



All City Tutor Training --Middle School Math--

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Your Facilitator

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Goals

What do you hope to get out of today's session?



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Let's Do a Number Talk!

What is 18×5 ?

Goals of a Number Talk:

- Think flexibly with numbers
- Reason and make sense
- Convince and question

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Let's Do another Number
Talk!

What is $7.6 - 3.9$?

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What are the BIG IDEAS in Middle School Math?

- 1) Ratios and proportional reasoning
- 2) Operations on rational numbers
- 3) Solving equations

How do we support students with these learnings?

Visual Models to Support Learning

Ratios and Proportional Reasoning

- Tape (or bar) diagrams
- Double number lines

Operations on Rational Numbers

- Number lines

Solving Equations

- Tape (or bar) diagrams & Number lines
- Algebraic Puzzles

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Percent problem with double number line

Manuel found a wrecked Trans-Am that he could fix. He bought the car for 65% of the original price of \$7200. What did he pay for the car? (Round to nearest dollar)

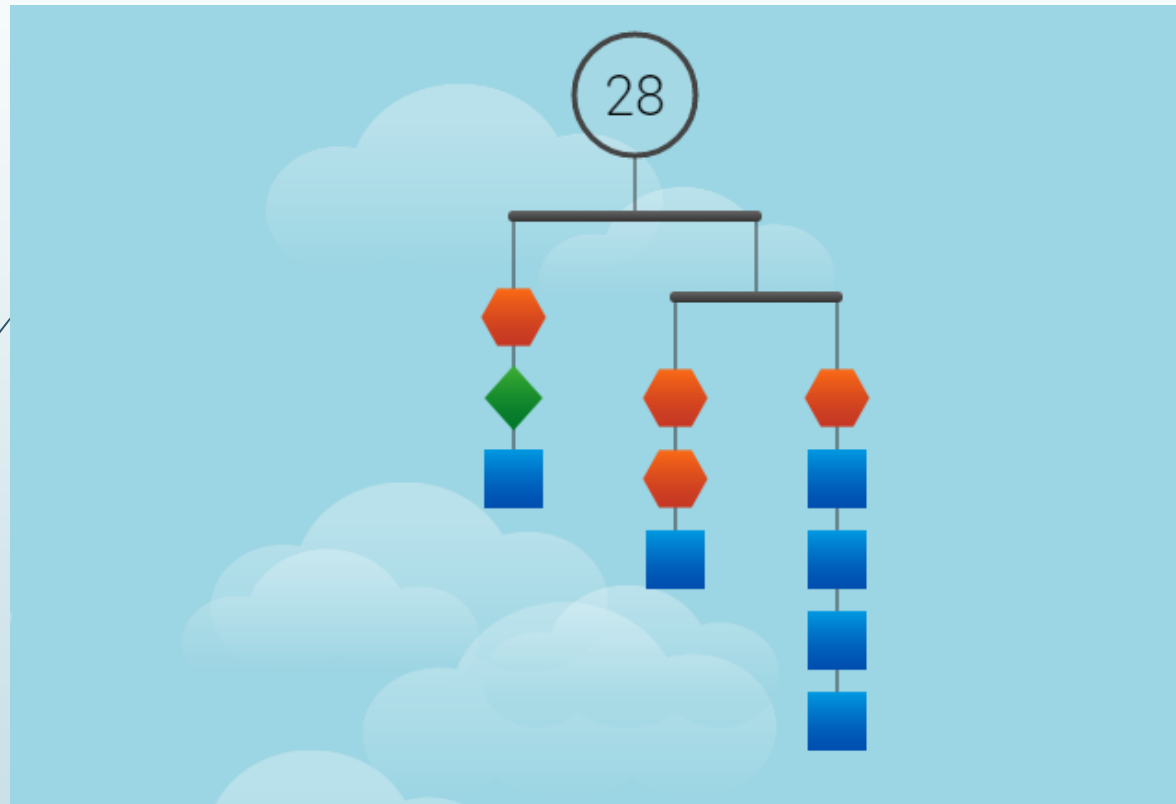
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Solving an equation using a number line

$$13 - 2x = x + 1$$

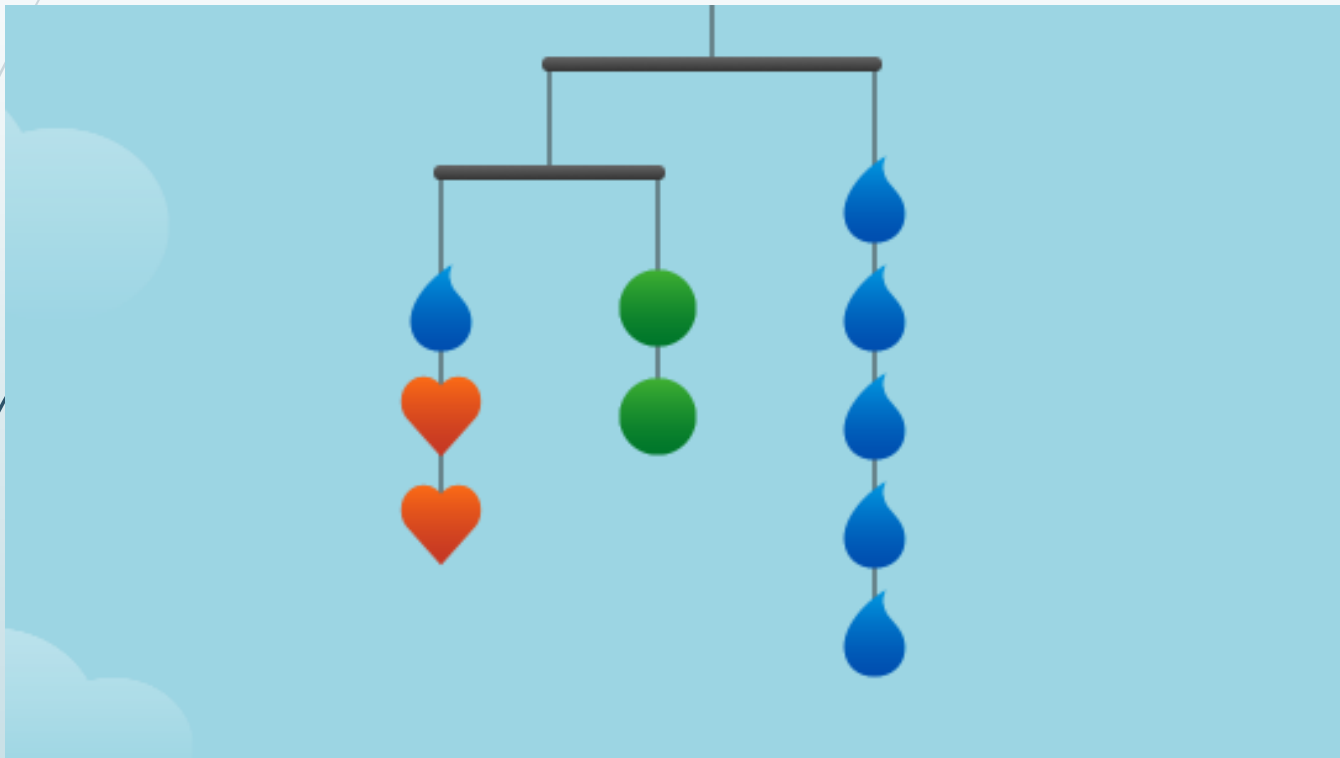
Shape Puzzle

(<https://solveme.edc.org>)



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Growth Mindset

Take two minutes to write down everything you know or have heard about the idea of “growth mindset”.

Fostering a Growth Mindset

Fixed Mindset

intelligence is static

- **Challenges** ... avoid
- **Obstacles** ... give up
- **Effort** ... no point
- **Criticism** ... deflect
- **Success of others** ...
feel threatened



Growth Mindset

intelligence is developing

- **Challenges**... embraces
- **Obstacles** ... fortitude
- **Effort** ... work hard
- **Criticism** ... learns
- **Success of others** ...
celebrates



Growth Mindset for Mentors

A 60 minute online module

www.mindsetkit.org

Topic 1: What is a Growth Mindset?

Topic 2: [How Mentors Support Growth Mindset](#)

Topic 3: Key Strategy: Using Growth Mindset Language


Topic 4: Key Strategy: Reframing Challenges, Failures, and Mistakes

Topic 5: Additional Tips and strategies

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Growing in the Mathematical Practices

1. Make sense of problems and persevere in solving them
2. Reason abstractly and quantitatively
3. Construct viable arguments and critique the reasoning of others
4. Model with mathematics
5. Use appropriate tools strategically
6. Attend to precision
7. Look for and make use of structure
8. Look for and express regularity in repeated reasoning

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Using Growth Mindset Language and Fostering Math Practices

You and a partner will work on a math problem. One partner plays the student, and the other plays the tutor.

Students have not yet developed a growth mindset, so the tutor will help the student reframe things in growth mindset language. Use your handouts to help you!

Questions?



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THANK YOU!

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