

# Katrina Axford

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Wirreanda Secondary School



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## EDUCATION

# EMPOWERING EDUCATORS IN EXPERIENTIAL LEARNING



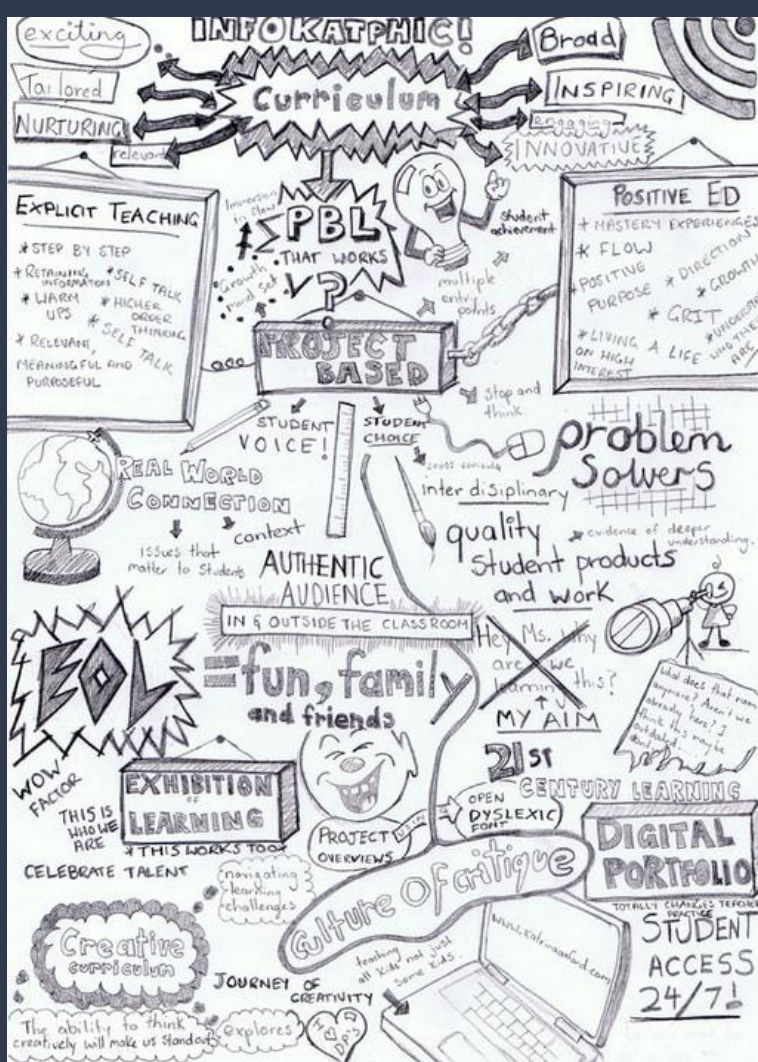
**Learning Intentions:** To explore how works of art can be prompts for STEM programs?

- Introduction (20 minutes)
- Gallery Tour (30 minutes)
- Form or Function activity (40 minutes)



Boxing equations

# My Story



## The 'could we should we' project

Investigating

# GMOs & Cloning

Using the power of Art and Media to question the ethics of scientific progress

Year 10 Science and Visual Art  
Ms. Bolyshniak and Ms. Axford



**BOXING EQUATIONS PROJECT**  
YEAR 10 MATHS & VISUAL ARTS  
MR. RANIERI AND MS. AXFORD

Being a conceptual artist means that all of the planning and decisions are made before the execution of the piece. The idea becomes the machine that makes the art. It is the concept rather than the art piece itself that is important. The artist acts as an architect, designing a plan that can be followed perfectly by anyone because the directions are based on mathematical concepts. – Sol LeWitt and HTW

**Project Overview**

- The aim of this project is for you and your classmates to develop Mathematical instructions that will create a sculptural art piece for the school. The sculpture will be displayed in the school grounds and will represent your knowledge and understanding about linear equations in Maths and how anyone can recreate this artwork using the instructions.

## THE WALLZ RULZ PROJECT

YEAR 10 MATHS & VISUAL ARTS  
MRS. THOMAS AND MS. AXFORD



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**PROJECT OVERVIEW**

- THE AIM FOR THIS PROJECT IS FOR YOU (THE MATHEMATICIAN AND ARTIST) TO DEVELOP AND DEMONSTRATE AN UNDERSTANDING OF LINEAR RELATIONSHIPS BY CREATING A CONCEPTUAL ART WALL MURAL INSPIRED BY THE WORK OF SOL LEWITT. THIS PIECE WILL BE TRANSFERABLE AND WILL BE DISPLAYED AS A PROTOTYPE MODEL THEN TRANSFERRED TO A WALL MURAL IN THE COMMUNITY.

## The "Newtoons" Project

Year 10 Maths/Science/Art  
Ms. Axford & Mr. Tatyzo



**Project Overview**

The 'Newtoons' Project requires you to become a Scientist, Cartoonist and Animator all rolled into one. Using the knowledge developed in Science, Maths and Art you will create a series of cartoon drawings that will be animated into a short film, which accurately illustrates one of Newton's Three Laws of Motion. These short film animations will be played on the TV Screens around the school but also on their very own 'Newtoons' YouTube channel for the entire world to see.



## Year 10 Project Overview

# MY ELEMENTAL SUPERHERO PROJECT

## 10 & SCIENCE, ENGLISH AND ART

JATINDER SAROWA, SUZANNE VELZBOER, KATRINA AXFORD

**Project Overview**

For this project you will research, develop and create a superhero or character based on the characteristics of an element from the periodic table. In Science you will research your chosen element including its physical and chemical properties collecting all the information needed to develop a character description and storyboard scenario in English/Art. From this research and development you will then create concept art for a logo, superhero/character (design costume/figure) and storyboard scenario.

## PUTTING THE MO IN MOC



The 'Putting the MO in MOC' project is to date the most ambitious project that students of Mark Oliphant College have ever undertaken. The project posed the dilemma question: 'As students of Mark Oliphant College how can we acknowledge the 70th anniversary of the dropping of the atom bomb on Hiroshima?' Students answered this question by using Art and Drama to design, write, and perform a play from scratch. Working with teachers across subjects was vital for the play to be historically and scientifically correct. The Visual Arts students also explored traditional Japanese art-making techniques to create murals and lanterns for the drama performance.

STEM THINKING  
+  
ART....DESIGN THINKING

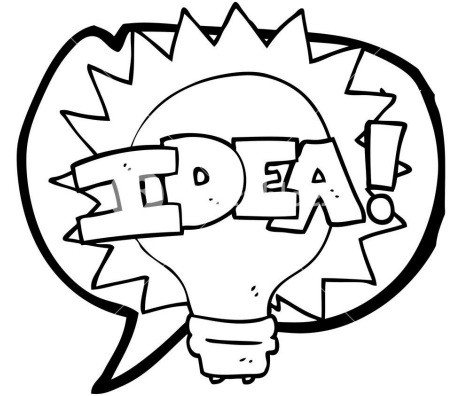
**WHY?**

# The 'Form or Function' challenge

5 x Newspaper sheets

2 minutes

5 x manipulations



**Challenge:** Using newspaper, masking tape, and scissors, build a chair to hold one member of your team at least 10cms above the ground for 5 seconds. No body part may touch the ground during this time.

**Time:** 20 minutes

In addition to newspaper, magazines can be an added material. When the challenge is presented, students will have many questions. Inform the class that questions can only be asked once the challenge begins. At this time, only one member per team can come to you with a question. Part of this challenge is to ask the right questions to correctly define the constraints. Examples: Does it need to be comfortable? *Have you ever sat in an uncomfortable chair? (Probably)* Can it be a beanbag? *Is that a chair? (Yes)*

At the end of the design phase, have each group present their design to the class and conduct the testing. In addition to applauding teams that successfully complete the challenge, you can also recognize teams with most creative designs.

# THE 30 MINUTE CHAIR

Essential Question:

What matters more, form or function? Should it be form over function or function over form?

IDEATE

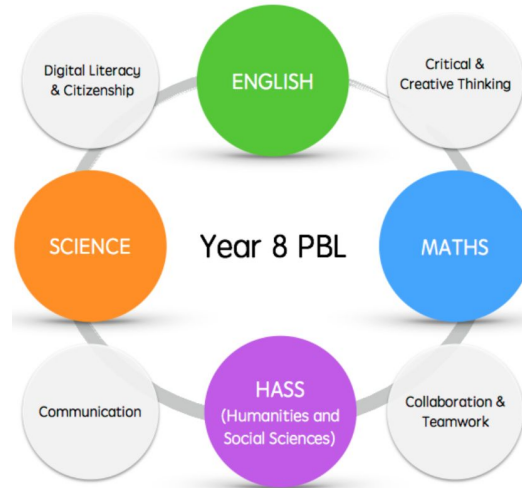
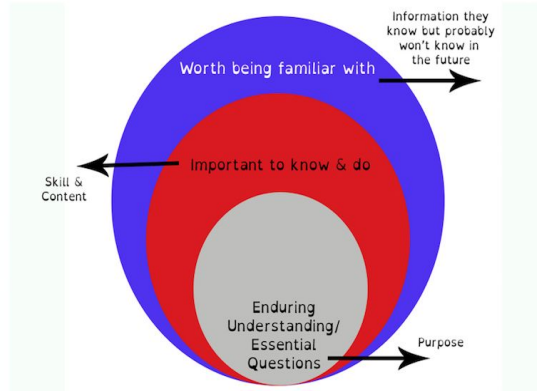
PROTOTYPE

PITCH

# Project Based Learning Wirreanda Secondary School

## HOW TO DEVELOP ENDURING UNDERSTANDING AND ESSENTIAL QUESTIONS

What do our students need to learn?



## VIA Classification of Character Strengths



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Project Based Learning (PBL) has become a key part of many successful learning environments in Australia and across the world. It takes students on a journey of creativity and exploration with real-world connections. Students learn problem-solving skills by successfully navigating learning challenges that are cross curricula, enhancing engagement and developing deeper understanding.