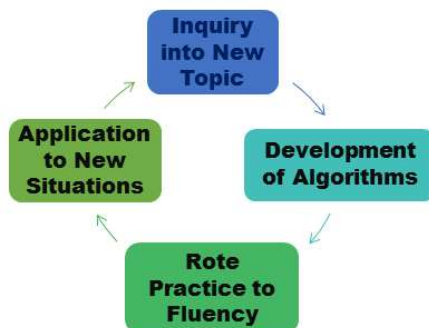




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| John Kaminsky | Office: TALI208 |
| Email: jkaminsky@eastsideprep.org | Free Periods: A, F, H |

Our math discipline believes that Math is accessible, intriguing, creative, beautiful, and useful.

Our math discipline believes in the following mathematical learning cycle:



We characterize the EPS approach to math as a balance of inquiry and direct instruction, emphasizing depth over breadth, and learning in a social and collaborative environment.

Students are meant to struggle, to discover... This is how they learn. To challenge but not overwhelm. "Productive struggle" is time well spent. Productive struggle is a means through which students can learn if they continue to work through it.

| How? <i>Our Current Practice</i> | Why? <i>Our Reasons</i> |
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| Inquiry First, Then Algorithm: <ul style="list-style-type: none"> We introduce topics with discovery and inquiry before moving on to efficient algorithms. | Inquiry First, Then Algorithm: <ul style="list-style-type: none"> Inquiry links past learning to the new topic and can generate curiosity. Inquiry develops large-scale, conceptual understanding to build long-term math understanding. It sometimes involves a physical/visual model. Once students have developed algorithms for use in the topic, rigorous practice follows. |
| Memorization: <ul style="list-style-type: none"> Students will not be given timed tests on math facts (such as multiplication facts). We teach that problem solving will be easier if they do memorize certain things, but in general, we do not test for memorization. Students memorize it by using it. Those who do the homework thoroughly will learn the material to a point of automaticity. The formulas will be at their fingertips, even if they have a formula sheet to remind themselves. Students are not required to memorize formulas. Formulas will be accessible for assessment purposes. | Memorization: <ul style="list-style-type: none"> Memory is limited. In order to learn many math topics, a strong math student will consolidate seemingly separate concepts into one shared idea. Analogy: After reading several books in the same genre, one can synthesize information about that genre. Students develop conceptual understanding, instead of memorizing the steps of how to solve a problem. Developing a conceptual understanding is important for more sustainable, longer-lasting understanding. It allows students to build an understanding of more and more advanced math concepts as they progress. The act of creating a notes sheet is an excellent study tool and an excellent habit. |
| Social aspects: | Social aspects: |

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| <ul style="list-style-type: none"> • Communication. Collaboration. Critical Thinking. Creativity. • Sharing and feedback of solutions is valued in addition to getting an answer individually. • Varied seating and grouping arrangements throughout the year • Increasing student voices: small group discussions as well as whole-class discussions | <ul style="list-style-type: none"> • Explaining (written and verbally) your work to peers increases one's own understanding of a concept. • Communication is of great importance in math: written work, visual representations, and spoken explanations of ideas. • We value the progress of the class as well as the progress of the individual. • The more ideas, the better. Synergy is created through class sharing thoughts and theories, multiple solutions, and common errors. |
| Homework: <ul style="list-style-type: none"> • Homework could be practice or an introduction to new material. -Practice homework is the first or second time that students are practicing a concept on their own. -Introduction to new material could involve exploring, reading, or watching a video. • Homework may be specific problems, or there may be a choice of activities to review the material from class. • Answers are made available at some point- and it is the expectation that students check their work against it. • Homework is typically graded based on completion. • In general, students are expected to write out their answers to homework problems- either physically or digitally- and then submit to Canvas. | Homework: <ul style="list-style-type: none"> • Homework is the time to make mistakes. We don't want to penalize students' errors at this point in the learning process. • When they sit down to do the homework, some students may need to review notes and materials from class. Research has shown that students who persevere through homework struggles develop better understanding. |
| Assessments: <ul style="list-style-type: none"> • Over the course of a trimester, some testing will be direct application, similar to what has been seen in homework and class, while other problems will be application of material to new situations or contexts. • Our tests are developed such that prepared students should complete it. • In-class tests and take-home assessments can have challenging questions, beyond rote work, a departure from exactly what they have done in class, because students have access to notes. • More creative problem-solving and application to new contexts is tested on take-home assessments or projects, which are untimed but due on a certain day. | Assessments: <ul style="list-style-type: none"> • In-class assessments often mirror the college model and college admissions process, preparing students for the next phase of their education. • Our goal is not to assess for speed. We are constrained by class time but try to accommodate for every learner. • We believe in testing complex problems to build flexibility that can be applied in novel situations. Take-home assessments typically take more time than is available in a single class period. The creative process is not necessarily accomplished in one sitting. |

If a student needs support, here is a list of what you can encourage them to do:

- Refer to the Class Notes
- Meet with me/email me
- Ask a classmate
- Use your resources (e.g. the internet)