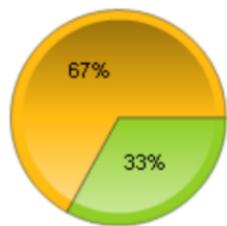


**Goal Setting** All students as measured by our focus students will move at least one strategy along the continua of number development building number fluidity and mental math skills in multiplication and division.

Overall Goal:

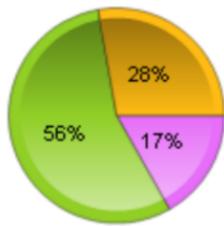
**Needs Assessment / Where Are We Now?**

I like mathematics.



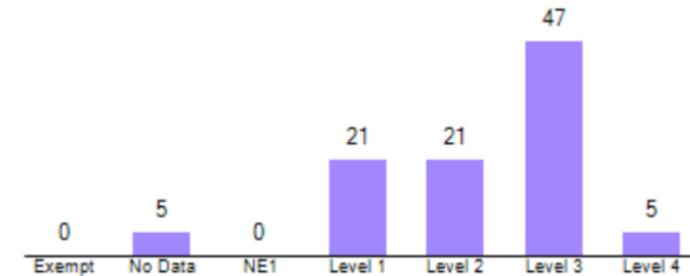
Grade 3

I like mathematics.



67 percent of students report liking math in Grade 3 but only 28 percent of students report liking math in Grade 6.

52 percent of our Grade 6 students were above provincial standard in EQAO testing.



**Theory of Action: Due October 11, 2019**

*If we create engaging learning experiences through a focus on purposeful planning and improve assessment and feedback practices through a focus on generating descriptive feedback then student engagement and achievement will improve as measured by monitoring our focus students.*

**Success criteria for engaging learning experiences:**

- I can see and hear authentic learning experiences*
- I can see and hear assessment and feedback practices*
- I can see and hear student-centered learning*
- I can see and hear students using resources with intention*
- I can see and hear educators as responsive facilitators*
- I can see and hear collaboration*
- I can see and hear purposeful planning*
- I can see and hear discourse along with independent think time*
- I can see and hear wellness*

**Success Criteria for generating descriptive feedback**

- I can give feedback that:*
- *Is descriptive*
  - *Is timely*
  - *Contains the right amount of information*
  - *Focusses on the work*
  - *Compares the work to the criteria*
  - *Is positive*
  - *Is clear to the student*
  - *Is specific but not so specific that the work is done for them*

**PRE DATA: DUE: October 11, 2019**

**Monitoring the IF:**

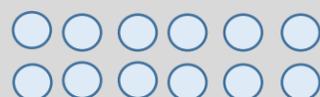
Based on the **co-constructed success criteria** for educator learning. (e.g. criteria for providing effective descriptive feedback). Include pre data for your educators:

**Monitoring the THEN (e.g. student achievement, engagement, wellness):** Drag Dots onto the continuum – choose the correct colour based on the division of the child. You can copy more dots if required.

**Primary Students:**

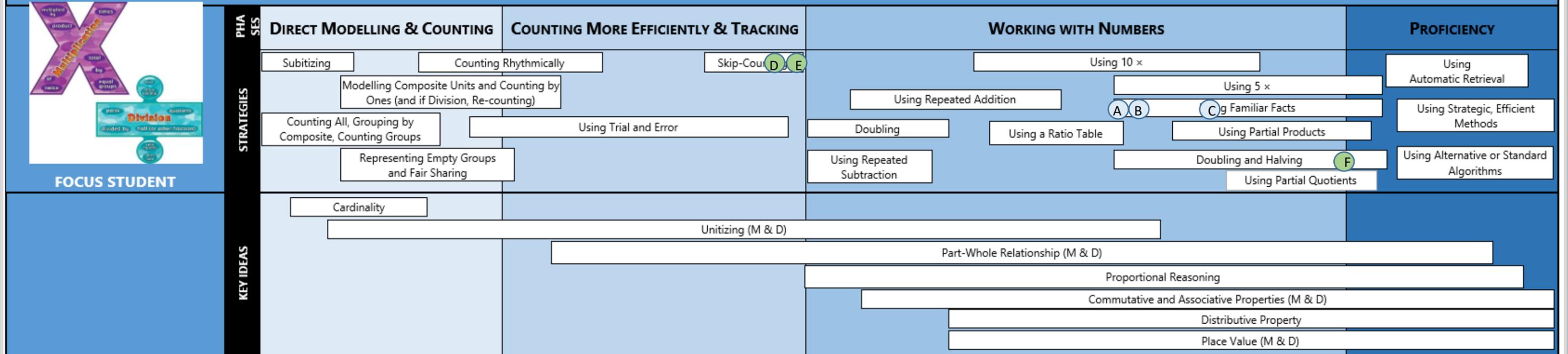
**Class one**

**Class two**



# Alex Lawson's What to Look For Continuum of Numeracy Development

## MULTIPLICATION AND DIVISION



- All our marker students are junior students. We used the green and blue to differentiate our students by grades 5 and 6.

### Qualitative Data

WE are using Math Running Records to understand more fully where our students are in their strategy use to perform basic math multiplication skills. The running records data compare a portion of the Lawson of Continuum. By using Running records have helped us to identify what strategies are missing before successfully demonstrating higher strategies demonstrated in the Alex Lawson continuum.

### PLAN

Students will build number fluidity as teachers familiarize themselves with Student thinking along the continuum as outlined in "What to Look For" by Alex Lawson

Plan is for teachers to build their assessment practices and become better able to provide students with better descriptive feedback.

### ACT

, Teachers will assess where their students are beginning along the continuum then determine next teaching/student moves "NEXT STEPS" to move students

They will use :

- Number talks,
- What to Look for Games,

- Running Records,
- individual assessments,
- Teachers will use the same data collection
- Next steps will be specific teaching strategies as outlined in “What to Look For” Teachers at the table will leave with strategies to move students forward
- Teachers will use/practice the Descriptive Feedback SC to give better feedback to their students.

MID CYCLE 1 DATA: DUE: November 29, 2019

**Monitoring the IF:**

Based on the **co-constructed success criteria** for educator learning. (e.g. criteria for providing effective descriptive feedback). Include pre data for your educators:

**Monitoring the THEN** (e.g. student achievement, engagement, wellness): Drag Dots onto the continuum – choose the correct colour based on the division of the child. You can copy more dots if required

Primary Students:



class one



class two



## Alex Lawson's What to Look For Continuum of Numeracy Development MULTIPLICATION AND DIVISION

FOCUS STUDENT	PHASES	MULTIPLICATION AND DIVISION			PROFICIENCY			
		DIRECT MODELLING & COUNTING	COUNTING MORE EFFICIENTLY & TRACKING	WORKING WITH NUMBERS				
	STRATEGIES	Subitizing	Counting Rhythmically	Skip  g	Using 10 ×	Using Automatic Retrieval		
		Modelling Composite Units and Counting by Ones (and if Division, Re-counting)	Using Trial and Error	Using Repeated Addition	Using 5 ×	Using Strategic, Efficient Methods		
KEY IDEAS		Counting All, Grouping by Composite, Counting Groups	Using Trial and Error	Doubling	Using a Ratio Table	Using Familiar Facts	Using Partial Products	Using Alternative or Standard Algorithms
		Representing Empty Groups and Fair Sharing		Using Repeated Subtraction		Doubling and Halving	Using Partial Quotients	
		Cardinality	Unitizing (M & D)					
			Part-Whole Relationship (M & D)					
			Proportional Reasoning					
			Commutative and Associative Properties (M & D)					
			Distributive Property					
			Place Value (M & D)					

- \* All our marker students are junior students. We used the green and blue to differentiate our students by grades 5 and 6.

As in the early stages of our Math Sipsa learning this year, we are continuing to use Math Running Records to understand more fully where our students are in their strategy use to perform basic math multiplication skills. The running records data compare a portion of the Lawson of Continuum. Running records continue to help us to identify what strategies are missing before successfully demonstrating higher strategies demonstrated in the Alex Lawson continuum.

#### Qualitative Data

#### MID CYCLE 1: ASSESS and REFLECT: DUE: November 29, 2019

Math Running Records were used as an in depth method to determine a baseline for our students in the area of multiplication. Based on the results, it was evident many students were relying heavily on doubles, skip counting and drawing out groups. An action plan was developed for the focus of our daily work on numbers. We have focused on solidifying the mental strategies we are already comfortable with, including making use of the Commutative Property ( $5 \times 6 = 30$  is equivalent to  $6 \times 5 = 30$ ). However, we have added strategies for  $\times 4$  (double double) and  $\times 8$  (double double double). At this time, there has not been sufficient time for growth to warrant reassessing with the Math Running Records. Growth has been noted in class but not on assessments... more time is needed.

The direction we will be taking with math to advance our students is to start focusing on basic strategies for multiplication. we will use Number Talk time to review the strategies/rules for multiplying by 0, 1, 2, 5 and 10. Of course, we will take time to review the concepts behind these 'rules'.

Following that, we will move on to some of the suggested strategies that are part of the Math Running Records in Action by Dr. Nikki Newton. These strategies include:

- double, double for the 4X tables (i.e., double the 2x tables to get the answer for 4X tables)
- double, double, double for the 8X tables
- X2 plus 1 (group) for the 3X tables
- double X 3 for the 6X tables
- $\times 10$  minus # for the 9X tables
- $\times 5$  plus X2 for the 7X tables

Following that, we will move on to the 'Squares' ...e.g., 4X4, 5X5, 6X6 and explain the concept visually of why those are called square numbers or square facts.

We feel it is important for these students to understand basic strategies such as the ones above before moving on to the more complex strategies in the Alex Lawson continuum.

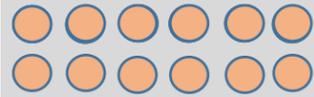
#### END CYCLE 1: DATA: DUE: February 15, 2020

#### Monitoring the IF:

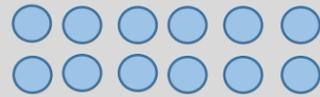
Based on the **co-constructed success criteria** for educator learning. (e.g. criteria for providing effective descriptive feedback). Include pre data for your educators:

Monitoring the THEN (e.g. student achievement, engagement, wellness): Drag Dots onto the continuum – choose the correct colour based on the division of the child. You can copy more dots if required

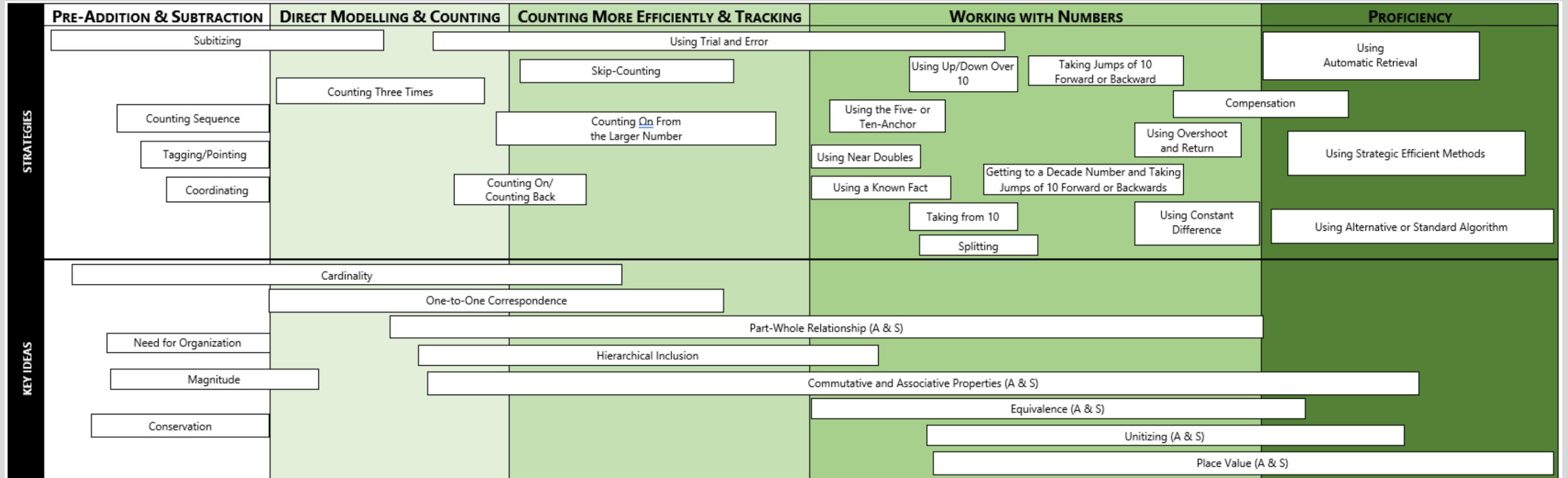
Primary Students:



Junior Students

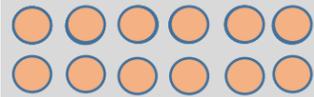


Intermediate Students

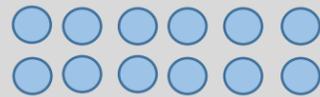


	Phase (Number of Students)	%
None Used	0	0.0%
Pre-Addition and Subtraction	0	0.0%
Direct Modelling and Counting	0	0.00%
Counting More Efficiently and Tracking	0	0.00%
Working With Numbers	0	0.00%
Proficiency	1	100.00%
Totals:	1	100.00%

Primary Students:



Junior Students



Intermediate Students



## Alex Lawson's What to Look For Continuum of Numeracy Development MULTIPLICATION AND DIVISION

PHASES	DIRECT MODELLING & COUNTING	COUNTING MORE EFFICIENTLY & TRACKING	WORKING WITH NUMBERS	PROFICIENCY
	STRATEGIES	Subitizing Counting All, Grouping by Composite, Counting Groups Representing Empty Groups and Fair Sharing	Counting Rhythmically Modelling Composite Units and Counting by Ones (and if Division, Re-counting) Using Trial and Error	Skip-Counting Using Repeated Addition Doubling Using Repeated Subtraction Using a Ratio Table Doubling and Halving Using Partial Quotients
KEY IDEAS	Cardinality	Unitizing (M & D)	Part-Whole Relationship (M & D) Proportional Reasoning Commutative and Associative Properties (M & D) Distributive Property Place Value (M & D)	



FOCUS STUDENT

	Phase (Number of Students)	%
None Used	0	0.0%
Direct Modelling and Counting	0	0.00%
Counting More Efficiently and Tracking	0	0.00%
Working With Numbers	0	0.00%
Proficiency	1	100.00%
Totals:	1	100.00%

**Other Quantitative Data**

**Qualitative Data**

**END CYCLE 1: ASSESS and REFLECT -: DUE: February 15, 2020**

**CYCLE 2 PLAN and ACT – DUE: February 15, 2020 (based on the assessing and reflecting at the end of cycle 1 – may not change from the October plan or may be revised)**

**END CYCLE 2: DATA: DUE: May 29, 2020**

**Monitoring the IF:**

Based on the **co-constructed success criteria** for educator learning. (e.g. criteria for providing effective descriptive feedback). Include pre data for your educators:

Monitoring the THEN (e.g. student achievement, engagement, wellness): Drag Dots onto the continuum – choose the correct colour based on the division of the child. You can copy more dots if required

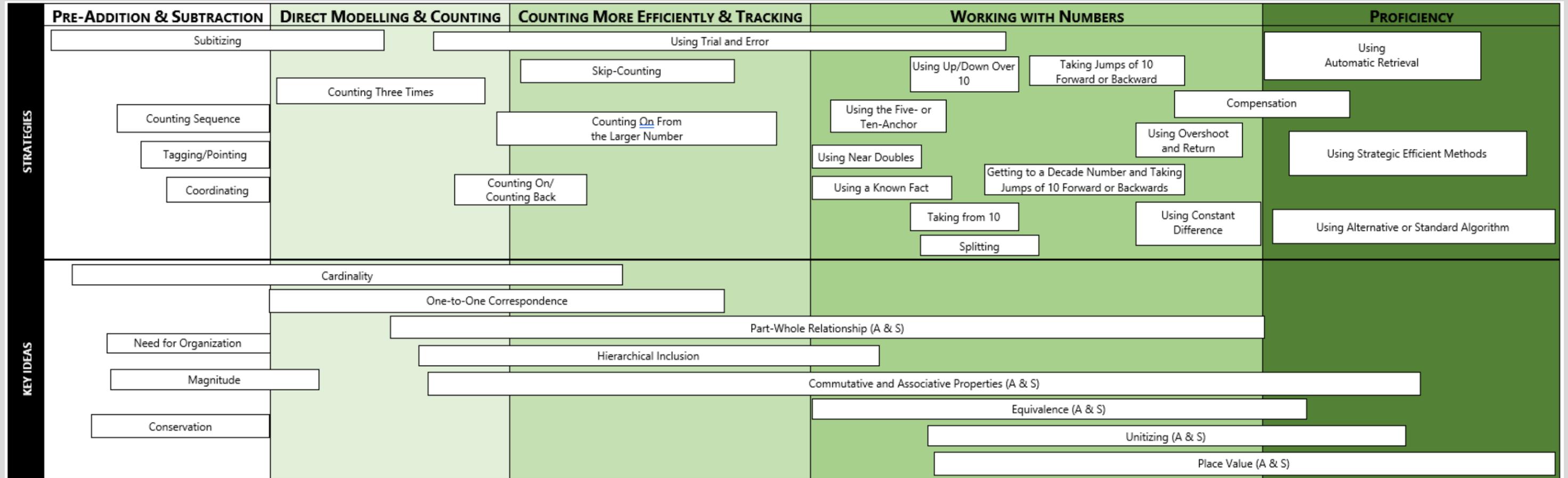
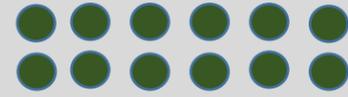
Primary Students:



Junior Students



Intermediate Students



	Phase (Number of Students)	%
None Used	0	0.0%
Pre-Addition and Subtraction	0	0.0%
Direct Modelling and Counting	0	0.00%
Counting More Efficiently and Tracking	0	0.00%
Working With Numbers	0	0.00%
Proficiency	1	100.00%
Totals:	1	100.00%

Primary Students:



Junior Students



Intermediate Students



## Alex Lawson's What to Look For Continuum of Numeracy Development MULTIPLICATION AND DIVISION

PHASES	DIRECT MODELLING & COUNTING	COUNTING MORE EFFICIENTLY & TRACKING	WORKING WITH NUMBERS	PROFICIENCY	
	STRATEGIES	Subitizing Counting All, Grouping by Composite, Counting Groups Representing Empty Groups and Fair Sharing	Counting Rhythmically Modelling Composite Units and Counting by Ones (and if Division, Re-counting) Using Trial and Error	Skip-Counting Doubling Using Repeated Subtraction Using Repeated Addition Using a Ratio Table	Using 10 × Using 5 × Using Familiar Facts Using Partial Products Doubling and Halving Using Partial Quotients
KEY IDEAS	Cardinality	Unitizing (M & D)	Part-Whole Relationship (M & D)	Proportional Reasoning Commutative and Associative Properties (M & D) Distributive Property Place Value (M & D)	



FOCUS STUDENT

	Phase (Number of Students)	%
None Used	0	0.0%
Direct Modelling and Counting	0	0.00%
Counting More Efficiently and Tracking	0	0.00%
Working With Numbers	0	0.00%
Proficiency	1	100.00%
Totals:	1	100.00%

**Other Quantitative Data:**

**Qualitative Data**

**END CYCLE 1: ASSESS and REFLECT -: DUE: May 29, 2020**