FROM STEM TO STEAM – Building innovation and wonder at IGS

Albert Einstein believed it was imagination rather than knowledge that encircles the world. Music was Einstein’s refuge and his inspiration. He thought in music and daydreamed in music. He played the piano every day.

The list of scientist-artists is long. Galileo was a poet. Morse was a portrait painter. Leonardo da Vinci was the ultimate Renaissance man and polymath.

Imagine if we could bridge the gap between mathematics, science and the arts that often shapes narrow ways of thinking about student learning preferences.

Enter STEAM. This year we want to push into the STEAM space – science, technology, engineering, the arts and mathematics – STEM plus the arts.

A STEAM project is a project in imagination - elegant patterns, new ways of thinking about how things work, teams sharing new technologies and applying them in novel situations, a growing sense of empowerment, awe and wonder.

Immersing students in STEAM projects at a young age could spark their curiosity, engage them creatively, push them intellectually, build their appetite for innovation, enhance their capacity to think flexibly, inspire them.

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Our inaugural IGS STEAM Innovator is Melissa Silk. Mel is the former Head of Design and Technology and in that role she established cross-curricular relationships with members of the IGS community, with designers and with academics from UTS, Sydney and MIT.

Mel also forged a strong collaborative partnership with Jane Martin, Head of Mathematics, and together they created...
Thinking Hyperbolically, a maths/art/design course that saw students explore mathematical ideas and communicate them through visual design. Their work garnered interest from educators at IGS and beyond.

Mel and Jane are now working together again. In January, to celebrate the UN’s International Year of Light, they headed to New York to present at the National Museum of Mathematics (MoMath) on East 26th Street.

The workshop was called Winter Wonderlamp. Participants were invited to “join educators from the International Grammar School in Sydney Australia, in creating your own beautiful lamp using iterative paper folding techniques. Enjoy a math-maker mash-up of elementary symmetries, crystallography, origami, and light while learning about structure, strength, stability, and translations — an aesthetic experience not to be missed!”

Winter Wonderlamp was dubbed by MoMath as “the coolest thing ever to happen to Math!” Educators and children from around the world were taken on a journey into the wonder of mathematical form, engineering and light. We are now in discussion with MoMath to create exciting new STEAM opportunities for our students.

The first STEAM project at IGS in 2015 will see Mel create a Maker Space for primary school students, giving them opportunities to share, create and learn by doing, in a technology-rich innovative learning environment.

We want to be a pioneering STEM to STEAM school and I’m thrilled that bold educators at IGS will drive this type of innovation.

Head of Science Stacey Preston and Assistant Head of Mathematics Andrew Campbell are off to a STEM conference in mid-February. There they’ll share ideas about how to build the quality of science and mathematics teaching in the context of the Chief Scientist of Australia’s recent call for a coordinated national approach to STEM.

As we prepare our students for the world, STEM TO STEAM initiatives have the potential to draw different types of learners into inclusive collaborative projects that delight, inspire and build our students’ critical and creative thinking skills.

Shauna Colnan
Principal

Note: To find out more about maker movements and maker spaces follow the link to: http://makerspace.com.