Lesson Title:	Subject:	Grade(s):
Blender - Additional Advanced 3D Blender Tools (Part 1)	Digital Media / Graphic Design (ADST)	8-12
Name:	Date:	Lesson #
		3.1

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 from their circulation of the class between tool demonstrations.

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	Computer
Projector	Blender (Free Software)
Blender (Free Software)	

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 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?

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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
Introd	luction	
Teacher prepares Blender Software and projector to begin class.	Students take their seat and log into their computers.	
Once students are settled, take attendance making note of who is not available for this introductory lesson.	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
Bo	ody	
Teacher will grab students attention and inform them of what the focus of the day is: - Blender Modes - Edit Mode - Various Edit Tasks Teacher will ask students to open a new Blender project with just a cube being visible.	Students will listen and understand what it is they're going to be working on for this lesson. Students will open Blender, and prepare a cube.	<5 mins

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Teacher will discuss the what modes are:		
 When in 'Edit Mode' of a mesh object you cannot select any other object until you go back to 'object mode' Tab will allow you to shift between 'Object' and 'Edit' modes. Notice that the 'Toolbar' on the left will change in 'Edit Mode' compared to 'Object Mode' 		
Teacher will explain the different type of 'Edit Modes'		
Vertex ModeLine ModeFace Mode		
Students can grab, rotate and scale (Shortcuts: G, R, S) when selecting these areas.		
Make sure not to rotate a mesh object face too much, or else you may get weird geometry that causes some issues down the road.		
Extrude Tool	Students will listen, and follow along on	
 Works best in face mode Watch out for internal walls / faces Can be viewed via 'X Ray' viewer on top right hand corner of 3D Viewport Pressing Shift whilst selecting another face will allow one to select two faces. Pressing Ctrl while extruding will allow you to 	their own computers as Teacher demonstrates and shows students the information needed.	30 mins
Long Pressing and holding on the extrude tool will showcase additional tools. Showcase the additional Extrude tools,		

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and the teacher will allow a moment for students to practice it on their own. Note: When using 'Extrude Along Normals', you can use the additional settings menu on the bottom left hand corner and select 'Offset Even'.	Students will take some time understanding and getting to learn the Extrude Tool, a very popular and useful tool.	5-10 mins
<i>Note: Tell students to avoid creating</i> <i>'N-Gons', or polygon faces / shapes with</i> <i>more than 4 sides. Having these objects</i> <i>may hinder more advanced tools /</i> <i>progress later.</i>		
After a few minutes of testing, Teacher will get the class's attention and move onto the next tool.		
Subdivide		
Can be accessed via Right Click of a face / edge.		
Teacher will demonstrate how to use the subdivide tool and additional options. Will create a little house!		
<i>Note: Tell students to avoid creating</i> <i>'N-Gons', or polygon faces / shapes with</i> <i>more than 4 sides. Having these objects</i> <i>may hinder more advanced tools /</i> <i>progress later.</i>		
Loop Tool		
Can be accessed via left side toolbar. Teacher will teach students how to use the Loop Tool, including how to click and slide the loop tool outside of 'snapped' locations. Teacher will demonstrate how to create a little house in Blender, and ask students to use the Loop tool to create their own little houses as well.	Students will listen, and follow along on their own computers as Teacher demonstrates and shows students the information needed.	20 mins

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Teacher will stop students after about 5-10 minutes (depending on how many students are getting the concepts) and move onto the next tool. Bevel Tool	Students will use the loop tool, trying to get a handle of how it is used, and how to select all / deselect all.	5-10 mins
Teacher will demonstrate where to find, and how to use the bevel tool. And how to differentiate between the 'Vertices' mode, as well as the 'Edges' Mode. <i>Note: Using the Bevel Tool creates many</i> <i>N-Gons, creating headaches with other</i> <i>tools down the road.</i> Inset Face Tool Teacher will demonstrate where to find and use the 'Inset Face Tool' on a cube.	Students will listen, and follow along on their own computers as Teacher demonstrates and shows students the information needed.	15 mins
Teacher will allow some time for students to practice and use the above tools. The teacher will go around the classroom helping students, or going over certain tools again for those who are not understanding / grasping the concepts.	Students will practice on some shapes with some of the tools that they've learned today, trying to get a better grasp at how it is done.	15-20 mins
Before the end of class, the teacher will remind students to save any progress they may want to save regarding their Blender projects.	Students will save the work they want to save.	<5 mins
<i>If there is still time remaining in class, then head to next lesson 'Lesson 3.2 - Advanced Blender Tools'</i>	sure	
CIO	5010	

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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: