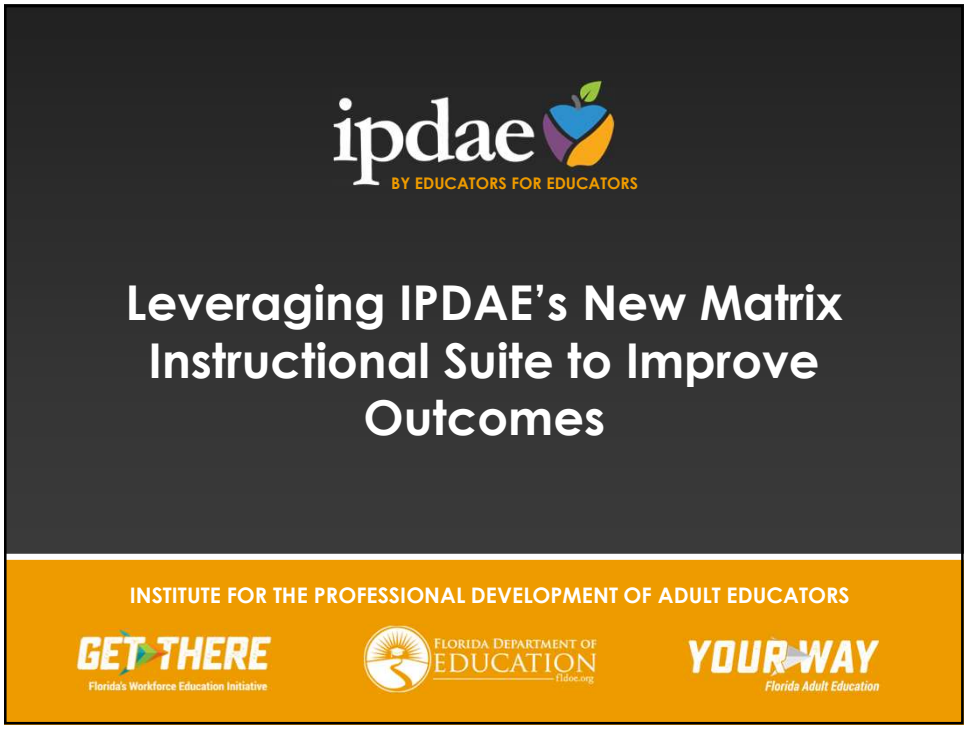
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Leveraging IPDAE's New Matrix Instructional Suite to Improve Outcomes
INSTITUTE FOR THE PROFESSIONAL DEVELOPMENT OF ADULT EDUCATORS
GET THERE
Florida's Workforce Education Initiative
FLORIDA DEPARTMENT OF EDUCATION
fldoe.org
YOUR WAY
Florida Adult Education

1

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Welcome

2

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Workshop Facilitator

Ronald Cruz
Coordinator, Hillsborough County Public Schools
National Trainer (IPDAE, GED, ACE and COABE)
rcruz@floridaipdae.org

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Agenda

1:
Changes in the Curriculum Frameworks

2:
The New Adult Education Curriculum Framework for ABE Mathematics

3:
The New Mathematics Standards Matrix

4:
The Electronic Mathematics Matrix and Activity Resources

4

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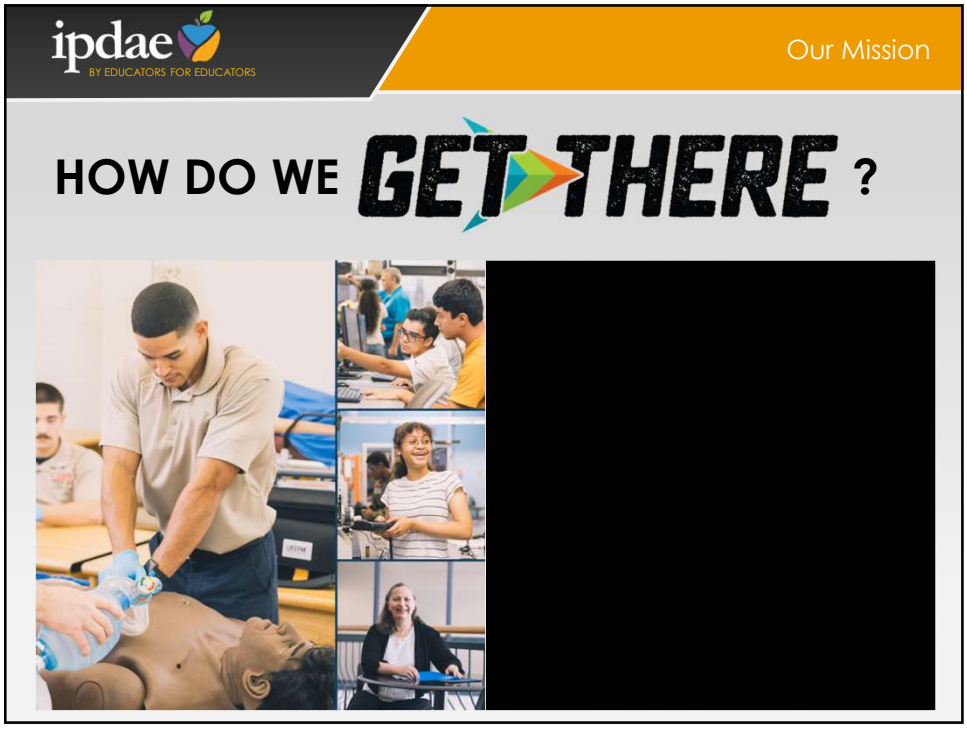
Our Vision
YOUR WAY
Florida Adult Education
To be the Top 10 Global Economies by 2030
GEORGIA
Macon
Tallahassee
Tampa
FLORIDA
Miami

5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Our Mission
HOW DO WE GET THERE ?

6

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Rationale

Background

Florida Executive Order 19-32 outlines a path for the state to improve its education system by eliminating Common Core and paving the way for Florida students to receive a world-class education to prepare them for jobs of the future.

As a result, the Florida K-12 B.E.S.T Standards were written and adopted.

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Curriculum Frameworks Changes Overview

8

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Rationale

New Adult Education Standards

Several design considerations were applied to update the standards.

Organization & Terminology: The new ABE standards use the organization and terminology of the K-12 B.E.S.T. standards, which means that overall, there are fewer strands.

Combining Standards: Because each ABE level is equivalent to more than one K-12 grade level, some redundant or overlapping standards in B.E.S.T. were combined. In these instances, the B.E.S.T. benchmark that more comprehensively encompassed the breadth and depth of skills was adopted.

Levels: When content appears in K-12 B.E.S.T. but at a different level, the content was kept at the same level as in the previous ABE framework to support consistency with current instruction and assessments.

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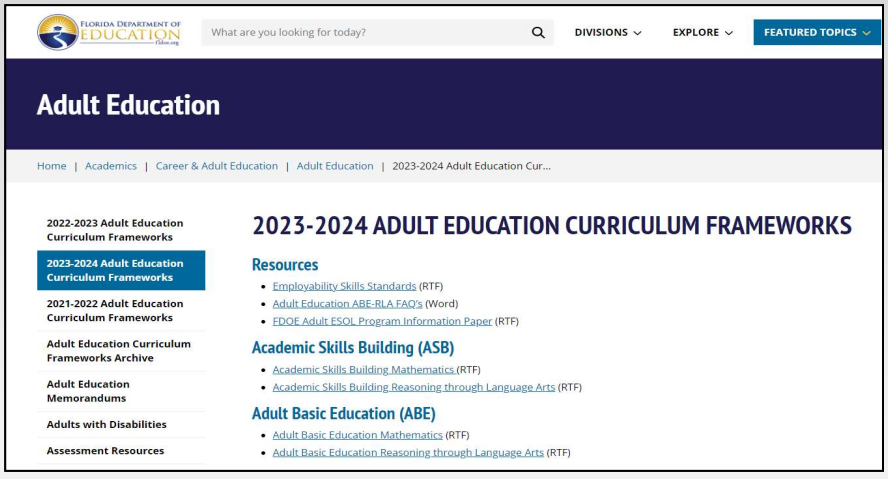
Accessing Curriculum Frameworks

New Adult Education Curriculum Frameworks



https://www.fldoe.org/academics/career-adult-edu/adult-edu/2023-2024-adult-edu-curriculum-framewo.stml

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Reasoning Through Language Arts Framework

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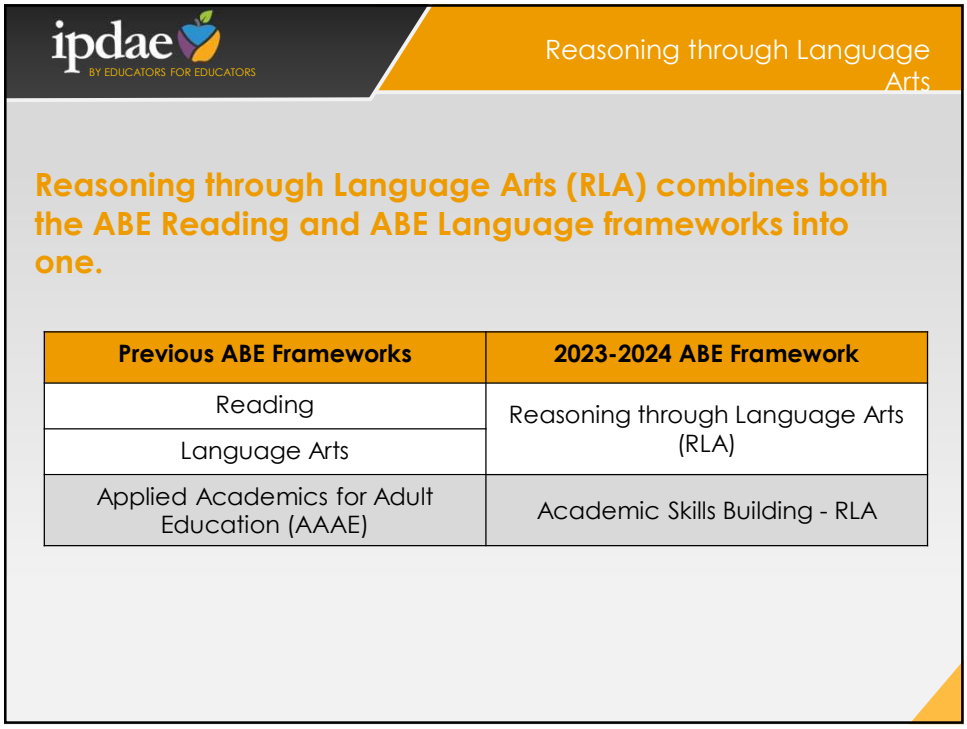
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Reasoning through Language Arts
Reasoning through Language Arts (RLA) combines both the ABE Reading and ABE Language frameworks into one.
Previous ABE Frameworks
2023-2024 ABE Framework
Reading
Language Arts
Reasoning through Language Arts (RLA)
Applied Academics for Adult Education (AAAE)
Academic Skills Building - RLA

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Reasoning through Language Arts

What's new in RLA?

- More continuity and clear vertical progressions
- Simpler, more concise language
- Speaking and listening skills are integrated
- Several new benchmarks, including rhetoric and handwriting

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Reasoning through Language Arts

What's been consolidated?

Previous ABE Strands	2023-2024 ABE Strands
Foundations	Foundations
Reading	Reading
Writing	Communication
Language	
Speaking & Listening	
	Vocabulary

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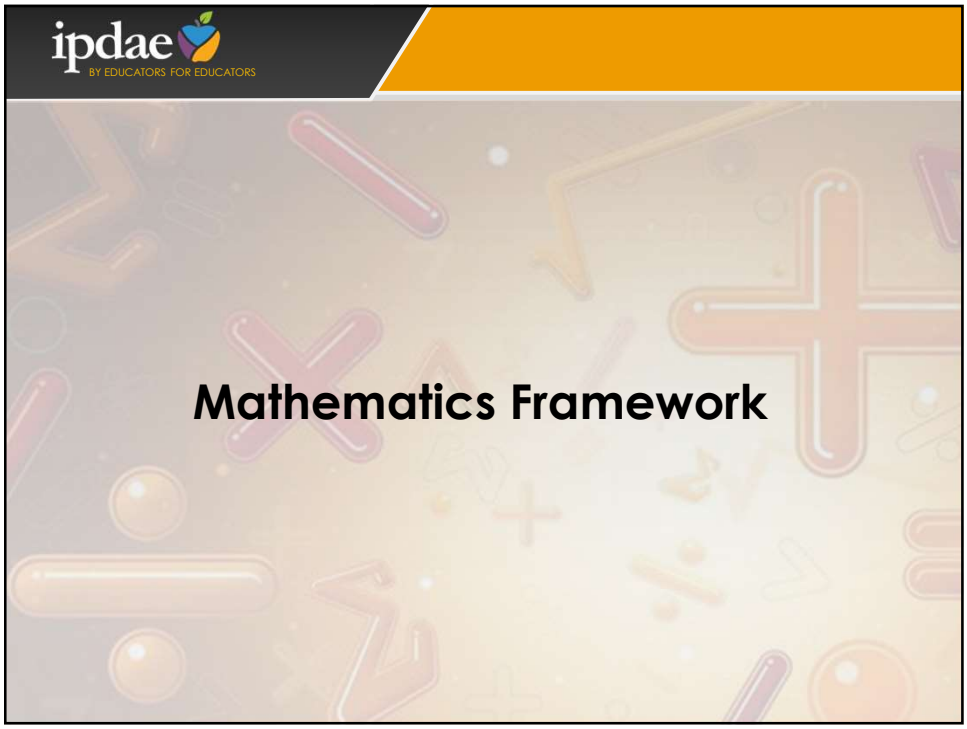

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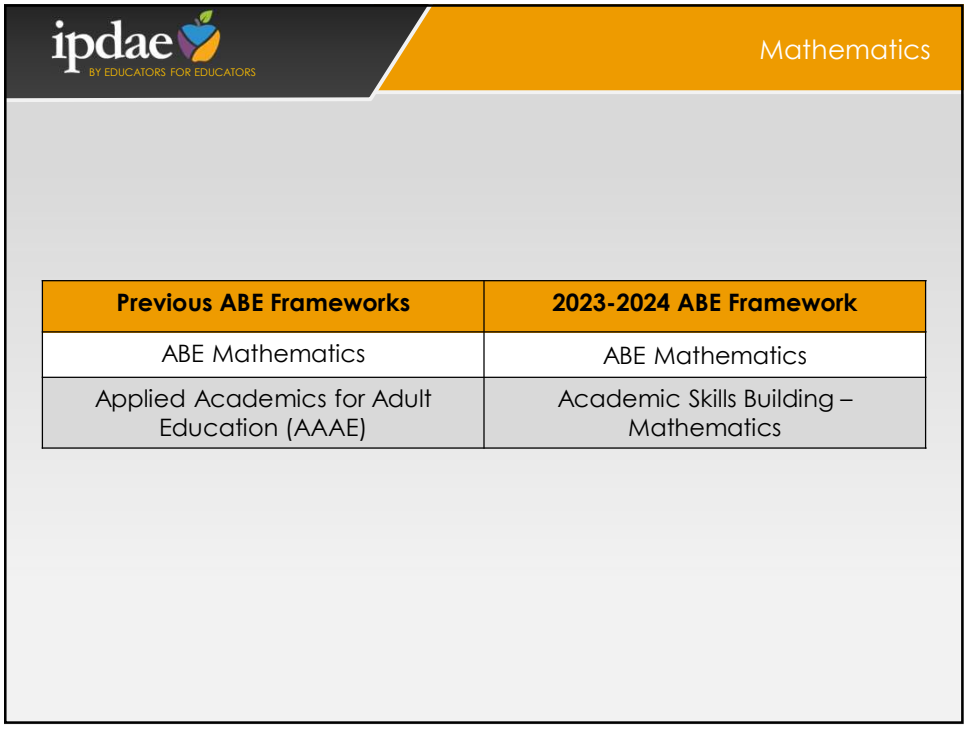

Previous ABE Frameworks	2023-2024 ABE Framework
ABE Mathematics	ABE Mathematics
Applied Academics for Adult Education (AAAE)	Academic Skills Building – Mathematics

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Mathematics

What's new in Math?

- Addition of the Mathematical Thinking and Reasoning Standards to describe the mathematical habits of mind that students should develop alongside their understanding of the content.
- Fluency expectations start earlier and are emphasized throughout
- Overall, there are fewer strands.

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Mathematics

Previous ABE Strands	2023-2024 ABE Strands
Number and Operations: Base Ten	Number Sense and Operations (NSO)
The Number System	
Number and Operations: Fractions	Fractions (FR)
Operations and Algebraic Thinking	Algebraic Reasoning (AR)
Expressions and Equations	
Ratios and Proportional Relationships	
Function	Function (F)
Measurement and Data	Measurement (M)
Geometry	Geometric Reasoning (GR)
Statistics and Probability	Data and Probability (DP)

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Mathematics

Underlying Principles

The framework emphasizes the importance to students:

- Applying math to solve real world problems
- Making connections between and across grade level standards
- Building their conceptual understanding as well as their procedural fluency

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Mathematics

ABE Mathematics Strands, NRS Levels, and Grade Equivalents

Strands	Basic		Intermediate	
	NRS Level 1 GE 0 – 1.9	NRS Level 2 GE 2.0 – 3.9	NRS Level 3 GE 4.0 – 5.9	NRS Level 4 GE 6.0 – 8.9
Number Sense and Operations				
Fractions				
Algebraic Reasoning				
Measurement				
Geometric Reasoning				
Data and Probability				
Function*				

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¡HOLA
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HELLO
こんにちは
CIAO
HALO
您好
ESOL Framework

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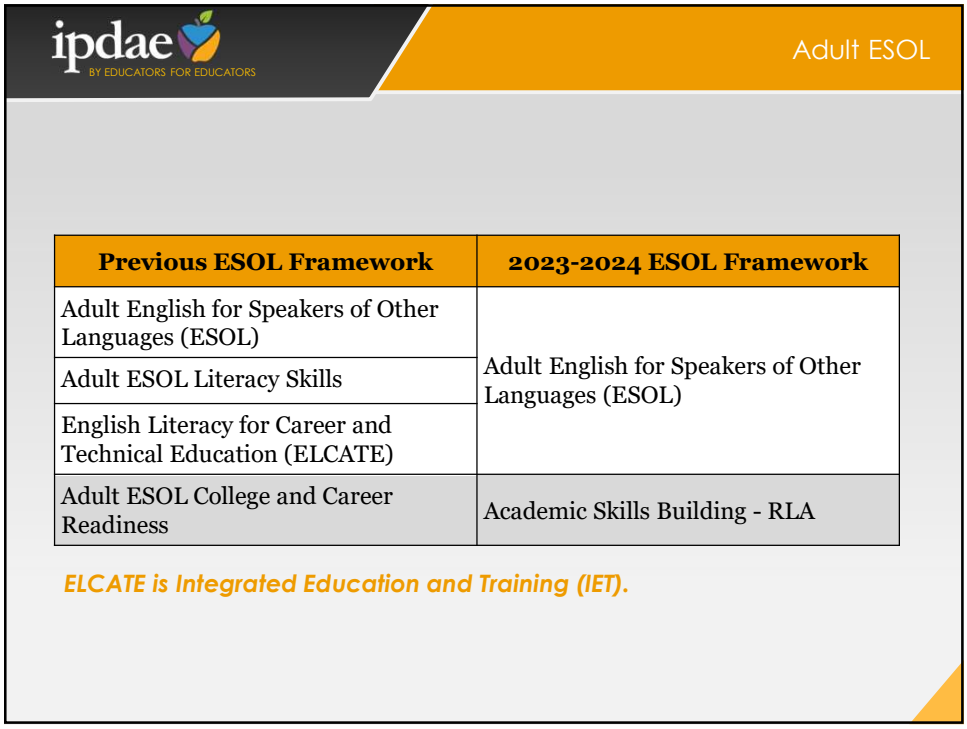
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Adult ESOL
Previous ESOL Framework
2023-2024 ESOL Framework
Adult English for Speakers of Other Languages (ESOL)
Adult ESOL Literacy Skills
English Literacy for Career and Technical Education (ELCATE)
Adult English for Speakers of Other Languages (ESOL)
Adult ESOL College and Career Readiness
Academic Skills Building - RLA
ELCATE is Integrated Education and Training (IET).

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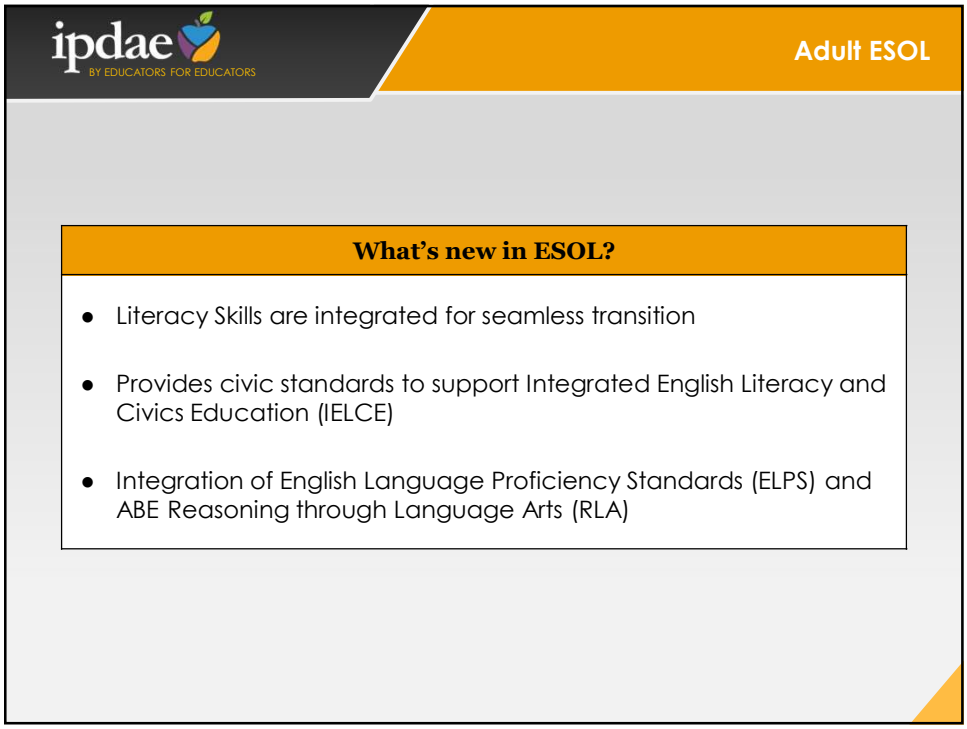

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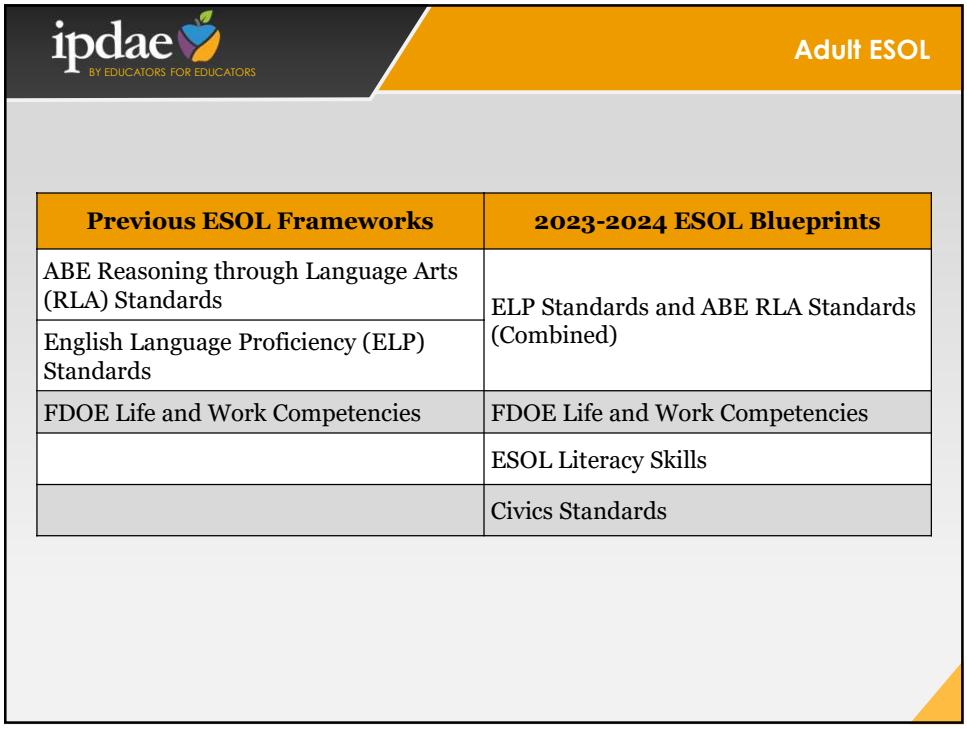

Previous ESOL Frameworks	2023-2024 ESOL Blueprints
ABE Reasoning through Language Arts (RLA) Standards	ELP Standards and ABE RLA Standards (Combined)
English Language Proficiency (ELP) Standards	
FDOE Life and Work Competencies	FDOE Life and Work Competencies
	ESOL Literacy Skills
	Civics Standards

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Adult ESOL

Underlying principles

The framework emphasized the importance of students:

- Having the necessary prerequisites literacy skills
- Gaining basic life and work knowledge and skills
- Providing the rights and responsibilities of civic participation
- Acquiring the reading, writing, listening and speaking skills necessary to achieve postsecondary and career goals
- Emphasizing academic language needs

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Challenges Facing Adult Educators

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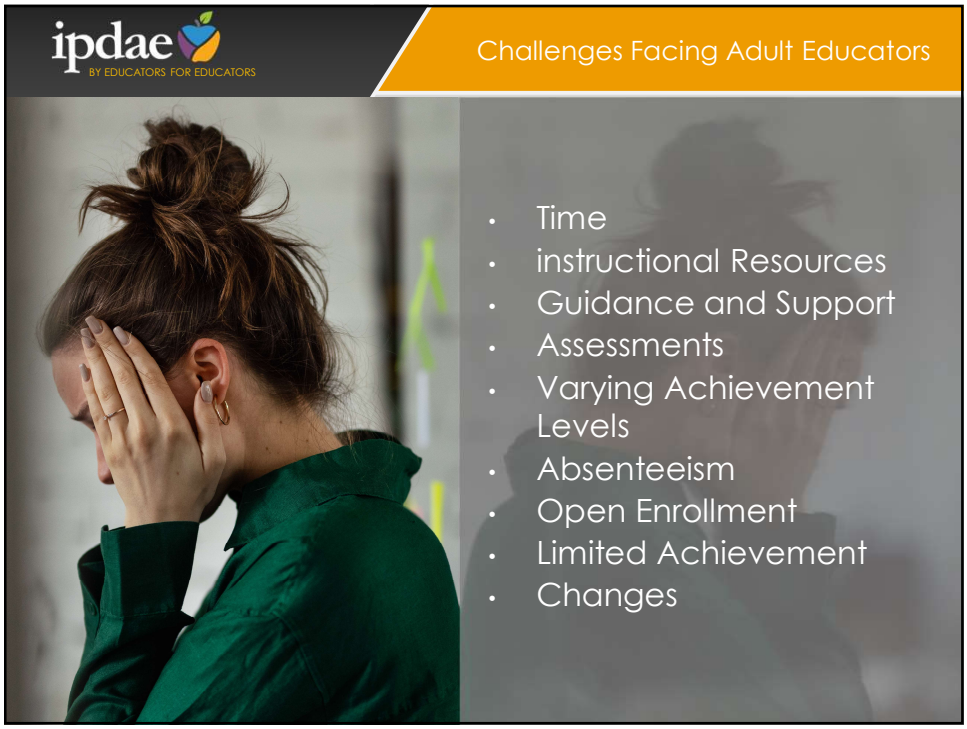
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Challenges Facing Adult Educators
Time
instructional Resources
Guidance and Support
Assessments
Varying Achievement Levels
Absenteeism
Open Enrollment
Limited Achievement
Changes

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The New
Instructional Matrix Suite

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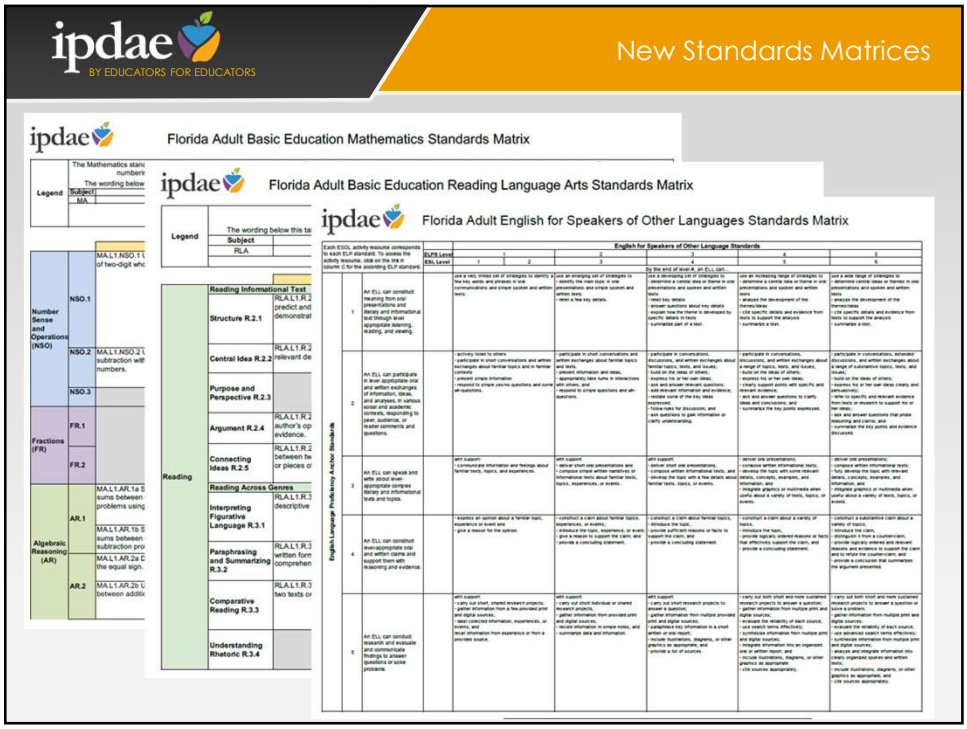
New Standards Matrices



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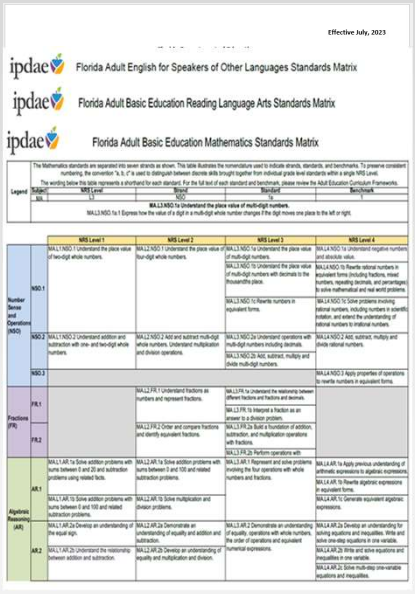
What Does It Do?

A One Page Version

- Summarizes several pages of the frameworks
- Includes all NRS Levels
- Includes all strands
- Includes all content standards (abridged)
- Includes all benchmarks (abridged)



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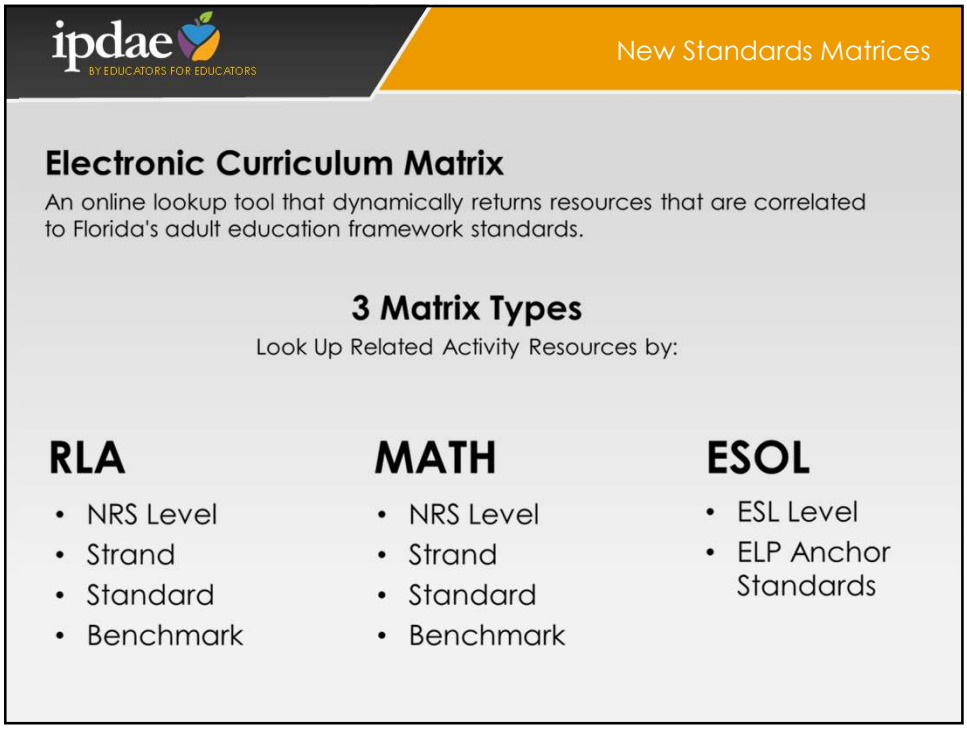

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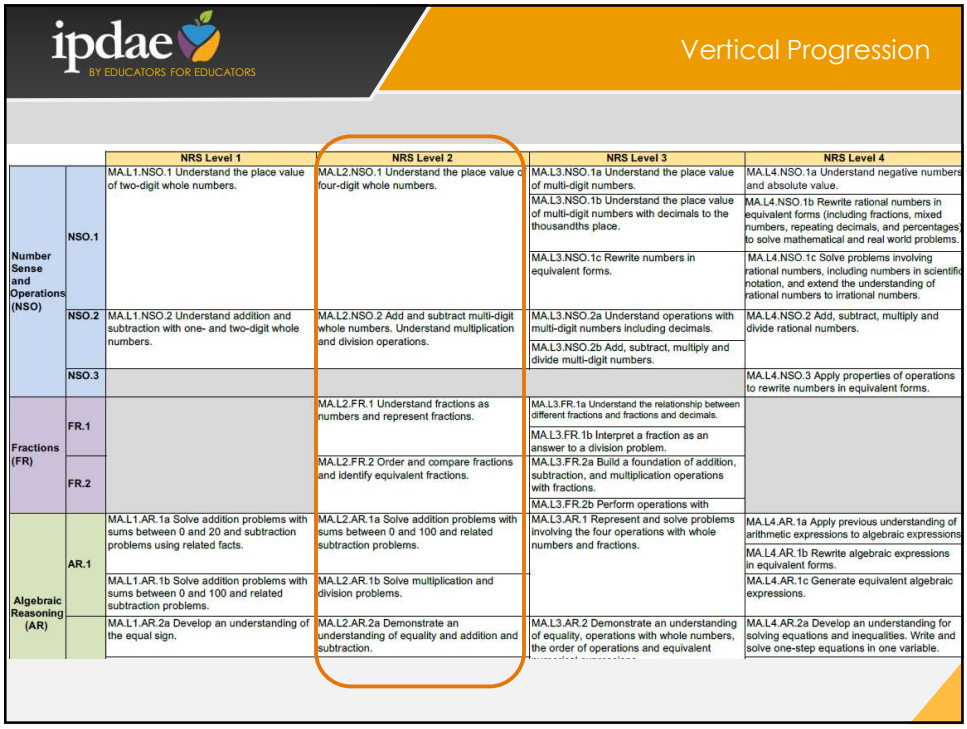

		NRS Level 1	NRS Level 2	NRS Level 3	NRS Level 4
Number Sense and Operations (NSO)	NSO.1	MA.L1.NSO.1 Understand the place value of two-digit whole numbers.	MA.L2.NSO.1 Understand the place value o four-digit whole numbers.	MA.L3.NSO.1a Understand the place value of multi-digit numbers.	MA.L4.NSO.1a Understand negative numbers and absolute value.
				MA.L3.NSO.1b Understand the place value of multi-digit numbers with decimals to the thousandths place.	MA.L4.NSO.1b Rewrite rational numbers in equivalent forms (including fractions, mixed numbers, repeating decimals, and percentages) to solve mathematical and real world problems.
				MA.L3.NSO.1c Rewrite numbers in equivalent forms.	MA.L4.NSO.1c Solve problems involving rational numbers, including numbers in scientific notation, and extend the understanding of rational numbers to irrational numbers.
	NSO.2	MA.L1.NSO.2 Understand addition and subtraction with one- and two-digit whole numbers.	MA.L2.NSO.2 Add and subtract multi-digit whole numbers. Understand multiplication and division operations.	MA.L3.NSO.2a Understand operations with multi-digit numbers including decimals.	MA.L4.NSO.2 Add, subtract, multiply and divide rational numbers.
				MA.L3.NSO.2b Add, subtract, multiply and divide multi-digit numbers.	
	NSO.3				MA.L4.NSO.3 Apply properties of operations to rewrite numbers in equivalent forms.
Fractions (FR)	FR.1		MA.L2.FR.1 Understand fractions as numbers and represent fractions.	MA.L3.FR.1a Understand the relationship between different fractions and fractions and decimals.	
				MA.L3.FR.1b Interpret a fraction as an answer to a division problem.	
	FR.2		MA.L2.FR.2 Order and compare fractions and identify equivalent fractions.	MA.L3.FR.2a Build a foundation of addition, subtraction, and multiplication operations with fractions.	
				MA.L3.FR.2b Perform operations with	
Algebraic Reasoning (AR)	AR.1	MA.L1.AR.1a Solve addition problems with sums between 0 and 20 and subtraction problems using related facts.	MA.L2.AR.1a Solve addition problems with sums between 0 and 100 and related subtraction problems.	MA.L3.AR.1 Represent and solve problems involving the four operations with whole numbers and fractions.	MA.L4.AR.1a Apply previous understanding of arithmetic expressions to algebraic expressions
					MA.L4.AR.1b Rewrite algebraic expressions in equivalent forms.
		MA.L1.AR.1b Solve addition problems with sums between 0 and 100 and related subtraction problems.	MA.L2.AR.1b Solve multiplication and division problems.		MA.L4.AR.1c Generate equivalent algebraic expressions.
		MA.L1.AR.2a Develop an understanding of the equal sign.	MA.L2.AR.2a Demonstrate an understanding of equality and addition and subtraction.	MA.L3.AR.2 Demonstrate an understanding of equality, operations with whole numbers, the order of operations and equivalent	MA.L4.AR.2a Develop an understanding for solving equations and inequalities. Write and solve one-step equations in one variable.

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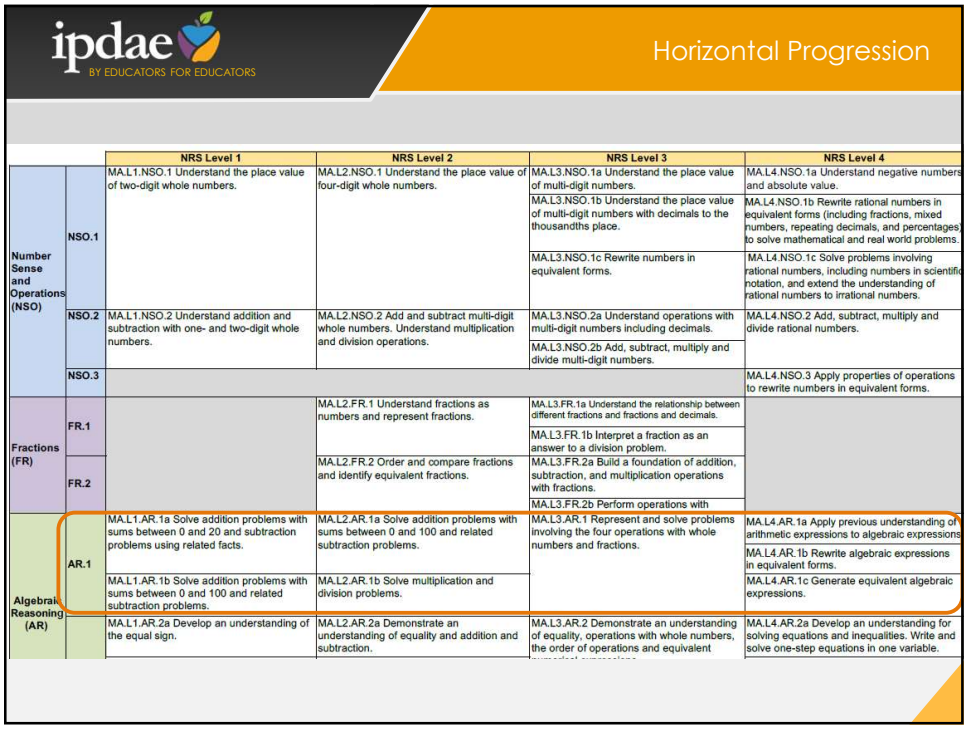

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				MA.L3.NSO.1c Rewrite numbers in equivalent forms.	MA.L4.NSO.1c Solve problems involving rational numbers, including numbers in scientific notation, and extend the understanding of rational numbers to irrational numbers.
	NSO.2	MA.L1.NSO.2 Understand addition and subtraction with one- and two-digit whole numbers.	MA.L2.NSO.2 Add and subtract multi-digit whole numbers. Understand multiplication and division operations.	MA.L3.NSO.2a Understand operations with multi-digit numbers including decimals.	MA.L4.NSO.2 Add, subtract, multiply and divide rational numbers.
				MA.L3.NSO.2b Add, subtract, multiply and divide multi-digit numbers.	
	NSO.3				MA.L4.NSO.3 Apply properties of operations to rewrite numbers in equivalent forms.
Fractions (FR)	FR.1		MA.L2.FR.1 Understand fractions as numbers and represent fractions.	MA.L3.FR.1a Understand the relationship between different fractions and fractions and decimals.	
				MA.L3.FR.1b Interpret a fraction as an answer to a division problem.	
	FR.2		MA.L2.FR.2 Order and compare fractions and identify equivalent fractions.	MA.L3.FR.2a Build a foundation of addition, subtraction, and multiplication operations with fractions.	
				MA.L3.FR.2b Perform operations with	
Algebraic Reasoning (AR)	AR.1	MA.L1.AR.1a Solve addition problems with sums between 0 and 20 and subtraction problems using related facts.	MA.L2.AR.1a Solve addition problems with sums between 0 and 100 and related subtraction problems.	MA.L3.AR.1 Represent and solve problems involving the four operations with whole numbers and fractions.	MA.L4.AR.1a Apply previous understanding of arithmetic expressions to algebraic expressions.
					MA.L4.AR.1b Rewrite algebraic expressions in equivalent forms.
		MA.L1.AR.1b Solve addition problems with sums between 0 and 100 and related subtraction problems.	MA.L2.AR.1b Solve multiplication and division problems.		MA.L4.AR.1c Generate equivalent algebraic expressions.
		MA.L1.AR.2a Develop an understanding of the equal sign.	MA.L2.AR.2a Demonstrate an understanding of equality and addition and subtraction.	MA.L3.AR.2 Demonstrate an understanding of equality, operations with whole numbers, the order of operations and equivalent	MA.L4.AR.2a Develop an understanding for solving equations and inequalities. Write and solve one-step equations in one variable.

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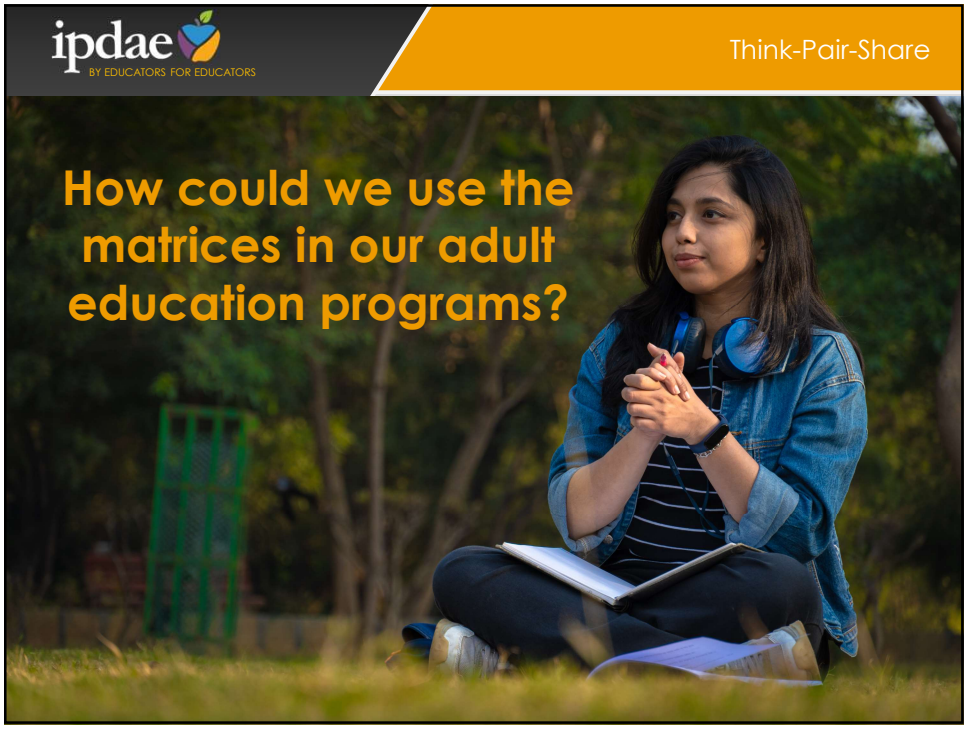

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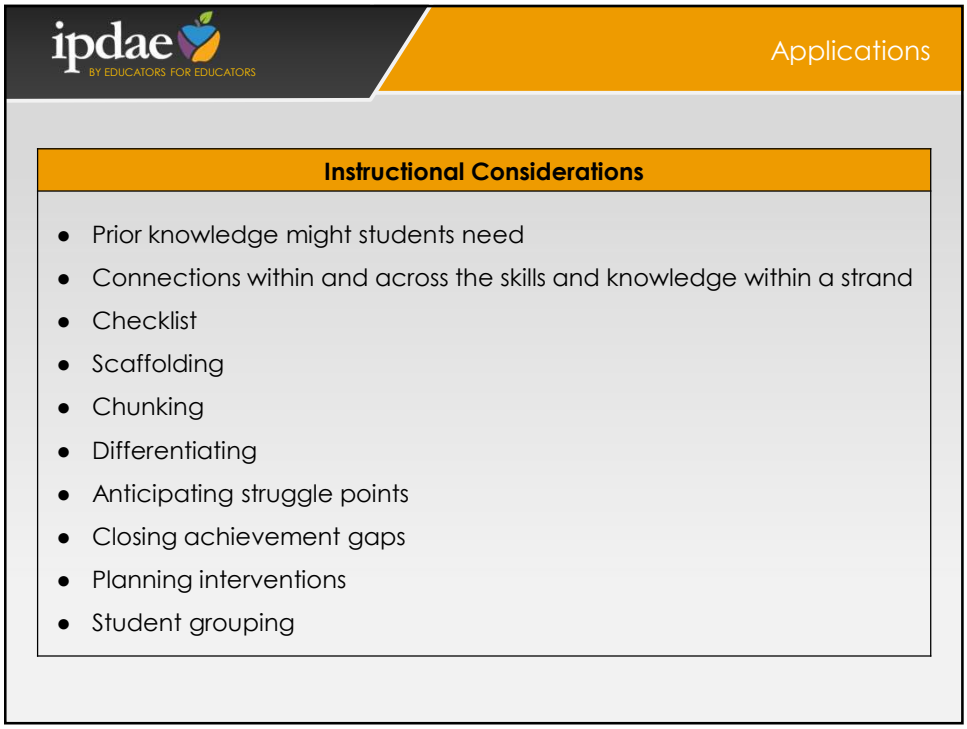
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Applications
Instructional Considerations
Prior knowledge might students need
Connections within and across the skills and knowledge within a strand
Checklist
Scaffolding
Chunking
Differentiating
Anticipating struggle points
Closing achievement gaps
Planning interventions
Student grouping

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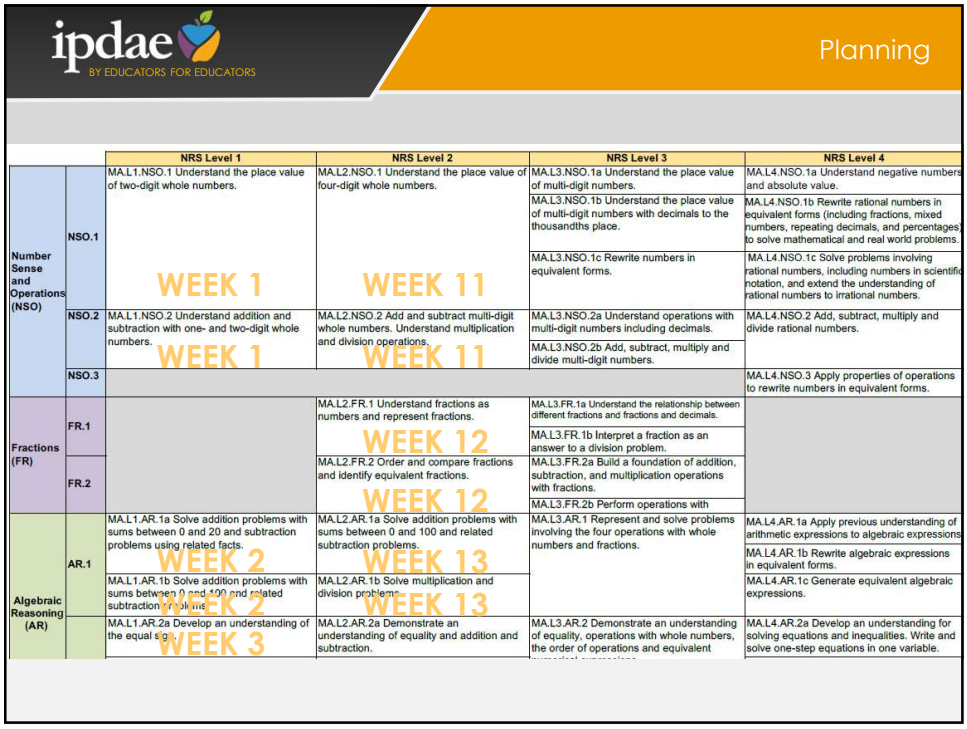
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Planning
NRS Level 1
NRS Level 2
NRS Level 3
NRS Level 4
Number Sense and Operations (NSO)
NSO.1
MA.L1.NSO.1 Understand the place value of two-digit whole numbers.
WEEK 1
MA.L2.NSO.1 Understand the place value of four-digit whole numbers.
WEEK 11
MA.L3.NSO.1a Understand the place value of multi-digit numbers.
MA.L3.NSO.1b Understand the place value of multi-digit numbers with decimals to the thousandths place.
MA.L3.NSO.1c Rewrite numbers in equivalent forms.
MA.L4.NSO.1a Understand negative numbers and absolute value.
MA.L4.NSO.1b Rewrite rational numbers in equivalent forms (including fractions, mixed numbers, repeating decimals, and percentages) to solve mathematical and real world problems.
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NSO.2
MA.L1.NSO.2 Understand addition and subtraction with one- and two-digit whole numbers.
WEEK 1
MA.L2.NSO.2 Add and subtract multi-digit whole numbers. Understand multiplication and division operations.
WEEK 11
MA.L3.NSO.2a Understand operations with multi-digit numbers including decimals.
MA.L3.NSO.2b Add, subtract, multiply and divide multi-digit numbers.
MA.L4.NSO.2 Add, subtract, multiply and divide rational numbers.
NSO.3
MA.L4.NSO.3 Apply properties of operations to rewrite numbers in equivalent forms.
Fractions (FR)
FR.1
MA.L2.FR.1 Understand fractions as numbers and represent fractions.
WEEK 12
MA.L3.FR.1a Understand the relationship between different fractions and fractions and decimals.
MA.L3.FR.1b Interpret a fraction as an answer to a division problem.
FR.2
MA.L2.FR.2 Order and compare fractions and identify equivalent fractions.
WEEK 12
MA.L3.FR.2a Build a foundation of addition, subtraction, and multiplication operations with fractions.
MA.L3.FR.2b Perform operations with
Algebraic Reasoning (AR)
AR.1
MA.L1.AR.1a Solve addition problems with sums between 0 and 20 and subtraction problems using related facts.
WEEK 2
MA.L2.AR.1a Solve addition problems with sums between 0 and 100 and related subtraction problems.
WEEK 13
MA.L3.AR.1 Represent and solve problems involving the four operations with whole numbers and fractions.
MA.L4.AR.1a Apply previous understanding of arithmetic expressions to algebraic expressions
MA.L4.AR.1b Rewrite algebraic expressions in equivalent forms.
MA.L4.AR.1c Generate equivalent algebraic expressions.
MA.L1.AR.1b Solve addition problems with sums between 0 and 100 and related subtraction problems
WEEK 2
MA.L2.AR.1b Solve multiplication and division problems
WEEK 13
MA.L1.AR.2a Develop an understanding of the equal sign
WEEK 3
MA.L2.AR.2a Demonstrate an understanding of equality and addition and subtraction.
MA.L3.AR.2 Demonstrate an understanding of equality, operations with whole numbers, the order of operations and equivalent
MA.L4.AR.2a Develop an understanding for solving equations and inequalities. Write and solve one-step equations in one variable.

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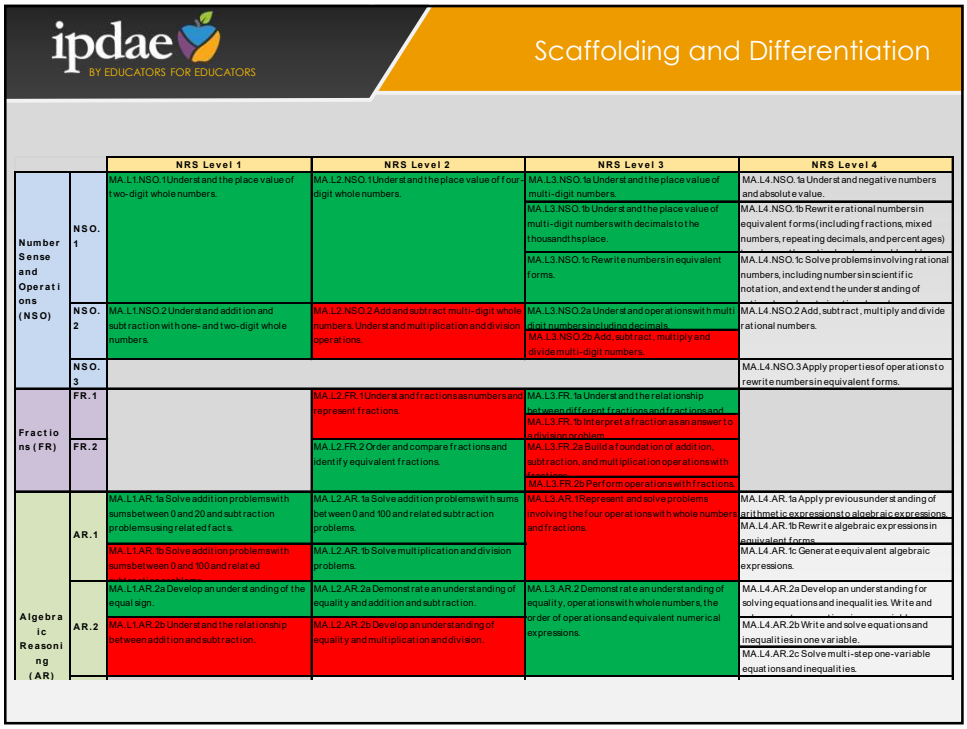

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				MA.L3.NSO.1c Rewrite numbers in equivalent forms.	MA.L4.NSO.1c Solve problems involving rational numbers, including numbers in scientific notation, and extend the understanding of
	NSO. 2	MA.L1.NSO.2 Understand addition and subtraction with one- and two-digit whole numbers.	MA.L2.NSO.2 Add and subtract multi-digit whole numbers. Understand multiplication and division operations.	MA.L3.NSO.2a Understand operations with multi-digit numbers including decimals.	MA.L4.NSO.2 Add, subtract, multiply and divide rational numbers.
				MA.L3.NSO.2b Add, subtract, multiply and divide multi-digit numbers.	
	NSO. 3				MA.L4.NSO.3 Apply properties of operations to rewrite numbers in equivalent forms.
Fractions (FR)	FR.1		MA.L2.FR.1 Understand fractions as numbers and represent fractions.	MA.L3.FR.1a Understand the relationship between different fractions and fractions and	
				MA.L3.FR.1b Interpret a fraction as an answer to a division problem.	
	FR.2		MA.L2.FR.2 Order and compare fractions and identify equivalent fractions.	MA.L3.FR.2a Build a foundation of addition, subtraction, and multiplication operations with	
				MA.L3.FR.2b Perform operations with fractions.	
Algebraic Reasoning (AR)	AR.1	MA.L1.AR.1a Solve addition problems with sums between 0 and 20 and subtraction problems using related facts.	MA.L2.AR.1a Solve addition problems with sums between 0 and 100 and related subtraction problems.	MA.L3.AR.1 Represent and solve problems involving the four operations with whole numbers and fractions.	MA.L4.AR.1a Apply previous understanding of arithmetic expressions to algebraic expressions.
					MA.L4.AR.1b Rewrite algebraic expressions in equivalent forms.
		MA.L1.AR.1b Solve addition problems with sums between 0 and 100 and related	MA.L2.AR.1b Solve multiplication and division problems.		MA.L4.AR.1c Generate equivalent algebraic expressions.
	AR.2	MA.L1.AR.2a Develop an understanding of the equal sign.	MA.L2.AR.2a Demonstrate an understanding of equality and addition and subtraction.	MA.L3.AR.2 Demonstrate an understanding of equality, operations with whole numbers, the order of operations and equivalent numerical expressions.	MA.L4.AR.2a Develop an understanding for solving equations and inequalities. Write and
		MA.L1.AR.2b Understand the relationship between addition and subtraction.	MA.L2.AR.2b Develop an understanding of equality and multiplication and division.		MA.L4.AR.2b Write and solve equations and inequalities in one variable.
					MA.L4.AR.2c Solve multi-step one-variable equations and inequalities.

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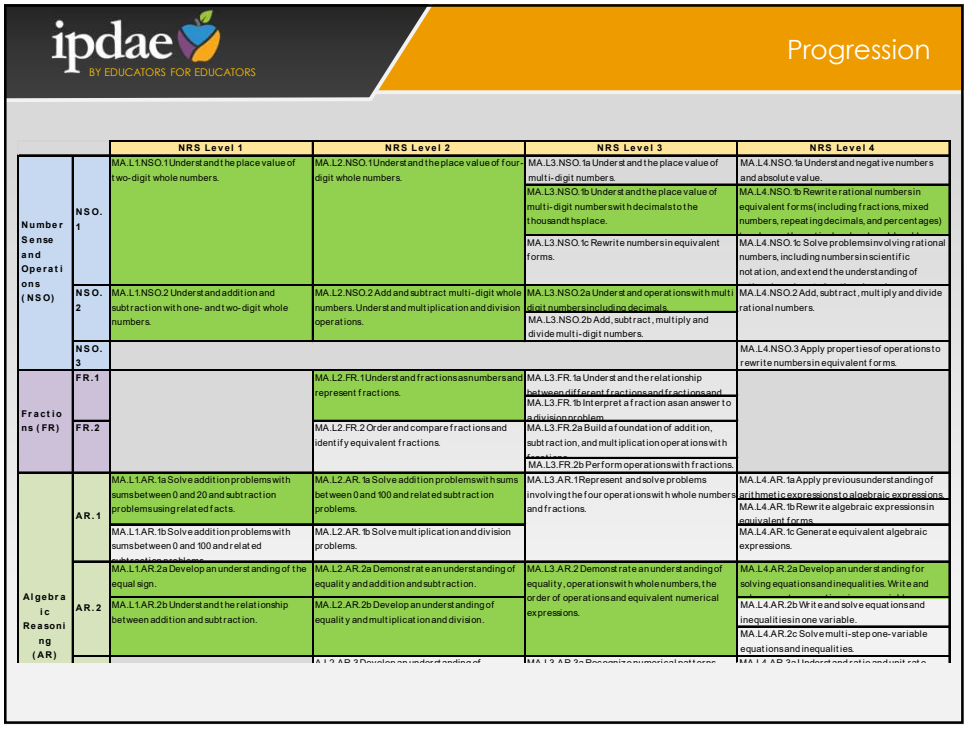

		NRS Level 1	NRS Level 2	NRS Level 3	NRS Level 4
Number Sense and Operations (NSO)	NSO. 1	MA.L1.NSO.1 Understand the place value of two-digit whole numbers.	MA.L2.NSO.1 Understand the place value of four-digit whole numbers.	MA.L3.NSO.1a Understand the place value of multi-digit numbers.	MA.L4.NSO.1a Understand negative numbers and absolute value.
				MA.L3.NSO.1b Understand the place value of multi-digit numbers with decimals to the thousandths place.	MA.L4.NSO.1b Rewrite rational numbers in equivalent forms (including fractions, mixed numbers, repeating decimals, and percentages)
				MA.L3.NSO.1c Rewrite numbers in equivalent forms.	MA.L4.NSO.1c Solve problems involving rational numbers, including numbers in scientific notation, and extend the understanding of
	NSO. 2	MA.L1.NSO.2 Understand addition and subtraction with one- and two-digit whole numbers.	MA.L2.NSO.2 Add and subtract multi-digit whole numbers. Understand multiplication and division operations.	MA.L3.NSO.2a Understand operations with multi-digit numbers including decimals.	MA.L4.NSO.2 Add, subtract, multiply and divide rational numbers.
				MA.L3.NSO.2b Add, subtract, multiply and divide multi-digit numbers.	
	NSO. 3				MA.L4.NSO.3 Apply properties of operations to rewrite numbers in equivalent forms.
Fractions (FR)	FR.1		MA.L2.FR.1 Understand fractions as numbers and represent fractions.	MA.L3.FR.1a Understand the relationship between different fractions and fractions and	
				MA.L3.FR.1b Interpret a fraction as an answer to a division problem.	
	FR.2		MA.L2.FR.2 Order and compare fractions and identify equivalent fractions.	MA.L3.FR.2a Build a foundation of addition, subtraction, and multiplication operations with	
				MA.L3.FR.2b Perform operations with fractions.	
Algebraic Reasoning (AR)	AR.1	MA.L1.AR.1a Solve addition problems with sums between 0 and 20 and subtraction problems using related facts.	MA.L2.AR.1a Solve addition problems with sums between 0 and 100 and related subtraction problems.	MA.L3.AR.1 Represent and solve problems involving the four operations with whole numbers and fractions.	MA.L4.AR.1a Apply previous understanding of arithmetic expressions to algebraic expressions.
					MA.L4.AR.1b Rewrite algebraic expressions in equivalent forms.
		MA.L1.AR.1b Solve addition problems with sums between 0 and 100 and related	MA.L2.AR.1b Solve multiplication and division problems.		MA.L4.AR.1c Generate equivalent algebraic expressions.
	AR.2	MA.L1.AR.2a Develop an understanding of the equal sign.	MA.L2.AR.2a Demonstrate an understanding of equality and addition and subtraction.	MA.L3.AR.2 Demonstrate an understanding of equality, operations with whole numbers, the order of operations and equivalent numerical expressions.	MA.L4.AR.2a Develop an understanding for solving equations and inequalities. Write and
		MA.L1.AR.2b Understand the relationship between addition and subtraction.	MA.L2.AR.2b Develop an understanding of equality and multiplication and division.		MA.L4.AR.2b Write and solve equations and inequalities in one variable.
					MA.L4.AR.2c Solve multi-step one-variable equations and inequalities.

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Checklist

		NRS Level 1	NRS Level 2	NRS Level 3	NRS Level 4
Number Sense and Operations (NSO)	NSO.1	MA.L1.NSO.1 Understand the place value of two-digit whole numbers.	MA.L2.NSO.1 Understand the place value of four-digit whole numbers.	MA.L3.NSO.1a Understand the place value of multi-digit numbers.	MA.L4.NSO.1a Understand negative numbers and absolute value.
				MA.L3.NSO.1b Understand the place value of multi-digit numbers with decimals to the thousandths place.	MA.L4.NSO.1b Rewrite rational numbers in equivalent forms (including fractions, mixed numbers, repeating decimals, and percentages) to solve mathematical and real world problems.
				MA.L3.NSO.1c Rewrite numbers in equivalent forms.	MA.L4.NSO.1c Solve problems involving rational numbers, including numbers in scientific notation, and extend the understanding of rational numbers to irrational numbers.
	NSO.2	MA.L1.NSO.2 Understand addition and subtraction with one- and two-digit whole numbers.	MA.L2.NSO.2 Add and subtract multi-digit whole numbers. Understand multiplication and division operations.	MA.L3.NSO.2a Understand operations with multi-digit numbers including decimals.	MA.L4.NSO.2 Add, subtract, multiply and divide rational numbers.
				MA.L3.NSO.2b Add, subtract, multiply and divide multi-digit numbers.	
	NSO.3				MA.L4.NSO.3 Apply properties of operations to rewrite numbers in equivalent forms.
Fractions (FR)	FR.1		MA.L2.FR.1 Understand fractions as numbers and represent fractions.	MA.L3.FR.1a Understand the relationship between different fractions and fractions and decimals.	
				MA.L3.FR.1b Interpret a fraction as an answer to a division problem.	
	FR.2		MA.L2.FR.2 Order and compare fractions and identify equivalent fractions.	MA.L3.FR.2a Build a foundation of addition, subtraction, and multiplication operations with fractions.	
				MA.L3.FR.2b Perform operations with	
Algebraic Reasoning (AR)	AR.1	MA.L1.AR.1a Solve addition problems with sums between 0 and 20 and subtraction problems using related facts.	MA.L2.AR.1a Solve addition problems with sums between 0 and 100 and related subtraction problems.	MA.L3.AR.1 Represent and solve problems involving the four operations with whole numbers and fractions.	MA.L4.AR.1a Apply previous understanding of arithmetic expressions to algebraic expressions.
					MA.L4.AR.1b Rewrite algebraic expressions in equivalent forms.
		MA.L1.AR.1b Solve addition problems with sums between 0 and 100 and related subtraction problems.	MA.L2.AR.1b Solve multiplication and division problems.		MA.L4.AR.1c Generate equivalent algebraic expressions.
		MA.L1.AR.2a Develop an understanding of the equal sign.	MA.L2.AR.2a Demonstrate an understanding of equality and addition and subtraction.	MA.L3.AR.2 Demonstrate an understanding of equality, operations with whole numbers, the order of operations and equivalent	MA.L4.AR.2a Develop an understanding for solving equations and inequalities. Write and solve one-step equations in one variable.

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Benefits to Teachers

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

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Benefits to Students

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

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Mathematics Activity Resources

Mathematics Activity Resource

Mathematics Matrix

		NRS Level 1	NRS Level 2
Number Sense and Operations (NSO)	NSO.1	MA.L1.NSO.1 Understand the place value of two-digit whole numbers.	MA.L2.NSO.1 Understand the place va four-digit whole numbers.
	NSO.2	MA.L1.NSO.2 Understand addition and subtraction with one- and two-digit whole numbers.	MA.L2.NSO.2 Add and subtract multi-d whole numbers. Understand multiplicati and division operations.
	NSO.3		
Fractions (FR)	FR.1		MA.L2.FR.1 Understand fractions as numbers and represent fractions.
	FR.2		MA.L2.FR.2 Order and compare fractio and identify equivalent fractions.
Algebraic Reasoning (AR)	AR.1	MA.L1.AR.1a Solve addition problems with sums between 0 and 20 and subtraction problems using related facts.	MA.L2.AR.1a Solve addition problems sums between 0 and 100 and related subtraction problems.
		MA.L1.AR.1b Solve addition problems with sums between 0 and 100 and related subtraction problems.	MA.L2.AR.1b Solve multiplication and division problems.
		MA.L1.AR.2a Develop an understanding of the equal sign.	MA.L2.AR.2a Demonstrate an understanding of equality and addition subtraction.

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Math Resource Order and Compare Fractions MA.L2.FR.2

Misconceptions and Ideas for Understanding Concepts

Students may assume fractions with smaller denominators are smaller than fractions with larger denominators when placing them on a number line.

or not equivalent when referring to the same size whole. Instruction includes partitioning shapes into halves, thirds, and fourths and then comparing the resulting pieces.

For example, students partition a shape into halves.

Conversation includes sharing observations about the shape partitioned into two equal pieces. The teacher models writing the fractional parts of ½ so that students can connect the number of pieces to the denominator. Students then practice partitioning shapes into thirds and fourths to reinforce the concept.

Explicitly address confusing examples where students may believe that that larger denominator indicates a larger amount. For example:

- The corner store sells candy bars that are exactly the same size. Kaitlyn ate 1 fourth of a candy bar and Jake ate 1 sixth of a candy bar. Who ate a larger piece?

Emphasize that fractions represent a specific amount that must be determined by comparing the numerator to the denominator. Students need practice experiencing fractions that have larger denominators but that still represent smaller amounts.

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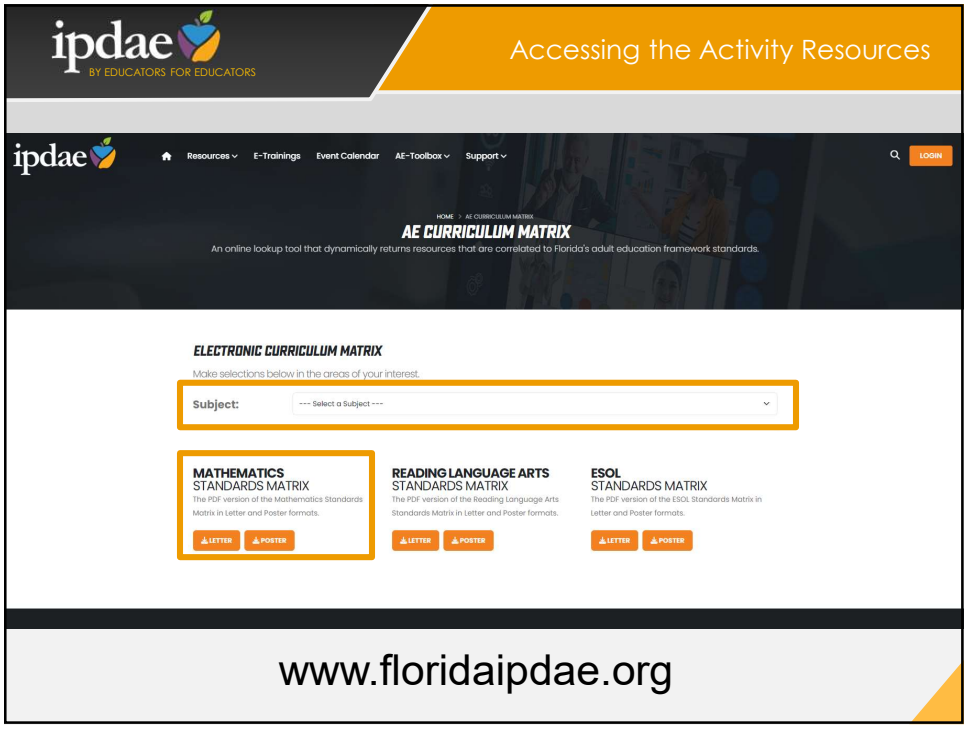
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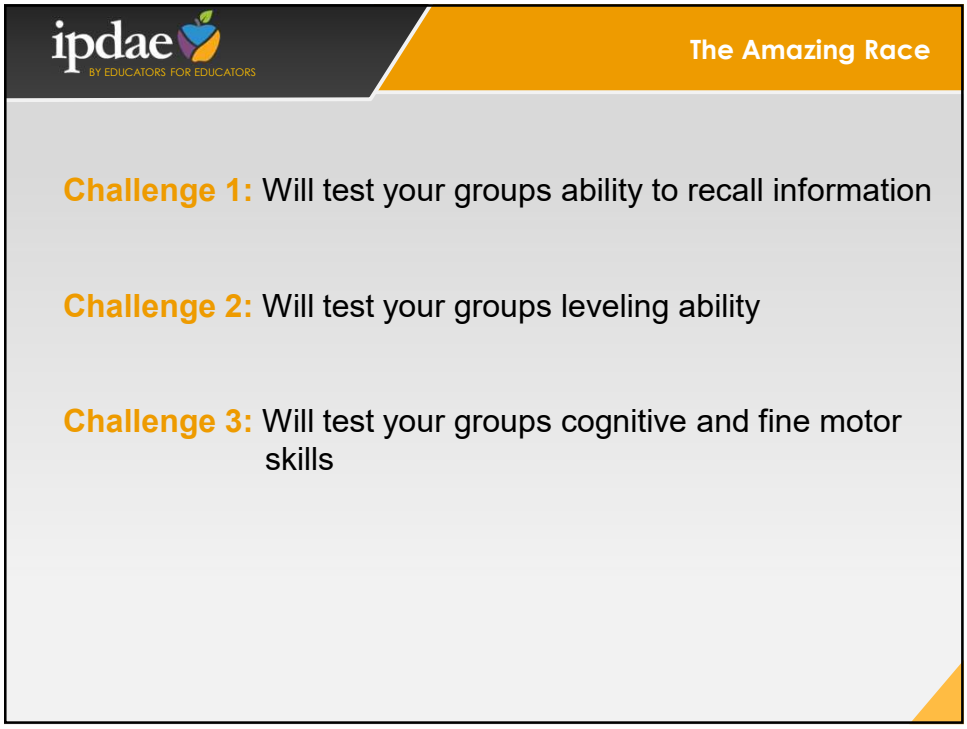
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The Amazing Race
Challenge 1: Will test your groups ability to recall information
Challenge 2: Will test your groups leveling ability
Challenge 3: Will test your groups cognitive and fine motor skills

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THE AMAZING
RACE

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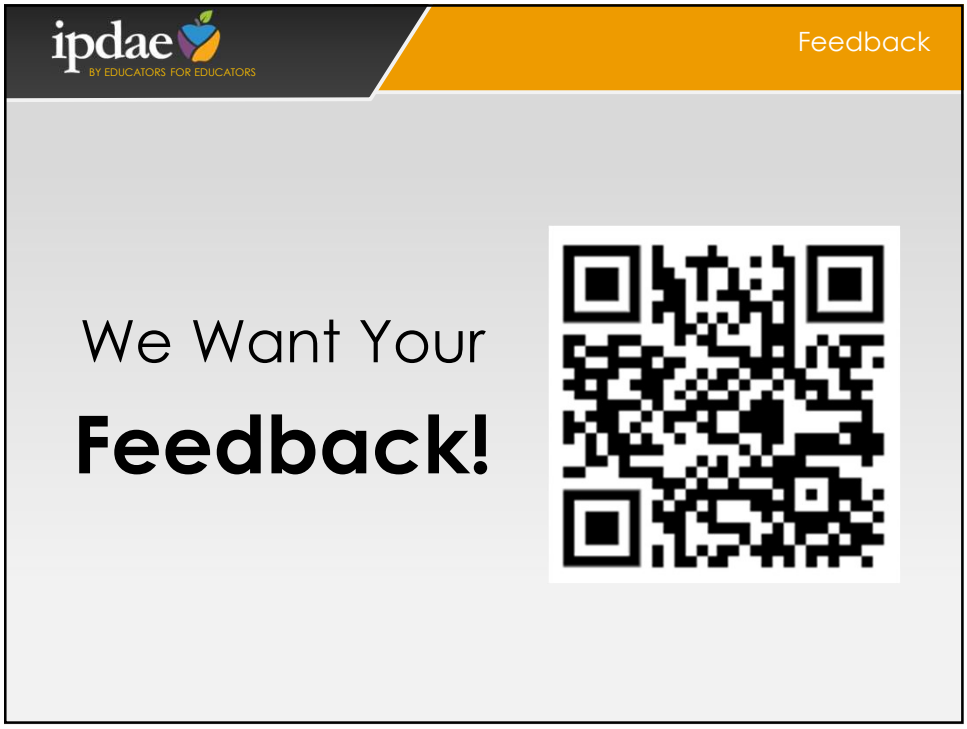
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