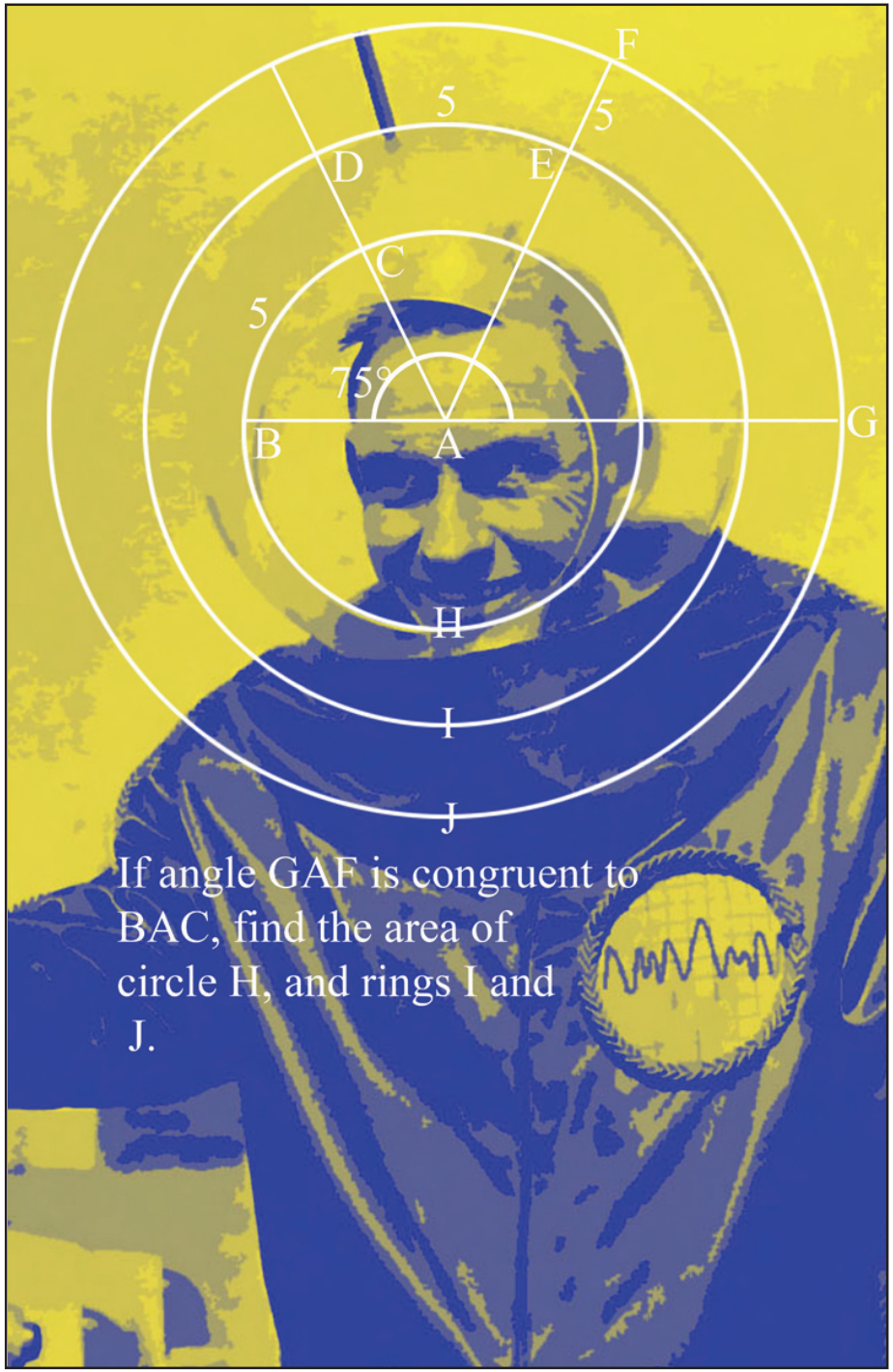

The Sangak{You} project

Daisy Sharrock, Math, High Tech High
Jeff Robin, Art, High Tech High

Sangaku or San Gaku (算額) are Japanese geometrical puzzles on wooden tablets, created during the Edo period (1603–1867) in Japan by members of all social classes. The finished puzzles were hung in Buddhist temples and Shinto shrines as offerings. Around nine hundred still exist in Japan today. Our students applied their knowledge of Euclidean geometry and mathematics, along with new geometric tools, to create their own artistic geometry puzzles. These now hang in High Tech High as offerings to peers and visitors.

Teacher Reflection

I wanted students to work with their existing mathematical skills to create and solve their own questions. I also wanted them to get stuck in situations where they had to learn new geometric tools to advance their puzzle. Finally, I wanted to integrate mathematics with art. Both require mastery of a collection of tools to communicate original creative thought. We experienced an intense month of drafts and revisions, with repeated sessions of peer and teacher critique. The finished puzzles are beautiful examples of student learning, and the pride of accomplishment throughout the team is palpable.

—Daisy Sharrock

Student Reflection

Coming up with a Euclidean geometry problem was one of the most challenging things I have ever done. Yet it was fun and taught me a great deal. I learned how to better solve problems, and I had to use all of my creativity to come up with a finished, challenging puzzle. I changed my puzzle idea twice, and when I finally came up with a good one, I had to take time to solve it myself. I feel this has been the best project I have ever completed in math. It was engaging and challenging, and I really learned about the geometry that was in my puzzle.

—Emma Jackson, 10th grade

To learn more about this project and others visit www.hightechhigh.org
and Daisy Sharrock's and Jeff Robin's digital portfolios at
http://staff.hightechhigh.org/~dsharrock & http://staff.hightechhigh.org/~jrobin

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