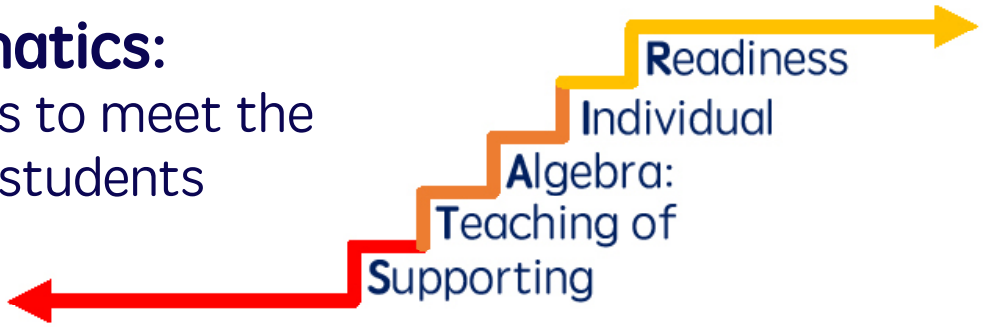
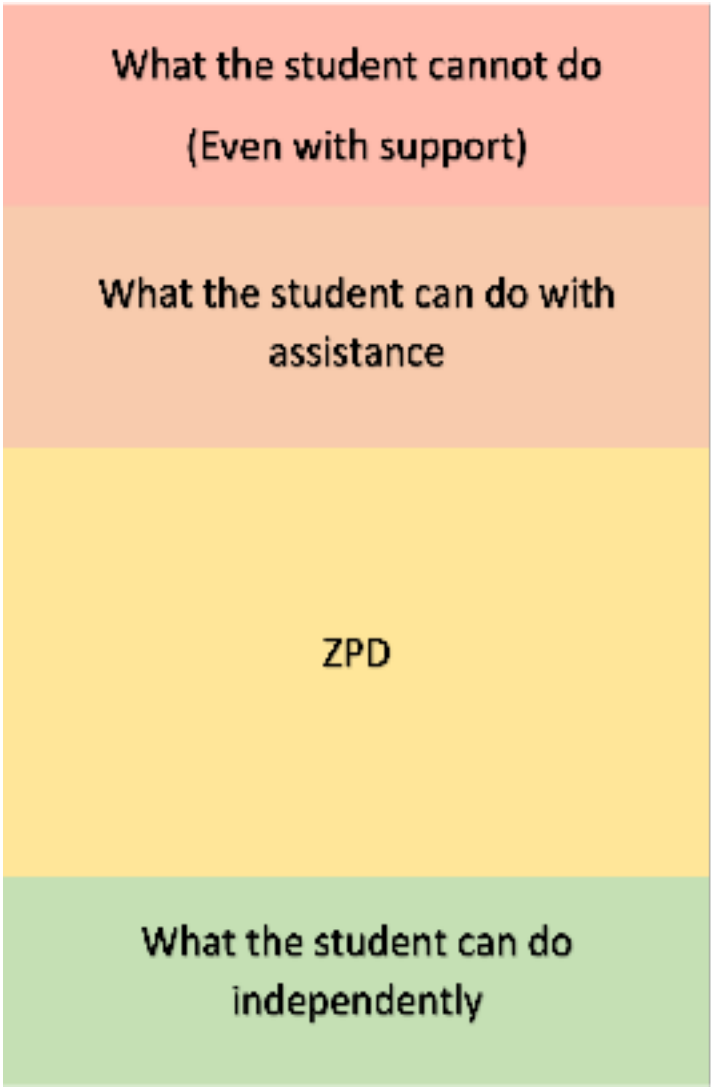
Ideas in Mathematics:

Individual strategies to meet the needs of individual students



Zone of Proximal Development (ZPD)

is described as the distance between a student's actual developmental level (independently) and the level of potential development (with guidance from adults or advanced peers).



Instruction in each student's ZPD is important, because it determines what students can do on their own, and in what areas they need the most support!

One effective way to meet individual student needs is through the use of scaffolded instruction!

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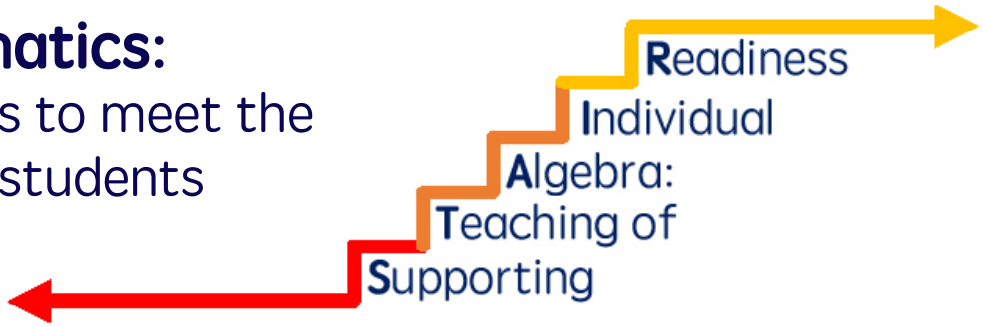

Scaffolding involves providing structure, guidance, and support during instruction that is faded over time as students become more independent.

Key Features of Scaffolding

- A complex skill is identified and broken down into manageable steps (task analysis)
- Skills are **sequenced** and built upon previously learned material
- **Repeated practice** with problems and examples that **gradually progress** in complexity
- Teacher modelling, demonstrations, and correctly completed examples are provided
- Prompting (verbal, visual) and checklists are utilized to help students recall steps and procedures, as needed, to complete the task
- **Systematic fading** of teacher support (modelling/ prompting) as students demonstrate they have acquired the skill.
- **Observations** are used to monitor student understanding

To meet the individual needs of your students you can scaffold:

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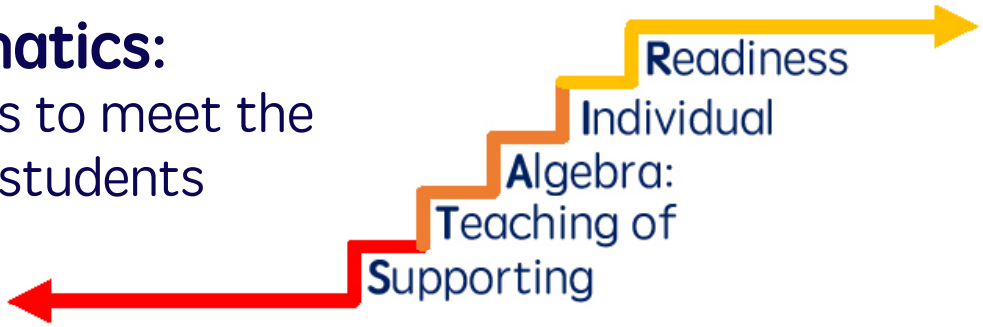
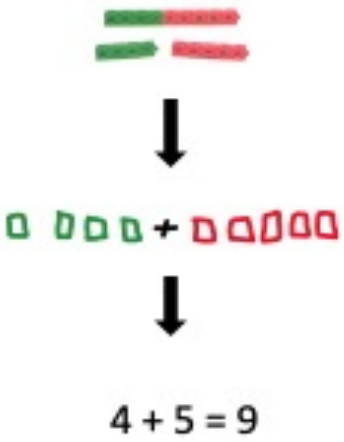


Scaffolding Type	Strategy	Explanation	Example
Content Scaffolding	Activating Prior Knowledge	Start with familiar concepts and ask students to use prior knowledge about a concept and apply it to a current problem.	You can do this by: 1. Using a familiar strategy and applying it to the task at hand 2. Making the new information relevant to the student's life, culture, and experiences 3. Tapping into student interests
Material Scaffolding	Visual Representat-ions	Visual representations can be used to make abstract concepts more tangible! The Concrete-Semi Concrete-Abstract (C-S-A) sequence is a three-part process in which the teacher first uses concrete materials (e.g., pattern blocks, counters, unifix cubes) to model a concept,	

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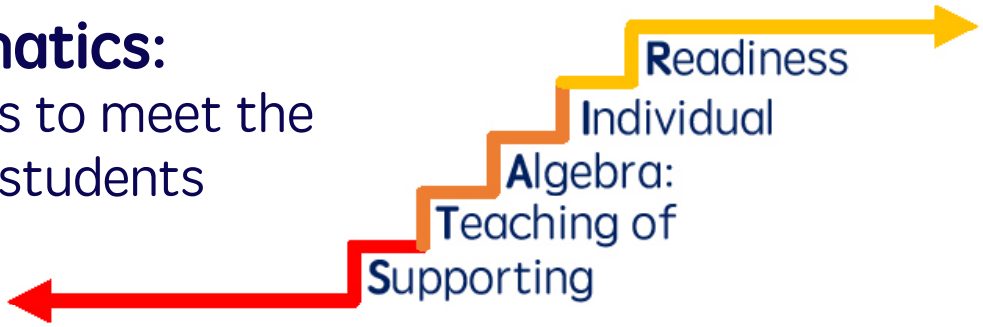

Scaffolding Type	Strategy	Explanation	Example
		then demonstrates the concept in semi-concrete terms (e.g., drawing pictures), and lastly in abstract terms (e.g., using mathematical notation or symbols) *Visuals should assist with task completion; NOT give students answers!	
Task Scaffolding	Prompting	Prompting helps to direct and remind students of processes or procedures to use during problem-solving -> Verbal Prompts: Spoken prompts that give explicit directions, ask questions, or provide reminders Visual Prompts: Writing out the steps of a procedure, creating a checklist, or using an anchor chart	**Questioning** What is the first step in solving this? **Procedural checklists:** ☐ Study the problem. ☐ Organize the facts. ☐ Line up the plan. ☐ Verify the plan with computation. ☐ Examine the answer.

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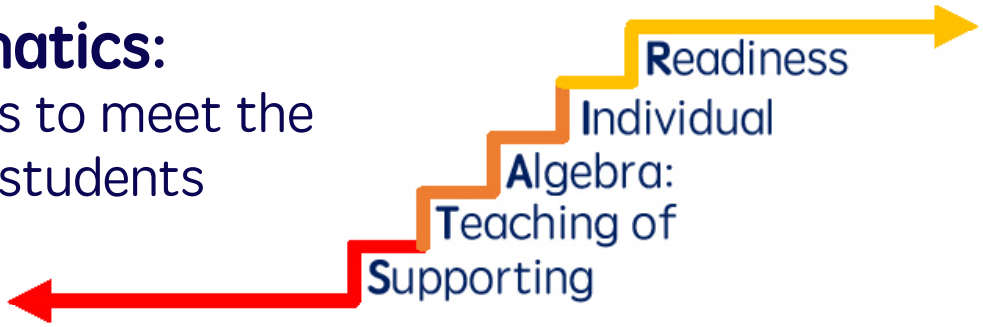

Remember: As students' proficiency increases, you gradually release responsibility