



NSW Department of Education

How do you Differentiate the Curriculum ?

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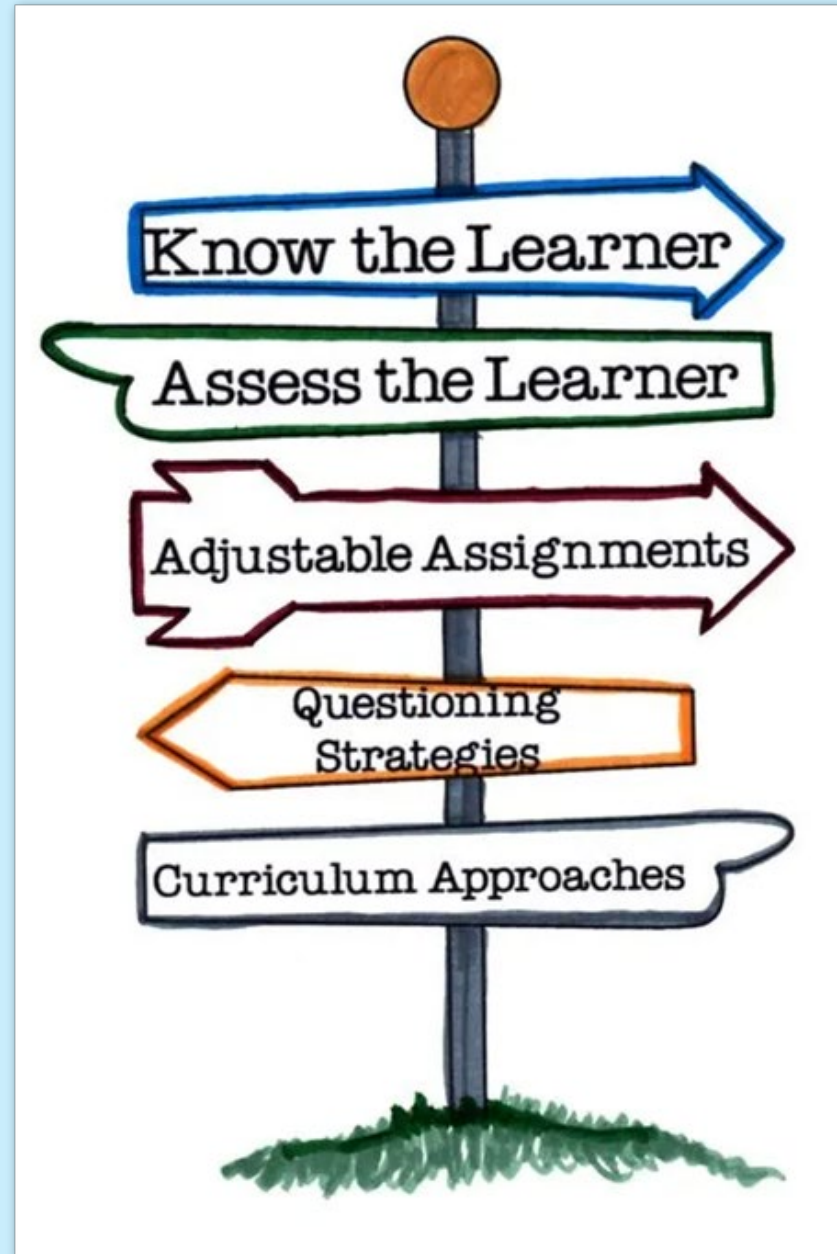
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Acknowledgement of Country

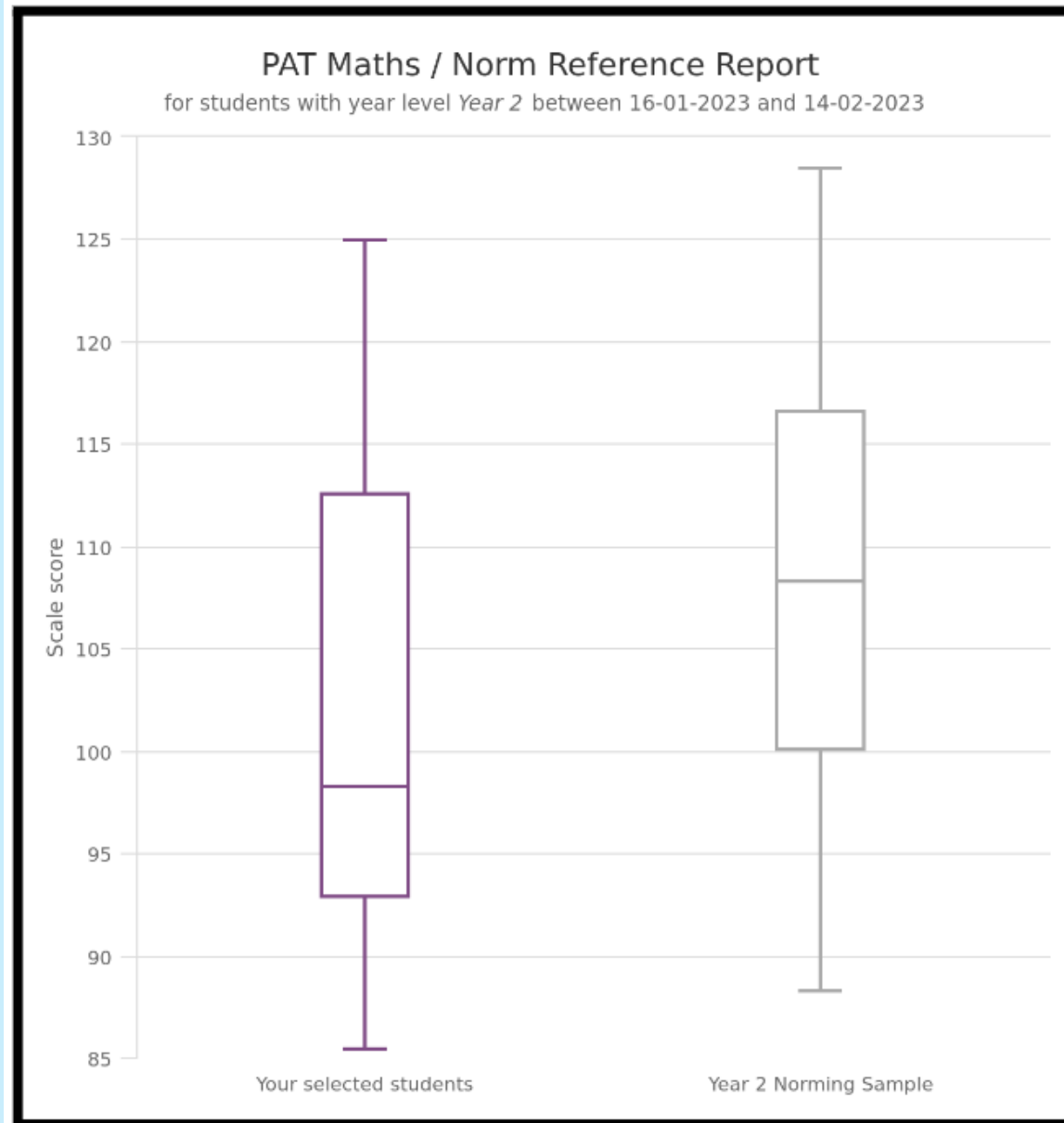
We strive to ensure every Aboriginal and Torres Strait Islander learner in NSW achieves their potential through education.

Differentiation is the process of tailoring learning experiences to address each student's individual strengths, needs and interests.



Differentiating the Curriculum

Our Why - to meet the needs of our students where they are at



Differentiation is about knowing



- your students and content well



- the goals and targets you want for each student



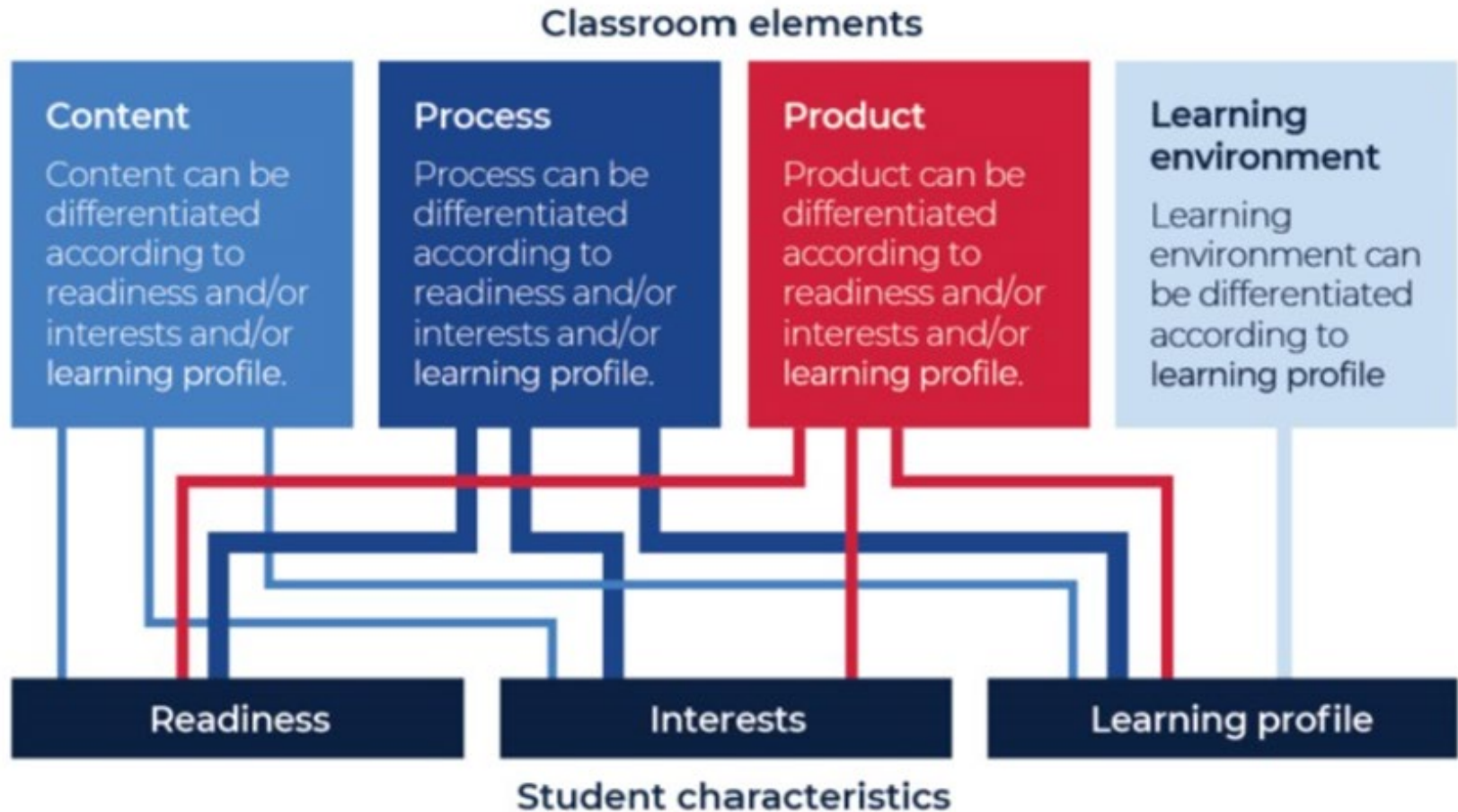
- about the types of adjustments to use



- having the confidence to use the tools appropriately.



When can we differentiate ?

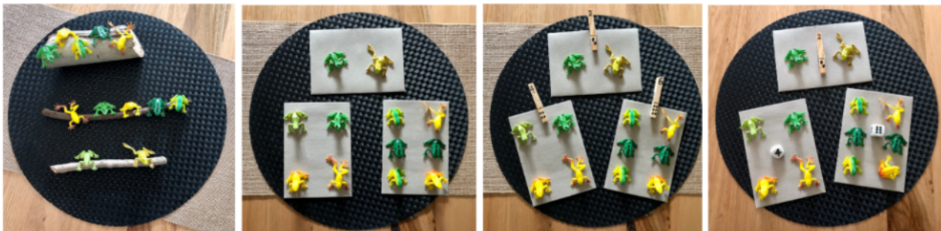


Differentiating Product & Differentiating Content

These are the learning experiences that you use for students to develop their understanding of a topic. It involves:

- Providing varying levels of difficulty (tiered) or varying topics of interest
- Offering different amounts of teacher and student support to complete a task
- Giving students choice about how to express their understanding
- Varying the length of time provided for a task
- Providing access to materials targeting different learning styles
- Using different grouping strategies e.g. high with middle and middle with low.

Differentiating Product & Differentiating Content

Modelled: Explicit Teaching/Guided	<ol style="list-style-type: none"> 1. Explain that to play this game students will need a partner, 3 logs (such as twigs or recycled cardboard) and 12 'frogs' (either figurines, objects to represent the frogs, or a copy of Resource 5: 12 frogs). 2. Display Resource 6: Frogs on logs and pose the mathematical problem: There are 12 frogs altogether and there are 2 frogs on the first log. Ask students to work out how many frogs might be on each of the other logs. <p>Note: Some students may confuse this with division, that is, by forming equal groups of frogs. Explain that sometimes we need to separate amounts in ways that don't all have the same amounts, or that are shared equally.</p>				
Independent	<p>In pairs, students will use the materials to represent this problem and investigate possible solutions. They record all the possible solutions they find. For examples, see below.</p> <div data-bbox="417 368 1363 596">  </div> <table border="1"> <thead> <tr> <th data-bbox="396 611 929 646">Prompts</th><th data-bbox="929 611 1532 646">Anticipated student responses</th></tr> </thead> <tbody> <tr> <td data-bbox="396 646 929 912"> <ul style="list-style-type: none"> • How did you use the materials to help solve the problem? • How many frogs did you put on the other 2 logs? How did you decide this? • Did your partner arrange their frogs a different way or the same way? What did you notice? • What other ways could you sort your frogs? What are you wondering? • How did you record this? • Did any ways of arranging the frogs give you a different total? </td><td data-bbox="929 646 1532 912"> <ul style="list-style-type: none"> • I counted out 12 frogs and 3 logs. I put 2 frogs on a log. Then I had 10 frogs left to put on the other logs. • I put 2 frogs on a log first then I counted 10 more frogs to put on the next 2 logs. • My partner had 12 frogs. They put 2 on the first log and then 2 and 8. That makes 12 too. • I put 2 and 3 and 7. That also makes 12. • I could use photos or drawings to show how I solved the problem. • The total of frogs was always the same. There were 12. </td></tr> </tbody> </table>	Prompts	Anticipated student responses	<ul style="list-style-type: none"> • How did you use the materials to help solve the problem? • How many frogs did you put on the other 2 logs? How did you decide this? • Did your partner arrange their frogs a different way or the same way? What did you notice? • What other ways could you sort your frogs? What are you wondering? • How did you record this? • Did any ways of arranging the frogs give you a different total? 	<ul style="list-style-type: none"> • I counted out 12 frogs and 3 logs. I put 2 frogs on a log. Then I had 10 frogs left to put on the other logs. • I put 2 frogs on a log first then I counted 10 more frogs to put on the next 2 logs. • My partner had 12 frogs. They put 2 on the first log and then 2 and 8. That makes 12 too. • I put 2 and 3 and 7. That also makes 12. • I could use photos or drawings to show how I solved the problem. • The total of frogs was always the same. There were 12.
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Adjustments	<p>Too Hard: Striving</p> <p>Students could work with 10 frogs and 2 logs, working to make 'friends of 10'.</p>
Differentiation Adjustment Tool/s	<p>Too Easy: Adjustments and Extensions</p> <p>Increase number of frogs and logs (e.g. 24 or 30 frogs and 4-5 logs)</p> <p>OR students choose their own number of frogs and logs.</p>
Lesson Reflection	<p>As a class, revise the problem that students were investigating with a partner by asking:</p> <ul style="list-style-type: none"> • What was the problem we were trying to solve? • How many frogs did we have altogether? (12 frogs) • How many logs did we have? (3 logs) • How many frogs were on the first log? (2 on the first log) • How many frogs could be on the other logs? (12 can be partitioned in different ways, such as 2, 5 and 5 or 2, 3 and 7)

Differentiating Product & Differentiating Content

Display the page with the sentence 'The scaly lorikeets and black cockatoos flew ahead to search for food'.

Deconstruct the descriptive noun group by identifying the:

- article – the
- adjectives – scaly, black
- nouns – lorikeets, cockatoos.

Adjectives and noun groups		
Diagram	Article	the
	Adjective	scaly
		black
	Noun	lorikeets
		cockatoos
Sentences		
<u>The scaly lorikeets</u> flew ahead and searched for food.		
<u>The black cockatoos</u> flew ahead so they could check for danger.		

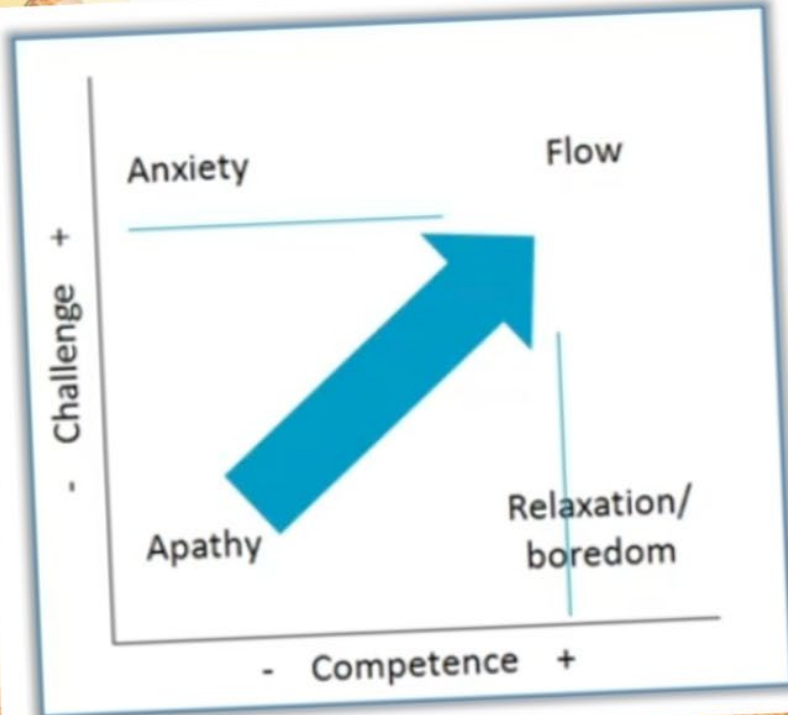
Independent:

Students draw a character and write a descriptive compound sentence using blank [Resource 1: Adjectives and noun groups](#).

Reflection of Learning

Students share their work with a partner and identify adjectives and noun groups within the compound sentence. Partners determine if the sentence provides effective detail and describes the character.

Adjustments	Too Hard: (Striving) Students write a simple sentence to describe their character.
Differentiation Adjustment Tool/s	Too Easy: Adjustments and Extensions Students draw a character and setting from the text, including multiple adjectives and noun groups in their writing to create complex sentences.
Assessment Opportunities What to Look for:	Stage 1 Assessment task 1 – Observations and work samples from this lesson allow students to demonstrate achievement towards the following syllabus outcomes and content points: EN1-OLC-01 – communicates effectively by using interpersonal conventions and language to extend and elaborate ideas for social and learning interactions <ul style="list-style-type: none"> • use adjectives and adverbs to elaborate and/or provide some supporting details or justifications and express causal relationships.



About!

GETTING THE
BALANCE RIGHT FOR
GROWTH!



How do I meet needs of my students where they are at ? **The just right - not too difficult, nor too easy**

1. Have a clear understanding of what they are supposed to be learning in the lesson
 - LISC -Why are they learning it and where it fits into their learning
 - what students are asked to do ,to learn is so important.
2. Lesson needs to be an appropriate increased level of challenge. Students need to know what they are aiming for in today's practice, and how that moves them forward in what they practiced yesterday.
3. Lesson must support the diversity in student readiness and ability to master the content, skill and reasoning process at this level of challenge.

HOW ?

Planning for the needs in your class

1. Formative assessment gathered in 3 ways

Observe your students - dispositions

Observe their work -samples CTJ

Observe students in the process of doing their work

How ?

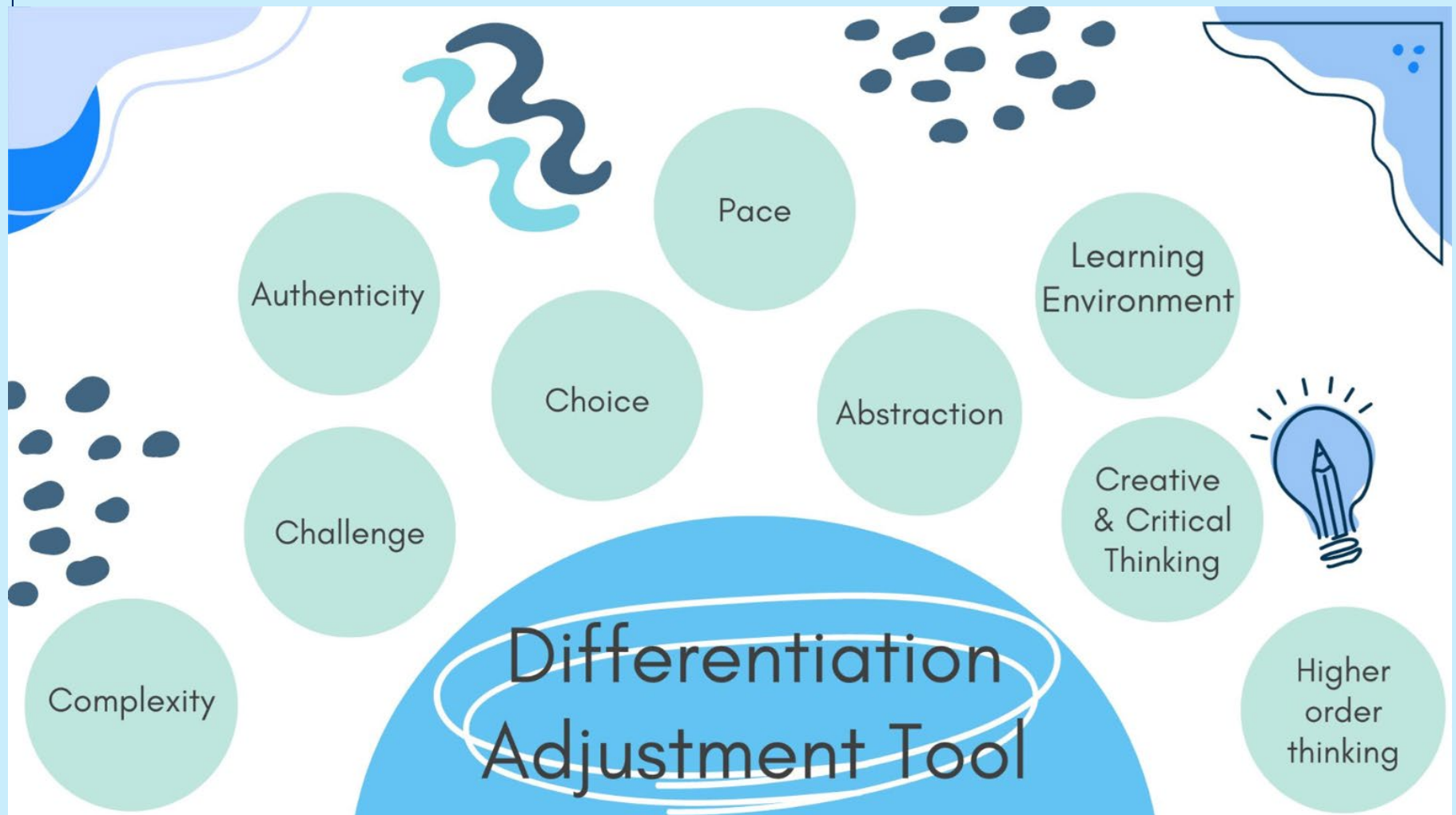
If most students are not up to the next content don't teach it.

Give students opportunities to do something that they clearly see develops their understanding and gives evidence of it.

Example here

Where to Next

Differentiation Adjustment Tool



My understanding of differentiation ?

Is it challenging work?

*Am I applying my knowledge
of differentiation effectively?*

Is it engaging work?

Let's ask the student

STUDENT SURVEY

MEETING THE NEEDS OF EVERY LEARNER

Your answers will be treated confidentially. Please answer each question as accurately as you can.

Thank you.



Question	Never ☹	Rarely	Sometimes	Often	Always ☺
My teachers make me feel that they really care about how I feel.					
Our class is always busy and doesn't waste time.					
My teachers have several good ways of explaining things so that I can understand what I need to learn.					
I learn a lot almost every day and I learn to correct my mistakes.					
I like the way in which we learn in my classes.					
My teachers respect my ideas and suggestions.					
The comments that I get about my work help me to understand how to improve.					

Data Analysis

Data analysis:

Question	Never	Rarely	Sometimes	Often	Always
1. Care	0%	0%	1%	93%	6%
2. Control	0%	0%	6%	89%	5%
3. Clarify	0%	0%	7%	90%	3%
4. Challenge	0%	2%	7%	82%	9%
5. Captivate	3%	5%	10%	75%	7%
6. Confer	0%	3%	9%	85%	3%
7. Consolidate	2%	3%	7%	81%	7%



What does data say?

**Not much variety of teaching
and learning techniques**

**not demonstrating
deeper understanding**

Engagement

Purple: Concept

Green: Core questions

Maroon: Basic questions

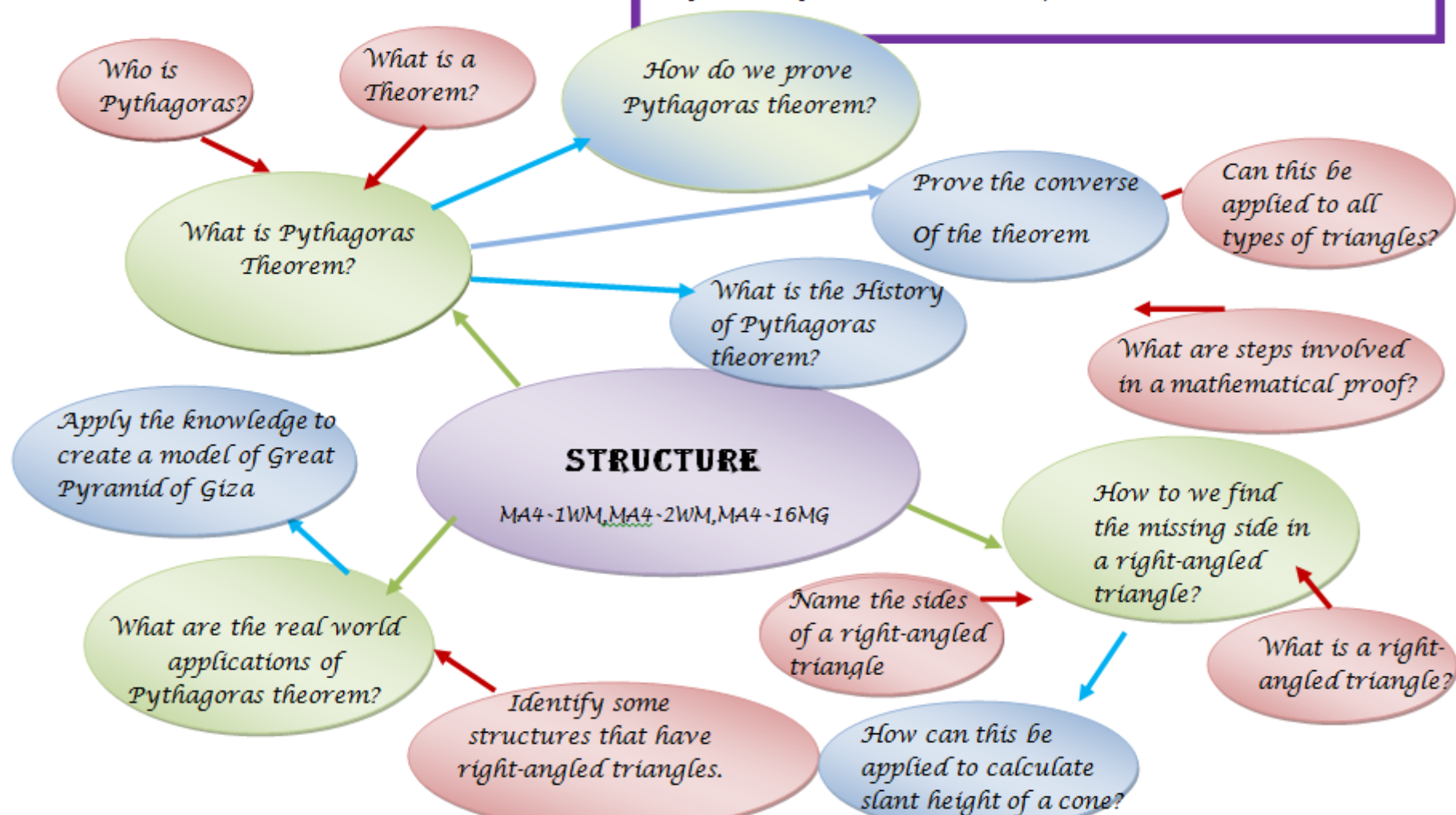
Blue: Extension Questions

A student:

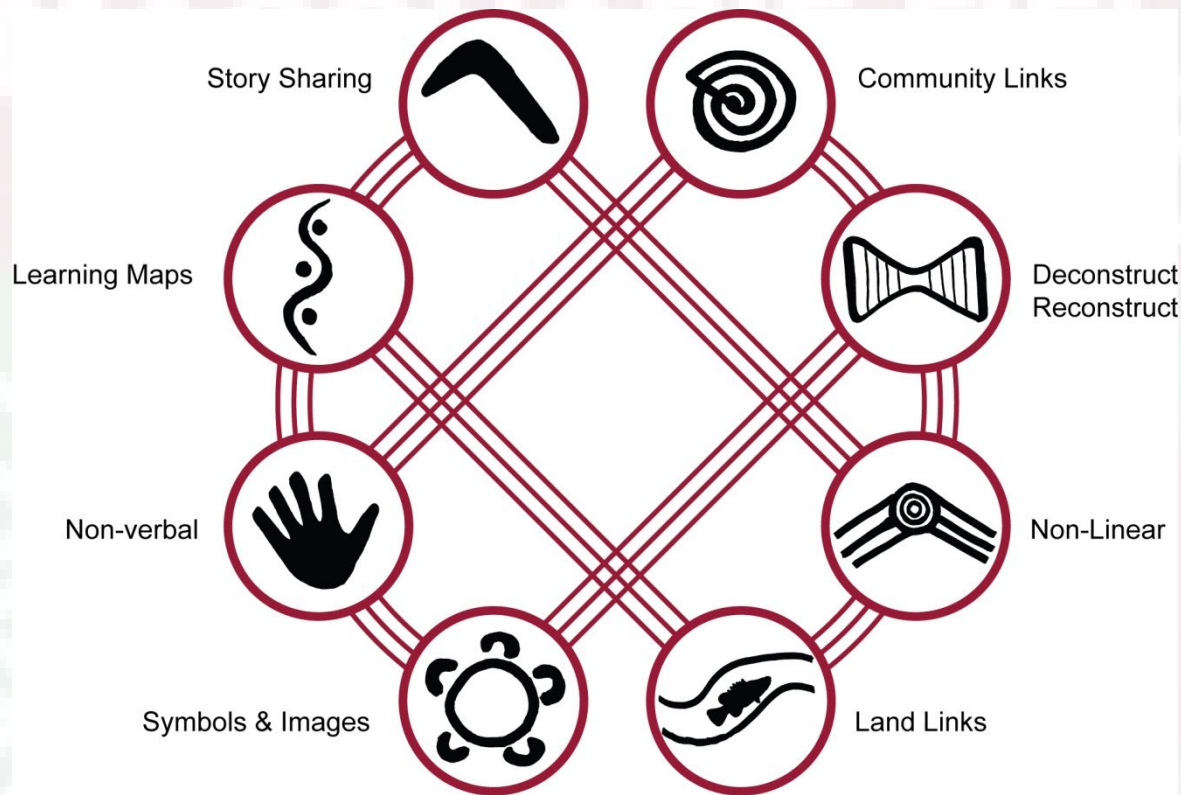
MA4-1WM: communicates and connects mathematical ideas using appropriate terminology, diagrams and symbols.

MA4-2WM: applies appropriate mathematical techniques to solve problems.

MA4-16MG: applies Pythagoras' theorem to calculate side lengths in right-angled triangles, and solves related problems.



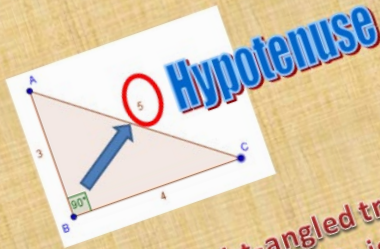
Differentiation Strategies



MACCOLLUMITE FIELDS

Differentiation Strategies : special needs (Autism)

Naming the Sides

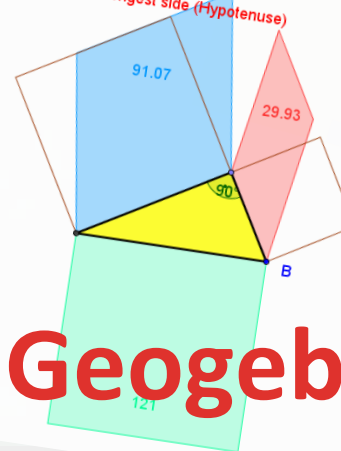


The longest side of a right-angled triangle which is opposite the right-angle is called the hypotenuse.

Demonstrate the Pythagorean Theorem

Think of each side of a right triangle as also being a side of a square that's attached to the triangle itself. (For example, $a \times a = a^2$.)
On the diagram below, show that $a^2 + b^2 = c^2$, by moving the two small squares to cover the area of the large square.

Pythagoras Theorem and Sides lengths
Relation of Short sides with Longest side (Hypotenuse)



Geogebra

☒ show squares on sides
☐ show Sides lengths
Use a slider to move the squares, in 3 changes the area of the triangle. What is special about the Sum of the Squares on the Short sides?

$$\text{Blue Square} + \text{Red Square} = 91.07 + 29.93 = 121$$
$$\text{Green Square} = 121$$

Success

Class Roll		Class										Semester										Assessment Record									
Class : Year 8 A		Home work		30 min		Per cent		Avg best tech		Half year		End of year		Ratio		Pytho		Pre test		Pyth		Length		Geo		Stat		Unit		11	
Name		30		15		25		50		50		30		30		30		30		30		30		30		30		30		30	
YEAR 8 MATHEMATICS		07		03		00		07		09		08		03		09		04		01		02		01		02		01		02	
8MATHS 3-8A		17		06		03		08		26		14		14		06		18		08		06		08		06		08		06	
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		26		14		06		10		28		29		40		10		24		08		08		08		08		08		08	
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High level
Engagement

HIGH effect size

Positive
Student
feedback

Pythagoras Pre-test:
Average = 8.26
Standard Deviation = 4.43

Pythagoras Post-test:
Average = 18.6
Standard Deviation = 6.05