Introduction to 3D Printing

Grade Level/s:	Subject/s:	Type:	Author:
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Students are introduced to 3D printing and its real-world applications. They explore the Makers Empire 3D software by creating simple 3D designs.

Single Lesson Plan

Introduction to 3D printing

Task:	Activity:	Resources:
Task 1 - Current Knowledge of 3D printing (10 minutes)	Brainstorm current knowledge of the class around 3D printing by asking the simple question 'What doe we know about 3D printing?' Emphasise there is no right or wrong answer as at this stage it's about what we THINK we know as opposed to what we ACTUALLY know	Information can be recorded in a number of ways - on whiteboard or created digitally and shared through numerous mean (i.e. - Showbie, Google Docs, Lino App etc)

Task 2 - What's currently able to be done with 3D printing (15-20 Minutes)	Share with students YouTube clips of real life applications of 3D printing. These will/may include prosthetics limbs, food, housing, medical etc. The intent of this is to confirm (or deny) some of our brainstorming from task 1 as well as show students that 3D printing has a practical application that improves the lives of others in some way.....that 3D printing is not just about being able to print our own toys! During this session also show students an overview video of how 3D printers operate so that they gain an understanding of the technology, its potential (and its limitations.	YouTube clips
Task 3 - Create Maker's Empire user account (15-20 minutes)	Set a context with students around the essential role software plays within 3D printing - whilst the machine creates - it needs instructions and those instructions are delivered in the form of often complex design software. Makers Empire have created software which allows complex designs to be created yet in a simple way for primary aged children. Instruct children on the step-by-step process for creating a log in. Use a simple naming convention to create an alias that is easily identifiable/remembered by children but does not reveal person (name) information. Initials are one such idea	None required
Task 4 - Explore and discover	Once an account has been created children can then 'play' within the Makers Empire app. Some scaffolding may be provided here but it should be an opportunity for students to discover rather than be told. Hints, tips, suggestions area good idea as well as raising questions 'What happens when you tap on that?' 'How might you make it do 'x'? ' 'I like what you're doing, is there an easier way to create the same thing?' Provide opportunities for students to share their discoveries with their peers. This could be quite informal but might also use something like a 'Discovery Wall' where students write up (paper or digital) useful things they have discovered	Some way for students to share their discoveries - paper, digital (as in Task 1)