



Action Figure

Grade Level/s:
5, 6

Subject/s:
Mathematics, Technologies

Type:
Unit Plan

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Action Figure

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

Single Lesson Plan

Tuning In

Task:
What is 3D printing?
(Think Pair Share)

Activity:
Using the Prezi "3D Printing" http://prezi.com/klzwrxsdwv7s/?utm_campaign=share&utm_medium=copy (http://prezi.com/klzwrxsdwv7s/?utm_campaign=share&utm_medium=copy) guide students through identifying the process of using a 3D printer and how it works. Discuss the terminology and have student identify the parts on the actual 3D printer.

Resources:
Prezi, Youtube videos, paper, pen, ipads, makers empire software

Exploration through play

Students are to explore Makers Empire on the iPads to look at designs and to see the process of printing out one of the designs. (Students work in small groups) Evaluate the 3D prints: What changes would you make? How would you make those changes? How is size and ratio important in 3D print designs?

ipads

Upgrading from 2D to 3D:

Pose the question: What is 3D thinking? Have students complete a Think/Pair/Share. History How did it start? – refer to timeline on <https://www.youtube.com/watch?v=M-MT18uBprs> (<https://www.youtube.com/watch?v=M-MT18uBprs>) (stop at 1:27)

youtube videos

Discuss what is the difference between 2D and 3D.

A square has two dimensions: length and width. Simply put, it is this: Two dimensional or 2D means that something has two geometrical dimensions, just length and width. Examples are a square, a circle or an illustration, such as a picture. Although a picture is two dimensional, it can suggest depth and seem three-dimensional. In computer gaming we find the term 3D a lot and here it means that perspective images are used.

Finding Out

Task:
Explore (First Creation)

Activity:
Students use MakersEmpire to create a simple design using a blend of at least 3 3D shapes.

Resources:
Ipads

Critique

Students look at each others designs and critique through the app based on pre-agreed guidelines.

ipads

First Structured Design

Task:
Nogard Activity

Activity:
Complete Sheena Cameron Nogard Activity

Resources:
Sheena Cameron Comprehension Book

Creation Time

Students create their Nogard on MakersEmpire

ipad

Digi Tech Lesson (2 Lessons)

Task:
Introduction to coding

Activity:
discussion about what is coding and why it is important

Resources:

Turtle Canyon

Students work in teams to play "Turtle Canyon" board game.

<http://hourofcode.minecraftedu.com/>
(<http://hourofcode.minecraftedu.com/>)

Reflection

How might the ability to computationally think affect us and improve our problem solving?

Characteristics

Task:
Discussion

Activity:
Talk to students about characteristics and what these are.

Resources:

Exploration of Characteristics

Students look at what characteristics or traits make them individual. Complete the activities.

<https://www.equalityhumanrights.com/en/secondary-education-resources/lesson-plan-ideas/lesson-3-identity-and-characteristics>
(<https://www.equalityhumanrights.com/en/secondary-education-resources/lesson-plan-ideas/lesson-3-identity-and-characteristics>)

Sketch of Character

Task:
Reflection on Previous Lesson

Activity:
Students reflect on what they found out about their traits and characteristics

Resources:

Sketch

Students develop a prototype/ sketch in their book, with labels for individual characteristics.

Books, Pens, Pencils

Pair and Share Feedback

Students share model with partner and get feedback to fine tune their design.

Ipads

Making of Character

Task:
Creation Time

Activity:
Students begin making their characters on MakersEmpire.

Resources:
ipad, books

Finish and Print

Students get final approval and printing.

3D Printer

Play Game

Task: Play and Trial	Activity: Students use their character in a knockout style competition for Turtle Canyon	Resources: Turtle Canyon games.
Prize	Award winning student with a "prize"	
Extension	Students create a narrative using their character.	

Downloadable files



Ben_TFEL_Planner.docx

(/download/lesson_plan_attachments/files/000/000/114/original/Ben_TFEL_Planner.docx?1495756229)

Curriculum

South Australian TfEL:

4.2 connect learning to students' lives and aspirations

4.4 communicate learning in multiple modes

4.3 apply and assess learning in authentic contexts

4.1 build on learners' understandings

Domain 4: Personalise and connect learning

3.4 promote dialogue as a means of learning

2.3 negotiate learning

2.4 challenge students to achieve high standards with

Australian Curriculum:

Connect three-dimensional objects with their nets and other two-dimensional representations (ACMMG11)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/89f91772-11b8-42ad-879b-9e4600a25347>)

Identifying The Shape And Relative Position Of Each Face Of A Solid To Determine The Net Of The Solid, Including That Of Prisms And Pyramids (ELBM193)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/874268ef-2b73-45cc-8928-9e4600a25347>)

Representing Two Dimensional Shapes Such As Photographs, Sketches And Images Created By Digital Technologies (ELBM194)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/4d2e56ba-0b2e-4bc4-9937-9e4600a25347>)

Shape
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/de99e528-c4f4-434d-b7b8-9e4600a25347>)

Investigate the main components of common digital systems, their basic functions and interactions, and how such digital systems may connect together to form networks to transmit data (ACTDIK014)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/7798b4c3-b1ef-42de-a267-597fa63706cc>)

Describing Digital Systems As Having Internal And External Components That Perform Different Functions, For Example External Components For Inputting Data Including Keyboard, Microphone, Stylus; Internal Processing Components Include The Central Processing Unit; External Output Components Including Speakers, Projector, Screen; And Data And Information Storage Components Include Cloud And External Devices (ELBT284)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/68ff16b9-ae35-4166-8201-6f25409f8e21>)

Explaining How Data May Be Transmitted Between Two Digital Systems In Different Ways, For Example That Wires Or Cables Are Used In Wired Networks To Transfer Data From One Digital System To Another, And Radio Waves Are Used To Transmit Data In Wireless Or Mobile Networks (ELBT482)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/820a58a5-c494-452c-94b0-943adbacdbc8>)

Investigating How The Internal And External Components Of Digital Systems Are Coordinated To Handle Data, For Example How A Keyboard, Central Processing Unit And Screen Work Together To Accept, Manipulate And Present Data And Information (ELBT8)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/5c71c1f9-3b89-4ca5-94da-fcc41e1e5eb9>)

Investigating How Emerging Digital Systems Work, For Example Using An Augmented Reality App (Or Blended Reality) And Considering How Images Of Real World Objects Can Be Blended With Computer Generated Information To Produce A Virtual Reality (ELBT55)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/9e8d1b02-6be4-48be-83fe-e6417de828c4>)

Design, modify and follow simple algorithms represented diagrammatically and in English involving sequences of steps, branching, and iteration (repetition) (ACTDIP019)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/a6c04dad-2d6d-4596-ac2a-841eb3fcbab4>)

Following A Diagram Of A Simple Method Of Sorting Numbers Or Words (ELBT240)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/3d7ee432-6dec-41a1-ba67-826a02c9fdc3>)

Following, Modifying And Describing The Design Of A Game Involving Simple Algorithms Represented Diagrammatically Or In English, For Example Creating A Flowchart With Software That Uses Symbols To Show Decisions, Processes And Inputs And Outputs (ELBT366)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/0b58ea9f-c8bb-4fb6-8678-464bb1d2a6ef>)

Experimenting With Different Ways Of Representing An Instruction To Make A Choice, For Example Branches In A Tree Diagram Or Using An 'If' Statement (A Common Statement Used To Branch) To Indicate Making A Choice Between Two Different Circumstances Using A Spreadsheet Or A Visual Program (ELBT13)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/1797a999-d835-4e2d-9413-fac532f038ef>)

Experimenting With Different Ways Of Representing An Instruction To Make A Repetition, For Example Loops In A Flowchart Diagram Or Using A 'Repeat' Statement (ELBT291)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/1cf51bf3-a48b-4558-9ac2-6c629fa915ba>)

Designing The Instructions For A Robot Vacuum Cleaner To Clean A Room (ELBT346)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/e524f13d-9ad9-4fc0-a782-5085e85f16b2>)

Using Different Design Tools To Record Ways In Which Digital Solutions Will Be Developed, For Example Creating Storyboards Or Flowcharts To Record Relationships Or Instructions About Content Or Processes (ELBT115)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/8ee5f63d-7597-458c-a79a-c60daa66a51b>)

Manage the creation and communication of ideas and information including online collaborative projects, applying agreed ethical, social and technical protocols (ACTDIP022)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/306fcc15-9c3d-4d8d-b82d-2d074080e31e>)

Applying Practices That Support The Organisation Of Collaborative Problem Solving, For Example Finding Online Meeting Times That Suit All Members, And Agreeing On Ways Of Protecting Files And Sharing Information Digitally With Members (ELBT46)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/338cc758-11a3-4e51-92f4-e9caf70385fb>)

Applying Safe Practices While Participating In Online Environments, For Example Checking The Default Privacy Settings To Ensure Maximum Protection Of Personal Details, Being Aware Of Online Filtering Techniques And Policies Used At School And At Home (ELBT315)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/02e4abc9-0701-4c1f-a018-5fab96fa2ac7>)

Considering Ways Of Managing The Use Of Social Media To Maintain Privacy Needs, For Example Activating Privacy Settings To Avoid Divulging Personal Data Such As Photographs, Addresses And Names (ELBT424)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/c1e8b5c0-c2f9-4cc2-a3de-26cbd2e55ab3>)

Developing A Set Of 'Rules' About Appropriate Conduct, Language And Content When Communicating Online, And Using These Rules As A Basis For Resolving Ethical Dilemmas (ELBT218)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/68f18a8b-0b6e-4fe5-9257-8db0377dff9a>)

Using Digital Systems To Create Web Based Information Taking Into Consideration Referencing Conventions, For Example Creating A Blog, Website Or Online Learning Space For Sharing Ideas (ELBT401)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/83f16653-2e46-49a8-9870-35b1c032f928>)

Using A Range Of Communication Tools To Share Ideas And Information, For Example Participating In Collaborative Online Environments (ELBT198)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/6f054219-1b98-47dc-867b-9a12704d3f92>)

Understand how the grammatical category of possessives is signalled through apostrophes and how to use apostrophes with common and proper nouns (ACELA1506)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/ab7662b7-6311-4b6a-b1a9-9e4600a2a3c5>)

Learning That In Standard Australian English Regular Plural Nouns Ending In 's' Form The Possessive By Adding Just The Apostrophe, For Example 'My Parents' Car'; Or 'James's House'; Or 'James' House'; (ELBE025)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/8714d4d-672c-4f69-96cb-9fb900e5703f>)

Learning That In Standard Australian English For Proper Nouns The Regular Possessive Form Is Always Possible But A Variant Form Without The Second 's' Is Sometimes Found, For Example 'James's House'; Or 'James' House'; (ELBE026)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/4d6225e6-89f9-49d6-bb42-9fb900e5703f>)

Understand that the starting point of a sentence gives prominence to the message in the text and allows for prediction of how the text will unfold (ACELA1505)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/f04fa3bc-5085-4a3f-829f-9e4600a2a3c5>)

Observing How Writers Use The Beginning Of A Sentence To Signal To The Reader How The Text Is Developing (For Example 'snakes Are Reptiles. They Have Scales And No Legs. Many Snakes Are Poisonous. However, In Australia They Are Protected') (ELBE955)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/2d6896cd-e08c-408b-8eb5-9e4600a2a3c5>)

Understand the use of vocabulary to express greater precision of meaning, and know that words can have different meanings in different contexts (ACELA1512)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/e377ddb-7a97-424d-bccb-9e4600a2a3c5>)

Moving From General, 'All Purpose' Words, For Example 'Cut', To More Specific Words, For Example 'Slice', 'Dice', 'Fillet', 'Segment'; (ELBE962)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/25e438ea-f790-4864-9102-9e4600a2a3c5>)

Plan, draft and publish imaginative, informative and persuasive print and multimodal texts, choosing text structures, language features, images and sound appropriate to purpose and audience (ACELY1704)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/ee714ec4-fc75-4e02-8051-9e4600a2a3c5>)

Using Research From Print And Digital Resources To Gather And Organise Information For Writing (ELBE019)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/233f906a-bf1a-4baf-99ed-9fb900e56f4d>)

Selecting An Appropriate Text Structure For The Writing Purpose And Sequencing Content According To That Text Structure, Introducing The Topic, And Grouping Related Information In Well Sequenced Paragraphs With A Concluding Statement (ELBE020)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/a4c35f80-51ad-443e-adc2-9fb900e56f4d>)

Using Vocabulary, Including Technical Vocabulary, Appropriate To Purpose And Context (ELBE018)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/2f255528-ebf8-430b-8d87-9fb900e56f4d>)

Using Paragraphs To Present And Sequence A Text (ELBE022)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/9ccf4f43-0d69-47ba-b2ba-9fb900e56f4d>)

Using Appropriate Grammatical Features, Including More Complex Sentences And Relevant Verb Tense, Pronoun Reference, Adverb And Noun Groups/Phrases For Effective Descriptions (ELBE021)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/160e5a91-4cb4-4540-b21d-9fb900e56f4d>)

Reread and edit student's own and others' work using agreed criteria for text structures and language features (ACELY1705)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/94f2f5a7-d970-42a5-bacd-9e4600a2a3c5>)

Editing For Flow And Sense, Organisation Of Ideas And Choice Of Language, Revising And Trying New Approaches If An Element Is Not Having The Desired Impact (ELBE996)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/ae9ab516-f59f-4c16-9536-9e4600a2a3c5>)

Plan, draft and publish imaginative, informative and persuasive texts, choosing and experimenting with text structures, language features, images and digital resources appropriate to purpose and audience (ACELY1714)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/54157e33-c9ec-45a1-8f3d-9e4600a2a3cf>)

Creating Informative Texts For Two Different Audiences, Such As A Visiting Academic And A Year 3 Class, That Explore An Aspect Of Biodiversity (ELBE1058)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/0565d9ed-f3e7-46d6-a9be-9e4600a2a3cf>)

Using Rhetorical Devices, Images, Surprise Techniques And Juxtaposition Of People And Ideas And Modal Verbs And Modal Auxiliaries To Enhance The Persuasive Nature Of A Text, Recognising And Exploiting Audience Susceptibilities (ELBE1059)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/6c12600c-e787-46fa-a3d2-9e4600a2a3cf>)

Reread and edit students' own and others' work using agreed criteria and explaining editing choices (ACELY1715)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/bbaf436c-8e21-46e0-9834-9e4600a2a3cf>)

Editing For Coherence, Sequence, Effective Choice Of Vocabulary, Opening Devices, Dialogue And Description, Humour And Pathos, As Appropriate To The Task And Audience (ELBE1060)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/663e6bfa-ec1c-4c34-98d3-9e4600a2a3cf>)

Experiment with text structures and language features and their effects in creating literary texts, for example, using imagery, sentence variation, metaphor and word choice (ACELT1800)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/81c6252c-2d2f-408b-9be6-9e4600a2a3ca>)

Selecting And Using Sensory Language To Convey A Vivid Picture Of Places, Feelings And Events In A Semi Structured Verse Form (ELBE1034)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/6840e53a-b516-491a-bcd7-9e4600a2a3ca>)

Create literary texts using realistic and fantasy settings and characters that draw on the worlds represented in texts students have experienced (ACELT1612)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/9c854b3d-f063-4f94-9303-9e4600a2a3c5>)

Using Texts With Computer Based Graphics, Animation And 2 D Qualities, Consider How And Why Particular Traits For A Character Have Been Chosen (ELBE973)
link (<http://rdf.australiancurriculum.edu.au/elements/2014/09/a848023c-b048-4027-8b98-9e4600a2a3c5>)
