

## Thoughts on PBL

"With project-based learning, students learn by designing and constructing actual solutions to real life problems."

— George Lucas, Hollywood Director & Chairman of The George Lucas Educational Foundation

# What does a successful project look like?

Where to find resources?



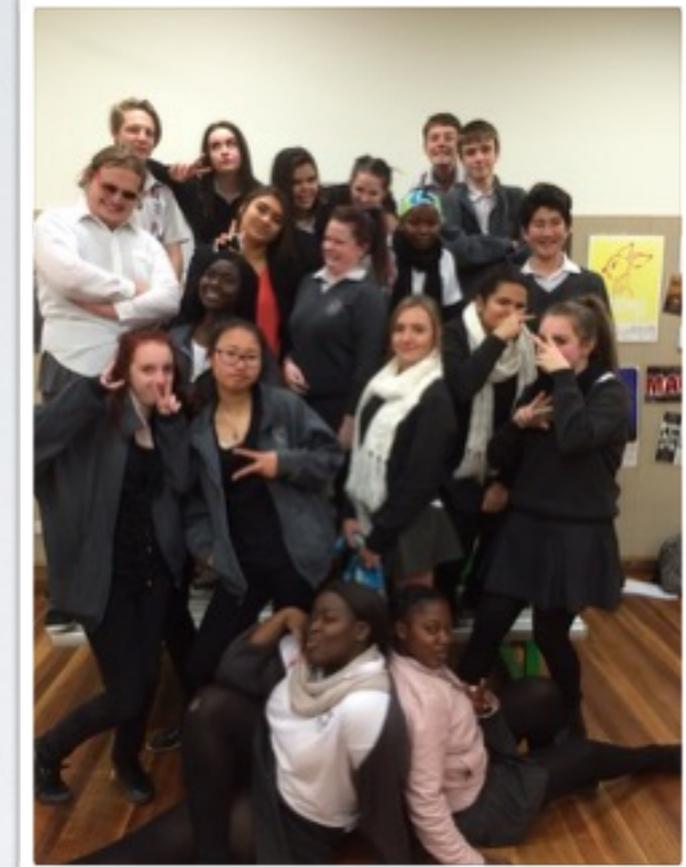
## Thoughts on PBL

"Project Based Learning is so important because it involves the whole child."

— LeVar Burton, Co-Founder & Curator-in-Chief of Reading Rainbow

# PUTTING THE MO IN MOC

Year 10 History, Science, English Drama and Art



# PROJECT OVERVIEW



## MOC Project Overview

### Putting the MO in 'MOC'

10 Drama, Science, History, English, Art

Ms Brett, Ms Axford, Mr Schult, Ms Winston, Mr Dissanayake and Mr Tatyzo

### Essential Question

As students of Mark Oliphant College how can we acknowledge the 70<sup>th</sup> anniversary of the dropping of the atom bomb on Hiroshima?

### Project Overview

- As a Drama student you will create a play about Mark Oliphant and the Hiroshima bomb.
- As an Art student you will create large mural backdrops and an installation piece with lanterns for the play.
- In Science you will investigate the advances in scientific understanding of the atomic structure and how has it developed the technology during the Manhattan Project to create the atom bomb. Then use your scientific knowledge on nuclear technology to evaluate whether we should use nuclear fission or fusion technology in the future.
- Then if you are a Drama student, record yourself explaining how the atom bomb works in your own words (podcast) to help write the script.
- or
- If you are an Art student draw a basic comic strip plan of how the bomb worked to develop further in the design of the murals.
- In History investigate who Mark Oliphant is and his role in the Manhattan project. In English you will write a biography about him.
- In History you will find out about the events that led up to the dropping of the bomb. Including what were the people in power role, why Hiroshima and how was it broadcast throughout the world after the bomb had been dropped.
- Drama/English students will write the play with Michael Mills from Heaps Good productions.
- Art/English students will write artist statements justifying their designs.
- This performance will be recorded and kept as a resource to teach other students about Mark Oliphant.

### Learning Objectives

- Learn about the atomic structure, stability of the nucleus, the nucleons (proton and neutrons), strong nuclear force, nuclear fission and fusion reactions ( $E = MC^2$ ).
- Learn about Mark Oliphant and Manhattan Project.
- Learn about World War 2 and the events that led to the end of the war.
- Learn about the role Arts have to play in highlighting issues and advocating for change
- Learn to create a performance from concept to final performance.
- Learn to create a variety of artworks for a performance space.

### Requirements (What you'll do!)

- Science: Atom bomb how it work (Drama: audio recording & Art: comic strip drawing)
- History: WW2 and write a biography on Mark Oliphant.
- English: Write a script (Drama), Write an anthology of haiku poems (Art).
- Drama: Rehearse and perform the final script to the school community.
- Art: Create and make 3 backdrops and individual lantern

### Final Product

- Recorded performance to be used as a teaching resource for the students at MOC and the wider community.
- Mural and installation piece to be displayed at MOC after the performance.

### Grading

See assessment feedback page

### Timeline

	Drama Students	Visual Art Students
Wk 6-8	Science & History: Who is Mark Oliphant? Science: What is Manhattan Project? How does the atom bomb work? Should we avoid using nuclear technology in the future? History: What were the events leading up to the dropping of the bomb? History: Information about the bombing? History: How was it broadcast throughout the world?	Teachers present project History: Who is Mark Oliphant? History: What were the events leading up to the dropping of the bomb? History: Information about the bombing? History: How was broadcast throughout the world? English: Haiku Poetry writing
Wk 9-10	History: Continue learning about WW2 Science: Create the Audio Vodcast English & Drama: Developing and writing script Working with Michael Mills (Thursday Week 10)	History: Continue learning about WW2 English: Haiku poetry writing Visual Art: The Lantern Project
Wk 11	Work experience	Work experience
Wk 1	Drama: Blocking/ Rehearsing	Visual Art: The Lantern Project Science: Revise what you learnt about the atom in year 9
Wk 2	Drama: Blocking/ Rehearsing Working with Michael Mills in Drama (Thursday Week 2)	Visual Art: Finish The Lantern Project and begin mural backdrops Science & History: Who is Mark Oliphant? Science: What is Manhattan Project? How does the atom bomb work? Should we avoid using nuclear technology in the future?
Wk 3	Drama: Rehearse	Science/Visual Art: Create a visual representation of how the atom bomb worked. Visual Art: develop mural design
Wk 4	Drama: Rehearse	Visual Art: Complete mural design
Wk 5-8	Drama: Rehearse	Visual Art: Paint
Wk 9	Film/Perform	Visual Art: finish painting
Wk 10	Exhibition of Learning	Exhibition of Learning

### Challenge / Extension Options

- Live Performance at the Exhibition of Learning

# Drama

## The 'MO in MOC' Project: Assessment Feedback

Name: \_\_\_\_\_

Identify and analyse the perspectives of people from the past (ACHHS190)

Biography of Mark Oliphant's life and achievements

Create imaginative texts that make relevant thematic and inter-textual connections with other texts (ACELT1644)

Scripts

Students develop and sustain different roles and characters for given circumstances and intentions.

Individual role development in rehearsals and performance.

Students perform devised and scripted drama in different forms, styles and performance spaces.

Create performance in groups.

Students collaborate with others to plan, direct, produce, rehearse and refine performances.

Work with your group to rehearse and perform.

Students will evidence the advances in scientific understanding of the atomic structure and explain how it led to the development in nuclear technology and link to scientific discovery of Atom Bomb during Manhattan Project (ACSHE192)

Students will evaluate the evidence and decide whether they should accept claims, explanations or predictions of using nuclear technology (ACSHE194)

Audio Vodcast

# Art

## The 'MO in MOC' Project: Assessment Feedback

Name: \_\_\_\_\_

Identify and analyse the perspectives of people from the past (ACHHS190)

Biography of Mark Oliphant's life and achievements

Create imaginative texts that make relevant thematic and inter-textual connections with other texts(ACELT1644)

Anthology of haikus written from both Japanese and Western perspectives.

Conceptualise and develop representations of themes, concepts or subject matter to experiment with their developing personal style, reflecting on the styles of artists. (ACAVAM125)

Evidence of Idea generation and Concept plans of Lantern

Develop and refine techniques and processes to represent ideas and subject matter (ACAVAM127)

Completed Lantern with Journal documenting process of making

Analyse a range of visual artworks from contemporary and past times to explore differing viewpoints and enrich their visual art-making, starting with Australian artworks, including those of Aboriginal and Torres Strait Islander Peoples, and consider international artworks (ACAVAR131)

Theory Assignment: What roles and responsibilities do Visual Artists have when it comes to highlighting an issue from the past and advocating for change

Students will evidence the advances in scientific understanding of the atomic structure and explain how it led to the development in nuclear technology and link to scientific discovery of Atom Bomb during Manhattan Project (ACSHE192)

Visual representation of how the atom bomb worked

Students will evaluate the evidence and decide whether they should accept claims, explanations or predictions of using nuclear technology (ACSHE194)

Scientific report

# Drama

# Art

Name..... Check List		
Tick off when you are done		<input checked="" type="checkbox"/>
Science	Listen and learn about the atom bomb worked.	
Science	Create a podcast exemplifying how the atom bomb worked and evaluating the evidence and deciding whether you should accept claims, explanations or predictions of using nuclear technology.	
History	Listen and learn about Mark Oliphant and his role in the Manhattan project.	
English	Write a draft biography about Mark Oliphant using word or pages. Email to Mr Schuit for critique and editing.	
English	Complete Biography remembering presentation is important.	
English/History	Email and print a copy for final assessment to Mr Schuit and Ms Winston.	
History	Listen and learn about WW2. The events important throughout the war and what lead up to the dropping of the bomb.	
Drama	Listen and learn about how the people of Hiroshima are commemorating the 70 <sup>th</sup> anniversary and how to develop a performance.	
English	Learn about writing scripts.	
Drama/English	Work with Michael Mills to develop play.	
Drama	Develop play.	
Drama	Rehearse.	
Drama	Perform.	
All subjects	Present Drama performance.	

Name..... Check List		
Tick off when you are done		<input checked="" type="checkbox"/>
History	Listen and learn about Mark Oliphant and his role in the Manhattan project	
English	Write a draft biography about Mark Oliphant using word or pages. Email to Mr Schuit for critique and editing	
English	Complete Biography remembering presentation is important.	
All subjects	Email and print a copy for final assessment to Mr Schuit and email a copy to Ms. Axford and Mr Tatyzzo	
History	Listen and learn about WW2. The events important throughout the war and what lead up to the dropping of the bomb	
Art	Listen and learn about how the people of Hiroshima are commemorating the 70 <sup>th</sup> anniversary and the lantern of peace project	
English	Anthology of haikus written from both Japanese and Western perspectives.	
Art/History	Use haikus poetry as inspiration to create individual lanterns, which will make an installation piece for the performance.	
Art	Design and make the lantern	
Science	Listen and learn about the atom bomb worked	
Science/Art	Draw a visual representation of how the atom bomb worked and the science behind it.	
Science	Write a scientific report evaluating the evidence and decide whether they should accept claims, explanations or predictions of using nuclear technology	
Art	Design Murals	
Art	Paint Murals	
All subjects	Present murals and lanterns in Drama performance	



# **Project Brainstorming**

## **Unbeautiful projects**

Think about

(HTH) What is your passion?

(MOC) What is your curriculum?

Use this as the inspiration for your project.

**Essential question  
that might frame the  
work or topic**

**Explicit instruction  
and  
skills needed**

# Product

**What might students  
build or make?**

**For example a poem,  
play or art piece that  
students can make**

**Who is the audience for  
this work?**

**NO dumpster projects ...**

**How can the projects live  
on?**

# Gallery walk

You are invited to look at each others work and post comments about it. These comments are based around the following:



What can you celebrate?

What questions emerge?

What suggestions do you have for further development?

What can you steal?

# Project Refining

- Using the posted comments, projects were then refined to include any additional ideas or modifications.

# Project tuning

- 'tuned' by small group, led by a facilitator.

The protocol for tuning involved:

- Overview
- Clarifying questions
- Probing questions
- Discussion
- Response
- Debrief

# High Tech High

<http://www.hightechhigh.org/projects/>

Australian Curriculum lessons

<http://www.australiancurriculumlessons.com.au/>

Buck Institute for Education

[http://bie.org/project\\_search/results/  
search&channel=project\\_search/](http://bie.org/project_search/results/search&channel=project_search/)

Edutopia

<http://www.edutopia.org/project-based-learning>

Global Digital Citizen Foundation

<https://globaldigitalcitizen.org/?s=project+based+learning>

Jeff Robin

<http://dp.hightechhigh.org/~jrobin/>