 Maker force be with you!

Stage 3 STEM project – 5P action plan

Main contact/coordinator – Rebecca Stone (Teacher) James Dunn (Principal)

Purpose, product and process

What are you hoping to achieve (who, what, how)?

* Teachers
  + Teachers develop 21st century learners using ICT and STEM, through project based and inquiry learning programming and practices. Teachers develop integrated learning programs with rich STEM and ICT tasks linking with the General Capabilities framework in new curriculums
* Students
  + Students are engaged in innovative and challenging hands on activities and rich tasks in an integrated curriculum to think critically and creatively to find and solve problems, while maintaining a strong focus on literacy and numeracy. Develop collaboration skills by working in small groups, thinking creatively and technologically to build a character, gadget, vehicle or stage prop.
* Community
  + We will create 'communities of practice' within our school community and school networks. Build a stronger culture of engagement, responsibility and impact through professional learning in innovative pedagogy and ICT resources. We will be sharing with other STEM schools through community activity days with parents and experts.

Brainstorm your ideas with your colleagues (project outline).

Inquiry question

What does STEM mean for the future of storytelling? Space Maker Wars!

Is technology changing the way stories have traditionally been told? What will coding platforms like Scratch and open hardware, like Little Bits, do for storytelling? How can new technology impact the creative process for students to invent stories?

We have a Years 4/5/6 class that are highly engaged in the Star Wars stories. We have a Visible Learning project this year based on creative writing. We will have finished an introduction on coding using Scratch in Term 2, programming their own interactive stories. We are in the process of purchasing iPads for students to create the movie of the narrative.

* Design thinking and open ended tinkering to sketch, create, build and test a droid character in a Maker challenge
* Encourage integration of Art plus Design equals STEAM
* 3D printer to create characters or parts of a character
* Use Little Bits as a tool to inspire creativity to have a moving character, gadget, vehicle or stage prop. They will be used as a tool that stimulates storytelling and imagination.
* Film-making- work collaboratively as a class to produce a movie using digital media tools
* Creative Writing -work collaboratively as a class to write a narrative based on a Star Wars setting and characters. Story-boarding and storytelling.
* Backward map the learning outcomes across key learning areas

Identify what is needed to complete the project (professional learning, external, resources …)

STEM and ICT-Coding

Purchase resources and set up infrastructure in technologies involved

* IPads- setup with iMovie, Garageband, Veescope or Chromakey, animation apps
* Little Bits- Gizmos & Gadgets Kits
* 3D printer- buy or loan (TBA)
* Makerspace craft materials -coloured paper, Styrofoam balls, glue dots, paper towel tubes, googly eyes, straws, craft sticks, etc.
* Green screen

Professional Learning and Reflection Time

Support professional development and networking opportunities that focus on the implementation of the project.

* 3D printing design workshop
* Casual relief days to cover planning days, activity days and sharing day eg. Scarborough PS- the students learning with Little Bits.

Practice

How will this inform/transform practice?

* Teachers develop integrated learning programs with rich STEM and ICT tasks linking with the General Capabilities framework in new curriculums and integrate other Key Learning Areas
* Quality educational outcomes are supported and enriched through STEM and technology guided inquiry, intrinsically motivating high achievement and success for students.
* Students working confidently with STEM and ICT to showcase their projects.
* Reported increased levels of student, staff and community engagement in STEM and ICT activities.

Future planning

Term 1

Research STEM ideas

Milestone 1- Action Plan submitted

Term 2

Purchase of resources. Class begins to familiarise themselves with Little Bits.

Teacher to write unit with support of principal.

Planning further with support of Tanya & Katherine.

PL time allocated

Visits to other STEM schools to share practice.

Term 3

Space Maker Wars begins! STEM unit of work taught.

PL in staff meetings

Mid-term milestones evaluation

Term 4

Sharing of project-Community activity day and celebration

Feedback survey and Evaluation

| Expenditure | What/who/when | Total |
| --- | --- | --- |
| Relief days @ (approx.) $400 per day | James- 4 days | $1600 |
| Professional learning/course fees | Mac ICT -$245 3D Printing | $245 |
| Hardware/equipment | Little Bits- Gizmos and Gadgets Kit $315 Fishpond  <http://www.ebay.com.au/itm/Littlebits-Gizmos-Gadgets-Kit-/172137095223?_trksid=p2141725.m3641.l6368> – Approximately $240  Base Kit $194 Fishpond  Space Kit $270  3D printer approx. $700 | $2000 |
|  | Maker craft materials | $100 |
| Community Activity Movie Celebration | Event- Invites and catering | $55 |

Total cost $4000