



Everyday Innovators: Turning Opportunities Into Action

Grade Level/s:
5, 6

Subject/s:
Mathematics, Technologies

Type:
Unit Plan

Author:
Terri Powell/ Tina Giglio/ Stefan Parente

Everyday Innovators: Turning Opportunities Into Action

e.g. Goal of the lesson, what students will learn, how it fits into their study, what resources are required etc.

Single Lesson Plan

Everyday Innovators

Task:

Step 1: Student Engagement and Introduction to software

Activity:

This lesson is designed to engage and introduce students to the opportunities made possible by 3D Printing. Students were shown relatable video clips used to inspire their future project. Allow students time to think about constructing situations for solving real life problems. Give students the opportunity to make a login/username and explore the software together.

Resources:

Video Clips (Refer to PowerPoint slides 1-6) Ipads/Laptops with Makers Empire software installed

Step 2: Engagement and solving opportunities

To spark students creativity we encouraged them to think outside the square regarding the many possible uses for every day objects. (refer to slide 7 and 8) We exposed students to a resource to encourage them to discuss situation solving opportunities. We allowed discussion time for students to construct and share ideas with their peers. (refer to slide 9 and 10)

Video Clip (Refer to PowerPoint slides 7, 8, 9 and 10)

Step 3: Putting design thinking into practice

Students begin to structure their Innovative thinking using the Design Process. (Slide 11) Students are given an electronic copy of the design process to follow for their project.

PowerPoint (Refer to Slide 11) Ipads/ Laptops with Makers Empire Software installed Electronic copy of design process

Step 4: Test and Evaluate and Redesign	Students will test their designs. Students are given the opportunity to informally share their built designs with peers and teachers in a discussion format e.g. round table discussion. Students are then given the opportunity to act on feedback and complete their redesign.	Ipads/ Laptops with Makers Empire Software installed Copy of students design process so far
Step 5: Share Solutions	Students are given the opportunity to share their final product and design process with peers and teachers in a formal setting for assessment purposes.	Ipads/ Laptops with Makers Empire Software installed Copy of students final design process Student final product
Possible Extension: Community Gallery/ Showcase	Students can invite parents/ teachers/ peers to view their final products in a community gallery/ showcase. Students are also given the opportunity to share their designs in an online forum e.g. school Facebook page	Ipads/ Laptops Students final products

Curriculum

South Australian TfEL:

4.2 connect learning to students' lives and aspirations

4.3 apply and assess learning in authentic contexts

Australian Curriculum:

Generating A Range Of Design Ideas For Products, Services Or Environments Using Prior Knowledge, Skills And Research (ELBT408)

link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/ecc70bac-4ded-4719-8922-2fe8ac3055fd>)

Analysing And Modifying Design Ideas To Enhance And Improve The Sustainability Of The Product, Service, Environment Or System (ELBT365)

link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/059cdc15-9fbc-4dcd-ad2f-47592878e0ea>)

Representing And Communicating Design Ideas Using Modelling And Drawing Standards Including The Use Of Digital Technologies, For Example Scale: Symbols And Codes In Diagrams: Pictorial Maps And Aerial Views Using Web Mapping Service Applications (ELBT364)

link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/b45f775a-3a31-4e00-80e6-4876549184f2>)

Independently And Collaboratively Identifying Criteria For Success, Processes And Planning, For Example Using Visual Representations Such As A Flowchart (ELBT297)

link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/67e1cd1d-cb6d-447a-9275-67af6fa70de8>)

Evaluating The Suitability Of Materials, Tools And Equipment For Specific Purposes (ELBT176)

link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/b61a99c5-795d-48a0-89b8-a93ed3654796>)

Reflecting On How Well Their Designed Solutions Ensure Safety And Wellbeing Of Users And Consumers And Meet The Needs Of Communities And Different Cultures (ELBT437)

link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/790ce14b-599c-49e4-8264-1f195fd1d11a>)

Considering The Criteria For Success In Relation To The Benefits And Costs Of Production Processes, The Environmental Impact, Future Use And Application, And Social Values And Ethics Of Clients (ELBT443)

link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/30edeabf-e43f-48ef-9b14-1c4f9fae7ac9>)

Evaluating Products, Services And Environments From A Range Of Technologies Contexts With Consideration Of Ethics And Sustainability (ELBT324)

link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/e8b18c25-8494-46f4-8edf-5bf9e35e6113>)

Negotiate criteria for success that include consideration of sustainability to evaluate design ideas, processes and solutions (ACTDEP027)

link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/26e94f5b-d29b-4364-aae9-475bf157aad1>)

Years 5 And 6 Achievement Standard

link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/9f5b49a0-54cd-4872-be6d-839ba272b9b2>)

Examining The Materials And Systems Used In A Public Use System That Affect The Way People Live, For Example A Community Exercise Environment Or Arts Facility, Water Treatment, Garbage Collection (ELBT139)

link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/edd2125f-ce99-4c58-ab20-bbbec08e4f76>)

Comparing Tools, Equipment And Techniques To Select Those Most Appropriate For A Given Purpose (ELBT426)

link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/5b723e0f-46be-4bf5-ae08-268536d424cd>)

Evaluating The Use Of Computer Aided Manufacturing In Terms Of Cost And Impacts On Local And Regional Designers, Producers And Enterprises (ELBT338)

link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/c0a3e511-a5eb-400e-b99f-55b1bb27b473>)

Comparing The Design And Production Of Products, Services And Environments In Australia And A Country In The Asia Region (ELBT18)

link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/361a3ef8-7e60-4af4-9533-f8a38691b34b>)

Exploring The Steps Involved In The Process To Satisfy A Design Brief, Need Or Opportunity (ELBT34)

link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/3ca02564-9519-46fc-b438-ee11c74fc9c>)

Investigating Designed Solutions From Around The World To Make Suitable, Quality Decisions That Meet The Design Brief, Challenge Or Scenario (ELBT97)

link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/1bf47f61-4046-463c-9528-cf522bdddc8e>)

Identifying The Importance Of Complementary Parts Of Working, Everyday Systems By Deconstructing The Components, Structure And Purpose Of Products, Services Or Environments (ELBT69)

link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/95651eea-698e-417c-a35e-dee42b90939d>)

Investigating How To Minimise Material Use And Manage Waste By Critiquing The Environmental And Social Impacts Of Materials, Components, Tools And Equipment (ELBT2)

link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/0e4889d9-1297-47bc-b70a-ff9d32be08b8>)

Testing A Range Of Materials, Components, Tools And Equipment To Determine The Appropriate Technologies Needed To Make Products, Services Or Environments, For Example A Moving Vehicle (ELBT376)

link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/f7955d4f-a1ff-4b70-ab36-433928a1c400>)

Critique needs or opportunities for designing, and investigate materials, components, tools, equipment and processes to achieve intended designed solutions (ACTDEP024)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/ba61fd1b-b7ed-4d58-8cb0-b7dd0dca64f9>)

Working Safely, Responsibly And Cooperatively To Ensure Safe Work Areas, For Example The Safe Use Of Equipment When Making A Water Resistant, Floating Craft Or A Model Of An Environmentally Sensitive Outdoor Shelter (ELBT27)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/7b61b9e2-0c45-4d5c-8c56-f2f1151c7d86>)

Using Appropriate Personal Protective Equipment Required For The Use Of Some Tools And Equipment, For Example Protective Eyewear (ELBT375)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/ead2ce71-6d9b-47ef-beeb-4362bd5975a9>)
