Diving Deeper into IPDAE's Matrix Suite for ABE and GED

Webinar

Activity Book

Institute for the Professional Development of Adult Educators

WEBINAR ACTIVITY BOOK

Diving Deeper into IPDAE's Matrix Suite for ABE and GED

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III. Individualized Student Plans (ISP's)

IV. Resource Activities

V. Applications of Matrix Suite Resources

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Guiding Questions

Slide(s)	Guiding Questions	My Thoughts
6	Decribe the features of the ABE Mathematics Matrix.	
8	What is the statewide difference between the GED Matrix and the ABE Matrices?	
10	How do you use the Individualized Student Plan to track student progress?	
11-14	How can you use the Resource Activities to help struggling students in class?	
15-30	Identify three applications of any Matrix Suite Resource and briefly explain each one in your own words.	
31	How will you apply the information you gained from this webinar?	

Core Matrices

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 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 Add and Subtract 2-Digit Numbers Compare 2-Digit Numbers Model Addition and Subtraction of 2-Digit Numbers	Place Value of 3-Digit Numbers Add and Subtract 3-Digit Numbers Compare 3-Digit Numbers Model Addition and Subtraction of 3-Digit Numbers Round Whole Numbers to the Nearest Tens or Hundreds Multiply 1-Digit Numbers By 2-Digit Multiples of 10 Use Properties of Operations to Perform Multi-Digit Arithmetic Mentally Add and Subtract 10 or 100 to 3-Digit Numbers	Generalize Understanding of Place Value Compare Any Multi-Digit Number Basic Operations with Multi-Digit Numbers in Standard Algorithm Read and Write Multi-Digit Numbers in Names and Expanded Form Round Multi-Digit Numbers to Any Place Value Perform Basic Operations on Decimal Numbers Using Multiple Strategies Multiply 4-Digit Numbers by 1- to 2-Digit Numbers Divide 4-Digit Numbers by 1-Digit Numbers Round Decimals to Any Place Use Place Value to Understand Decimals Read, Write, and Compare Decimals to Thousandths Divide 4-Digit Numbers by 2-Digit Numbers Using Multiple Strategies		
2. Operations and Algebraic Thinking	Solve Addition and Subtraction Problems within 20 The Equal Sign Commutative and Associative Property of Addition Solving Addition and Subtraction Equations	Solve Addition and Subtraction Problems within 100 Solve Multiplication and Division Problems within 100 Multiplication Facts within 100 Solve 2-Step Problems or Equations Commutative and Associative Property of Multiplication Solve Multiplication and Division Equations Distributive Property of Multiplication Model Multiplication and Division within 100	Solve Multi-Step Problems Using Basic Operations Check Answers Using Mental Computation and Estimation Write and Interpret Numerical Expressions Interpret Multiplication as Comparison Statements Solve Problems Involving Multiplicative Comparisons Interpret Expressions without Evaluating Them Interpret the Remainder in Problems Find All Factor Pairs of Any 2-Digit Whole Number Generate and Analyze Numeric and Geometric Patterns Multiples of 1-Digit Numbers Up to 100 Prime and Composite Numbers within 100 Identify Inexplicit Features of a Pattern from a Rule		Identify Parts of an Expression Use Factoring Techniques to Rewrite Expressions Find Zeros of Quadratic Functions Perform the Four Basic Operations on Polynomials Use Constraints to Evaluate Viability of Algebraic Models of Real World Situations Manipulate Formulas to Isolate a Quantity of Interest Explain Steps in Solving Equations Construct Viable Arguments to Justify Solution Method Represent Real World Problem Constraints Using Equations or Inequalities Represent Real World Problem Constraints Using Systems of Equations or Inequalities
3. Measurement and Data	Organize, Represent, and Interpret Categories of Data Measure Lengths Through Iteration	Interpret and Generate Line Plots Measuring and Estimating Lengths in Standard Units Relate Addition and Subtraction to Length Measure to Determine How Much Longer One Object Is Than Another Represent Whole Number Lengths on a Number Line Measuring and Estimating Liquid Volumes and Masses of Objects Solve Problems Involving Perimeter of Polygons Use Area to Model Addition and Multiplication	Solve Problems in Length, Time, Volume, Mass and Money Including Decimals Apply Area and Perimeter Formulas for Rectangles Measure and Sketch Angles in Whole-Number Degrees Solve Problems Involving Information Presented in Line Plots Convert Measurements within a System Solve Addition and Subtraction Problems for Unknown Angles Recognize Angles Organize Unit Fraction Data (1/2, 1/4, 1/8) in a Line Plot Understand Concepts of Angle Measurement		Use Dimensional Analysis to Solve Multi-Step Problems Interpreting Scales in Graphs and Data Displays Use Measurements Limitations to Adjust Level of Accuracy when Reporting Quantities Analyze and Interpret Units Consistently in Formulas Interpret the Origin in Graphs and Data Displays
4. Geometry	Analyze, Compare, and Compose 3-Dimensional Shapes 2- and 3-Dimensional Composite Shapes	Analyze, Draw and Compare Shapes Having Specified Attributes Identify Common Polygons and 3-Dimensional Figures Categorize Shapes with Common Attributes Partition Shapes into Parts with Equal Areas	Draw and Identify Points, Lines, Line segments, and Rays Solve Problems by Graphing Points on the Coordinate Plane Solve Problems Involving Area, Surface Area, and Volume Draw Polygons in a Coordinate Plane Draw and Identify Angles, Perpendicular 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 Represent 3-Dimensional Figures Using Nets Use Nets to Find the Surface Area of Figures	Solve Problems Involving Scale Drawings of Geometric Figures Produce Congruence and Similarity Using Models Angle Sum and Exterior Angles of Triangles and Transversals Solve Problems Involving Angle Move., Areas, SA and Volume Recognize Congruence and Similarity from Transformations Explain and Apply the Pythagorean Theorem	Define Angles, Circles, Perpendicular Lines, Parallel Lines and Line Segments Prove Theorems Involving Similarity of Triangles Use Congruence and Similarity Criteria for Triangles to Solve Problems Prove Relationships in Geometric Figures Use the Volume Formula for Cylinders to Solve Problems Use the Volume Formula for Pyramids to Solve Problems Use the Volume Formula for Cones to Solve Problems Use the Volume Formula for Spheres to Solve Problems Apply the Concept of Density Based on Area and Volume in Modeling Situations
5. Number and Operations: Fractions		Represent Fractions with Denominators 2, 3, 4, 6, or 8 on a Number Line Recognize Equivalent Fractions on a Number Line Use Visual Models to Represent Equivalent Fractions Compare Fractions with the Same Numerator or Denominator	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 Use Models to Illustrate Equivalent Fractions Compare Fractions Using Benchmark Fractions Such as 1/2 Add and Subtract Mixed Numbers Using Equivalent Fractions Multiply Fractions by a Whole Number Multiply and Divide 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		
6. Expressions and Equations			Write and Evaluate Algebraic Expressions with Exponents Identify and Generate Equivalent Algebraic Expressions Use Substitution to Determine If an Equation or Inequality is True Perform the Order of Operations on Algebraic Expressions Reason and Solve One-Variable Equations and Inequalities Use Variables to Represent Two Related Quantities in a Problem Express One Quantity as the Dependent Variable of the Another Quantity Use Graphs, Tables and Equations to Show Variable Relationships	Add, Subtract, Factor, and Expand Linear Expressions Construct Equations and Inequalities to Solve Problems Apply the Properties of Exponents to Generate Equivalent Expressions Solve Problems Involving Quantities in Scientific Notation Rewrite Expressions to Show Relationships Between Quantities Solve Problems Using Algebraic Equations with Rational Coefficients Evaluate Square and Cube Roots of Perfect Squares and Cubes Graph Proportional Relationships. Unit Rate as the Slope Solve Simultaneous Linear Equations in One Variable	Rewrite Rational Expressions Using Various Techniques Solve Quadratic Equations in One Variable Solve Systems of Linear Equations Graphically and Algebraically Graph Equations in Two Variables Write Equations and Inequalities in One Variable to Solve Problems Write Equations in Two or More Variables to Represent Relationships in Quantities Graph Equations with Labels and Scales Simple Rational and Radical Equations in One Variable Simple Rational and Radical Equations with Extraneous Solutions Solve Linear Equations and Inequalities with Letter Coefficients
7. The Number System			Fluently Divide Multi-Digit Numbers Fluently Add, Subtract, Multiply and Divide Multi-Digit Decimals Find the Greatest Common Factor of Two Numbers < 100 Apply Distributive Property to Generate Equivalent Expressions Find the Least Common Multiple of Two Numbers < 12 Use Models to Illustrate Interpret and Compute Quotients of Fractions Solve Problems Involving Division of Fractions by Fractions	Use Integers to Represent Quantities in Real World Contexts Plot/Find Rational Numbers on a Number Line Convert a Rational Number to Decimal Plot/First Order Pairs of Rational Numbers on a Coordinate Plane Understand and Evaluate Absolute Value of Rational Numbers. Solve Problems Involving Basic Operations on Rational Numbers. Explain Statements of Order and Inequality Using a Number Line Solve Problems by Graphing Find Rational Approximations of Irrational Numbers. Add and Subtract Rational Numbers Using a Number Line Multiply and Divide Rational Numbers Estimate the Location of Irrational Numbers on a Number Line	Transforming Radical Expressions to Exponential Expressions Transforming Expressions with Rational Exponents to Radical Expressions
8. Ratios and Proportional Relationships			Describe a Relationship Between Two Quantities Using a Ratio	Explain the Unit Rate a/b Associated with the Ratio a:b, with b ≠ 0 Use Various Techniques to Solve Problems Involving Ratios Represent Proportional Relationships by Equations and Graphs Solve Problems Involving Proportional Relationships	
9. Statistics and Probability			Discuss Statistical Questions Involving Variability in Data Discuss Statistical Questions Involving Center, Spread and Overall Shape Discuss the Measures of Center and Variation for a Numerical Data Set Display Numerical Data in Plots on a Number Line: Dot Plots, Histograms, Box Plots	Relate Measures of Center and Variability to Data Distribution and Context Draw Informal Comparative Inferences About Two Populations Find or Approximate the Probability of Simple & Compound Events with Various Techniques Construct and Interpret Scatter Plots From Two-Way Tables and Vice Versa Summarize and Describe Numerical Data Sets Use Interquartile Range and MAD to Draw Comparative Inferences. Use Random Sampling to Draw Inferences About a Population Use the Equation of a Linear Model to Solve Problems	Represent Data Using Dot Plots Represent Data Using Histograms Represent Data Using Box Plots Interpret Differences in Shape, Center and Spread in the Context of Data Sets Summarize Data Using Two-Way Frequency Tables Interpret Relative Frequencies in the Context of Data (Joint, Marginal and Conditional) Recognize Possible Associations and Trends in the Data Interpret the Slope and the Intercept of a Linear Model Interpret Effects of Extreme Data Points to Shape, Center and Spread of Data Sets Distinguish Between Correlation and Causation
10. Functions				Define, Evaluate and Compare Functions Interpret the Equation y = mx + b as Defining a Linear Function Construct a Function to Model Linear Relationships Describe Qualitatively or Sketch the Functional Relationship Between Two Quantities	Definition of a Function Identify the Domain and Range of a Function Write Functions Using Function Notation Evaluate Functions Calculate and Interpret the Average Rate of Change of a Function Over an Interval Estimate the Rate of Change of a Function from its Graph Over a Specified Interval Graph the Equations of a Functions by Hand and by Using Technology Identify Key Features of a Graph of a Function Write the Equation of a Function Describing the Relationship of Two Quantities Interpret Key Features of Graphs and Tables of Functions Sketch the Graph of a Function Given a Verbal Description of Relationship of Quantities Relate the Domain of a Function to the Real-World Quantity it Represents Recognize Linear Functions Recognize Exponential Functions as Growth or Decay Interpret Parameters in Linear or Exponential Functions in Terms of its Context Interpret Function Notations in Terms of the Context They Describe Interpret Exponential Functions Using Properties of Exponents (e.g. Growth or Decay) Compare Functions Each Represented in a Different Way (Graph, Equation, Table, etc.)

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	Demonstrate Understanding of Spoken Words, Syllables, and Sounds (Phonemes)				
Phonics and Word Recognition	Apply Grade-Level Phonics and Word Analysis in Decoding Read with Accuracy and Fluency	Apply Grade-Level Phonics and Word Analysis in Decoding Read with Accuracy and Fluency	Apply Grade-Level Phonics and Word Analysis in Decoding Read with Accuracy and Fluency		
Reading Comprehension					
Key Ideas and Details (Anchor Standards 1, 2, 3)	Ask/Answer Questions About Key Details Identify Main Topic and Retell Key Details Describe the Connection Between Two Things	Ask/Answer 5 W and H Questions Determine Main Idea and Supporting Details of a Text Describe Relationships Between Events, Ideas, Concepts or Procedures	Refer to Details/Examples in Literary Text when Explaining Explicit and Inference Meanings Refer to Details/Examples in Informational Text when Explaining Explicit and Inference Meanings Quote Accurately from Literary Text (Explicit and Inferential) Quote Accurately from Informational Text (Explicit and Inferential) Explain How Details Support a Main Idea and Summarize Determine the Theme and Summarize the Literary Text Explain Events, Procedures, Ideas, or Concepts in Informational Texts Including What Happened or Why	Cite Textual Evidence from Literary Text to Support Analysis (Explicit and Inference) Cite Textual Evidence from Informational Text to Support Analysis (Explicit and Inference) Cite Textual Evidence from Science and Technical Sources to Support Analysis (Explicit and Inference) Determine Theme or Central Idea and Accurately Summarize Determine Central Ideas or Conclusion and Summarize Accurately Analyze Text Connections and Distinctions (Comparisons, Analogies, Categories) Identify Key Steps in Process Related to Social Studies Follow a Multistep Procedure (e.g., Experiments, Technical Tasks)	Cite Strong/Thorough Textual Evidence from Literary Text to Support Analysis (Explicit and Inference) Cite Specific Textual Evidence to Support Analysis of Primary and Secondary Sources (Explicit and Inference) Cite Strong/Thorough Textual Evidence from Informational Text to Support Analysis (Explicit and Inference) Cite Specific Textual Evidence to Support Analysis of Science/Technical Texts (Explicit and Inference) Determine Theme or Central Idea and Analyze Development and Details Determine Central Ideas or Conclusion and Summarize Complex Concepts (Informational Texts) Determine Central Ideas or Conclusion and Summarize Complex Concepts/Processes (Science/Technical Texts) Analyze Complex Set of Ideas/Events and Interaction of Individuals (Informational Text) Analyze Details in Sequence of Events Follow a Complex Multistep Procedure (e.g., Experiments, Technical Tasks)
Craft and Structure (Anchor Standards 4, 5, 6)	Ask/Answer Questions to Clarify Word/Phrase Meaning Use Text Features to Locate Information (Headings, Table of Content, Glossaries, Electronic Menus, Icons)	Determine Meaning of General Academic and Domain-Specific Words by Topic Area Use Text Features to Locate Information (Captions, Bold Print, Subheadings, Glossaries, Indexes, Electronic Menus, Icons) Use Search Tools (Key Words, Sidebars, Hyperlinks) Identify Main Purpose of Text Distinguish How Personal Point of View Differs from Author's	Determine Meaning of General Academic and Domain-Specific Words by Topic Area Determine Meaning of Words Use in Text (Figurative Language) Describe Structure of Informational Text (e.g., Chronology, Comparison, Cause/Effect, Problem/Solution) Compare and Contrast Structure in Multiple Texts Analyze Similarity/Differences in Point of View in Multiple Accounts Describe How Narrator's Point of View Influences Description of Events	Analyze Word Choice on Meaning and Tone - Literary Texts (Figurative, Connotative, Technical Meaning) Determine Word Meaning and Choice in Informational Texts (Figurative, Connotative, Technical Meaning) Analyze How Sections Fit Overall Structure and Develop Themes, Settings, or Plots Analyze How Organizational Structure Contributes to Idea Development Analyze How Author's Point of View Responds to Conflicting Evidence Identify Text Revealing Author's Point of View/Purpose (e.g., Loaded Language, Inclusion, Fact Avoidance)	Analyze Word Choice and Impact on Meaning and Tone - Literary Texts (Figurative, Connotative, Technical Meaning) Determine Word Meaning and Impact in Informational Texts (Figurative, Connotative, Technical Meaning) Determine Meaning of Symbols, Key Terms, Domain-Specific Words in Scientific/Technical Texts Analyze Development and Refinement of Ideas/Claims Analyze and Evaluate Effectiveness of Text Structure Analyze Point of View from World Literature Analyze Satire, Sarcasm, Irony, Understatement Analyze Rhetoric Compare Point of View of Multiple Authors
Integration of Knowledge and Ideas (Anchor Standards 7, 8)	Use Illustrations/Details to Describe Key Ideas (e.g., Maps, Charts, Photographs) Identify Author's Reasons for Using Supporting Points	Use Illustrations and Words to Demonstrate Understanding Explain How Illustrations Contribute to Words in Texts (e.g., Mood, Character Analysis) Describe How Reasons Support Author's Points	Interpret and Explain How Oral, Visual, Quantitative Information Helps Understanding Use Multiple Sources to Locate Answers or Solve Problems Explain How Reasons and Evidence Support Specific Points	Integrate Information from Different Media/Formats Integrate Technical Information from Different Media/Formats Delineate and Evaluate Arguments/Claims and Assess Evidence	Delineate and Evaluate Arguments/Claims and Assess Evidence (Relevance, Sufficiency, Fallacious Reasoning)
Analyze Themes/Topics in Multiple Texts (Anchor Standard 9)	Identify Similarities/Difference Between Two Texts on Same Topic	Compare/Contrast Important Points and Key Details Between Two Texts on Same Topic	Integrate Information from Several Texts on Same Topic	Analyze Multiple Texts that Provide Conflicting Information	Analyze U. S. Historical/Literary documents Compare and Contrast Findings from Primary and Secondary Sources
Read and Comprehend Complex Text (Anchor Standard 10)		Read and Comprehend Complex Literary Text for NRS Level 2 (Flesch-Kincaid 1.98-5.34) Read and Comprehend Complex Informational Text for NRS Level 2 (Flesch-Kincaid 1.98-5.34)	Read and Comprehend Complex Literary Text for NRS Level 3 (Flesch-Kincaid 4.51-7.73) Read and Comprehend Complex Informational Text for NRS Level 3 (Flesch-Kincaid 4.51-7.73)	Read and Comprehend Complex Literary Text for NRS Level 4 (Flesch-Kincaid 6.51-10.34) Read and Comprehend Complex Informational Text for NRS Level 4 (Flesch-Kincaid 6.51-10.34)	Read and Comprehend Complex Literary Text for NRS Level 5 and 6 (Flesch-Kincaid 8.12 - 16.2) Read and Comprehend Complex Informational Text for NRS Level 5 and 6 (Flesch-Kincaid 8.12 - 16.2)

Adult Basic and Adult Secondary Education Language Curriculum Matrix

Domain	NRS 1	NRS 2	NRS 3	NRS 4	NRS 5/6
CONVENTIONS OF STANDARD ENGLISH Language Anchor 1: English grammar & usage; Language Anchor 2: Capitalization, punctuation & spelling	**DETERMINERS / NOUNS / PRONOUNS** Print upper- and lowercase letters Use determiners. Use singular and plural nouns with matching verbs. Use common, proper, and possessive nouns. Use personal, possessive, and indefinite pronouns.	Use collective nouns. Form and use regular and irregular plural nouns. Use abstract nouns. Use reflexive pronouns. Explain the function of nouns and pronouns.	Use relative pronouns.	Ensure that pronouns are in the proper case. Use intensive pronouns. Correct vague pronouns. Recognize and correct inappropriate shifts in pronoun number and person.	
	VERBS Use frequently occurring verbs. Use singular and plural nouns with matching verbs. Use verbs in past, present, and future tense.	Form and use the past tense of frequently occurring irregular verbs. Form and use regular and irregular verbs. Form and use simple verb tenses. Explain the function of verbs.	Form and use the progressive verb tenses. Form and use perfect verb tenses. Use verb tense to convey time, sequence, state, and condition. Recognize and correct inappropriate shifts in verb tense. Use modal auxiliaries.	Explain the function of verbals. Form/use verbs in the active and passive voice. Form/use verbs in indicative, imperative, interrogative, conditional, and subjunctive mood. Recognize and correct inappropriate shifts in verb voice and mood.	
	ADJECTIVES / ADVERBS Use frequently occurring adjectives.	Explain the function of adjectives and adverbs. Form and use comparative and superlative adjectives and adverbs.	Use relative adverbs. Order adjectives within sentences. Use frequently confused adjectives and adverbs.		
	PREPOSITIONS / CONJUNCTIONS / CORRELATIVE CONJUNCTIONS / INTERJECTIONS Use frequently occurring prepositions.		Form and use prepositional phrases. Explain the function of prepositions. Correctly use frequently confused prepositions. Explain the function of conjunctions. Use correlative conjunctions.		
	SENTENCE STRUCTURE Use question words. Use frequently occurring conjunctions. Produce and expand complete sentences. Produce and expand various sentence types.	Produce, expand, and rearrange complete simple and compound sentences. Ensure subject-verb and pronoun-antecedent agreement. Use coordinating and subordinating conjunctions. Produce simple, compound, and complex sentences.	Produce complete sentences, correcting inappropriate fragments and run-ons.	Place phrases and clauses within a sentence, correcting misplaced/dangling modifiers. Explain the function of phrases and clauses. Choose among sentence types to signal differing relationships among ideas. Recognize variations from standard English.	Use parallel structure. Use various types of phrases and clauses.
	CAPITALIZATION Capitalize the first word in a sentence and pronoun I. Capitalize dates and names of people.	Capitalize holidays, product names, and geographic names. Capitalize words in titles.	Use correct capitalization. Use underlining, quotation marks, or italics to indicate titles of works.		
	PUNCTUATION Recognize and name end punctuation. Use end punctuation for sentences. Use commas in dates and to separate single words in a series.	Use an apostrophe to form contractions and possessives. Form and use possessives. Use commas in greetings and closing of letters. Use commas in addresses. Use commas and quotation marks in dialogue.	Use commas and quotation marks to mark direct speech and quotations. Use a comma before a coordinating conjunction. Use punctuation to separate items in a series. Use a comma to separate introductory elements. Use commas with introductory words, tag questions, and direct address. Use commas and quotation marks to mark direct speech and quotations. Use a comma when combining two complete sentences.	Use commas, parentheses, and dashes to set off nonrestrictive/ parenthetical elements. Use a comma to separate coordinate adjectives. Use punctuation (comma, ellipsis, dash) to indicate a pause or break. Use an ellipsis to indicate an omission.	Use a semicolon to link independent clauses. Use a colon to introduce a list or quotation.
	SPELLING Write a letter or letters for consonant and short-vowel sounds. Spell simple words phonetically. Apply spelling patterns for frequently occurring irregular words.	Use spelling patterns and generalizations. Use conventional spelling for high-frequency words and add suffixes.	Spell grade-appropriate words using references as needed.	Spell grade-level words.	Spell grade-level words.
KNOWLEDGE OF LANGUAGE Language Anchor 3: Understanding how language functions	**SENTENCE CONSTRUCTION** Choose words and phrases for effect. Observe differences between conventions of spoken and written standard English.	Choose words and phrases to convey ideas. Choose punctuation for effect. Differentiate between contexts that call for formal English vs. informal discourse. Expand, combine, and reduce sentences. Compare and contrast the varieties of English.			
	TONE & STYLE			Maintain consistency in style and tone. Vary sentence patterns. Choose precise and concise language.	
VOCABULARY ACQUISITION & USE Language Anchor 4: Word meaning; Language Anchor 5: Figurative language; & Language Anchor 6: Vocabulary Knowledge	**DETERMINING WORD MEANING** Identify frequently occurring root words. Use frequently occurring affixes. Use sentence-level context.	Consult reference materials for word spelling. Use glossaries and dictionaries for meaning. Determine the meaning of the new word formed when adding a prefix. Use a known root word to understand unknown words. Use meaning of individual words to predict the meaning of compound words. Use sentence-level context as a clue to word/phrase meaning.	Consult reference materials (dictionaries, glossaries, thesauruses) for pronunciation and meaning. Use common, grade-appropriate Greek and Latin affixes and roots as clues to word meaning. Use context clues (examples, definitions, restatements) to determine word/phrase meaning.	Consult reference materials for pronunciation, meaning, and part of speech. Use common, grade-appropriate Greek and Latin affixes and roots as clues to word meaning. Verify word meaning (e.g., by checking the inferred meaning in context or in a dictionary). Use context clues (overall meaning, word position/function) to determine meaning.	Consult reference materials for pronunciation, meaning, part of speech, etymology or usage. Verify meaning (e.g., by checking the inferred meaning in context or in a dictionary). Use patterns of word changes that indicate different meanings or parts of speech. Use context clues (overall meaning, word position/function) to determine meaning.
	UNDERSTANDING FIGURATIVE LANGUAGE Sort words into categories. Define words by category and by one or more key attributes. Identify real-life connections between words and their use. Distinguish shades of meaning among verbs and adjectives.	Distinguish the literal and nonliteral meanings of words and phrases in context. Identify real-life connections between words and their use. Distinguish shades of meaning among words that describe states of mind or degrees of certainty.	Interpret figurative language in context. Recognize and explain common idioms, adages, and proverbs. Use relationships between words.		
	GATHERING VOCABULARY KNOWLEDGE Use words/phrases that include conjunctions.	Use words/phrases that include using adjectives and adverbs. Use words/phrases that signal spatial and temporal relationships.	Use words/phrases that signal actions, emotions, or states of being. Use words/phrases that signal context, addition, and relationships. Use words/phrases specific to a particular topic.	Use words/phrases necessary for comprehension or expression.	Use words/phrases at the college and career readiness level.

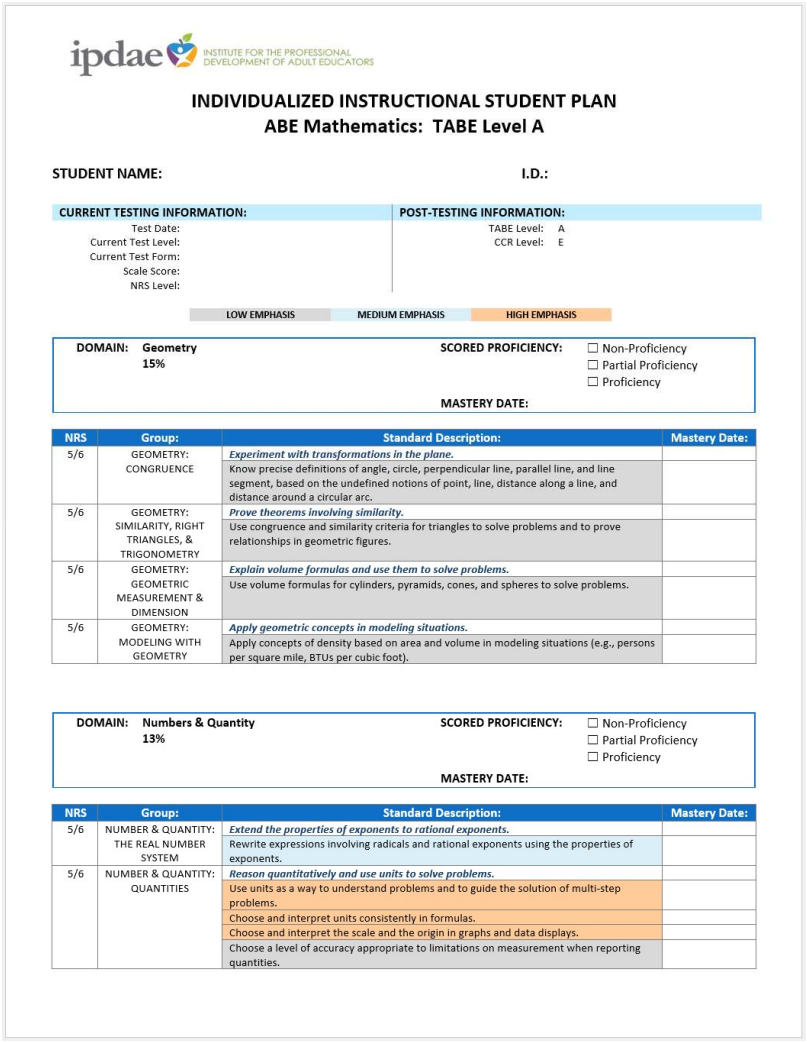
Adult Basic and Adult Secondary Education Writing Curriculum Matrix

Domain	NRS 1	NRS 2	NRS 3	NRS 4	NRS 5/6
TEXT TYPES & PURPOSES Writing Anchor 1: Writing arguments	**INTRODUCE TOPIC AND GROUP-RELATED INFORMATION**				
		Write opinion pieces on topics or texts, supporting a point of view with reasons. Introduce the topic, state an opinion, and create an organizational structure.	Write opinion pieces on topics or texts, supporting a point of view with reasons and information. Introduce a topic, state an opinion, and create a structure to support writer's purpose.	Write arguments to support claims with clear reasons and relevant evidence. Introduce claim(s), acknowledge alternate or opposing claims, organize, and provide evidence.	Write arguments to support claims in an analysis of topics, using valid reasoning and evidence. Introduce claim(s) and create an organization that establishes clear relationships. Write arguments focused on discipline-specific content. Develop claim(s) and counterclaims fairly, supplying evidence for each.
	USE FACTS, RELATED DETAILS, CLAIMS & COUNTERCLAIMS TO SUPPORT TOPIC				
		Provide reasons that support the opinion.	Provide ordered reasons supported by facts and details.	Support claim(s) with evidence, using credible sources.	Develop claim(s) and counterclaims supplying evidence.
	USE CORRECT TRANSITION WORDS				
		Use linking words and phrases.	Link opinions and reasons using words, phrases, and clauses.	Use words, phrases, and clauses.	Use words, phrases, and clauses to link sections of text and clarify relationships.
	PROVIDE CONCLUSION				
		Provide a concluding statement or section.	Provide a concluding statement or section related to the opinion.	Provide a concluding statement or section that supports the argument.	Provide a concluding statement or section that supports the argument.
	USE PRECISE LANGUAGE & MAINTAIN STYLE/TONE				
				Establish and maintain a formal style	Establish and maintain a formal style and objective tone.
Writing Anchor 2: Writing informative/explanatory texts	**INTRODUCE TOPIC & GROUP-RELATED INFORMATION**				
		Write informative/ explanatory texts to examine a topic and convey ideas. Introduce a topic and group related information, including illustrations.	Write informative/ explanatory texts to examine a topic and convey ideas. Introduce a topic and group related information; include formatting, illustrations, and multimedia.	Write informative/ explanatory text, e.g., narration of historical events, scientific procedure/ experiments, or technical processes. Introduce a topic; organize ideas into categories.	Write informative/ explanatory texts to examine and convey complex ideas and concepts. Introduce a topic; organize complex ideas, concepts, and information. Write informative/ explanatory texts, e.g., narration of historical events, scientific procedures/ experiments, or technical processes.
	USE FACTS, RELATED DETAILS, CLAIMS & COUNTERCLAIMS TO SUPPORT TOPIC				
		Develop the topic with facts, definitions, and details.	Develop the topic with facts, definitions, concrete details, quotations, or other information.	Develop the topic with facts, definitions, details, quotations, or other information and examples.	Develop the topic with facts, extended definitions, concrete details, quotations, etc.
	USE CORRECT TRANSITION WORDS				
		Use linking words and phrases.	Link ideas within categories of information using words and phrases.	Use transitions to create cohesion and clarify relationships.	Use transitions to link major sections of the text, create cohesion, and clarify.
	PROVIDE CONCLUSION				
		Provide a concluding statement or section.	Provide a concluding statement or section related to the information presented.	Provide a concluding statement or section that supports the information presented.	Provide a concluding statement that supports the information presented.
	USE PRECISE LANGUAGE AND MAINTAIN STYLE/TONE				
			Use precise language and domain-specific vocabulary.	Use precise language and domain-specific vocabulary. Establish and maintain a formal style and objective tone.	Use domain-specific vocabulary to manage the complexity of the topic and convey appropriate style. Establish and maintain a formal style and objective tone.
Writing Anchor 3: Writing narratives	Write narratives recounting two or more sequenced events.	Write narratives in recounting a well-elaborated event or short sequence of events.			
Writing Anchor 4: Producing writing		Produce writing in which the development and organization are appropriate to task and purpose.	Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience.	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
Writing Anchor 5: Developing & strengthening writing	Focus on a topic, respond to questions and suggestions, and add details.	Develop writing by planning, revising, and editing.	Develop writing by planning, revising, editing, and rewriting.	Develop writing by planning, revising, editing, and rewriting, focusing on purpose and audience.	Develop writing by planning, revising, editing, and rewriting, focusing on purpose and audience.
Writing Anchor 6: Using technology	Use a variety of digital tools to produce and publish writing. Discuss digital citizenship.	Use technology to produce and publish writing. Discuss how technology is used for communication, critical thinking, research, and innovation. Complete an electronic job application. Create simple data tables.	Use technology to produce and publish writing and present some demonstrating keyboarding skills. Produce a one page resume. Insert a table or graph using drag and drop. Evaluate and select information sources and digital tools.	Use technology to produce and publish writing and link to and cite sources. Develop a career plan. Create original works using a variety of programs such as Word and Excel. Locate, organize, analyze, evaluate, synthesize, and use electronic information from a variety of sources.	Use technology to produce, publish, and update writing products.
Writing Anchor 7: Conducting research	Participate in shared research and writing projects.	Conduct short research projects that build knowledge about a topic.	Conduct short research projects that use several sources to build knowledge.	Conduct short research projects to answer a question, using several sources and generating questions.	Conduct research projects to answer a question or solve a problem; synthesizing multiple sources.
Writing Anchor 8: Evaluating sources for integration	Use information from provided sources to answer a question.	Gather information from sources; take brief notes, and sort evidence into categories.	Gather information from sources; summarize or paraphrase, and provide list of sources.	Gather information from sources, assess the credibility and accuracy of each source; quote/paraphrase, and cite.	Gather information from sources, assess usefulness of each source, maintain the flow of ideas, avoid plagiarism, and cite.
Writing Anchor 9: Drawing evidence to support analysis, reflection & research			Draw evidence from literary or informational texts to support analysis, reflection, and research. Apply grade level reading standards to informational text.	Apply grade level reading standards to literature, citing evidence from the text when drawing inferences. Draw evidence from literary or informational texts to support analysis, reflection, and research. Apply grade level reading standards to literary nonfiction.	Apply grade level reading standards to literature, determining a theme/idea, and summarizing without bias.	Draw evidence from literary or informational texts to support analysis, reflection, and research. Apply grade level reading standards to literary nonfiction, integrating quantitative with qualitative analysis. Apply grade level reading standards to literature; determining meaning (figurative, connotative, and technical).

GED Mathematical Reasoning PLD Matrix

Domain	Level 1 Below Passing Limited/Inconsistent	Level 2 Passing (HS Equivalency) Satisfactory	Level 3 College Ready Strong	Level 4 College Ready + Credit Outstanding
1. Rational Numbers	Apply number properties involving multiples and factors. Compute unit rates. Solve real-world problems using rational numbers.	Apply number properties involving multiples and factors. Compute unit rates. Perform computations with rational numbers. Determine when a numerical expression is undefined. Solve real-world problems using rational numbers. Solve arithmetic and real-world problems involving ratios and proportions. Solve multi-step arithmetic and real-world problems involving percents. Use scale factors to determine the magnitude of a size change, and convert between actual drawings and scale Order fractions and decimals, including on a number line. Identify absolute value of a rational number as its distance from 0 on the number line Determine the distance between two rational numbers on the number line. Simplify numerical expressions with rational exponents. Compute numerical expressions with squares and square roots of positive, Compute numerical expressions with cubes and cube roots of positive, rational	Determine when a numerical expression is undefined. Solve arithmetic and real-world problems involving ratios and proportions. Identify absolute value of a rational number as its distance from 0 on the number line. Determine the distance between two rational numbers on the number line. Simplify numerical expressions with rational exponents. Compute numerical expressions with squares and square roots of positive,	
2. Measurement	Compute the area and perimeter of triangles and rectangles. Determine side lengths of triangles and rectangles when given area or perimeter. Represent, display, and interpret categorical data in tables and scatter plots. Represent, display, and interpret categorical data in circle and bar graphs.	Compute the area and perimeter of triangles and rectangles. Compute the area and perimeter of polygons. Compute the area and circumference of circles. Compute the area and perimeter of composite figures. Determine side lengths of triangles and rectangles when given area or perimeter. Use the Pythagorean theorem to determine unknown side lengths in a right triangle. Determine side lengths of polygons when given area or perimeter. Determine the radius and diameter of circles when given area or circumference. Compute volume and surface area of rectangular prisms. Compute volume and surface area of right prisms. Compute volume and surface area of right pyramids and cones. Compute volume and surface area of cylinders. Compute volume and surface area of composite figures. Compute volume and surface area of spheres. Determine side lengths and height of right prisms when given volume or surface area. Determine side lengths and height of rectangular prisms when given volume or surface area. Determine side lengths, radius, diameter, and height of right pyramids and cones when given volume or surface area. Determine radius, diameter, and height of cylinders, when given volume or surface area. Determine radius and diameter of spheres when given volume or surface area. Calculate the median, mode, and weighted average, and calculate a missing data value, given the average and all the missing data values but one. Represent, display, and interpret categorical data in dot plots, histograms, and box plots. Use counting techniques to solve problems and determine combinations and permutations.	Use the Pythagorean theorem to determine unknown side lengths in a right triangle. Compute volume and surface area of composite figures Compute volume and surface area of cylinders. Determine radius, diameter, and height of cylinders, when given volume or surface area. Use counting techniques to solve problems and determine combinations and permutations. Determine the probability of simple and compound events.	Compute volume and surface area of composite figures. Use counting techniques to solve problems and determine combinations and permutations Determine the probability of simple and compound events
3. Expression and Equations	Evaluate linear expressions. Write linear expressions to represent context Evaluate polynomial expressions. Write rational expressions to represent context. Solve real-world problems involving linear equations. Solve algebraic and real-world problems involving systems of equations.	Write linear expressions to represent context. Write quadratic equations to represent context. Write polynomial expressions. Write rational expressions to represent context. Compute with linear expressions. Factor polynomial expressions. Compute with polynomials. Solve linear equations in one variable. Solve quadratic equations in one variable. Evaluate polynomial expressions. Evaluate rational expressions. Solve real-world problems involving linear equations. Solve linear inequalities in one variable. Identify or graph the solution to a one variable linear inequality on a number line. Solve real-world problems involving inequalities.	Factor polynomial expressions. Compute with polynomials. Compute with rational expressions. Solve quadratic equations in one variable. Write linear inequalities to represent context. Solve linear inequalities in one variable. Solve real-world problems involving inequalities.	Solve quadratic equations in one variable. Write linear inequalities to represent context.
4. Graphs and Functions	Represent or identify a function in a table or graph as having exactly one output for each input Interpret unit rate as the slope in a proportional relationship. Locate and plot points in the coordinate plane. Sketch graphs and interpret key features of graphs and tables in terms of quantities. Evaluate linear and quadratic functions. Compare two different proportional relationships, represented in different ways.	Represent or identify a function in a table or graph as having exactly one output for each input. Determine the slope of a line from a graph, equation, or table. Interpret unit rate as the slope in a proportional relationship. Graph two-variable linear equations Use slope to identify parallel and perpendicular lines and to solve geometric problems. Write the equation of a line with a given slope through a given point Write the equation of a line passing through two given distinct points. Evaluate linear and quadratic functions. Compare two different linear or quadratic functions, each represented in different ways. Compare two different proportional relationships, each represented in different	Algebraic problem solving with graphs and functions. Determine the slope of a line from a graph, equation, or table. Graph two-variable linear equations. Use slope to identify parallel and perpendicular lines and to solve geometric problems. Write the equation of a line with a given slope through a given point. Compare two different linear or quadratic functions, each represented in different ways.	Graph two-variable linear equations. Use slope to identify parallel and perpendicular lines and to solve geometric problems. Compare two different linear or quadratic functions, each represented in different ways.

Individualized Student Plans



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INDIVIDUALIZED INSTRUCTIONAL STUDENT PLAN
ABE Mathematics: TABE Level A

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

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

LOW EMPHASIS | MEDIUM EMPHASIS | HIGH EMPHASIS

DOMAIN: **Geometry** **15%** **SCORED PROFICIENCY:** ☐ Non-Proficiency ☐ Partial Proficiency ☐ Proficiency

MASTERY DATE:

NRS	Group:	Standard Description:	Mastery Date:
5/6	GEOMETRY: CONGRUENCE	***Experiment with transformations in the plane.***	
		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	***Prove theorems involving similarity.***	
		Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.	
5/6	GEOMETRY: GEOMETRIC MEASUREMENT & DIMENSION	***Explain volume formulas and use them to solve problems.***	
		Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.	
5/6	GEOMETRY: MODELING WITH GEOMETRY	***Apply geometric concepts in modeling situations.***	
		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** **13%** **SCORED PROFICIENCY:** ☐ Non-Proficiency ☐ Partial Proficiency ☐ Proficiency

MASTERY DATE:

NRS	Group:	Standard Description:	Mastery Date:
5/6	NUMBER & QUANTITY: THE REAL NUMBER SYSTEM	***Extend the properties of exponents to rational exponents.***	
		Rewrite expressions involving radicals and rational exponents using the properties of exponents.	
5/6	NUMBER & QUANTITY: QUANTITIES	***Reason quantitatively and use units to solve problems.***	
		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 Levels (E, M, D & A)
- Emphasis Level
- Domain Percentage

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

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:

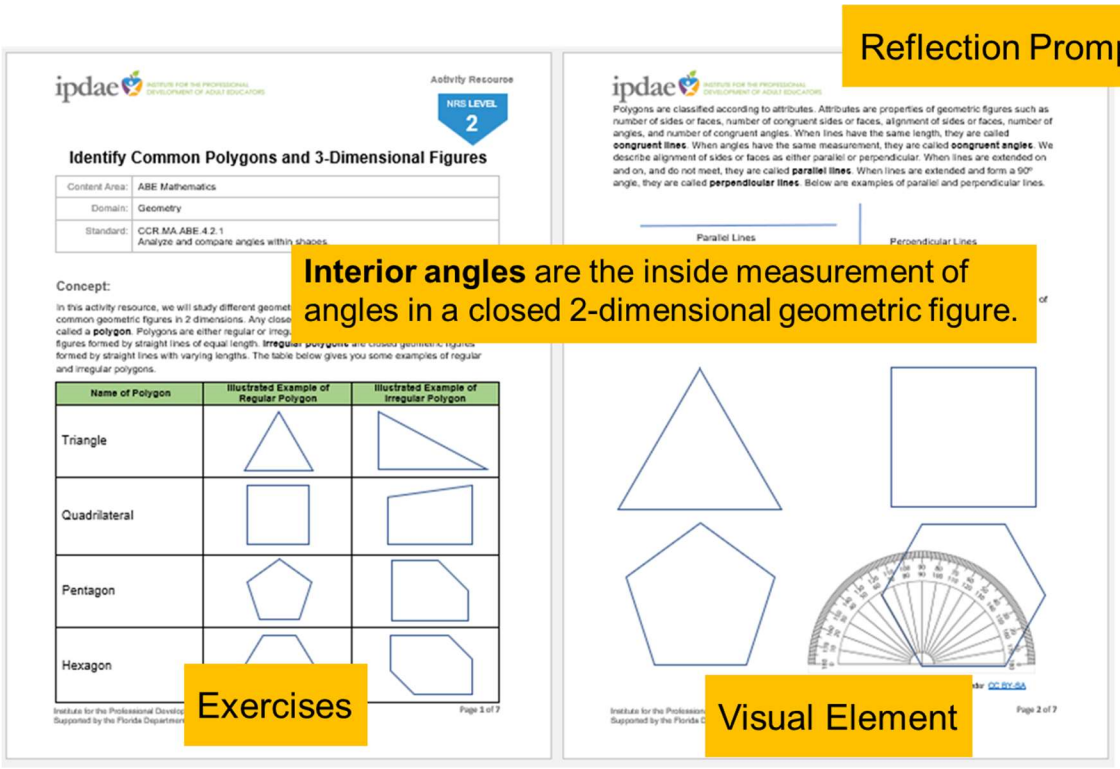
- Alignment to CCRS
- Alignment to Standardized Assessment
- Research Base
- Content Development
- Visual/Graphic Element
- Hands-On Approach
- Vocabulary Emphasis
- Reflective Prompts
- Developed by Florida Practitioners
- Simple yet versatile
- FREE and Reproducible

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.



Applications of the Matrix

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

1. Curriculum Development

   Curriculum specialists can use the core matrices as a guide in developing their own district or school's curricula. It presents itself as an easier tool because it is already aligned with CCRS and the FLDOE Curriculum Frameworks for Adult Basic Education.

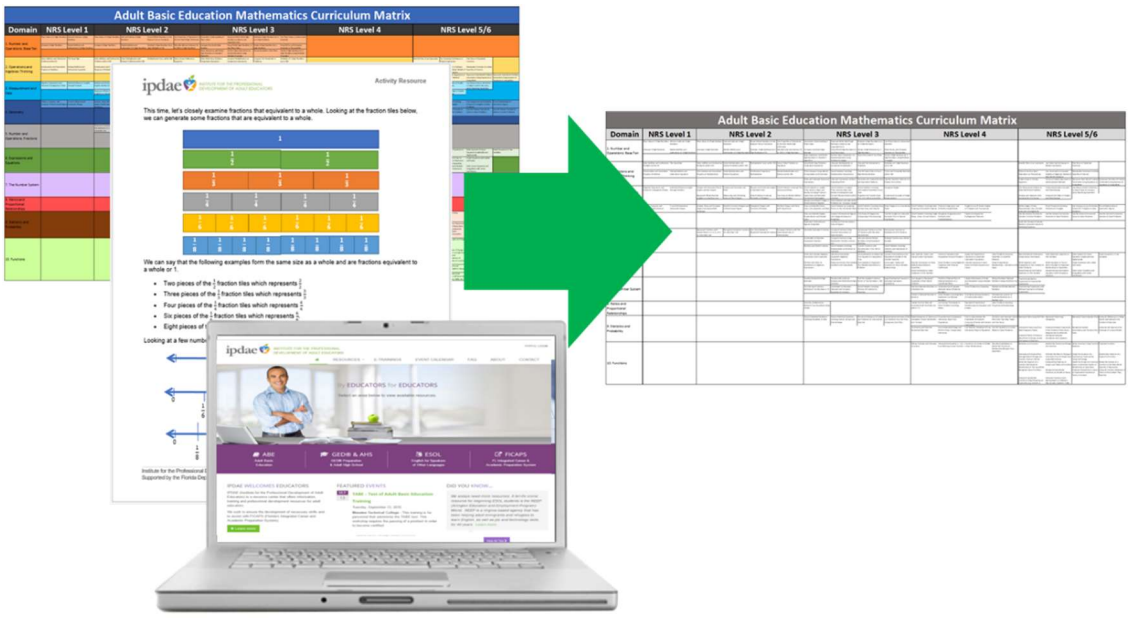
   Specialists and teachers may also use the blank version of the core matrices as a template.

2. 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:

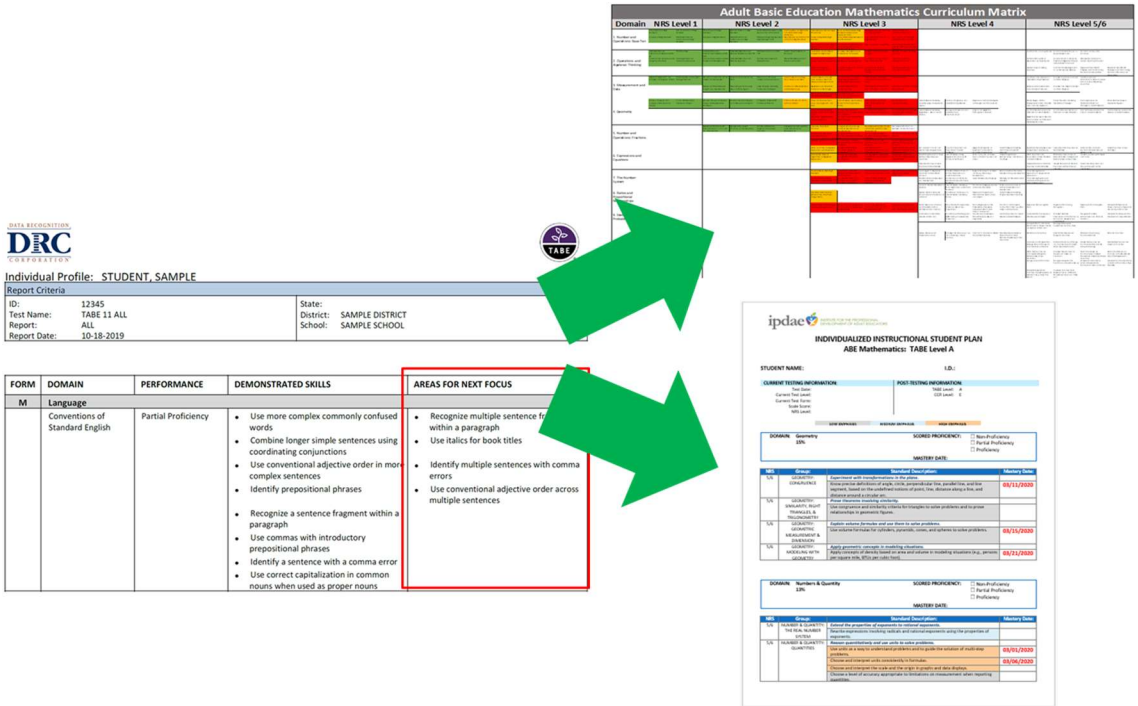
3. Resource Guide

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:



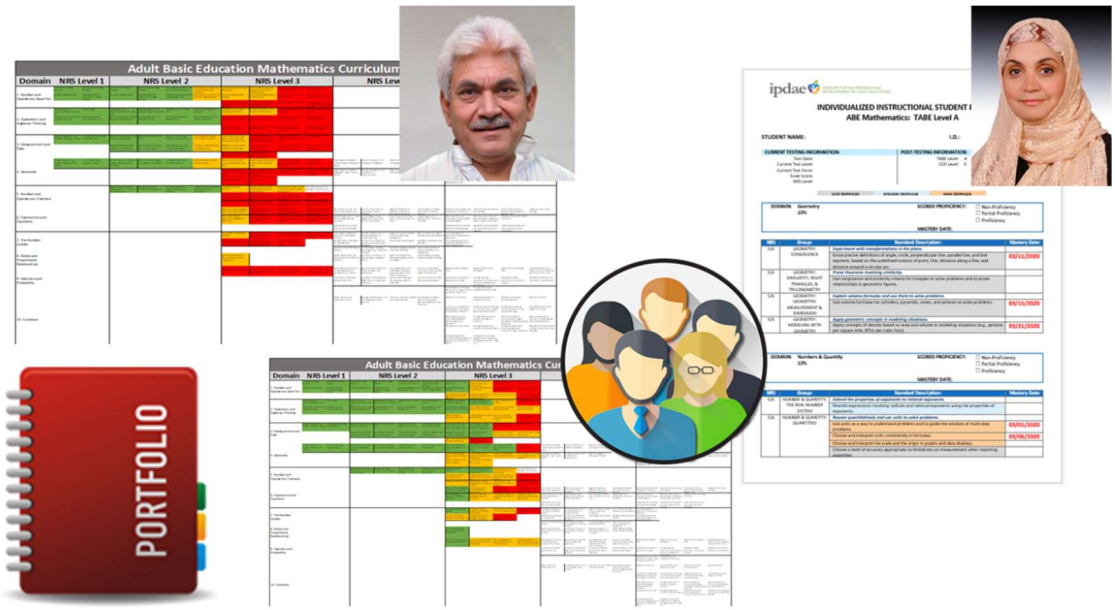
4. Targeting Instruction

   Used together with the students TABE Individualized Score Report, teachers can map areas of strength and focus to the core matrix and/or Individualized Student Plan to set-up for targeted instruction.



5. Creating Individual 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 non-proficient cells in red, partially proficient cells in yellow and proficient cells in green. Teachers may also see that including these profiles and Individualized Student Plans in the students' portfolios to capture the true picture of a student's progress.

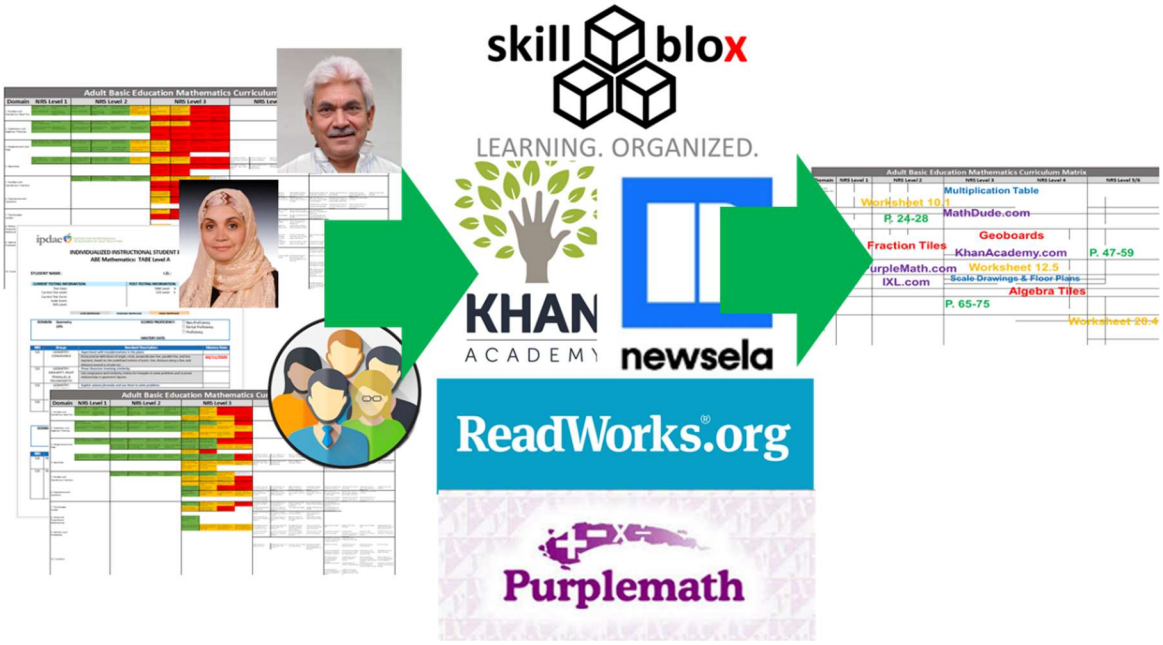


6. Data Chats with Student(s) or PLC Groups

   Teachers may also find the student profiles and Individualized Student Plans useful when conducting data chats with individuals or groups of students. Teachers may also use class or group profiles when discussing data with their PLC's.

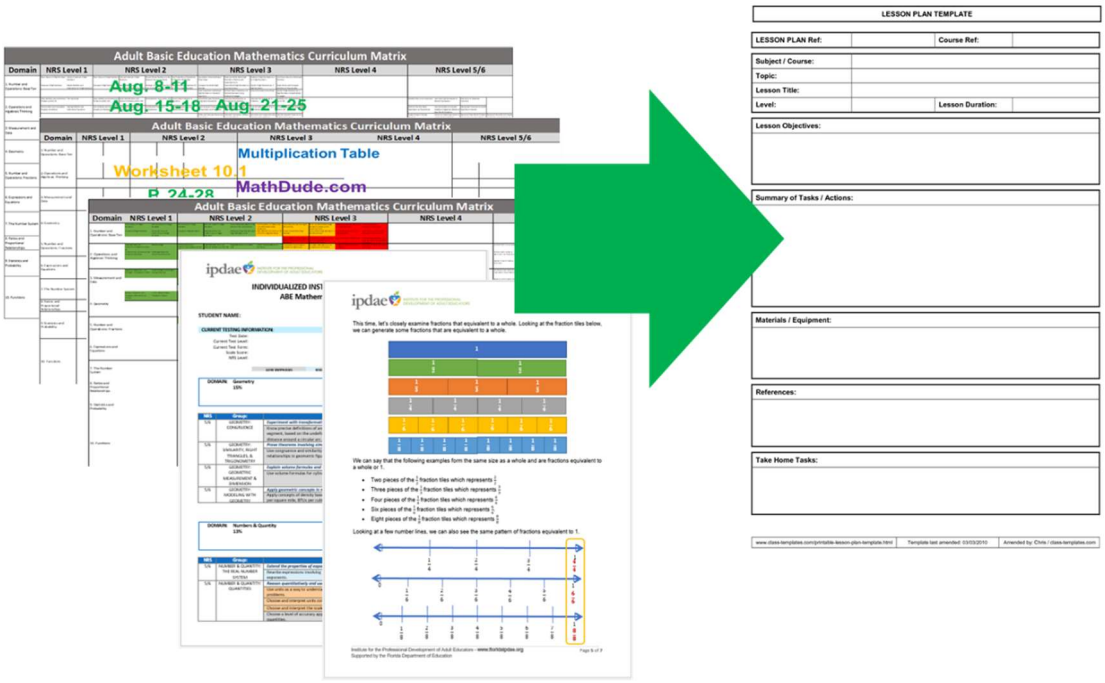
7. Tailoring Content, Resources and Activities

   Individual or group profiles and ISP's may also help the teacher in selecting the appropriate content and resources from the Internet based on ability, weaknesses, learning style or grouping. To keep track of this, teachers may update the Resource Guide for new materials found.



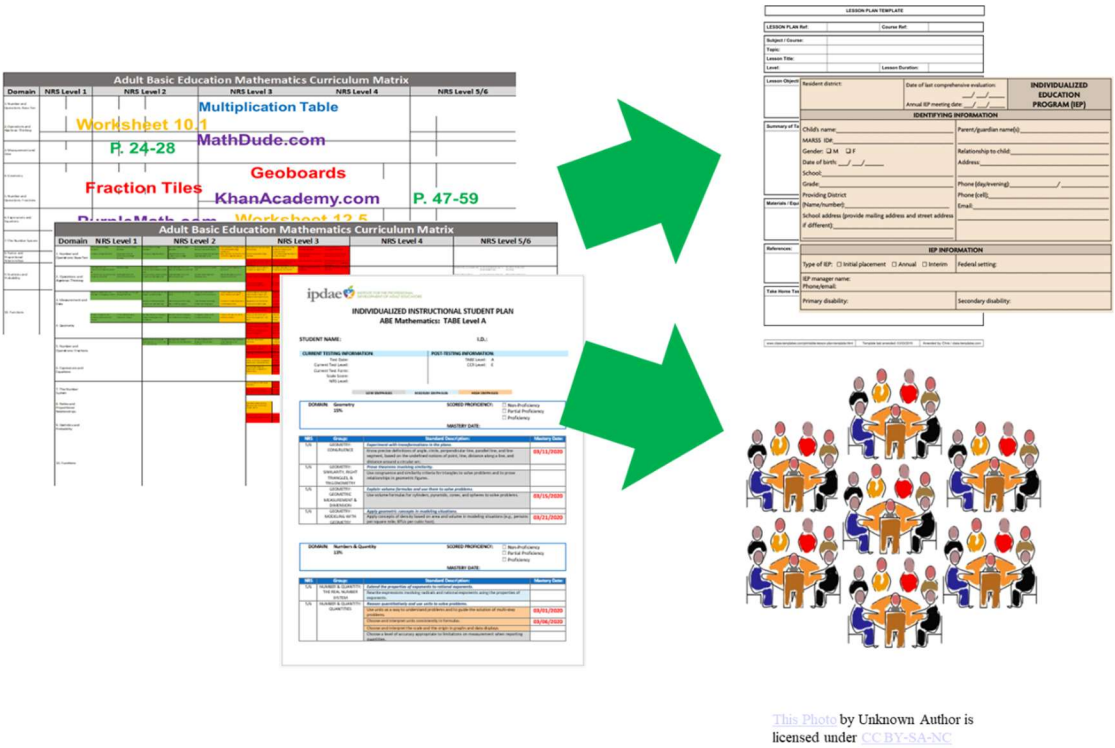
8. Lesson Planning

   Teachers may use the Matrix Suite in planning lessons. They will have all that they need at their fingertips, if they include the student profiles. The result is a strongly differentiated lesson.



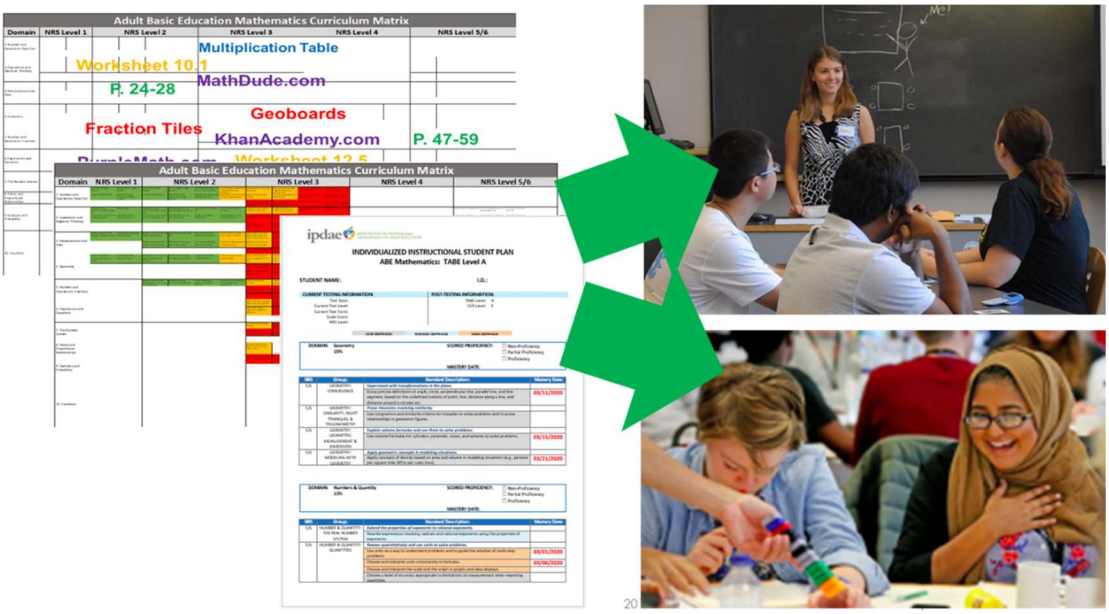
9. Differentiating Instruction and Grouping

   Resource Guide, Student Profiles and ISP's combined together make an effective toolkit for developing IEP's and grouping students.



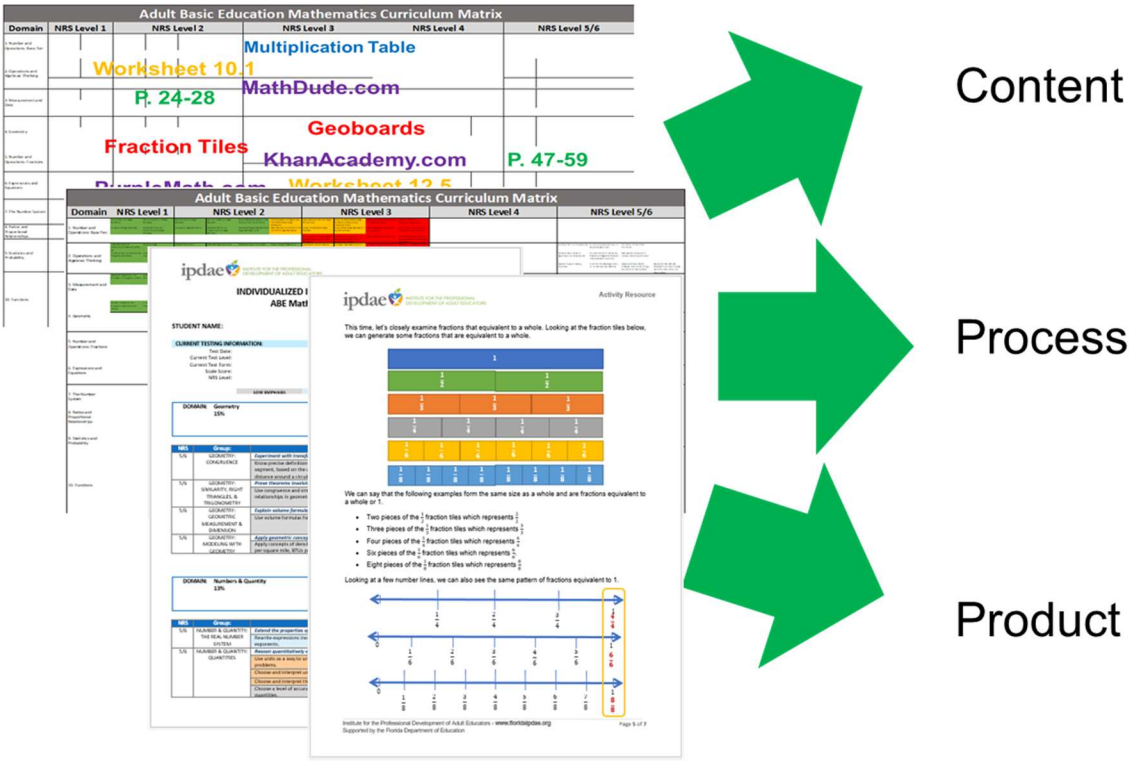
10. Grouping by Ability, Achievement or Learning Style

    To be more purposeful in forming groups, the Resource Guide, Student Profiles and ISP's can be put to use whether groups are formed based on ability, achievement or learning style.



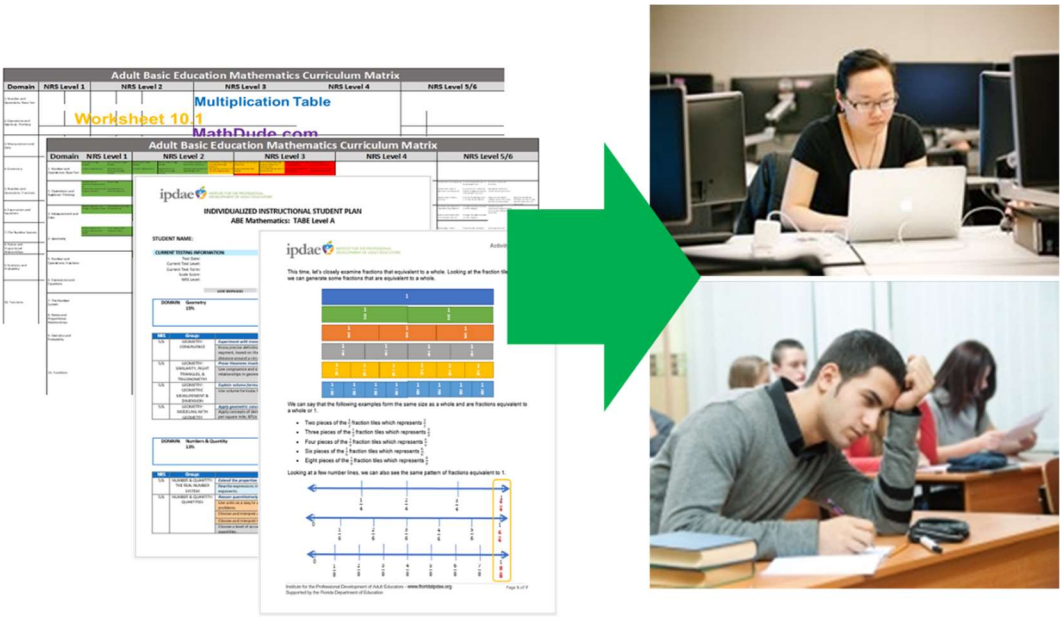
11. Complementing Other Differentiation Techniques

To be more purposeful in selecting a differentiation strategy, the Resource Guide, Student Profiles and ISP's can be used to determine whether differentiation will occur based on content, process, or product.



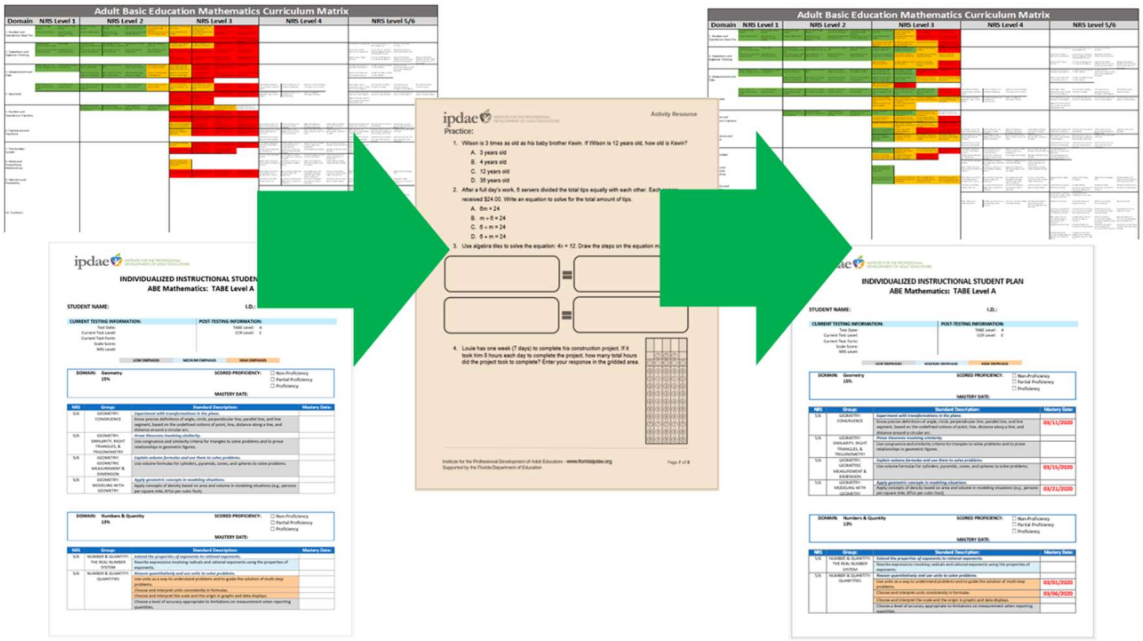
12. Designing and Managing Self-Paced or Individualized Learning

The Resource Guide, Student Profiles, Resource Activities and ISP's may be used to help teachers design or manage student activities and lessons on their respective online platforms (LMS). The Resource Activities may be used to reinforce or assess completed units, modules or activities.



13. Assessment and Monitoring of Progress

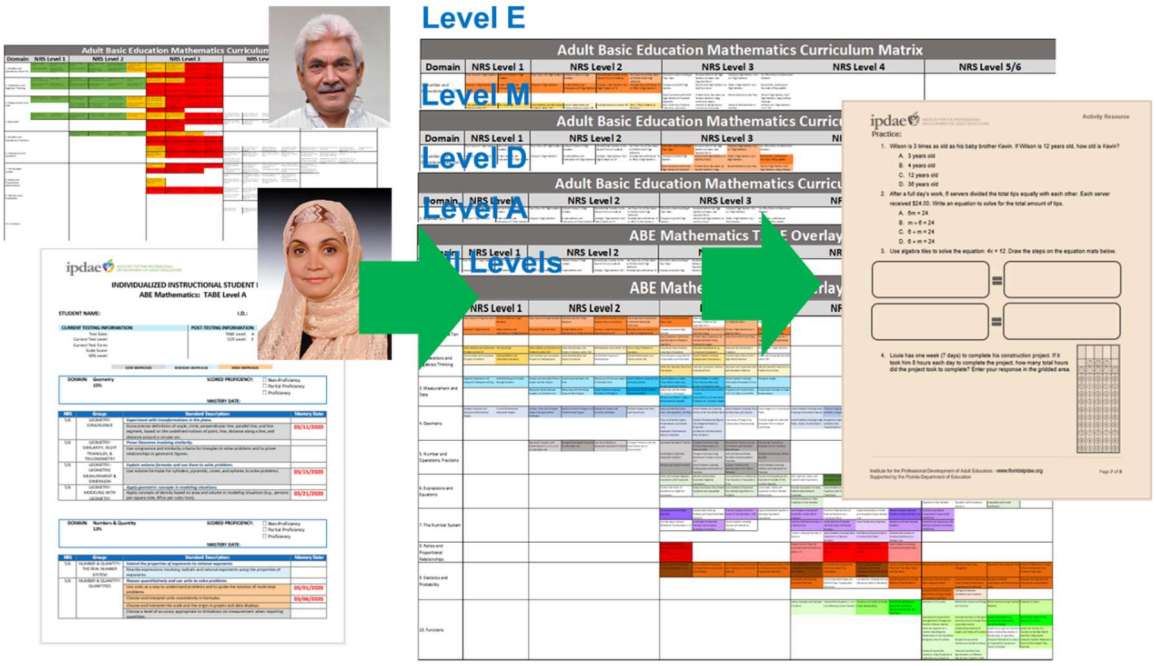
Together with the student profiles and ISP's, teachers may use Resource Activities (Practice Exercises) as informal assessments to determine mastery or readiness.



14. Intervention or Remediation

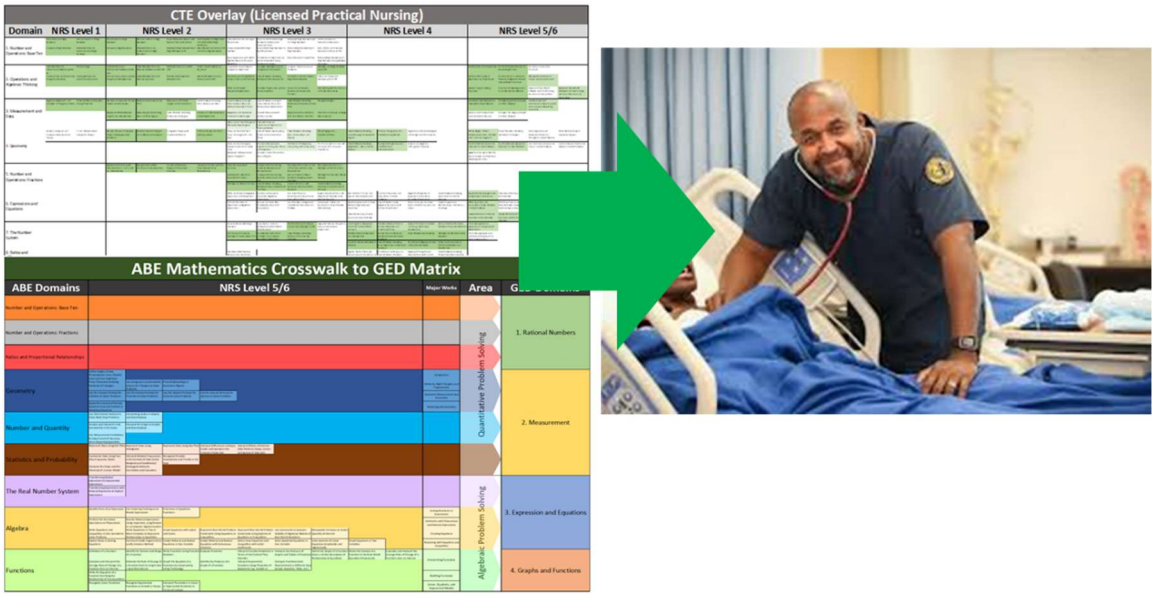
Based on student profiles and ISP's, teachers may use the TABE Overlays to map medium and high emphasis items and remediate students on topics identified as areas of focus. This way, the teacher does not only see the proper sequence of topics, but they also can prioritize topics based on level of emphasis on the TABE

11/12 test. As an added step, the teacher may use the Resource Activity (Practice Exercise) to informally assess students against skills that were remediated.



15. IET, Post-Secondary Career Technical Programs and Career Pathways

Teachers may use the CTE Overlays and the Crosswalk to GED as tools to support their students in their pathways towards post-secondary education or career. CTE Overlays and Crosswalk to GED may also be used to support schools that implement IET Programs.

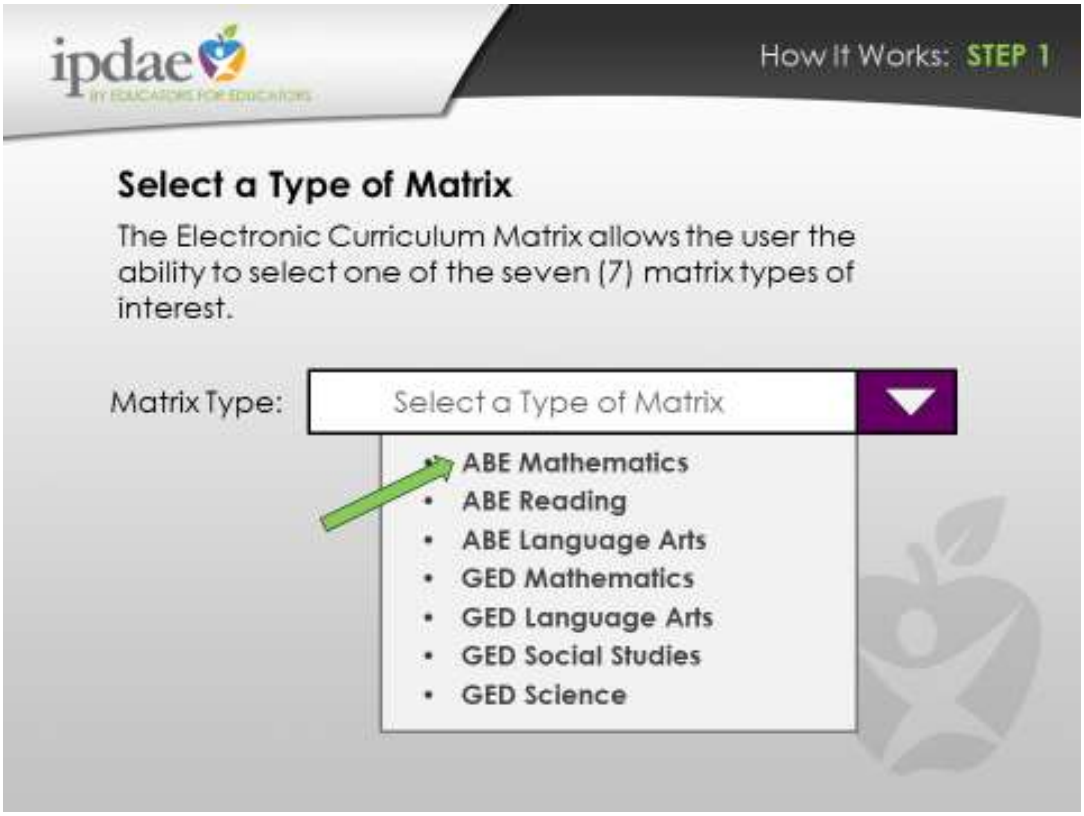


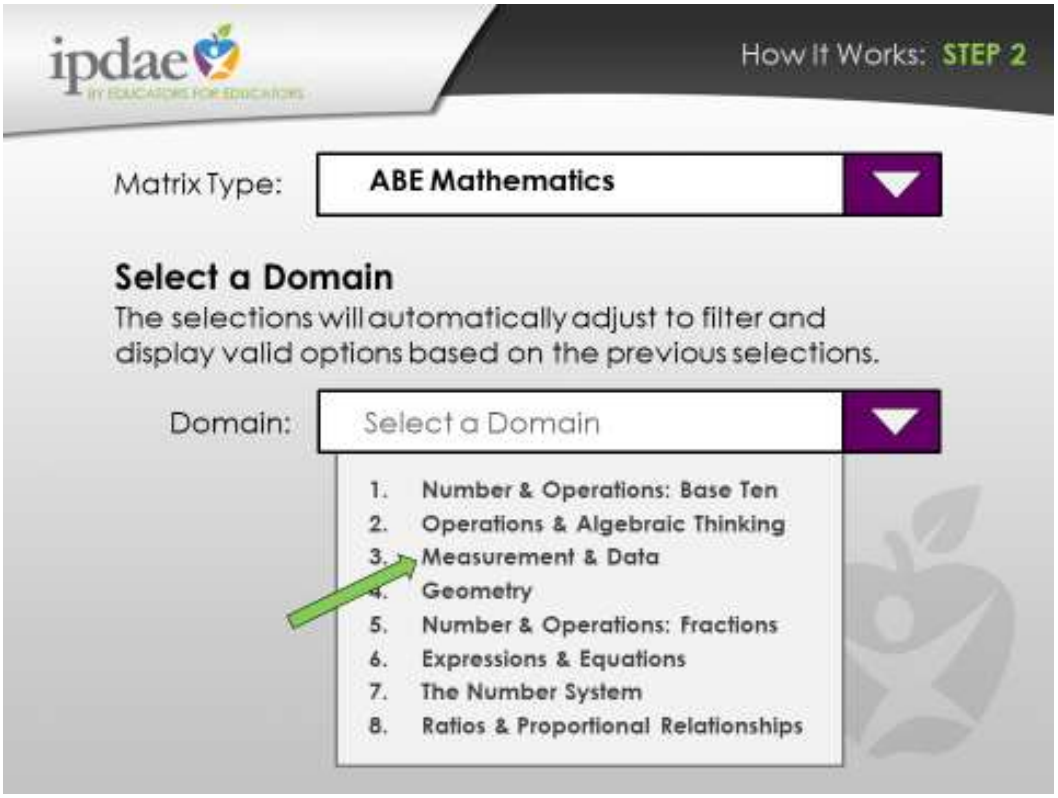
Accessing the Electronic Matrices

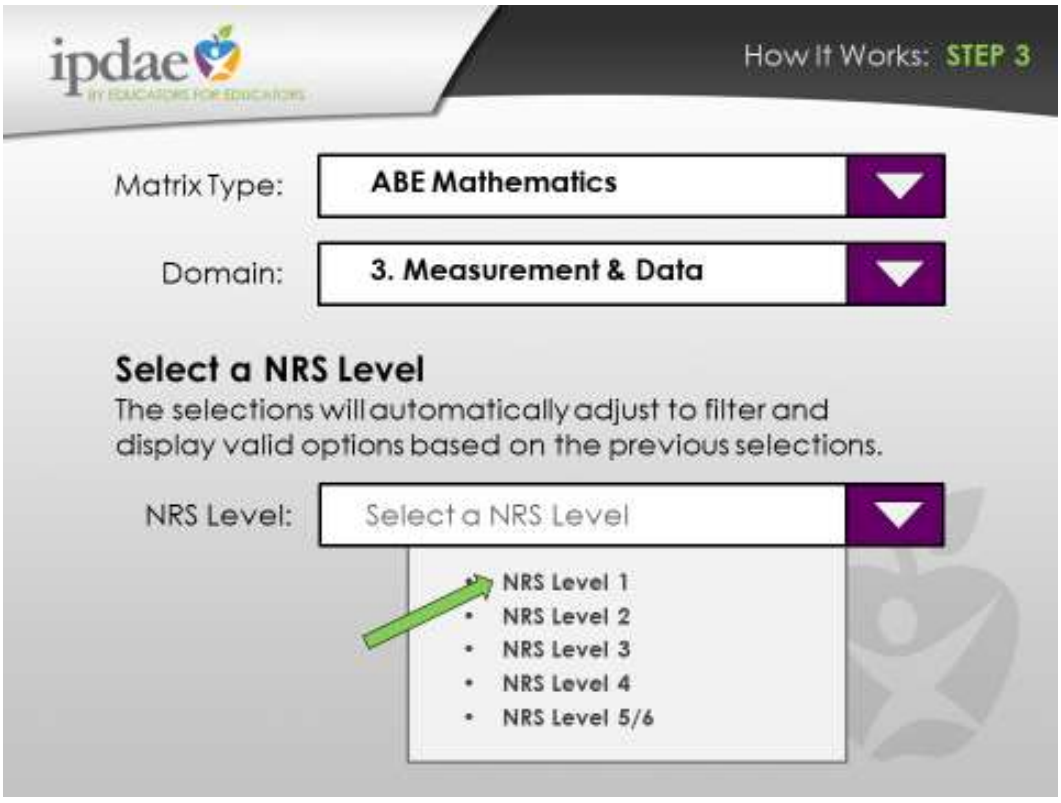
Below are the steps on how to access the electronic copies of the matrices and the resource activities from the IPDAE website, www.floridaipdae.org.

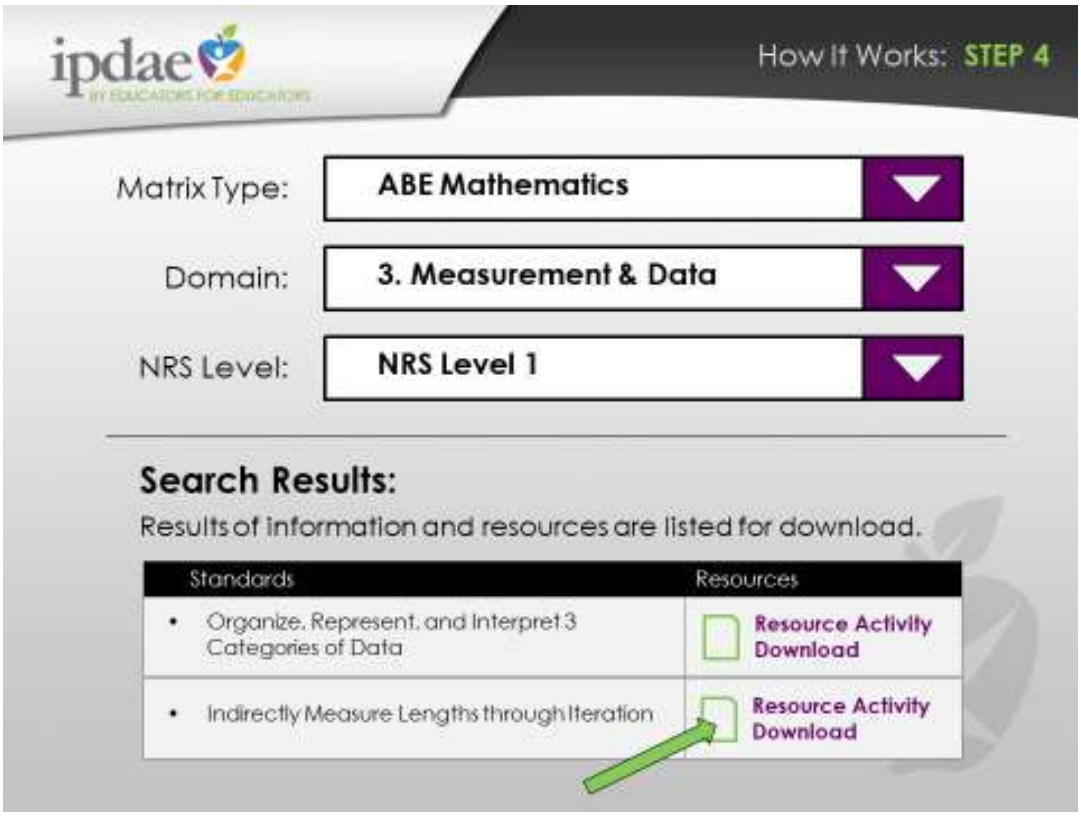
The Electronic Curriculum Matrix is an online lookup tool that dynamically returns information and resources that are correlated to adult education framework standards.

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.




ipdae
BY EDUCATORS FOR EDUCATORS
How It Works: STEP 2
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


ipdae
BY EDUCATORS FOR EDUCATORS
How It Works: STEP 3
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


ipdae
How It Works: STEP 4
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
Organize, Represent, and Interpret 3 Categories of Data
Resource Activity Download
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.

Appendix A: Resource Activity Sampler (Math)

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Activity Resource

NRS LEVEL 2

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.

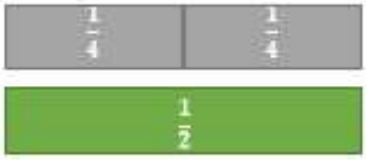
If we combine two pieces of the $\frac{1}{3}$ fraction tiles we form a fraction that represents $\frac{2}{3}$.

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

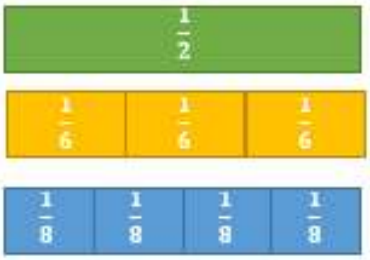
If we combine five pieces of the $\frac{1}{6}$ fraction tiles we form a fraction that represents $\frac{5}{6}$.

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.



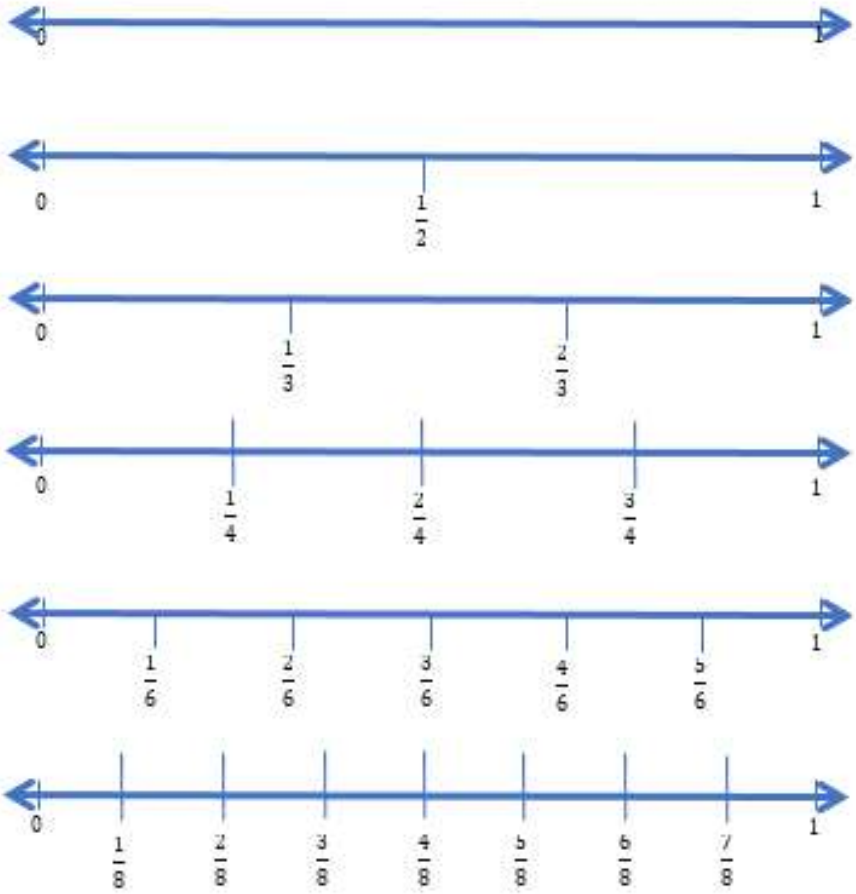
Let's see what other tiles we can compare to figure out some equivalent fractions. If we compare the sizes of three pieces of the $\frac{1}{6}$ fraction tiles placed side by side, four pieces of the $\frac{1}{8}$ fraction tiles placed side by side and a $\frac{1}{2}$ fraction tile, we can see that they 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.

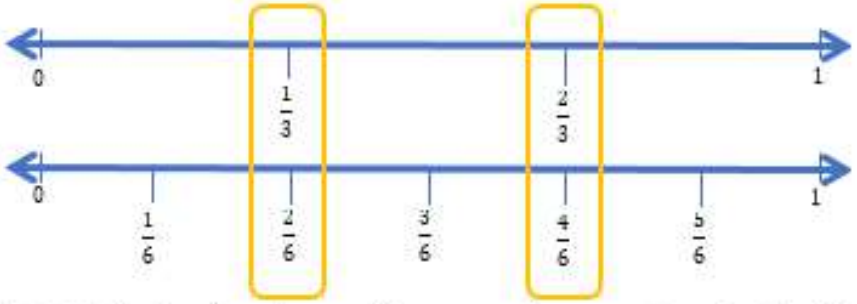
This time, let's look at how fractions are laid out on a number line from 0 to 1.

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



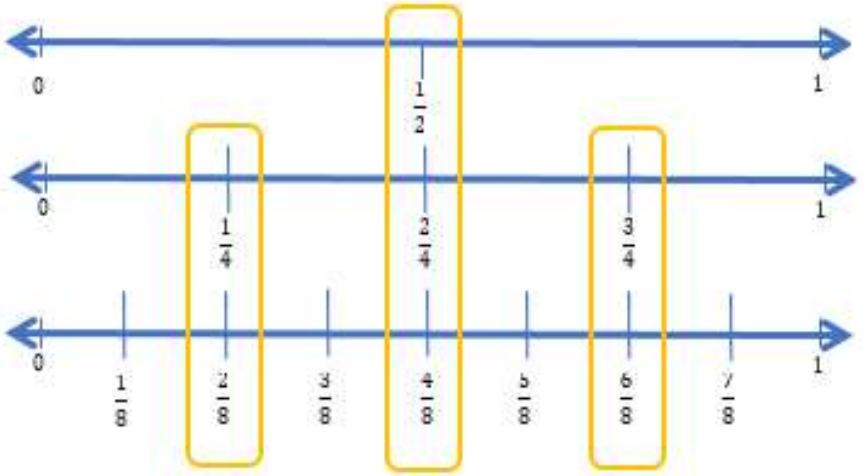
Pay attention to the position of certain fractions on the number line. Do you see any fractions that are on the same spot on a number line from 0 to 1?

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.



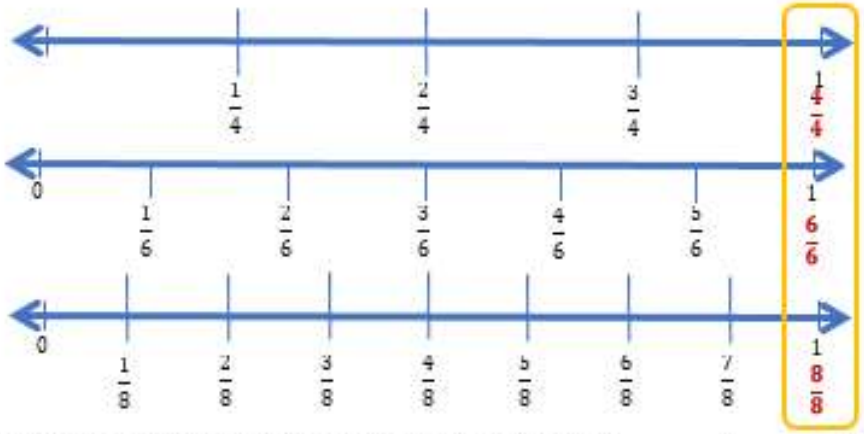
From the illustration above, we can see that $\frac{1}{4}$ and $\frac{2}{8}$ are equivalent fractions. The same is true with $\frac{1}{2}$, $\frac{2}{4}$, and $\frac{4}{8}$. We can also see that $\frac{3}{4}$ and $\frac{6}{8}$ are equivalent fractions.

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.

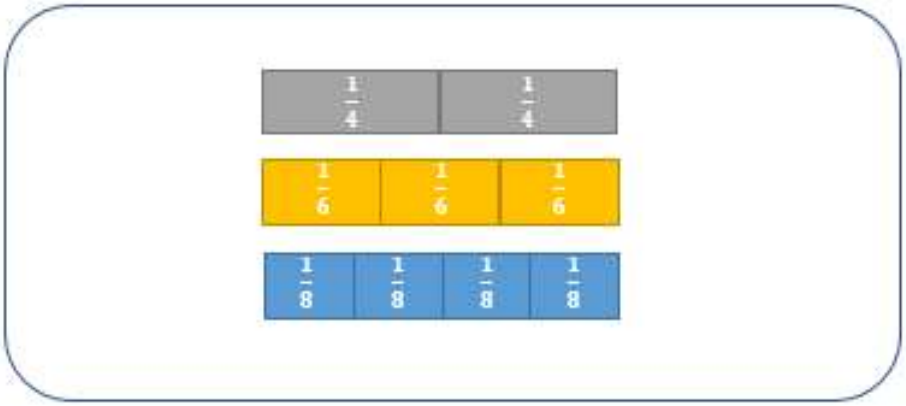


Practice:

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)

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INDIVIDUALIZED INSTRUCTIONAL STUDENT PLAN
ABE Mathematics: TABE Level E

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

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

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 x 80, 5 x 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,	

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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 x 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 x 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).	

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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.	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.	
		Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories.	
		Solve one- and two-step how many more and how many less problems using information presented in scaled bar graphs.	
		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.	
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.	

DOMAIN: **Geometry**
10%

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

MASTERY DATE:

NRS	Category:	Standard Description:	Mastery Date:
2	REASON WITH SHAPES & THEIR ATTRIBUTES.	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.	
		Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals).	
		Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.	

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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**
12%

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

MASTERY DATE:

NRS	Domain:	Standard Description:	Mastery Date:
2	DEVELOP UNDERSTANDING OF FRACTIONS AS NUMBERS.	*Understanding & Representing Fractions*	
		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.	
		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 reasoning about their size.	
		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.	