55/8 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	Apply properties of operations as strategies to multiply and divide.	
	PROPERTIES OF	Understand and apply the commutative property of multiplication.	
	MULTIPLICATION & THE RELATIONSHIP BETWEEN MULTIPLICATION & DIVISION.	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 clivide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 x 5 = 40, one knows 40/ 5 = 8) or properties of operations.	
		Know from memory all products of two one-digit numbers.	
	E E E E E E E E E E E E E E E E E E E	Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the masonableness 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 & Dat 28%				Proficiency Il Proficiency ciency
		MASTERY DATE:		
IRS	Group:	Standard Description:	an in ann a	Mastery Date
2	MEASURE & ESTIMATE LENGTHS IN STANDARD UNITS	Measure the length of an object twice, using length units of o two measurements; describe how the two measurements rel chosen.		
- 1		Estimate lengths using units of inches, feet, centimeters, and	meters.	
		Measure to determine hew much longer one object is than a length difference in terms of a standard length unit.	nother, expressing th	e
2	RELATE ADDITION & SUBTRACTION TO LENGTH.	Represent whole numbers as lengths from 0 on a number line spaced points corresponding to the numbers 0, 1, 2,, and r sums and differences within 100 on a number line clagram.		
2	SOLVE PROBLEMS INVOLVING MEASUREMENT &	Tell and write time to the nearest minute and measure time i		
		Solve word problems involving addition and subtraction of the e.g., by representing the problem on a number line diagram.	me intervals in minut	es,
	ESTIMATION OF INTERVALS OF TIME,	Measure and estimate liquid volumes and masses of objects (grams (g), kilograms (kg), and kters (l).	using standard units	t



INDIVIDUALIZED INSTRUCTIONAL STUDENT PLAN

ABE Mathematics: TABE Level E

	MASSES OF DEJECTS	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	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.	
		Oraw 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.	
		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 borizontal scale is marked off in appropriate units - whole numbers, halves, or quarters.	
2	GEOMETRIC MEASUREMENT: UNDERSTAND CONCEPTS OF AREA & RELATE TO AREA OF MULTIPLICATION & ADDITION.	Recognize area as an attribute of plane figures and understand concepts of area measurement.	
		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.	
		Relate area to the operations of multiplication and addition.	
		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.	
		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.	
		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 x b and a x c. Use area models to represent the distributive property in mathematical reasoning.	
		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.	
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.	

DON	MAIN: Geometry 10%	E] Non-Profic] Partial Pro] Proficiency	ficiency
		MASTERY DATE:		
NRS	Category:	Standard Description:	No. 18 1	Mastery Date
1	REASON WITH SHAPES & THEIR ATTRIBUTES.	Recognize and draw shapes having specified attributes, such as a given nu angles or a given number of equal faces. Identify triangles, quadrilaterals, hexagons, and cubes.		
		Understand that shapes in different categories (e.g., rhombuses, rectangle others) may share attributes (e.g., having four sides), and that the shared can define a larger category (e.g., quadrilaterals).		
		Recognize rhombuses, rectangles, and squares as examples of quadrilater- draw examples of quadrilaterals that do not belong to any of these subcat		



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 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	SCORED PROFICIENCY:	□ Non-Proficiency
	12%		D Partial Proficiency
			Proficiency
		MASTERY DATE:	

URS	Domain:	Standard Description:	Mastery Date
2	DEVELOP	Understanding & Representing Fractions	
	UNDERSTANDING OF FRACTIONS AS NUMBERS	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.	
		Understand a fraction as a number on the number line.	
		Represent fractions on a number line diagram.	
		Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the hole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line.	
		Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.	
- 1		Equivalent Fractions	
		Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.	
		Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.	
		Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 2/3. Explain why the fractions are equivalent, e.g., by using a visual fraction model.	
		Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.	
		Comparing Fractions	
		Compare two fractions with the same numerator or the same denominator by masoning about their size.	1
		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.	