

# ALGEBRA 1

Houston A+ Challenge

2017-2018

## Mathematics Lesson Study

Effective practices in classroom instruction.

Content development designed to build relational thinking, explore activities and lesson topics which outline the importance of Algebraic reasoning and how it builds to connect from students' primary learning.

- **Writing and Solving Linear Functions, Equations**  
Building on what students learn in middle school, discover ways to engage in mathematics through context, intriguing visuals and problem solving with linear equations.
- **Writing and Solving Inequalities**  
Why do you "flip" the sign when you are solving inequalities? Building on Linear Relationships and Equations, discover why and how properties in mathematics play a crucial role in a conceptual understanding behind inequalities.
- **Systems of Equations**  
Does Standard form of a line continue to be a struggle for your students when solving systems? Through problem solving study to build an understanding in context without changing linear functions into slope-intercept form.
- **Connecting Linear Factors to Quadratics Functions and Equations**  
From the concrete to the abstract, work side by side with our coaches to engage in building polynomials, exploring linear factors through graphing and identifying the key attributes of linear factors and how they relate to quadratics functions.
- **Geometric sequences and Exponential Functions and Equations**  
Building an understanding of growth and decay from patterns

## Classroom Coaching

Coaching shoulder to shoulder with adults to increase pedagogical content knowledge.

Through lessons and activities we develop skills sets of teachers to meet the needs of the classroom.

## Summer

Be prepared in August by doing work with our coaches during the summer months. Set up your teachers for success when the school year begins.

*"Houston A+ Challenge has pricelessly impacted my teaching and effectiveness in the classroom and as a result, students are feeling fully empowered as I apply these skills in my daily lessons."*

*~ Shelby Powers  
Algebra I Teacher,  
Charter School*

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For more information, contact Tom Monaghan at [tmonaghan@houstonaplus.org](mailto:tmonaghan@houstonaplus.org)

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## Effective Classroom Practice

Smarter and stronger classrooms.

### Creating an Environment for Learning

Even the best lessons fall apart without a safe environment for learning. Build capacity in your teachers toward creating an environment where students can thrive and feel safe about mistakes and learning.

### Getting started with mathematical talk through rich tasks

How do you recognize a good task and determine if it will activate higher order thinking or not? Learn with our coaches to determine characteristics of good task and how to create them from your own resources. Alongside rich tasks, teachers will learn important teacher moves to get students talking in class, and what to listen for when they REALLY start talking.

### Vertical Alignment

How do the middle and elementary standards support algebraic thinking? Study with our master coaches how to identify the gaps from lower grades and incorporate them into classroom routines.

*"Genius! The connections that were made during this professional learning has helped me become a stronger teacher which will make my classroom better."*

*~Katie O'Brien  
Algebra 1 Teacher,  
Spring Branch ISD*



Professionals collaborating to build shared craft knowledge and expand their tool kits in service of advancing student learning

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