



CAPITOL
HILL
DAY
SCHOOL

GRAY MATTERS (Dec2016)
By Jason Gray, Head of School

A little more than a year ago, Tom Sellevaag and I hosted a parent coffee during which we shared Capitol Hill Day School's approach to teaching mathematics and how our approach aligns with the School's mission and philosophy. Following the coffee, I wrote a Gray Matters piece, Teachers Learning/Learners Teaching, Mathematics at Capitol Hill Day School, summarizing our presentation. As we begin the second trimester of this school year, I'd like to share an update regarding math pedagogy and curriculum at Capitol Hill Day School.

Two key areas of focus throughout our program and across disciplines are problem solving and collaborative learning. This year, both have been a point of emphasis in our math program.

Problem-Based Tasks

Problem-based tasks are instructional devices, built around a single problem that allow students to explore important mathematical concepts and skills in a way that supports inquiry, discussion, and collaboration. Problem-based tasks are used to introduce concepts, not just practice them. Introducing mathematics in this way provides an opportunity for students to build conceptual understanding. Problem-based tasks require students to apply their current understanding and skills in new contexts that highlight core math concepts.

The three main components of a problem-based task are:

Part 1: The Introduction - setting up the task, preparing students to work, providing any necessary context or background information

Part 2: Work Time (AKA "The Grapple") - students work independently and/or collaboratively, teacher circulates to provide guidance

Part 3: The Debrief - whole-group sharing of strategies and answers, teacher ensures that discussion coalesces around important math concepts and skills

Collaborative Professional Development

- In August, Tom Sellevaag led Capitol Hill Day School early childhood and elementary teachers in a workshop focused on the implementation of math problem-based tasks.
- In November, fourth grade teachers Pearl Bailes and Hannah Williams shared and reflected on their work with math problem-based tasks with colleagues at the Capital Area Progressive Schools Conference.
- In February, Capitol Hill Day School will host math teachers from the Association of Independent Maryland and DC Schools for a problem-based task professional development workshop conducted by Tom.

As Head of Capitol Hill Day School, it is my sincere privilege to work with a wonderful faculty. As in other areas of our program, the ongoing, reflective work with math pedagogy and curriculum is a clear illustration of faculty commitment to continued growth and development, and to creating a teaching and learning environment with the best interests of children as the clear point of focus.