

<b>Lesson Title:</b>	<b>Subject:</b>	<b>Grade(s):</b>
Blender Introduction - Layout / Materials Tutorial Setup	Digital Media / Graphic Design (ADST)	8-12
<b>Name:</b>	<b>Date:</b>	<b>Lesson #</b>
		1.1

<b>Rationale:</b>
(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 modeling in future projects.

<b>Curriculum Connections :</b> <a href="https://curriculum.gov.bc.ca">https://curriculum.gov.bc.ca</a>
<b>Core Competency</b>
Creative Thinking
<b>Curricular Competency</b>
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.
<b>Content:</b>
Methods and principles of 3D Graphic Design  2D, 3D, Audio, and video digital media editing tools, including paid, freeware, open source, and cloud-based solutions.  Tools and techniques for image manipulation

Learning Intentions	Activity	Assessment
Students Will be able to:		
Understand the basics of Blender, identify the tools necessary to use the program and begin creating basic shapes, resizing, rotating and scaling them.	Students will be taught the basics of Blender, and will continue working on their snowman for a bit!	Formative: Teacher will evaluate student progress through walking around and ensuring students are focused and working on activity.

Prerequisite Concepts and Skills:
For student success
Basic understanding of shapes Basic understanding of how to use a computer

Materials and Resources with References/Sources:	
For Teacher	For Students
Computer Projector Blender (Free Software)	Computer Blender (Free Software)

Differentiated Instruction (DI):
Accommodations
Students may be able to create shapes or play with the program at their own pace. As this is introductory, much of the Blender program at this stage is exploratory

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](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](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		
<p>Teacher prepares Blender Software and projector to begin class.</p> <p>Once students are settled, take attendance making note of who is not available for this introductory lesson.</p>	<p>Students take their seat and log into their computers.</p> <p>Students will raise hand / provide attendance.</p> <p><i>Teachers may have students complete daily task/activity to settle the class prior to or during attendance.</i></p>	5-10 mins
Body		
<p>Teacher will grab students attention and inform them of what the focus of the day is:</p> <ul style="list-style-type: none"> <li>- Work on their snowman for a little bit of time and save it.</li> <li>- Additional Basic navigation and understanding of Blender</li> <li>- Setup to learning about how to add Materials to objects.</li> </ul> <p>Teacher will ask students to open Blender and open their snowman.</p> <p>Teacher will tell students they have only 15-20 minutes to continue working on</p>	<p>Students will listen and understand what they're expected to learn for today's lesson.</p> <p>Students will continue working on their snowman from the previous day, adding</p>	<p>&lt;5 mins</p> <p>15-20 Mins</p>

<p>their snowman. They can get creative, or attempt to add on (or even try to add a texture) to their snowman if they wish.</p> <p>After 15-20 minutes, teacher will stop the class, ask them to save their work and open a blank new project (with a simple cube)</p> <p>Teacher will then discuss and demonstrate the following within Blender, encouraging students to follow along as they speak:</p> <ul style="list-style-type: none"> <li>- <b>Discuss</b> <ul style="list-style-type: none"> <li>- Outliner Screen (Top right screen) <ul style="list-style-type: none"> <li>- Discuss how they work between parent/child formations</li> <li>- How to hide an object</li> <li>- Filter <ul style="list-style-type: none"> <li>- Camera tool hides objects from final render when toggled off</li> </ul> </li> </ul> </li> <li>- Properties (Bottom Right) <ul style="list-style-type: none"> <li>- Show the tabs on the left and briefly describe each one.</li> <li>- Output Option <ul style="list-style-type: none"> <li>- You can do math inside it.</li> <li>- Example: End Section... Algorithm</li> </ul> </li> </ul> </li> </ul> </li> </ul>	<p>and or upgrading their snowman from the day prior</p> <p>Students will stop and save their Snowman, and will open a new 'General' project and listen for the following instructions.</p>	<p>&lt;5 mins</p> <p>&lt;5 mins</p>
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<ul style="list-style-type: none"> <li>is Seconds</li> <li>x Frames</li> <li>= Frames</li> <li>Duration</li> <li>- 12s x 24=</li> <li>288</li> <li>Frames in</li> <li>duration</li> <li>- Status Bar (Below</li> <li>Timeline)</li> <li>- What you</li> <li>can do</li> <li>- Right side</li> <li>is memory</li> <li>and other</li> <li>informatio</li> <li>n</li> <li>- Timeline Editor</li> <li>- Animation</li> <li>- 3D Viewport Editor</li> <li>- Hidden Side Panel</li> <li>- N Properties</li> <li>Shortcut</li> <li>- T Tools Shortcut</li> <li>- Object Context Menu</li> <li>(Right Click to open)</li> <li>- Changing UV Mesh</li> <li>Properties</li> <li>- Only Available</li> <li>when you FIRST</li> <li>add it</li> <li>- Located Bottom</li> <li>Left Corner of 3D</li> <li>Viewport Editor</li> <li>- Viewport Shading Modes</li> <li>- Wireframe</li> <li>- Solid</li> <li>- Material Preview</li> <li>- Rendered</li> <li>- Search (F3)</li> <li>- Duplicate Example</li> <li>Example</li> </ul>	<p>Students will change the following property settings in their Blender to Orbit</p>	<p>5-7 mins</p> <p>&lt;5 mins</p> <p>&lt;5 mins</p> <p>&lt;5 mins</p> <p>&lt;5 mins</p> <p>5 mins</p> <p>&lt;5 mins</p>
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<ul style="list-style-type: none"> <li>- Actual Properties (Found in Edit) <ul style="list-style-type: none"> <li>- Orbit around Selection (Input)</li> <li>- Save Files <ul style="list-style-type: none"> <li>- Filepaths</li> </ul> </li> </ul> </li> </ul>	<p>around the selection, and to understand where and how Blender is saving their projects.</p> <p><i>Note: Depending on the computer setup and saving, students may have to toggle these properties on each time they use the program. Consult your local IT Department regarding change if required.</i></p>	<p>5-10 mins</p>
<p>Once the teacher has provided more information regarding the Blender UI, they will then ask students to delete the current cube they have on their screen (as the original cube that is added into a new screen already has a material attached to it! New mesh's do not.)</p>	<p>Students will delete the original cube in their project.</p>	<p>&lt;5 mins</p>
<p>They are going to be asked to do the following:</p> <ol style="list-style-type: none"> <li>1) Create a plane, and make it large so it can fit certain objects on top of it. It can stay at the origin point, but just transform it to be larger</li> <li>2) Add the following objects, and add them along the Y Axis <ol style="list-style-type: none"> <li>a) Cube</li> <li>b) Cylinder</li> <li>c) Sphere</li> <li>d) Torus</li> <li>e) Monkey</li> </ol> </li> </ol>	<p>Students will listen and ask questions if needed regarding these next steps.</p>	
<p><i>*Refer to the Materials Images for reference!*</i></p> <p>Teacher will allow time for students to add the objects to the plane. Teacher will go around and assist students that are</p>	<p>Using the examples provided, students will add in the shapes as referenced by the teacher to the best of their ability. Students</p>	

<p>struggling with this task and answer questions.</p> <p>Once the teacher has confirmed that all the students have got their 3D objects added into Blender he will ask students to save their work, name it, and prepare to open it for next class.</p> <ul style="list-style-type: none"> <li>- File → Save As</li> </ul> <p><i>If you still have time in class, please go to the next lesson and continue with adding Materials / Shaders to this scene.</i></p>	<p>will raise their hand or seek assistance from their peers when needing help.</p> <p>Students will save their work, providing it with an appropriate name so that they're able to locate it again for next class.</p>	<p>30 mins</p> <p>&lt;5 mins</p>
<p>Closure</p>		
<p>Teacher will ask students to log off their computers, push in their chairs and prepare for the next lesson.</p>	<p>Students will log off their computers, and prepare for their next class.</p>	<p>&lt;5 mins</p>

Post Lesson Reflections: