



PROJECT
3D Digital Game Art

POST-SECONDARY

1 INTRODUCTION

This competition aims to create assets for a fictional game called "Go-Go Tortoise Racer."

1.1 Game Background

"Go-Go Tortoise Racer" is a mobile game featuring a tortoise as a playable character. While the premise is comedic, the game has a realistic look and feel, with full PBR materials and a vibrant colour palette. The tortoise has natural features and proportions, and as several are included in the game, its face should convey a unique personality. During races, tortoises pull chariots piloted by robots.

2 DESCRIPTION OF PROJECT AND TASKS

During this competition, you will be creating two assets for the game:

- A tortoise character.
- The chariot for the tortoise to pull.



3 Deliverables Overview

Deliverables for this competition will include the following:

- Concept Art for The Chariot.
 - A minimum of two digital sketches
 - Final Art 3840x2160px
 - Asset List

- Chariot Model
 - A model with a maximum of 10,000 triangles
 - 1024x1024 texture map
 - Ambient Occlusion, Normal and Opacity maps.
 - Diffuse, Metal Rough PBR

- Tortoise Model
 - A model with a maximum of 15,000 triangles
 - 4096x4096 texture map
 - Ambient Occlusion, Normal and Opacity maps.
 - Diffuse, Metal Rough PBR

- Tortoise Animation
 - A looping animation of the tortoise in motion. The tortoise model should be keyframed using a rig with multiple bones. The file should be lit and presented in Sketchfab.

NOTE – ALL ASSETS ARE TO BE PLACED IN FOLDERS ON YOUR DESKTOP

4 Deliverables Schedule

	DELIVERABLE	DESCRIPTION
Day 1	Project Planning; and Modelling	Asset List Initial Modeling & Materials
Day 2	Modelling, Texturing, Materials, Unwrapping, Mapping, Rigging, Animation and Export	Final Models, Maps & Materials Exported model rigged, animated, and exported to Sketchfab



5 Day 1 – Project Planning & Modeling

The focus of the first day of the competition is to submit the concept art for the chariot, plan your project and start modelling. You will also need to create an Asset List for the competition, which should include:

- Names of assets/elements to be made.
- Estimated texture and triangle budgets for various elements (parts of the chariot and the tortoise)

Be adventurous in your designs. Get some inspiration from the images provided. Use them as a reference while you devise an original design for a chariot and an accurate recreation of the type of tortoise pictured. Create your materials and textures to tell the story of the models and make sure you conform to the following guidelines:

- The chariot should have a **unique design and cannot be a copy** of any of the images provided;
- The chariot must show aged materials and wear & tear. **It does not have to be animated;** and
- **The tortoise's appearance must be realistic** and compliment the style and presentation of its chariot.

Note: Your concept art can/should be done before you arrive in Vancouver. You will submit an image (.png or .jpg) or .pdf of the final design to the competition. The art submission specifications can be found in the next section.

5.1 DAY 1 DELIVERABLES

- The concept art* for the chariot consists of:
 - At least two variation digital sketches
 - Final art 3840 x 2160px
- The concept art* for the tortoise attached to the chariot consists of:
 - At least two variation digital sketches
 - Final art 3840 x 2160px
- Asset List with triangle and texture budgets for various elements of both the chariot and the tortoise.

- Initial modelling should be underway.

NOTE – ALL ASSETS ARE TO BE PLACED IN FOLDERS ON YOUR DESKTOP



GUIDELINES
PSD tidiness - named layers and sensible folder structure;
The asset list is written;
including poly budgets and texture sizes;
THE Digital sketch explores more than two ideas;
The digital painting demonstrates shading;
The digital painting demonstrates perspective drawing skills;
Digital painting indicates proportion;
Consistent colour palette and lighting;
One selected design turned into a piece of art showing the tortoise attached to the

chariot; and

The final concept art features blending/smoothing to indicate form.

6 Day 2 - Modeling, Texturing, Materials, Unwrapping, Mapping, Rigging, Animation and Export

Day two is focused on modelling, mapping, animating and export. You should have finished UV unwrapped models with texture maps and animated rig by the end of the day. Your work should be exported to Sketchfab and displayed professionally.

The order in which you build the models is not important, as long as they are both ready by the end of the day. The tortoise should be sculpted and retopologized. The final must remain within the 10,000 triangle limit. Make sure you consider edge loops and ensure you have enough topology where additional detail or possible deformation is required. The model of the chariot also has to be completed today. Use separate maps for the tortoise and the chariot.

Make the most out of each texture sheet – note that marks are awarded for the effective use of texture sheets. Create stylized textures for each asset, thinking about the variety of materials used, such as wood, metal, leather, vegetation, dirt, and skin.

Add a rig to your tortoise using a hierarchical arrangement of bones. Bind the skeleton to the mesh and keyframe a looping animation showing the tortoise in motion.

Export the tortoise and the chariot into Sketchfab. You will present and illuminate the two objects in Sketchfab to show them off at their best.

6.1 DAY 2 DELIVERABLES

- Model of the chariot – Maximum 10,000 triangles;
- Model of the tortoise – Maximum 15,000 triangles;
- UV Unwraps of models;
- Texture maps for chariot, Diffuse/Metal/Rough/Ambient Occlusion/Normal/Opacity maps;
- Texture maps for tortoise, Diffuse/Metal/Rough/Ambient Occlusion/Normal/Opacity maps;
- 2 Texture sheets – 1024 x 1024px and 4096 x 4096px;
- Lit tortoise and chariot in Sketchfab; and

- Animation created with rig and bones.

NOTE – ALL ASSETS ARE TO BE PLACED IN FOLDERS ON YOUR DESKTOP



GUIDELINES for MODELLING
Max/Maya scene organization - only relevant assets in the scene;
Models sculpted then retopologized if needed;
Topology and edge loop distribution for the tortoise. Consider areas that require deformation (+ same for chariot);
Both 3D models conform to edge flow that accentuates the represented object;
Models can be understood in silhouette only ;
Models are consistent with art style;
No N-gons present on the models;
No flipped normal present on the models;

Chamfered edges on any 90-degree edge;

Models utilize 90+% of the triangle budget; and

Models are within triangle budgets.



GUIDELINES for MATERIALS
Aspect Ratio of texture sheets are correct - 4096x4096 & 1024x1024;
PSD saved as PNG format and applied to model;
UV Tidiness and Efficiency;
Smooth and even UV shells;
Texel density – the size of polygons relative to the pixel resolution;
Group shells with similar colours together;
UV coordinates exported to PS or Substance;
No overlapping UVs (except for mirror/repeat);
UVs utilize rotation to maximize space;
No noticeable pixelation or obvious stretching of textures on the surface;
The texture looks seamless on the model;
The texture is consistent with art style;
A variety of physical materials have been represented;
Evidence of variation in PBR textures (settings);
Evidence of Diffuse/Metal/Rough/Ambient Occlusion/Normal/Opacity maps; and
Height or Displacement and Specular or Metal maps created.

GUIDELINES for ANIMATION & EXPORT
All tasks completed on time;
Art style consistent through all assets;
Bones created to form the structure of moveable asset;
FK or IK structure set up;
Tortoise mesh skinned;
Animation keys set up in Max/Maya to test motion;
Animation exported as FBX;
The Animation loops without popping;
The bones have been adjusted to be hidden inside the mesh;
Models' materials and textures are visible in Sketchfab viewport;
The model posed appropriate lighting settings to show the best qualities of the assets;
Sketchfab shows no UV errors; and
Sketchfab shows no deformation errors.

7 Instructions

Save your files in your working directory using this format, "XX_AssetName_A," where XX is your Province code. Save all your files to be assessed into a suitable directory structure and naming inside the abovementioned directory. Save all your work files (those that will/should not be evaluated – if any) into a subdirectory called "work."

GOOD LUCK!

