

Wayside Schools Vision for Mathematics Instruction

Vision

At Wayside Schools scholars engage in rigorous, cognitively demanding mathematics. Scholars are mathematicians and develop critical thinking skills to enhance real-world problem solving abilities. Mathematics instruction is student-centered, hands-on and progresses from concrete representations, to the pictorial and abstract and examines the relationships between these representations to develop conceptual understandings. Through connected, aligned and purposefully planned instruction, scholars are prepared to excel in college and become empowered, global citizens.

Essential Elements

Discourse

"The ways of representing, thinking, talking, agreeing and disagreeing" -NCTM

Scholars will...

- Talk, write, record, question, and make determinations about mathematical ideas
- Formulate problems, explore, conjecture, and reason logically, to evaluate whether something makes sense

Teachers will...

- Engage every scholar in the discourse by preparing questions that lead to deeper understandings and carefully listening to all scholars
- Initiate and orchestrate discourse and to use it purposefully to foster student learning

Problem Solving

"Engage with challenging tasks that involve active meaning making and support meaningful learning"- NCTM

Scholars will...

- Engage in daily non-routine, challenging problems solving
- Continually ask themselves, "Does this make sense?" and think about what a reasonable solution would look like before solving

Teachers will...

- Create opportunities for scholars to use varied approaches and strategies to make sense and solve tasks
- Implement mathematically meaningful tasks that challenge all scholars, gauging the level of appropriate productive struggle

Fluency

"Allows students to focus mental energy on flexibly approaching and thinking through problems, rather than steps to perform an accurate calculation"- Achievement First Charter Network

Scholars will...

- Engage in daily practice, developing skill and fact fluency to calculate efficiently and accurately
- Build on conceptual understandings to develop mathematical fluency

Teachers will...

- Use concrete and visual models to support scholars in creating their own numeracy methods
- Monitor and intervene daily as scholars progress in fluency

Flexible Reasoning

"Students become competent users of the language of mathematics and begin to use it as a way of thinking"- Making the PYP Happen

Scholars will...

- Demonstrate flexible use of strategies, identifying the best method for specific situations
- Scholars develop resilience and perseverance through mathematics and apply these habits in diverse scenarios

Teachers will...

- Celebrate grit, by helping scholars view productive struggle as an essential part of learning
- Purposefully create opportunities for scholars to make connections and identify patterns in mathematics and beyond

Intellectual Preparation

"In any classroom, there should be evidence that the teacher knows the big idea of the lesson, has crafted a culminating question or task that directly gets at the big idea, has pre-planned an exemplar response, and has thought through student misconceptions." -Achievement First Charter Network

Scholars will...

- Participate in engaging instruction that is planned, succinct, aligned and builds upon previous learning

Teachers will...

- Anticipate and respond to scholar needs by utilizing data, curricular documents, standards, and end-of-year goals to create daily, scaffolded objectives.
- Create a detailed instructional plan that reflects the purposeful selection and alignment of exemplar problems, anchor charts, vocabulary, multiple representations, and manipulatives to meet the needs of every scholar.