VIRGINIA DEPARTMENT OF EDUCATION

# Mathematics Instructional EnhancementsDiverse Learners

## Make Mathematics Learning Visible

* Establish targets that address both content and connected language targets to support students in comparing, sequencing, justifying, explaining their thinking, etc.
* Provide multiple ways for students to communicate their thinking
* Use graphic organizers to help students connect their ideas (e.g., mind maps and Venn Diagrams)
* Draw attention to patterns and relationships in graphics and visuals
* Create and interact with [word walls](http://www.doe.virginia.gov/instruction/mathematics/resources/vocab_cards/index.shtml) and process and skill anchor charts, both teacher and student generated (e.g., provide solved problems with labels for each step)

## Use Graphics, Visuals, Manipulatives, and Motions

* Use multiple representations of concepts and models to supplement verbal and written directions
* Use (and encourage students to use) motion to support understanding and retention of new concepts and key terms
* Post visual displays to cue memory and support written language
* Encourage students to represent their thinking with pictorial representations and manipulatives
* Embed lined or graph paper within tasks

## Use Cooperative Learning Structures and Strategies

* Structure opportunities to share ideas and make meaning collaboratively
* Use strategies to support student engagement and mathematical discourse (e.g., number talks and talk moves)
* Use flexible and fluid grouping of students

## Support the Language of Mathematics

* Model the process of reading and making sense of word problems (e.g., “think-alouds”, “3-read strategy”)
* Explicitly teach mathematics vocabulary to support contextual understanding
* Provide sentence starters to support student communication of mathematical strategies, processes, and thinking

## Reduce Cognitive Load and Allow Processing Time

* Break tasks and prompts into smaller sections or consider organizing the text using points
* Use simple sentences and include only details needed to complete the task
* Minimize the number of questions that address the same skill or concept
* Reduce visual clutter and provide structured workspace
* Provide adequate thinking and processing time
* Provide flexible time frames for completing tasks

## Connect Learning to Students’ Backgrounds

* Make connections between mathematical ideas and representations with everyday life
* Craft tasks and prompts that connect with students’ lives and responsibilities
* Support conceptual understanding by inviting students from various cultures to share their strategies
* Facilitate opportunities for mathematical processes to be explained in student’s home language

*High expectations, asset-based thinking, and a growth mindset are key to student success!
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