

ACTIVATE 2021
LEARNING OVERVIEW
STEM Stream

## **OVERVIEW**

STEM Stream
20 x 70 Min Lessons Cross Curriculum

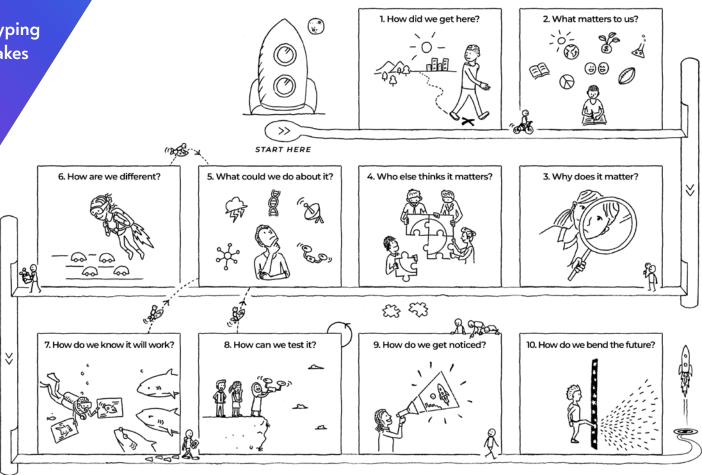
## **Driving Question:**

As an entrepreneur, use diegetic prototyping to pitch an innovative prototype that makes the world a better place.

Future Anything transforms young people's passion and curiosity into innovative ideas that make their world a better place. With supported educators, leading authentic 'future ready' curriculum, we really can bend the future; one youth-led idea at a time.

# THE ENTREPRENEUR'S ODYSSEY

Equipping students to think creatively and solve problems.



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LESSON	TITLE	LEARNING GOALS	SUCCESS CRITERIA	EXIT PASS
1	Science Fiction or Fact?	<ol> <li>Build an appreciation for innovation and imagination.</li> <li>Practise your online research and public speaking skills.</li> </ol>	Investigate one innovation that captures your interest Present your findings to the class	Research and presentation Reflection^ Complete Pre-Program Survey
2	Introduction to Future Anything — STEM	<ol> <li>Become familiar with the Future Anything program.</li> <li>Reflect on your own entrepreneurial strengths and identity.</li> </ol>	Feel comfortable explaining what the Future Anything is and what you will be expected to complete for assessment to your caregiver Identify at least two of your strengths, likes and dislikes	Mind-map of 'Things I'd like to change about the world' started  Completed Know Yourself Template
3	Introduction to Design Fiction & Diegetic Prototyping	<ol> <li>Understand the process of diegetic prototyping.</li> <li>Brainstorm diegetic prototypes you are familiar with.</li> </ol>	Feel comfortable explaining the process of diegetic prototyping to a friend in a different class  Compile a list of all of the diegetic prototypes you can think of	List of diegetic prototypes you are familiar with linked to problems they solve.
4, 5	Exploring Examples of Diegetic Prototypes	<ol> <li>Explore examples of two diegetic prototypes from one speculative fiction text.</li> <li>Appreciate the usefulness of design fiction as a framework for innovation.</li> <li>Reflect on your teamwork, research and presentation skills.</li> </ol>	Present the findings of your research on two diegetic prototypes from one speculative fiction text to the class  Use full sentences to answer the reflection prompts	Presentation on two diegetic prototypes in one text. Individual reflection^



LESSON	TITLE	LEARNING GOALS	SUCCESS CRITERIA	EXIT PASS
6, 7, 8, 9	Making Diegetic Prototypes Real	<ol> <li>Explore examples of two diegetic prototypes from one speculative fiction text.</li> <li>Use your imagination to improve and realise the design.</li> <li>Practise working under time pressure.</li> <li>Practise prototyping.</li> <li>Learn about the structure and delivery of a persuasive pitch.</li> <li>Practise pitching your ideas.</li> <li>Reflect on the processes of prototyping and pitching.</li> </ol>	Complete a physical prototype of a new wearable device you have created using inspiration from two diegetic prototypes  Present a 2-3 minute pitch about your prototype  Answer all the questions in the reflection scaffold thoughtfully	Prototype out of recycled materials Two minute pitch Group reflection^
10, 11	Analyse	<ol> <li>Understand that most problems are multifaceted and complex.</li> <li>Understand the value of strategically approaching big problems.</li> <li>Identify experts and spokespeople locally, nationally and globally on the chosen problem.</li> </ol>	Complete a Root Cause Tree about a problem that matters to you  Complete an Impact Gap Canvas on a problem that matters to you	One problem chosen and written in 'How might we?' format  Completed Root Cause Template completed  Completed Impact Gap Canvas
12, 13	Fantasise	Understand some of the conditions that make creativity and divergent thinking possible.	Use Rapid Brainstorming to generate as many ideas as possible for solving your problem  Use Rapid Prototyping to generate as many ideas as possible for solving your problem	You are in groups of less than four and have chosen your top two ideas
14, 15	Concretise	<ol> <li>Practice using design fiction to present your diegetic prototype to an audience.</li> <li>Understand the value of feedback in the design process.</li> </ol>	Complete a short story or film trailer which presents your diegetic prototype as realistic, useful and exciting Give useful feedback to one other team Use the feedback one other team has given you to improve on your design	Storyboard Template <sup>^</sup> Short story or Movie Trailer Feedback given to one team and received from one team. Group reflection <sup>^</sup>



LESSON	TITLE	LEARNING GOALS	SUCCESS CRITERIA	EXIT PASS			
16, 17, 18	Realise	<ol> <li>Alter a diegetic prototype to create an innovative solution which is plausible in the real world.</li> <li>Create your own pitch and slidedeck.</li> </ol>	Create a realistic prototype which solves a problem that matters to you  Create a 3 minute pitch and sizzling slidedeck	Finished realistic prototype  Three minute pitch and slidedeck^			
Drafting: Week 8							
Assessment: Week 9							
Shark Tank + Showcase: Week 10							
20	Reflecting	Reflect on how you have grown and changed throughout this program.	One thoughtfully completed reflection template	Post Program Survey Individual Reflection^			

<sup>\*</sup> Future Anything: Activate has never intended to be a 'plug and play' program. We recognise and celebrate the diversity within and between schools and work with each teaching team to contextualise this curriculum for implementation during the face-to-face professional learning opportunity provided to all schools. Each school also has access to unlimited coaching and support throughout the duration of the program to ensure you have access to the skills, support and space to successfully run Future Anything your way for your students.

#### KEY

^ Assessment Portfolio



### Design and Technologies

#### **Content Descriptors**

Critically analyse factors, including social, ethical and sustainability considerations, that impact on designed solutions for global preferred futures and the complex design and production processes involved **ACTDEK040** 

Explain how products, services and environments evolve with consideration of preferred futures and the impact of emerging technologies on design decisions **ACTDEK041** 

Develop, modify and communicate design ideas by applying design thinking, creativity, innovation and enterprise skills of increasing sophistication **ACTDEP049** 

Work flexibly to effectively and safely test, select, justify and use appropriate technologies and processes to make designed solutions **ACTDEP050** 

Evaluate design ideas, processes and solutions against comprehensive criteria for success recognising the need for sustainability **ACTDEP051** 

Develop project plans using digital technologies to plan and manage projects individually and collaboratively taking into consideration time, cost, risk and production processes **ACTDEP052** 

#### **Achievement Standards:**

By the end of Year 10, students identify the changes necessary to designed solutions to realise preferred futures they have described.

Students create designed solutions for one or more of the technologies contexts based on a critical evaluation of needs or opportunities.

They establish detailed criteria for success, including sustainability considerations, and use these to evaluate their ideas and designed solutions and processes.

They create and connect design ideas and processes of increasing complexity and justify decisions.

Students communicate and document projects, including marketing for a range of audiences.

They independently and collaboratively apply sequenced production and management plans when producing designed solutions, making adjustments to plans when necessary.

They select and use appropriate technologies skilfully and safely to produce high-quality designed solutions suitable for the intended purpose.



## **■** Literacy (LI)

Interpret and evaluate information within and between texts, comparing and contrasting information using comprehension strategies.

Use pair, group and class discussions and formal and informal debates as learning tools to explore ideas, compare solutions, evaluate information and ideas, refine opinions and arguments in preparation for creating texts.

Plan, research, rehearse and deliver presentations on more complex issues and learning area topics, combining visual and multimodal elements creatively to present ideas and information and support opinions and engage and persuade an audience.

Use comprehensive knowledge of the structure and features of learning area texts to comprehend and compose complex texts in innovative ways, using conventions for citing others.

Evaluate the impact of different visual choices in the composition of images, including symbolic images and movement of camera or light, to achieve different nuances.

## ix Information and Communication Technology (ICT)

Assess the impact of ICT in the workplace and in society, and speculate on its role in the future and how they can influence its use.

Select and use a range of ICT independently and collaboratively, analyse information to frame questions and plan search strategies or data generation.

## Critical and Creative Thinking (CCT)

Pose questions to critically analyse complex issues and abstract ideas.

Clarify complex information and ideas drawn from a range of sources.

Create and connect complex ideas using imagery, analogies and symbolism.

Speculate on creative options to modify ideas when circumstances change.

Assess risks and explain contingencies, taking account of a range of perspectives, when seeking solutions and putting complex ideas into action.

Give reasons to support their thinking, and address opposing viewpoints and possible weaknesses in their own positions.

Identify, plan and justify transference of knowledge to new contexts.

Analyse reasoning used in finding and applying solutions, and in choice of resources.

Use logical and abstract thinking to analyse and synthesise complex information to inform a course of action.

Evaluate the effectiveness of ideas, products and performances and implement courses of action to achieve desired outcomes against criteria they have identified.



## Personal and Social Capability (PSC)

Reflect critically on their emotional responses to challenging situations in a wide range of learning, social and work-related contexts.

Assess their strengths and challenges and devise personally appropriate strategies to achieve future success.

Establish personal priorities, manage resources effectively and demonstrate initiative to achieve personal goals and learning outcomes.

Evaluate, rethink and refine approaches to tasks to take account of unexpected or difficult situations and safety considerations.

Plan, implement and evaluate ways of contributing to civil society at local, national regional and global levels.

Formulate plans for effective communication (verbal, nonverbal, digital) to complete complex tasks.

Critique their ability to devise and enact strategies for working in diverse teams, drawing on the skills and contributions of team members to complete complex tasks.

Develop and apply criteria to evaluate the outcomes of individual and group decisions and analyse the consequences of their decision making.

Propose, implement and monitor strategies to address needs prioritised at local, national, regional and global levels, and communicate these widely.





