Test Project

EVENT: 3D Digital Game Art	**LEVEL:** Secondary
EQUIPMENT DROP OFF, SET-UP AND TESTING **MAY 5:** 4:00PM – 5:30PM	**LOCATION:** Hall E Edmonton Expo Centre, Edmonton
COMPETITION START & END TIMES: **MAY 6:** 8:00 AM – 5:00 PM **MAY 7:** 8:00 AM – 12:30 PM	**REGIONALIZED:** NO
DURATION: 13.5 hrs. (2 days)	**WORLD SKILLS TRADE #:** 50

Please Note: This document is subject to change as competition information is updated. Competitors are responsible for staying up to date with the most recent information. Check the footer for the last updated date. Changes will be highlighted in <mark>*yellow.*</mark>

3D Digital Game Art 2026 Overview:

During the competition, you will be challenged with 6 modules to demonstrate your skills. Modules do overlap, but we will do our best to ensure that issues from one module do not cause issues for another module. To ensure authenticity with the industry workflow there could be a situation where an impact is unavoidable. Each module will have a distinct submission requirement. The modules will allow you to demonstrate:

1. Your ability to model a hard surface object.
2. Your skill in UV unwrapping the hard surface object to prepare for texturing.
3. Your ability to sculpt an object using proper forms and details, and then retopologizing the asset to be game ready.
4. Your skill at unwrapping and texturing your retopologized asset.
5. Your skill to prepare a model for animation (rigging) and provide a basic animation for one or more components
6. Your ability to import files to a game engine and demonstrate their functionality.
7. Your ability to communicate your work with others on your team.

The 2026 Project

The overall theme for your 2026 contest project will be: **Hogwarts Legacy 2!**

You have been contacted by a new upstart game studio as a potential candidate for a role as a junior general 3D artist. To score the interview, you must complete an art test to demonstrate your skills. Your test is broken down into 6 different modules. Each module will have unique instructions attached and different requirements that you will need to read carefully.
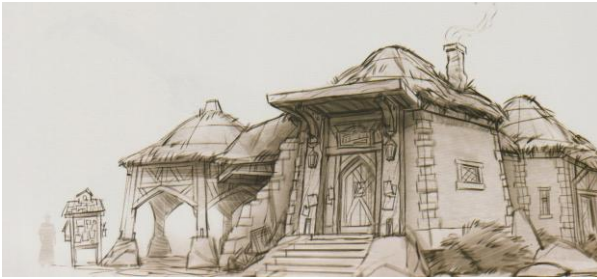
The studio has provided you with the following style guide and references for you to get an idea of what you will be required to be created:

Hard Surface Model References (Fireplace)

NOTE: Ignore the detailed components on the references as they are not hard surface aspects. Consider the forms and overall designs. You will be responsible for creating your own version and not copying one of the above.

Style Guide

Forms demonstrate realistic features

Reaching towards photorealism within the confines of game optimizations

Textures clearly are linked to the houses of Hogwarts. Pay close attention to value and contrast.

Medieval architecture is consistent throughout the game. Curves are intersecting straight lines, but features are very clearly defined and detailed.

NOTE: Concept Art has been removed from the Provincial 2026 competition!!!

HOWEVER, it is still a requirement at the National and WorldSkills levels. The committee suggests competitors sketch out their designs of the hard surface, the sculpting, and the game engine modules. The committee is willing to review any sketch work <u>AT THE COMPETITION</u> to ensure it would meet the standards in the phases that follow Provincials.

You must choose which Hogwarts house you are wanting to represent. Your assets will follow the themes and aspects of your chosen house. If you cannot choose a house, one will be provided for you. (*Ex: You have selected Slytherin house. Your hard surface, sculpt, and textures, must relate to the moods and beliefs of that house: darker colors, greens, snakes, curves, etc.*)

Module 1: Hard Surface Modelling

The required item is a **unique fireplace that could be found in one of the Hogwarts common rooms. designed with at least two construction materials in mind (EX: glass and metal, wood and concrete)**

NOTE: UV mapping is not required for this module. The model will only require simple materials like glass, metal, and simple base colors. Making more complex materials will only eat away at your time, KEEP IT SIMPLE!

Hard Surface Modelling Guidelines
- Appropriate distribution of polygons. Larger for less detailed areas, smaller for details.
- You are limited to 15000 triangles for this asset.
  - NOTE: If you go over the polygon limit, your score for all criteria in this module will be reduced as the judges see fit.

    Example: Asset contains 30000 triangles, which is significantly above the provided limit, the maximum score for each criterion will likely be 0 or 1, even if it could have scored maximum points.

    Example 2: Asset contains 15075 triangles, which is barely above the provided limit, the judges may not reduce the marks at all if the extra polygons provide clear definition to the asset and without them the look of the asset would be incomplete.

- No Ngons (Polygons with more than 4 sides).
- Geometry is manifold and no shading artifacts exist.
- Designs conform to the theme provided and your selected house.

Module 2: UV Mapping

Competitors will create a UV map within their chosen 3D software.

Auto UV unwrapping workflows are **allowed** this year! However, please note that automated workflows never generate the optimal result and typically result in more work than less work (maybe one day...). Automated workflows include smart unwrapping and UV projections.

You are tasked with UV Unwrapping your fireplace!

UV Mapping Guidelines
- Be mindful of texture distortion and stretching.
- Create your UV map appropriate to the model and professional standards. This means you should group your islands by materials, stay within the 0 to 1 UV space, and scale of islands should be appropriate based on detail required (texel density).
- Please make use of mirroring and stacking techniques as the model should be symmetrical, which saves you a TON of time.
- Place a UV grid texture on your model. Make sure that you pack this texture with your scene file!
- Ensure you use as much of the 0 to 1 UV space as possible! Auto packing will never result in a well packed UV space and you will need to know how to optimize things manually!

UV Mapping Submissions
- Your Blender, Maya or 3DS Max scene files. (.blend, .ma, .max) with your UV grid packed within (NOTE: Maya's checker texture is built in. Therefore, no additional texture is required).

Module 3: Sculpting and Retopology

Competitors will sculpt a statue that represents the symbolic animal of their chosen Hogwarts house.

Examples:

Slytherin house – a coiled snake its head raised and poised to strike.

Gryffindor house – a lion head on a detailed plaque that could be placed above a fireplace mantle.

Ravenclaw house – an eagle with its wings spread apart as if in flight.

Hufflepuff house – a badger that is sniffing the air for a good hearty meal.

Keep in mind your statue will be placed in your final scene and may need something for it to stand/lay on.

After your sculpted animal is complete you must retopologize the detailed mesh to make the asset game and animation ready.

Sculpting and Retopology Guidelines
- The sculpture can have an unlimited number of polygons.
- The retopologized model can be no greater than 50000 tris.
  - Please review the polygon budget note in Module 1 for score reductions regarding going over the polygon budget.
- No Ngons are present in the retopology.
- Quads and tris are used appropriately throughout the retopology.
- The retopology will be used for animation. Try your best to ensure the object can deform.
- Designs conform to your selected house.

NOTE: The Blender Add-on Retopoflow is 100% allowed for this section and is highly recommended. Auto-retopology tools are permitted but be aware that most times they cause more problems than the time they save.

Modelling Submissions
- For both components of this module you will submit your scene file(s) containing all your work. (.ma, .blend, .max).
- Use of proper naming conventions within your object outliner. Please use _low and _high to tag your low poly and high poly models respectively.
- If you have elected to use Zbrush for your sculpture (highly recommended), you must export your work as a .FBX and import it into your retopology program of choice. It is recommended that you decimate your sculpt to 30% of the original polycount. This will increase performance and likely will not cause any loss of detail. Submit your Zbrush file in .ztl format.

Module 4: Surfacing

Competitors will UV unwrap and texture the sculpture completed in Module 3.

NOTE: Only UV unwrap your low poly (retoplogized) model. Some may not be aware of this workflow, so the committee is making all competitors aware of this procedure within the test project. If during the competition a competitor asks if you are to unwrap the high poly, the committee members WILL NOT provide guidance as this is clearly outlined here in the project.

For this task you must use Substance Painter or Marmoset Toolbag.

Surfacing Guidelines
- Materials should use a PBR-Metallic-Roughness workflow (Roughness, Metallic, Base Color, Normals, Curvature, Thickness, Ambient Occlusion).
- Base shaders and tones represent the model successfully and embodies the themes and aspects of your chosen house.
- The appropriate maps have been created for the objects. Maps look seamless on model, no obvious joins or break in texture.
- Multiple maps have been used to create masks or used in generators to create unique looks for your work.

Surfacing Submission
- Your Substance Painter or Marmoset Toolbag file.

Module 5: Animation and Rigging

Competitors are to rig and animate their statue from Module 3.

The animation should be appropriate to the model that was created.

Examples include: A snake looking around and flicking its tongue, a lion roaring, an eagle flapping its wings, a badger looking around and sniffing the air.

DO NOT use your high poly model for this task. If you did not finish your retopology or your retopology does not allow for deformation, there will be a placeholder asset provided to you.

Animation and Rigging Guidelines
- To prepare an appropriate rig you should be using an armature for modern rigging workflows. The entire model DOES NOT need to move, rig only the parts that will need to move.
- Utilize the 12 principles of animation to ensure you create a captivating action. 3D Artists should always look for ways to really make their work POP, and animation is a relatively easy way to accomplish this. For competition you will need to showcase at minimum 3 major principles of animation. EX: Exaggeration, Anticipation, Squash and Stretch.
- Your animation should be set at 60 frames per second.
- The animation should have a 30 frame hold at the beginning and a 30 frame hold at the end. This will allow the animation to "wake up" and "go to sleep" ensuring the player has a chance to witness the animation.

Animation Submission
- Provide a .FBX file with the animation baked into it. This will be required for import in the final module.

NOTE: Only Unreal Engine is being allowed as it is the industry standard for displaying prepared game assets currently. Unity is a solid engine but requires more technical understanding to create a serious scene. If a competitor can demonstrate a high level of understanding of Unity *BEFORE THE COMMENCEMENT* of the competition the committee may grant an exception.

Competitors will work through the following steps to create a simple common room for their chosen house.

1. Create a blank level with no assets and no lighting.
2. Import your assets first. These should include your animated sculpture complete with textures and your UV unwrapped fireplace.
3. Create materials in Unreal Engine for your fireplace using the provided textures found on your provided competition USB drive.
4. Create materials for your sculpture using the textures you created in Module 4.
5. Use the provided assets on your competition provided USB drive to create your own common room. Make sure you appropriately place your fireplace and statue in the scene.
6. Create a visual effect of a fire burning in your fireplace. To create the fire you will use Niagara fluids. Instructions will be provided at the competition for this, but practice is highly encouraged.
7. Create a UE Blueprint that will change the fire from orange to green and causes the fire to grow. This Blueprint must be triggered when the interact key (usually F) is pressed.
8. Create lights as you see fit for proper ambience of your scene.
9. Create a post-process volume and adjust to finalize the look of your scene.

Game Engine and Technical Art Submission
● Your work will be viewed on your workstation at the end of day 2.

NOTE: The committee would appreciate if competitors packaged their scenes and place them on the provided USB drive, but only if time permits. Instructions to complete this task will be provided if requested. This is not a judged component, but these assets allow the committee to showcase competitor work and share with industry members that love to see what youth do with their tools.

Organization

This component is judged throughout the competition as part of each module.

Each module will have criteria that judges will be looking for:
1. Proper file naming conventions are used.
   a. Files must always be named as follows:
      FirstName_LastName_Module#.FileExtension
2. Components are always renamed to indicate their purpose (Example: A wood beam is not Cube123, but wood_beam)
3. Components are grouped in collections or folders as appropriate. The collections/folders are named appropriately to indicate their contents (Example: A wood beam is in a collection called wood_parts, not in Scene Collection. A texture that is for dirt and grime is in a Painter folder called dirt_grime)

Workplace Communication

At the **end of each day** competitors will complete the following communication assets to be submitted on their competition provided USB drive before they leave.

1. Work Log – this will include a breakdown and description of the work completed in each module worked on that day. Think of it as a timesheet that you would submit to an employer.
2. Asset List - this will include a breakdown of all the assets a competitor completed during the day and their location on their USB drive. Key information appropriate to the asset will be included. (Example: Fireplace Model, fireplace.blend, /module1/fireplace, polygon count 14768)

Templates will be provided for competitors and a demonstration on how to complete these sheets will be shown during orientation.

Questions?

Please contact Mike Sury, mikes@skillsalberta.ca, if you have any questions.

COMMITTEE MEMBERS
Chair - David Brown
Member – Ethan Thomsen