Lesson Title:	Subject:	Grade(s):
Blender - Additional Advanced 3D Blender Tools (Part 3) + Final Project Introduction	Digital Media / Graphic Design (ADST)	8-12
Name:	Date:	Lesson #
		3.3

Rationale:

(lesson context and reasons why lesson matters)

These lessons are intended to provide a basic understanding of the Blender software, enabling students to use these basic understandings to allow them to develop greater skills and 3D modelling in future projects.

Curriculum Connections : https://curriculum.gov.bc.ca

Core Competency

Creative Thinking

Curricular Competency

Identify appropriate tools, technologies, materials, processes, and time needed for production.

Construct prototypes, making changes to tools, materials and procedures as needed

Identify and assess skills needed for design interests, and develop specific plans to learn or refine them over time.

Content:

Methods and principles of 3D Graphic Design

2D, 3D, Audio, and video digital media editing tolls, including paid, freeware, open source, and cloud-based solutions.

Tools and techniques for image manipulation

Learning Intentions	Activity	Assessment
Students Will be able to:		
Learn advanced blender tools to create various shapes within Blender outside of the imported Mesh objects.	Students will be guided through various edit tools and explore and test them for themselves.	Formative: Teacher will evaluate student progress based on their progress with the tools being taught

Prerequisite Concepts and Skills:

For student success

Basic understanding of Blender and the UI

Creation of various mesh tools and the ability to alter them

How to add Materials and Shaders, including the mixing within Shader Editor / Nodes

Materials and Resources with References/Sources:		
For Teacher	For Students	
Computer Projector Blender (Free Software) Import / Export Blender File and Adobe Aero (Instructions) Apple Mobile Device (iPhone / iPad) Printer with Paper (Digital is also possible)	Computer Blender (Free Software) Import / Export Blender File and Adobe Aero (Instructions) Apple Mobile Device (iPhone / iPad)	

Differentiated Instruction (DI):

Accommodations

Students may be able to create shapes or play with the program at their own pace. This is still introductory advanced work, so for students that work a bit slower, it may be advised that they

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can learn / follow along using an instruction sheet as the class runs at a different pace. (Instructions on various tools provided)

Organizational/Management Strategies:

Anything special to consider?

It is highly recommended to have a projector in a spot where all students are able to view and see the content easily.

It is strongly suggested that teachers familiarize themselves with Blender prior to teaching any lesson to reduce teacher frustration / confusion.

Teacher should create succinct steps when discussing new programs such as Blender

Concrete plans or instructions should be considered beforehand.

Possible Aboriginal Connections / First Peoples Principles of Learning

http://www.bced.gov.bc.ca/abed/principles_of_learning.pdf https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/aboriginal_education_bc.pdf

Learning takes patience and time.

Lesson Activities		
Teacher Activities	Student Activities	Pacing
Introduction		
Teacher prepares Blender Software and projector to begin class. Once students are settled, take attendance making note of who is not available for this introductory lesson.	Students take their seat and log into their computers. Students will raise hand / provide attendance. <i>Teachers may have students complete</i> <i>daily tasks / activity to settle the class</i> <i>prior to or during attendance.</i>	5-10 mins
Body		
Teacher will quickly go over some of the more advanced tools from the previous day as a reminder (or for those who perhaps missed this class):		

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 Joining & Separating Removing Doubles Fill Tool Bridge Edge Loops Merging Vertices Snapping and Merging 	Students will listen and be briefed about the tools that were discussed and demonstrated on the day previous	<10 mins
Teacher will grab students attention and inform them of what the focus of the day is:		
 Knife and Bisect Tools Introduction to Final Project + AR Element 	Students will learn about the two tools that are being introduced today, as well as the final 'Castle Project' that will be introduced.	<5
Teacher will ask students to open a new Blender project with just a cube being visible and head into 'Edit Mode'.	Students will open up Blender and get a cube prepared to be worked on.	THITS
Knife Tool		
Teacher will introduce the Knife tool, showing where it is located within `Edit Mode'.		
Teacher will demonstrate how to use multiple cuts, how to make 'Snap' cuts, as well as making non-snapped cuts by holding down the 'Shift' button.	Students will watch and listen to the demonstration on the 'Knife Tool', asking	10-15
Teacher will indicate how the knife tool cannot be started within a face of a mesh object, as it will create additional cuts in order to do so.	questions where possible / necessary.	mins
Teacher will provide students an opportunity to use this tool, circulating the classroom and assisting students where it is needed most.	Students will take some time to demonstrate and use the knife tool on their own designs.	5-10 mins
After a short time, teacher will stop students to move onto the next tool.	Students will stop in preparation for the next tool to be taught to them.	
Bisect Tool		

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Teacher will ask students to remove the cube from the 3D Viewport, and instead ask them to add a 'UV Sphere'.	Students will delete the cube, and add in a 'UV Sphere' into their 3D Viewpoint.	
Going into 'Edit Mode', the teacher will demonstrate where to find the Bisect tool, and the basic function of it.		10.20
Teacher will demonstrate how to cut the sphere in half.		mins
Teacher will provide students some time to practice using the Sphere tool and try cutting their own sphere.	half using the teachers directions and demonstrations. Students will raise their hand or ask their peers for assistance if	
After some time, the Teacher will stop the class and prepare to discuss the Final Project.	required. After some time, they will be stopped, and will listen to the teacher regarding the next steps.	
Final Project Introduction + AR		
<u>Note:</u> As the AR Element is using Adobe Aero, be sure to ensure that there is an availability of Apple iOS devices available to be used either via students iPhones or classroom iPad stations.		
Teacher will take the time to introduce the Final 'Castle Project' which serves to be an encapsulation of all their learning into one project.		10-20 mins
Teacher will go over the final project with them, explaining what is required.	Students will listen to what is involved in the 'Final Castle Project', raising their	
Teacher will also go over the AR element with them as a way to share their projects and designs in a more interactive and fun environment.	hands to ask questions if necessary.	
Once all questions have been answered, the Teacher will allow students to begin their castle creation where the teacher will begin circulating the classroom and assisting students who have questions, or working with students who may need	Students will begin creating their own castle designs using many of the lessons and demonstrations that have been taught to them in previous lessons. Students will	30+ mins

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additional help / assistance with their project. Before the end of class, the teacher will remind students to save any progress	cooperate with each other, and ask the teacher when issues arise. Students may also consult the internet with any additional issues that may arise. Students will be sure to save their projects, so as to return to it on a future	<5
they may want to save regarding their Blender projects.	date.	
Note: Students should be engaged in their Castle creations over the next several lessons / days. Be sure to provide ample time for students to build, create and otherwise customize their own castles, and import their designs into Adobe Aero to meet the criteria of the project.		
Closure		
Teacher will ask students to log off their computers, push in their chairs and prepare for the next lesson.	Students will log off their computers, and prepare for their next class.	<5 mins

Post Lesson Reflections: