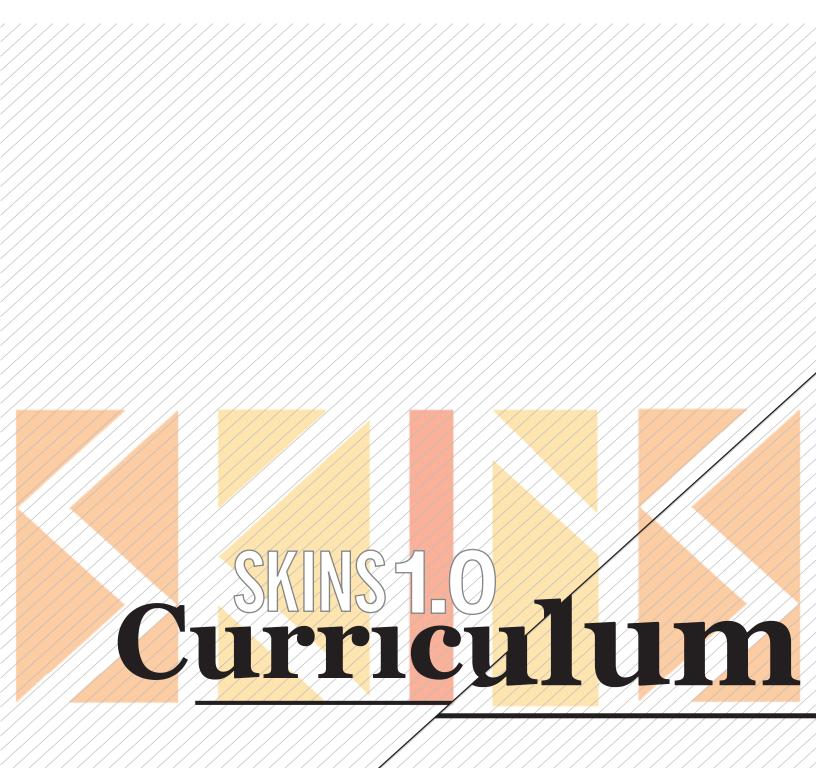# Aboriginal Territories in Cyberspace | Obx Labs

Co-Directors: Jason E.Lewis & Skawennati Tricia Fragnito
www.abtec.org | www.obxlabs.net

SKINS 1.0
Curriculum

Aboriginal Territories in Cyberspace | Obx Labs

Co-Directors: Jason E.Lewis & Skawennati Tricia Fragnito

www.abtec.org | www.obxlabs.net

SKINS 1.0
Curriculum

Skins 1.0

a Workshop in
Aboriginal Storytelling

&

Game Design
Draft Curriculum

Created by
Aboriginal Territories in Cyberspace
Obx Labs

Co-Directors
Jason E. Lewis
Skawennati Tricia Fragnito

Co-Authors
Beth Aileen Lameman
Bea Parsons
Mohannad Al-Khatib
Cassandra Lacombe
Nancy-Elizabeth Townsend
Angela Gabereau

In collaboration with the members of the AbTeC research network.

The Skins curriculum was created to teach Aboriginal youth a multitude of skills related to game production while at the same time encouraging them to develop game concepts, characters, and mechanics based out of their own cultural experience. The curriculum materials provided herein can be used in numerous settings, whether intensive or long-term workshops, extracurricular programs, or in-class projects. Skins can also be adapted into a regular class schedule, as its content could fit well into Culture, History, Art, Design, and/or Technology classes.

The Skins curriculum contains several aspects that are uniquely oriented towards Aboriginal students. One is the emphasis on traditional stories and storytelling techniques, which serves to both encourage youth to reflect on how stories are transmitted in their community, as well as how they themselves can participate in the preservation, evolution, and future transmission of those stories. A second aspect is the inclusion of a community partner who plays a central role in mentoring the youth and ensuring that cultural elements, such as language and stories, are represented in ways that reflect the history and values of the community

The curriculum covers traditional storytelling as well as topics central to game and virtual environment production, including:

- **Aboriginal storytelling traditions**
- **Aboriginal storytelling techniques**
- **Aboriginal storytelling across media**
- **Concept development**
- **Interactive narrative**
- **Level Design**
- **Art Direction**
- **3D Modeling**
- **3D Animation**
- **Digital Audio**
- **Project Management**

The full Skins curriculum entails 125 hours of instruction time, along with 75 hours of out-of-class preparation or self-directed complimentary reading/exercises.

Skins was prototyped with Mohawk youth in Owisokon Lahaches' Senior Graphics Arts course at the Kahnawake Survival School (Kahnawake First Nation) throughout the 2008-2009 school year. It was developed by Aboriginal Territories in Cyberspace (AbTeC), an international research network of Aboriginal and non-Aboriginal artists, academics, activists, and technologists who are exploring ways in which Native people can be active participants in the shaping of our digitally mediated future. It is our hope that Skins provides a new venue through which elders can pass on their knowledge to the next generation, and an opportunity for youth to explore their culture via a new medium that is exciting to them. The curriculum aims to empower Native youth to be more than just consumers of these new technologies; it shows them how they themselves can be creators and builders—full participants in defining the future of cyberspace.

The curriculum is divided into four components:.

1. Play Module

This module was created to provide opportunities for students and mentors to get acquainted with each other at the beginning of the workshop series by playing video games, board games, and viewing movies made by Aboriginal filmmakers. These sessions can also be scheduled throughout the workshop series to break up long work periods..

2. Storytelling Module

The lessons in this module are designed to give students a chance to listen to stories told by elders as well as share their own stories. Students will also learn about the different ways that stories can be told—from traditional oral storytelling to comic books, films, and narrative in video games. The lessons at the end of this module are meant to help students work as a team to decide on a story they would like to tell in their own video game. Students will also learn how to write the narration that will be featured in the introduction and cut scenes for the game.

3. Game Design Module

The lessons in this module are intended to help students take their game ideas to realization through preliminary planning and group work. This module involves lessons on how to create a basic layout and design for game creation through paper prototyping, how to test the game idea without even turning on a computer, and designing the concept art for the game.

4. Technical Module

The lessons in this module are meant to take students step by step through the technical skills needed to create a game. Skills range widely, including digital art, animation, level design, programming, and sound engineering. Students will learn the software and skills needed to implement their game design.

About this module

This module was created to provide opportunities for students and mentors to get acquainted with each other at the beginning of the workshop series by playing video games, board games, and viewing movies made by Aboriginal filmmakers. These sessions can also be scheduled throughout the workshop series to break up long work periods.

- **Play 1: Board Games**
- **Play 2: Video Games**
- **Play 3: At the Movies: Aboriginal Films**

Play 1. Board Games

Population:

These guidelines were created for young adults between the ages of 15-17. There are 16 participants in the class and one instructor/facilitator.

Instructors' Prerequisites:

- The instructor/facilitator should have an understanding of board games.

Students' Prerequisites:

- No previous experience with board games is required.

Duration:

1+ hours.

Objectives:

- To open the workshop in order to give participants and facilitators a chance to get to know each other and have some fun playing board games.

Vocabulary

Games, Board Games

Equipment, Software, Materials:

Ask the facilitators to bring in a variety of board games from home to play during this session. Suggestions: Monopoly, Clue, Pictionary, Trivia Pursuit, Sorry, Settlers of Catan, Tikal, Battleship, Uno, and Yahtzee, to name a few.

Preparation:

- Invite participants to bring in their favourite games from home that they would like to play with the group.

- Arrive early to set up the board games. There should be enough seating for everyone.

Procedure:

1. Introduction (5min)

Explain to students that, at first, the idea of playing board games may seem old fashioned in relation to a video game development workshop, but the fundamentals are similar: games are fun, games can challenge you, and games have goals. Also introduce students to the board game options.

2. Play (~40min)

Divide students into groups based on the number of players allowed for each game. Allow at least 30 minutes of gameplay time.

3. Discussion (15min)

Once gameplay is finished, discuss the experience with students and facilitators.

Play 2. Video Games

Population:

These guidelines were created for young adults between the ages of 15-17. There are 16 participants in the class and one instructor/facilitator.

Duration:

1+ hours.

Instructors' Prerequisites:

- Either the instructor should have an understanding of setting up video game consoles or the instructor should ask a facilitator to run the session.

Students' Prerequisites:

- No previous experience with video games is required.

Duration:

1+ hours.

Objectives:

- Participants should have a good time and learn about each other and what kinds of games they are interested in..

Vocabulary

Games, Game Consoles, Video Games, Wii, PS2, PS3, Xbox 360

Equipment, Software, Materials:

Game consoles (e.g. Wii, PS2, PS3, and/or Xbox 360). Ask students to bring in their favourite games to play. TV(s) and cables..

Preparation:

- Ask participants to bring in their favourite video games to play during this session. Knowing each others' game preferences will be helpful later on when working as a group on the design and development of their game.

- Arrive early to set up the game consoles and screens. There should be enough seating for everyone.

Procedure:

1. Introduction (5min)

Invite students to introduce what video games they brought. Discuss the different genres of games.

2. Play (~40min)

Help students divide into pairs or groups for gameplay sessions. Allow at least 10 minutes of gameplay time per pair or group. Pairs/groups can have more time if there are more gameplay stations (TV plus console).

3. Discussion (15min)

Once gameplay is finished, discuss the experience with students and facilitators.

Play 3. At the Movies: Aboriginal Films

Population:

These guidelines were created for young adults between the ages of 15-17. There are 16 participants in the class and one instructor/facilitator.

Instructors' Prerequisites:

- Either the instructor should have an understanding of Aboriginal films or the instructor should ask a facilitator to run the session.

Students' Prerequisites:

- No previous experience with Aboriginal film is required.

Duration:

2 hours.

Objectives:

- Students will gain an understanding of Aboriginal film.

Vocabulary

Games, Game Consoles, Video Games, Wii, PS2, PS3, Xbox 360

Equipment, Software, Materials:

DVD player. Monitor or projector for screening the movie. Suggested feature length films include Ten Canoes (2006, Australia), The Journals of Knud Rasmussen (2006, Denmark), Atanarjuat/The Fast Runner (2002, Canada), Rabbit Proof Fence (2002, Australia), Skins (2002, US), Whale Rider (2002, New Zealand), Smoke Signals (1998, US), Once Were Warriors (1995, New Zealand), and Powwow Highway (1989, US).

Preparation:

- Consult with the students ahead of time to decide what type of movie they would like to watch.

Procedure:

1. Introduction (5min)

Explain to students that watching Aboriginal films and movies is another way of looking at how Aboriginal stories are translated through movies and films. Introduce students to the film they will be viewing.

2. Watching (~100min)

Watch the film with students.

3. Discussion (10min)

Discuss the film, its inspiration, how it relates to Aboriginal storytelling, and how it relates to Aboriginal media. Ask students to think about how films relate to games for future sessions.

This module contains the following:

The lessons in this module are designed to give students a chance to listen to stories told by elders as well as share their own stories. Students will also learn about the different ways that stories can be told—from traditional oral storytelling to comic books, films, and narrative in video games. The lessons at the end of this module are meant to help students work as a team to decide on a story they would like to tell in their own video game. Students will also learn how to write the narration that will be featured in the introduction and cut scenes for the game.

- **Storytelling I: Seeing Red**
- **Storytelling II: Listening to Stories**
- **Storytelling III: The Root of a Story**
- **Storytelling IV: Translating Stories**
- **Storytelling V: Sharing Stories**
- **Storytelling VI: Deciding on a Story**
- **Storytelling VII: Narration for Opening & Cut Scenes**

Storytelling 1. Seeing Red

Population:

This lesson was created for young adults between the ages of 15-17. It is intended as an introduction to popular video games and virtual worlds, alternative games, and games with indigenous representations (characters or themes); as well as a discussion of how our culture is portrayed in games and how we can contribute and create our own narratives and identities using interactive technology. There are 16 participants in the class, one instructor, and one visiting instructor.

Instructors' Prerequisites:

- The visiting instructor should have a strong understanding of video games and virtual worlds as well as indigenous representations in media overall.

Students' Prerequisites:

No previous experience with video games or virtual worlds is required.

Duration:

45-minutes

Objectives:

1. Students will be introduced to commercially available games and concepts such as game genre, alternative games including independent, serious, and educational game titles, popular virtual worlds, and indigenous representations found in this interactive technology.

2. Students discuss their experience with games, their thoughts on indigenous representations in games, and how they think their ideas can contribute to creating uniquely indigenous narratives and identities in video games and virtual worlds.

Vocabulary:

Game Genre, Platformers, Action, Fighting, Role Playing, Sports, Strategy, Simulation, Party, Massively Multiplayer Online, Casual, Commercial Games, Alternative Games, Independent Games, Machinima.

Equipment, Software, Materials:

- "Seeing Red" PowerPoint presentation.

- Projector connected to computer for display.

Preparation:

The visiting instructor must bring the presentation slides and prepare for discussion.

Web ressources &books:

See attached PowerPoint presentation: "Seeing Red" by Beth Aileen Lameman.

Procedure:

1.Introduction to Games and Virtual Worlds (5min)

You will introduce yourself and ask the students to introduce themselves along with a video game or virtual world they like. Use these as references in later discussion. Help them identify the genres of the games they mentioned.

Storytelling 1. Seeing Red (continued)

2. Presentation on Commercial Games (5min)

Game genres refer to the type of play found in a video game and roughly include: Platformers, Action, Fighting, Role-Playing, Sports, Strategy, Simulation, Party, Massively Multiplayer On-line, and Casual. Casual games like *Bejeweled* and *Diner Dash* can be played on websites or by downloads. Next-gen (meaning the latest consoles including Xbox 360, PlayStation 3, and Wii) platformers like *Super Paper Mario* and *Ratchet & Clank* change up the classic Mario model by using multiple directions and 3D graphics. Action games include a wide range and sometimes cross over into genres like First Person Shooters, such as the *Halo* series..

3. Presentation on Games with Indigenous Representations (10min)

Indigenous representations in video games have been present across game genres and platforms since the 1980's. Arguably, most of these representations are drawn from stereotypes found in film. In Fighting games, Native characters are often the "Keeper of His People" or "Protector of His People" without any idea who exactly his people are (as in band, nation, or tribe). Usually, in Adventure games, the lead hero is mixed blood rather than completely Native. In most games, Natives fill the role of the non-player character (enemy) to be killed for points. To break up the presentation, interject a small discussion by asking the youth if they have experience with Native characters in games or films, and if so, what their experience has been and what it meant to them.

4. Presentation on Alternative Games (5min)

Alternative games are games that have a purpose that is outweighed by entertainment, often a form of education. Military games like America's Army used as a recruiting ad contrast greatly with Activism games like Darfur is Dying, which is intended to enlighten players about Darfur's pressing issues. Games can also be modded strictly with the motivation of art or activism. Lastly, machinima is an interesting form of film made from game engines or from footage captured while playing the game itself.

5. Discussion (15min)

Ask the youth questions including: What is your favorite game genre? How could you make that genre's gameplay different (e.g. making a hybrid between a role playing game and a simulation game). Relate back to their favorite games mentioned at the beginning of the presentation.

 Once a rapport is established, get into deeper questions such as: What kind of representation of your culture do you want to see in a game? What kind of game do you want to play (and thus make)?

6. Conclusion (5min)

Close by exciting them with the idea that they are getting a chance to make their own game and determine their own identity within interactive media like video games. Ask them to think about these points and their own interests while keeping in mind working with a team to develop a game.

Storytelling 2. Listening to Stories

Population:

These guidelines were created for young adults between the ages of 15-17. This is intended as a series where elders and storytellers are invited to share oral stories. There are 16 participants in the class, one facilitator, and a guest storyteller.

Instructors' Prerequisites:

The facilitator needs to have a connection to the local community in order to invite a guest storyteller or elder to share stories with the group.

Students' Prerequisites:

- No previous experience with storytelling is required.

About this section:

This section is a guide for a series of 2 to 3 individual storytelling sessions. For each session, a different storyteller from the community will be invited to share stories with the group. Each storyteller will be asked to begin their visit with their version of the creation story. Later, these stories will be used as basis for discussion about translating stories.

Duration:

45 minutes

Objectives:

1. Students will listen to stories told by a local elder or community storyteller.

2. Students will learn about their culture and oral history through the transmission of stories.

3. The stories will serve as a reference later during the discussions about storytelling.

Vocabulary:

Storytelling, Narrative, Oral History, Knowledge, Tradition, Creation.

Equipment & Materials:

- A quiet space for storytelling and listening.

Preparation:

The facilitator must make arrangements to locate and invite a guest storyteller from the local community or region. The storyteller should be asked ahead of time if they would be willing to begin their storytelling session with a creation story. The reason for this is so that the participants can later discuss the art of storytelling and how each storyteller brings their own style to a shared cultural story. Hearing different versions of the same story will help participants find the root of the same story, and identify how each version is translated differently depending on the person telling it.

Web Resources & Books:

Reference material for instructor/facilitator:
King, Thomas. The Truth About Stories. Toronto, ON : House of Anansi Press, 2003.

Procedure:

1. Introductions (5 min)
The facilitator will welcome the storyteller to the group. Introductions will be made between the storyteller and the students. Remind everybody to turn off or mute his or her cell phones.

2. Listening to Stories (35 min)

The remainder of the session will be given over to the storyteller share stories with the group. This person will start off by telling the creation story followed by any other stories they may wish to share. The students will participate by listening and learning about their culture through the transmission of oral stories.

Storytelling 3. The Root of a Story

Population:

These guidelines were created for young adults between the ages of 15-17. There are 16 participants in the class and one instructor.

Instructors' Prerequisites:

- The instructor must have been present during the previous storytelling sessions in order to lead this discussion.

Students' Prerequisites:

- No previous experience with storytelling is required.

Duration:

45 minutes

Objectives:

1. The students will identify the root of the creation stories told by each guest storyteller in the previous sessions.

2. The students will discuss the differences between each version of the creation story in order to understand how the storytellers each brought their own originally to this traditional story.

3. The students will learn what is intellectual property.

Vocabulary:

Storytelling, Narrative, Oral History, Translation, Knowledge, Tradition, Creation.

Equipment & Materials:

- A round table for students to sit during group discussion.

- White board and markers for taking notes.

Web Resources & Books:

Reference material for instructor/facilitator:
King, Thomas. The Truth About Stories. Toronto, ON : House of Anansi Press, 2003.

Procedure:

1. Introduction (10 min)
Begin the discussion by talking about how a story changes when told by different people and across different media (from literature to film, for example). Review the storytelling sessions, the storytellers, and the stories they told. Ask the students if it was their first time hearing these stories or not—where did they hear the stories before and how did they differ from the ones heard during the workshop?

2. Identifying the Root of the Story (10min)

Ask the students to think back to the creation stories they heard in the previous storytelling session. What was the running theme and similarities between the versions of the creation story told by the guest storytellers? Have the students establish the similar themes, lessons, and characters in each version of the creation story they heard.

Storytelling 3. The Root of a Story (continued)

3. Translation (10min)

Once the students have identified the root and running themes of the creation story, discuss how each version of the story differed between storytellers. Talk about the style of each story by looking at the tone. Was the story comical, serious, scary, or suspenseful? Who was the main character? From whose point of view was the story told? Use these examples as the basis for talking about how the decisions a storyteller makes in telling a story gives the story an original feeling each time its told, even if the story is hundreds of years old. For example, how would the story change it was told from the Skywoman's point of view instead of an omniscient narrator? What if it was the told from the turtle's perspective? Ask these questions to get the students thinking about the various ways the same story can be told.

4. Intellectual Property (10min)

Discuss what is intellectual property (IP) with the students. Talk about how intellectual property refers to ideas and creative work such as literature, art, images, symbols and designs. Talk about how intellectual property is something the students need to consider, as they will be translating a story into a game. They will have to consider where the story idea comes from, does the idea belong to a person, group of people or culture.

5. Conclusion (5min)

Prepare students for the next lesson when they will look at Aboriginal storytelling in media. Ask them to think on how IP is affected when stories are translated into new media.

Storytelling 4. Translating Stories

Population:

This presentation was created for young adults between the ages of 15-17. It is a discussion-based presentation that introduces storytelling across varying media with an emphasis on Aboriginal stories. There are 16 participants in the class and one instructor.

Instructors' Prerequisites:

- The instructor should be very familiar with Aboriginal storytelling as well as Aboriginal comic book artists, writers, and animators in order to give examples to discuss the various ways in which we can use media to tell our stories.

Students' Prerequisites:

- No prerequisites necessary.

Duration:

45 minutes.

Objectives:

1. Through lectured presentation, students will learn about the links between storytelling and art using examples of comic books and animation.

2. Through discussion, students will consider video games as another mode of storytelling.

Vocabulary

- Oral history, Translation, Fables, Legends, Morals, Entertainment, Education, Culture. Tradition, Games, Comic Books, Animation.

Equipment, Software, Materials:

- Projector connected to computer for display

Preparation:

The instructor must bring the presentation slides and prepare for discussion. The presentation slide show should feature images from the examples of films, comic books, and games discussed by the presenter.

Films, Resources & Books:

Suggested Comic Books:
"When Darkness Calls" Steve Sanderson
"Fala" and "The West Was Lost" by Beth Aileen Lameman

Suggested Animations:

"By the Rapids" by Joseph Lazare - http://www.bytherapids.ca/

Procedure:

1. Storytelling: Introduction (10min)

To begin the discussion with the students, establish what oral history and storytelling is. Start out with talking about how oral history is passed along generations over the years.

Present the different modes of telling a story:

1) Historical recounts

2) Personal stories, family history, accounts

3) Creation stories, animal stories, character stories

Storytelling 4. Translating Stories (continued)

Talk about how a story changes along the way depending on whom the person is sharing it, as their own style will influence the telling of the story. For example, the creation story has been told for generations across different Aboriginal cultures. Even though each storyteller maintains the root of this story, their own style and personality will change the creation story to varying degrees. Provide an example of how a story changes from generation to generation by showing two different versions of the same story with movie stills from films such as Seventh Samurai and Star Wars, which share the same root of a story.

2. Link Between Storytelling and Art (5 min)

Before showing examples of comic books and animations as stories told through other media, start by showing historical examples of how Aboriginal people have always translated information not only through oral histories but through visual language. Provide examples of pictoglyphs, rock carvings, and hide paintings to show how Aboriginal people have used images to communicate throughout time.

3. Storytelling Through Comic Books (10min)

Comic book artists tell stories using images and words. Aboriginal artists are telling their stories through comic books. Some stories in the comic books are based on old tales such as Beth Aileen Lameman's "Fala" which was inspired by "Alice in Wonderland." The comic book is available online at http://www.zeros2heroes.com/property/fala. Steve Sanderson's "When Darkness Calls" was inspired by both a personal story (about his cousin who contemplated suicide) and the Cree trickster figure, Wesakechak. Present examples of these artists and their way of adapting traditional Native and non-Native stories as well as personal stories in their work.

4. Storytelling Through Animation and Film (10min)

Another form of popular storytelling is done using animation and film. Joseph Lazare's cartoon series "By the Rapids" on APTN is an example of animation. The story takes place on a reserve with a contemporary Aboriginal family, making this style of storytelling coming from a personal point of view as a man who grew up in Kahnawake. More information about Lazare's work can be found at http://www.bytherapids.ca/. Another example of Aboriginal animation is "Raven Tales," a 13 part series that uses computer-generated images to tell traditional stories. More about "Raven Tales" can be found at http://www.raventales.ca/?p=46. Show the participants examples of these cartoon animations and discuss what kinds of stories are being presented here.

5. Aboriginal Games (5min)

Before introducing storytelling through video games in the final section, bring up how game play is an inherent part of Aboriginal culture just as storytelling is. Throughout time we have used games in order to teach, play, train, and solve conflict. Briefly provide visual examples and a short description of Aboriginal games such as Snow Snake (a competition to teach hunting), and Lacrosse, which continues to be a popular sport today.

6. Storytelling Through Video Games (10min)

Just like storytelling, games similarly serve the purpose of entertaining, educating, or delivering a message, to name a few. How can the types of stories discussed in this lecture such as historical accounts, personal stories, creation stories, and character stories be told in a game? What kinds of stories would make an interesting game? There are some stories that have more visually interesting elements than others. Thinking about these types of questions now will help later on when students share and select their stories for future lessons. To start a discussion, play video clips of popular video games and then discuss the kinds of stories they see.

Storytelling 5. Sharing Stories

Population:

This presentation was created for young adults between the ages of 15-17. This is a session where participants are asked to bring in their stories to share with the rest of the group. These stories will serve as a resource for participants to select one from when it comes to deciding what story they want to base their game on. There are 16 participants in the class and one instructor.

Instructors' Prerequisites:

- The instructor/facilitator should be very familiar with Aboriginal storytelling. This person should have general knowledge about current video games.

Students' Prerequisites:

- Storytelling 4. Translating Stories

- Participants should be asked by the instructor/facilitator to select a story that they might want to make into a game for this project.

- Participants should also be asked to bring in a written copy of the story.

Duration:

45 minutes.

Objectives:

1. The participants will take turns sharing the stories that they have brought in. They are welcome tell the story by either reading it out loud from the printed version or just telling it from heart.

2. By the end of the session, the participants will have a large resource of stories to choose from in the next session when they select the story to base their game on.

Vocabulary

- Oral history, Translation, Fables, Legends, Morals, Entertainment, Education, Culture, Tradition, Games, Comic Books, Animation.

Equipment, Software, Materials:

- A space where participants can sit and face each other during storytelling.

Preparation:

The instructor/facilitator must prepare a comfortable and undisturbed room for participants to share their stories.

Procedure:

1. Introduction (5 min)

Introduce storytelling by explaining that the participants will each take a turn telling their story to the group. Let them know that they can either read it out loud or tell it from memory. Explain that, after this session, the group will have a resource of stories to choose from when the time comes to decide on a story that they want to tell. Ask for a volunteer to go first.

2. Storytelling (35min)

Participants share, listen, and learn each other's stories for the remainder of the session.

Storytelling 5. Sharing Stories (continued)

3. Conclusion (5min)

Ask participants to reflect on the stories until the next session and try to think of what stories or parts of the story would make for an interesting game idea. Ask them to think about this in relations to visuals, characters, the message, and what kind of games they are interested in making such as action, horror, or educational, to name a few.

* If there are a large number of participants, the facilitator may want to schedule a longer storytelling period going over 45 minutes.

Storytelling 6. Deciding on a Story

Population:

This session was created for young adults between the ages of 15-17. In a group discussion and decision making process, the participants will decide on what story they will base their game on. There are 16 participants in the class and one instructor.

Instructors' Prerequisites:

• The facilitator should be very familiar with Aboriginal storytelling.
• This person should have general knowledge about current video games.

-   Experience moderating group decision-making is also helpful for this session.

Students' Prerequisites:

- Storytelling 4. Translating Stories

- Storytelling 5. Sharing Stories

Duration:

45 minutes.

Objectives:

1. As a group, participants will decide on one story that they will be used to base their game on.

Vocabulary

- Oral history, Translation, Fables, Legends, Morals, Entertainment, Education, Culture. Tradition, Games, Comic Books, Animation

Equipment, Software, Materials:

- A round table where students can sit and face each other during the discussion and decision-making.

- Chalk board/White board for writing down group notes

Preparation:

- The facilitator must bring in the printed stories that the participants brought in the during the "Sharing Stories" session.

Procedure:

1. Introduction (10min)

Review what took place in the previous session when the participants shared their stories. Refresh their memories by listing the stories that were told. Instruct participants that they will be given the next half hour to decide on a story that they would like base their game on.

2. Discussion & Decision Making (30min)

Go around the table and ask the participants what stories from the previous session they were interested in basing their game on. If there is a unanimous answer or a few main stories that people agree on, go through each one and ask questions such as:

-"What is it about this story that will make for an exciting game?"

-"What is there visually in the story that would translate well in a game?"

-"What kind of actions takes place in the story that would translate well into a game?"

-"What kind of game genre would this turn out to be if based on the story? … First Person, Third Person Adventure, Educational?"

Storytelling 6. Deciding on a Story (continued)

By the end of 30 minutes the participants should have looked over their stories in terms of translating into a game. They should be at the point to decide on what story they will be following for their game idea.

3. Conclusion (5min)

Wrap up the session by making sure everyone agrees on the game and let him or her know what he or she will be doing in the next session.

Storytelling 7. Narration for Opening and Cut Scenes

Population:

This lesson was created for young adults between the ages of 15-17 and is intended to inform students about the steps and techniques for writing narration for opening and cut scenes in video games. There are 16 participants in the class, one instructor, and one visiting instructor.

Instructors' Prerequisites:

- The visiting instructor should have a strong understanding of writing for video games and virtual worlds.

Students' Prerequisites:

- No previous experience with writing for video games or virtual worlds is required. Students should have their game design in mind.

Duration:

45 minutes..

Objectives:

1. Students will be introduced to the uses of opening and cut scenes in video games and their importance. They will be given steps and techniques for writing narrative for opening and cut scenes for their own video games.

2. Students will have hands-on guidance from the visiting instructor as they write a scene for their video game. They will then share their writing with the other students for feedback and discussion.

Vocabulary

- Opening Scene, Cut Scene, Pacing, Immersion.

Equipment, Software, Materials:

- Writing materials for students.

Preparation:

- The visiting instructor should prepare for talking about narrative in games.

Web Resources & Books:

"Better Game Design Through Cutscenes," Hugh Hancock, Gamasutra.com
(http://www.gamasutra.com/view/feature/3001/better_game_design_through_.php).

Procedure:

1. Introduction to Game Writing (5min)

You will introduce yourself and ask the students to introduce themselves along with a brief description of their current game concepts. You will then briefly explain game writing, which mainly concerns dialogue, backstory, and opening or cut scenes. In this case, students will be working on an opening or cut scene, which usually establish or enhance characters, setting, plot, and gameplay (e.g. the goal of the next level).

2. Presentation on Writing for Cut Scenes (10min)

Opening and cut scenes, simply, are "films in games." They can be used for backstory, rewards, encouragement, pacing, and immersion. Cut scenes are made short for two reasons—(1) they're usually very expensive to create because of the complex rendering required for animation, and (2) players want to play the game, not watch it! Cut scenes are written like a film script but with a few more visual cues for the animator. Most in-game writing is written in Excel, but for cut scenes, you can use a text program. Explain the writing activity to students (details below). Write a film script template up on the board for them to see and copy by hand on their own team materials.

Storytelling 7. Narration for Opening and Cut Scenes (continued)

3. Writing Activity (20min)

Break students into the teams. For this activity, students should keep the scripts short (no more than 1 page). Remind them to keep the dialogue minimal and strong. Steps include: (1) Decide the purpose of the scene, (2) decide what characters to include, (3) decide what the characters are doing and saying, (4) write out their actions and dialogue like a film script. Help them as needed but give them room to work alone.

4. Sharing and Discussion (10min)

After the teams have completed the draft of their cut scene, have them share the basic premise with the rest of the class. Close the discussion by telling them to keep their writing to add to their game design documents for future use.

This module contains the following:

The lessons in this module are intended to help students take their game ideas to realization through preliminary planning and group work. This module involves lessons on how to create a basic layout and design for game creation through paper prototyping, how to test the game idea without even turning on a computer, and designing the concept art for the game.

- **Game Design 1. What's in a Game?**
- **Game Design 2. Game Development Process**
- **Game Design 3. Paper Prototyping**
- **Game Design 4. Game Design Documents**
- **Game Design 5. Playtest I**
- **Game Design 6. Playtest II**
- **Game Design 7. Maquette Building**
- **Game Design 8. Introduction to Concept Art and Character Design**
- **Game Design 9. Drawing Basics for Concept Art**
- **Game Design 10. Technical Drawing for Blender**
- **Game Design 11. Finalize Technical Drawing for Blender**

Game Design 1. What's In a Game?

Population:

This presentation was created for young adults between the ages of 15-17. It is a beginner level introduction to the various technical and artistic aspects of game creation from modelling to team coordination. There are 16 participants in the class and one instructor.

Instructors' Prerequisites:

The instructor should be knowledgeable about the video game industry and have a very strong understanding of the different roles involved in game creation from producer to game tester. Ideally, a professional from the video game industry will be invited to give this presentation to the group.

Students' Prerequisites:

No prior experience or knowledge on this topic required.

Duration:

45 minutes.

Objectives:

1. During this presentation, students will be given an overview of the various roles involved with video game creation ranging from producer to game tester.

2. Students will also learn about the software that is utilized with each role in game design.

Vocabulary

Producer, art director, level designer, level artist, modeler, lighting artist, texture artist, special effect artist, animator, programmer, technical director, sound designer, story board artist, tester.

Equipment, Software, Materials:

- Smart board, Digital Projector, Computer.

Preparation:

- The instructor should prepare a PowerPoint presentation highlighting the various roles discussed.

Procedure:

1. Introduction (5min)

Tell the students that this presentation is an overview of the roles that are required in the development of a video game at the industry level. Let the students know that this presentation is to help them consider what roles they are interested in working in during the Skins project.

2. Roles in Video Game Creation (35min)

The body of the presentation will go through 15 major roles in game creation ranging from producer to game tester. Allow about 2-3 minutes for each explanation of the role and the software involved.

1) Producer

The producer manages the project. Responsibilities include establishing the budget for the game and giving salary increments to the employees. This person is also in charge of creating a timeline for the project to make sure the team moves along towards completion of the game. The producer is also responsible of taking care of the employees by doing things such as ordering food when the team is doing over time!

Software: The entire MS Office suite, some dark tools for management.

Game Design 1. What's In a Game? (continued)

2) Art Director

The art director is in charge of finding all the references to create the game. The art director must create a document to show the vision of the project so that team is on the same page. This person has to work with the artists and designers to oversee that all levels are made with the same style.

Software: Adobe Photoshop, Painter, Sketchup (Alias), Game Engine (Unreal, Duinia, Anvil, Crysis, HeroEngine, etc.), 3D application (3Dsmax, XSI, Maya, Modo, cinema 4, Blender 3D, etc.), the entire MS office suite.

3) Level Artist

The level artist builds the basic 3D world shape and requests the objects the fill this world from the 3D modellers. This person also asks the texture artist for textures designed to cover the 3D objects. Once the 3D models are complete with textures, the level artist positions the objects in the map editor.

Software: Adobe Photoshop, Game Engine (Unreal, Duinia, Anvil, Crysis, HeroEngine, etc.), 3D application (3Dsmax, XSI, Maya, Modo, cinema 4, Blender 3D, etc.), the entire MS office suite.

4) Level Designer

The level designer creates the levels so that they are fun to play! This person takes plans and maps out how the player needs to move through the game and places objects (mostly interactive ones) where they need to go to fit the flow of the game.

Software: Adobe Photoshop, Game Engine (Unreal, Duinia, Anvil, Crysis, HeroEngine, etc.).

5) 3D Modeller

The 3D modeller builds 3D assets for the game, including objects such as weapons, flora and fauna, as well as buildings and other structures.

Software: 3D application (3Dsmax, XSI, Maya, Modo, cinema 4, Blender 3D, etc.),

6) Lighting Artist

The lighting artist uses various tools to create lighting for atmosphere and mood in a game. Lighting can also be used to give players hints about where to go in a level.

Software: Adobe Photoshop, Game Engine (Unreal, Duinia, Anvil, Crysis, HeroEngine, etc.), 3D application (3Dsmax, XSI, Maya, Modo, Cinema 4, Blender 3D, etc.), the entire MS office suite.

7) Texture Artist

The texture artist applies colouration to 3D models.

Software: Adobe Photoshop, Game Engine (Unreal, Duinia, Anvil, Crysis, HeroEngine, etc.), 3D application (3Dsmax, XSI, Maya, Modo, cinema 4, Blender 3D, etc.), the entire MS office suite.

8) Special Effects Artist

This person creates special effects for the game. The special effects artist also creates particles for environment interaction.

Software: Adobe Photoshop, Game Engine (Unreal, Duinia, Anvil, Crysis, HeroEngine, etc.), 3D application (3Dsmax, XSI, Maya, Modo, cinema 4, Blender 3D, etc.), The entire MS office suite.

Game Design 1. What's In a Game? (continued)

9) Animator

The animator brings 3D characters and objects to life through animation. Part of the process involves studying how movement works in real life. For instance, looking at details to see how the skeleton and muscles appear when the body is in motion.

Software: Adobe Photoshop, Game Engine (Unreal, Duinia, Anvil, Crysis, HeroEngine, etc.), 3D application (3Dsmax, XSI, Maya, Modo, cinema 4, Blender 3D, etc.), 3D Animation application (Motion Builder, Puppet Shop), the entire MS office suite.

10) Technical Director

The technical director evaluates technologies used on the project and develops better tools for the production. They make sure that the game will run on predefined minimal machine specifications.

Software: Visual Studio, Code Warrior, Notepad, script editor (Coding) Scarab, Jira (for Bug report and task managing, Adobe Photoshop, Game Engine (Unreal, Duinia, Anvil, Crysis, HeroEngine, etc.), 3D application (3Dsmax, XSI, Maya, Modo, cinema 4, Blender 3D, etc.), 3D Animation application (Motion Builder, puppet shop), the entire MS office suite.

11) Programmers

The programmer, using code, creates the game engine as well as the tools for other people to work on the game.

Software: Visual Studio, Code Warrior, Notepad, script editor (Coding) Scarab, Jira (for Bug report and task managing, Adobe Photoshop, Game Engine (Unreal, Duinia, Anvil, Crysis, HeroEngine, etc.), the entire MS office suite.

12) Storyboard Artist

The storyboard artist lays down the game narrative in a storyboard, which tells the story using graphics and text. This person works with the art director in order to match up the visual aesthetic with the storyboard.

Software: Adobe Photoshop, the entire MS office suite.

13) Sound Designer

The sound designer creates music for the game. This person also creates sounds for the characters, objects, interactions, and ambiance.

Software: Game Engine (Unreal, Duinia, Anvil, Crysis, HeroEngine, etc.), Fruit Loop.

14) Tester

The tester plays the game to look for and report bugs and advises how to fix them.

Software: Adobe Photoshop, Game Engine (Unreal, Duinia, Crysis, HeroEngine, etc.), Video Recording tools (Camtasia), Visual Studio, Code Warrior, Notepad (Coding), the entire MS office suite.

Game Design 1. What's In a Game? (continued)

3. Conclusion (5min)

Wrap things up by fielding any questions the students might have and tell them to keep these roles
in mind to think about what role they want to take in the creation of their game.

Game Design 2. Game Development Process

Population:

This lesson was created for young adults between the ages of 15-17 and is intended as an introduction to the process and career paths of professional game development and exploration of students' possible roles in the development team. There are 16 participants in the class and one mentor.

Instructors' Prerequisites:

- The mentor should have some understanding of the workings of game development industry.

Students' Prerequisites:

- No previous experience with game development is necessary.

Duration:

45 minutes.

Objectives:

1. Students will be introduced to the career paths in game development as a way to contextualize what goes into making a game. They will be informed of typical game development practices, understanding that these practices should be kept in mind during their project.

2. Students will self-identify their interests and skills, which will help guide them in a possible role to take on their development team, although the exercise is not intended to exclusively tell them what role they must take. Students can ultimately choose any role in their team and this exercise is only intended to help them understand their skills relative to game industry.

Vocabulary

Game Design, Game Programmer, Game Artist, Game Animator, Paper Prototype, Digital Prototype, Playtesting.

Equipment, Software, Materials:

- "Game Development Roles" Information Sheet.

- "Color Coding Your Game Development Career" Exercise Cards.

- Projector set up with computer (optional).

Preparation:

Mentors must print out the double-sided "Color Coding Your Game Development Career" Exercise Cards.

Web Resources & Books:

Game Career Guide – http://www.gamecareerguide.com

See attached handout: "Game Development Roles" by Beth Aileen Lameman.

Also see attached "Color Coding Your Game Development Career" Exercise Cards by Beth Aileen Lameman.

Game Design 2. Game Development Process (continued)

Procedure:

1. Introduction to Game Development (10min)

You will introduce students to game development industry and its process. Ask students what their favorite games are and reference those games in examples about how games are made as you go through the Introduction portion of the "Game Development Roles" information sheet. You can also display the sheet with a computer connected to a projector if you want to show the salary charts (optional).

2. Color Coding Your Game Development Role Exercise (10min)

Spread out the exercise cards with the "trait" side facing up. Don't give them any hint that anything is on the other side. In fact, if you need to, tell them to keep the cards facing up.

Have each student collect five cards based on what they think their skills or interests are.

When everyone has collected their cards and settled down, have them flip over their cards.

Have them look for what color the majority of their cards are. If their cards were mostly yellow, they'd make a strong Designer. If their cards are mostly teal, they'd make a strong Artist. If their cards were mostly brown, they'd make a strong Programmer. If the cards were mixed between yellow and brown, they'll make a great Level Designer. If they are mixed between yellow and teal, they'd be a great Technical Artist, who usually does the animation work.

3. Discussion of Roles (20min)

Now that they've had a chance to check out their cards for themselves, have everyone go around in a circle and share what their color combinations were. The must-haves of any team are a Designer, a Programmer, and an Artist, but they will also be able to work on sound.

Ask them if they feel comfortable with the role that is suggested to them based on the cards. What are their interests? What do they like about games? What hobbies do they have? What are their strengths in school? What is their ideal career? How do these fit into putting together a balanced team for game development?

4. Conclusion (5min)

Tell students to keep these roles in mind for deciding their teams and what role they want to take on their teams later. Make sure they know that they don't have to take the role that their cards revealed to them, since this exercise is mainly intended for discussion and getting them to see where their skills and interests fit in game industry.

Game Development Roles Handout

Games start as strong ideas with fun game mechanics (the rules of the game), story (including characters, theme, and storyline), and an interesting art style (including 3D or 2D or combinations, environment art, as well as color and lighting).

In game industry, once the game concept is strong, it is often pitched as a concept to the marketing team within a commercial game development company. Independent game companies sometimes use a different model, since they share roles on their team. When the project is approved, funding is planned, and the team begins working on the game. There are different ways to go about developing a game, but one of the most common is to:

- **Paper prototype: Make a paper version of a level or game mechanic using game pieces,**
  craft materials, and other things.

- **Test the paper prototype: Show it to other members of the company or friends and family for the first testing stages to see if people understand the rules and if they like them or what they would do differently.**

- **Digital prototype (also called a beta): Design, programming, art, and sound can be incorporated in various ways to prototype a level or a game mechanic.**

- **Test the digital prototype**

- **Revise and test as needed**

- **Finalize and launch the game!**

As you can see, the main idea is to make something, test it, revise it, and test it again until it's ready to send out into the world. Often, only one level or one game mechanic will be tested at a time, but it's up to you.

Game development requires teamwork and can include roles like designer, programmer, artist/animator, sound artist, producer, and quality assurance tester.

Game designers are responsible for the overall game concept—deciding what the game play should be to create a desired experience for the player. Lead game designers are seen as the visionaries behind the games. Level designers help by making the maps and deciding where objects go in a level.

More at *Game Design, An Introduction* on **GameCareerGuide.com**.

Salary:

Average salary for three or fewer years' experience: $44,574
Average salary across all experience levels: $61,538

More at *The Game Industry Salary Survey 2007* on **GameCareerGuide.com.**

Game artists and animators are responsible for the 2D and 3D visual properties of everything in the game from characters to objects to environment to lighting. Game artists are different from traditional artists since they usually help the designer create their vision, rather than being the visionary themselves.

More at *Game Art and Animation, An Introduction* on **GameCareerGuide.com.**

Game Development Roles Handout (continued)

Salary:

Average salary for three or fewer years' experience: $42,672
Average salary across all experience levels: $65,107

More at *The Game Industry Salary Survey 2007* on **GameCareerGuide.com.**

Game programmers are responsible for shaping things like the rules of the game, the interactions of the environment, and the depth of artificial intelligence by writing codes.

More at *Game Programming, An Introduction* on **GameCareerGuide.com.**

Salary:

Average salary for three or fewer years' experience: $57,913 to $65,833
Average salary across all experience levels: $80,886

More at The *Game Industry Salary Survey 2007* on **GameCareerGuide.com.**

Game Design 3. Paper Prototyping

Population:
This lesson was created for young adults between the ages of 15-17 and is intended as an introduction to paper prototyping and group work time to make a paper prototype of their team's game. There are 16 participants in the class and one instructor.

Instructors' Prerequisites:
- The instructor should have some understanding of paper prototyping.

Students' Prerequisites:
- No previous experience with paper prototyping is necessary.

Duration:
45 minutes.

Objectives:
1. Students will be introduced to the paper prototyping process of game development. They will be informed that other students in the class, as well as instructors, mentors, and possibly industry professionals will later test the paper prototype if they are available.

2. Students will be given time to paper prototype a level, selected levels, or specific game mechanics, depending on their preference and the materials available to them.

Vocabulary
Iterative Design, Paper Prototyping, Playtesting.

Equipment, Software, Materials:
- "Paper Prototyping" Information Sheet.

- Any available materials for paper prototyping, including, but not limited to: construction paper, glue, markers, colored pencils, pencils, pens, paint, paintbrushes, paper clips, felt, popsicle sticks, pieces from existing board games or card games, sticks, rocks, or anything else from crafts stores, school supplies, or even the outside.

Preparation:
Instructors must gather and organize materials for paper prototyping and may want to ask students to bring in any materials they want to use from home during the conclusion of the prior lesson.

Web Resources & Books:
Paper Prototyping: 5 Facts for Designing in Low-Tech by Rich Marmura
(http://www.gamecareerguide.com/features/622/paper_prototyping_5_facts_for_.php)

The Paper Chase: Saving Money via Paper Prototyping by John Henderson
(http://www.gamasutra.com/features/20060508/henderson_01.shtml)

The Siren Song of the Paper Cutter: Tips and Tricks from the Trenches of Paper Prototyping by Tyler Sigman
(http://www.gamasutra.com/features/20050913/sigman_00.shtml)

See attached handout: "Paper Prototyping" by Beth Aileen Lameman.

Game Design 3. Paper Prototyping (continued)

Procedure:

1. Introduction to Paper Prototyping (5min)

You will introduce students to the reasons for paper prototyping and how to paper prototype (reference the "Paper Prototyping" information sheet). Make them aware that the paper prototypes will be playtested in the future so that they can receive helpful feedback and revise their games as needed.

2. Group Preparation (5min)

Set up students with materials and explain what is available for them to use. Set them up with different work areas within their groups and facilitate the division of materials. Help them decide what exactly they want to paper prototype—an individual level, a whole map of levels or a free roaming environment, a specific game mechanic (rule) or a set of rules, or a mix of any of these.

3. Paper Prototyping in Groups (30min)

Let them go at it! Be available for them but don't watch too closely. It is better for students if they feel like they are working independently unless they come to you for help. Enjoy the time.

4. Conclusion (5min)

Wrap up by congratulating the students on their work.

Paper Prototyping Handout

Introduction:

Paper prototyping is the process of making a non-digital physical representation of a part of your game that can be immediately playtested by other people to get their opinions about your ideas.

Why Paper Prototype:

Game companies paper prototype because it's fast and doesn't cost a lot of money or time if you decide one of your ideas doesn't work the way you expected it to. They help you come up with standards for what you should make first for the future digital prototype/beta.

How to Paper Prototype:

Gather up any materials you can find, from home, school, or even the outdoors. Think about everything from objects to art supplies to craft materials to existing board game and card game pieces to things like timers on watches.

Decide what you want to paper prototype—a single level, a whole map of the world/city/wilderness for a free-roam environment, multiple levels, a single primary game mechanic (rule), multiple game mechanics, and player goals.

Think about how the player enters the space, how they leave the space (if they do), what they can interact with, how they can interact with it, what they're supposed to do, and what the main goals are. Do you have a scoring system? What items do you need? What does the environment look like? Who is the player? Are there other characters or creatures? What do they do?

Experiment and have fun!

Drawbacks:

Some of your ideas might be hard to test with a paper prototype. Don't worry about this too much, just do what you can and use whatever materials make sense. You can even use people on your team as a part of your paper prototype if you need to (i.e. for counting down time or replicating interaction with non-player characters).

Game Design 4. Game Design Documents

Population:

This lesson was created for young adults between the ages of 15-17 and is intended as an introduction to making game design documents (GDD) and directed group work time to make a game design document. There are 16 participants in the class, one instructor, and one mentor per group.

Instructors' Prerequisites:

The mentors should have some understanding of game design documents.

-Students' Prerequisites:

-No previous experience with game design documents is necessary, but they should have an idea of what their game is about so they can fill out the GDD template.

Duration:

45 minutes.

Objectives:

1. Students will be introduced to the purpose and layout of game design documents (GDDs).

2. Students will fill out their GDD template with the help of mentors.

Vocabulary:

Game Design Document (GDD).

Equipment, Software, Materials:

- "Game Design Document" information sheet by Beth Aileen Lameman.

- "GDD Template" by Skawennati Fragnito and Bea Parsons.

Preparation:

- Instructors must print out the GDD Template for each group and provide the file for a digital version that can be changed and updated when needed.

Web Resources & Books:

 "You Can't Design Fun on Paper" (http://rampantgames.com/blog/2006/09/you-cant-design-fun-on-paper.html).

"Anatomy of a Design Document" by Tim Ryan (http://www.gamasutra.com/features/19991217/ryan_01.htm).

See attached handout: "Game Design Document" by Beth Aileen Lameman.

Also see "GDD Template" by Skawennati Fragnito and Bea Parsons.

Procedure:

1. Introduction to Game Design Documents (5min)

You will introduce students to the reasons for writing a game design document, the basic elements of a game design document, and how they will need to update their GDD as their game changes.

Game Design 4. Game Design Documents (continued)

2. Group Preparation (5min)

Set up students in their groups with the GDD template and scrap pieces of paper. Each group should have a mentor (one mentor can help multiple groups though) who will help them write their GDD and keep track of any changes as they playtest and update their game. Assign the Designer in the team with the task of writing down everyone's ideas as notes, which he/she can then write into the GDD Template once the group has made their final decisions.

3. Fill Out GDD Template in Groups (20min)

Give the groups time to decide on their ideas and finalize them on paper. They should write down the group's discussion notes on the scrap pieces of paper and then turn the notes into final statements on the GDD Template. At a later point, the mentors can type up the written statements into a digital version of the GDD Template that will be updated as the game progresses.

4. Present GDD Templates to Class (10min)

Have a student representative from each group present their GDD Template by giving a summary of their game ideas.

5. Conclusion (5min)

Wrap up by congratulating the students on their work and mentioning the next lesson.

Game Design Documents Handout

Introduction:
Game Design Documents (GDDs) are written documents that help you develop and manage your concept, the assets you need, and the timeline for completing the game. More advanced GDDs include detailed descriptions of the game elements, thumbnails of concept art, and specific timelines to keep the team on track. A GDD is a great communication tool for the whole team. You will work on a concept GDD.

Why Make a GDD:
GDDs help you form and finalize your ideas. Ideas start off really fuzzy in your mind, but once you write them down, you'll have a much better grasp on exactly what tasks you need to complete to make the prototype. They also help you record all the details of the game that you've talked about with your team so that they don't get lost or forgotten. Again, advanced GDDs include a "things to do" list with a schedule for each team member.

Guide to Filling out the GDD Template:Group Members
  – Names of the group members and their roles in the team.

What is the game title?
  – The game title!

What is the platform?
  – A platform is the system the game can be played on. You will probably have a PC game, but there can also be games for Xbox, PlayStation, Wii, DS, or other systems. They should also put down what they are using to make the game, such as Unreal.

What is the genre of this game?
  – Genre is defined as the type of game play and story. Game genres include action, shooter, adventure, role-playing, strategy, and simulation, but you can also make up your own new genre. You can also specify if the game is first person or third person, which is based on the camera view.

What is your game concept/story?
  – A simple one-liner about the overall story.

What is the style? Are there any games, movies, comic books… that have a similar style?
  – Titles of other games, movies, comic books, or other media that provide inspiration for the art style or story. Take notes about the style and mood of the game.

Who are the characters? What can they do? (e.g. run, jump, special powers)
  – Who each character is and their abilities/actions (such as shoot, walk, eat, swim, paddle).

What are the obstacles that your characters meet? And how do they overcome them?
  – The main goals and how to accomplish them.

What kind of game play elements? (Weapons, tools, medicine, spells and other objects)
  – An itemized list of all the assets that you will need to make.

How do you win?
  – How to accomplish the main goal.

Other ideas
  – Any other notes.

Game Concept and Design Document Template

Group Members:

What is the game title?

What is the platform?

What is the genre of this game?

What is your game concept/story?

What is the style? Are there any games, movies, comic books… that have a similar style?

Game Concept and Design Document Template (continued)

Who are the characters? What can they do (e.g. run, jump, special powers)?

What are the obstacles that your characters meet? And how do they overcome them?

What game play elements do you want (weapons, tools, medicine, spells and other objects)?

How do you win?

Other ideas:

Game Design 5. Playtest I

Population:
This lesson was created for young adults between the ages of 15-17. There are 16 participants in the class, one instructor, and two or more mentors.

Instructors' Prerequisites:
- The instructor should have experience playing and creating video games, or at least have extensive knowledge of the game design process.

Students' Prerequisites:
- Game Design 3. Paper Prototyping

- Game Design 4. Game Design Documents

- For this playtest session, students should have come up with their story idea and as a group created their paper prototype.

Duration:
45 minutes.

Objectives:
1. The mentors will either play or be walked through the paper prototype by the students.

2. The mentors will offer feedback to help students improve the design of their game.

Vocabulary
Playtest, paper prototype.

Equipment, Software, Materials:
The paper prototype, the GDD, whiteboard and markers, paper and pens.

Preparation:
The facilitator may want to invite guests to this class to playtest the game. The reason for this is to give students the opportunity to present the game to someone who is unfamiliar with it. The invited playtesters should be observant game players and have some knowledge about creating video games in order to offer students feedback.

Just prior to class, have the students set up their paper prototype at a table for mentors to playtest.

Procedure

1. Introduction (10min)

Start out by introducing the students and invited guests to each other. Spend a few minutes talking about how playtesting is used by companies to work out bugs and problems in the development of a new game. Playtesting is also used in the development of board games. Explain how this eliminates flaws and saves time down the road during the technical creation of the game.

Tell the students that for this session they will be presenting their game to the playtesters who will help identify what works and doesn't work in the game. The advice offered by the guests is meant to benefit the students by helping them improve their game design. Since the prototype might not be actually playable, ask one of the leaders in the group to walk the playtesters through the game. Ask the student to first introduce their game to the playtesters by establishing the genre, characters, objective, basic rules, and final goal of the game. They will then go through the prototype and go through what happens in detail throughout the game. The playtesters are invited to ask questions and give feedback. Before getting started, elect a student to take notes and write down comments given by the playtesters.

Game Design 5. Playtest I (continued)

2. Playtest (30min)

The remainder of the session will be spent going through the game as described above. In our experience, the questions and suggestions offered by the playtesters created discussion among the group.

3. Conclusion (5min)

Wrap up the session by thanking the playtesters for their advice. Let the students know that in the next session they will update and make revisions to their prototype and GDD based on the feedback from today.

Game Design 6. Playtest II

Population:
This lesson was created for young adults between the ages of 15-17. There are 16 participants in the class, and one or more instructors.

Instructors' Prerequisites:
The instructor should have experience playing and creating video games, or at least have extensive knowledge of the game design process.

Students' Prerequisites:
Game Design 3. Paper Prototyping
Game Design 4. Game Design Documents
Game Design 5. Playtest I
Students should have presented their game to playtesters and received feedback during Playtest I.

Duration:
45 minutes.

Objectives:
1. Students will work as a group to revise their game based and GDD documents based on the feedback from Playtest I.

Vocabulary
Playtest, paper prototype.

Equipment, Software, Materials:
The paper prototype, the GDD, whiteboard and markers, paper and pens, any specific materials the students will need to revise and update their prototype.

Preparation:
Students will need a workspace such as an art room to work on their paper prototype.

Procedure:
1. Introduction (15min)

Start out by asking the students to update their paper prototype and GDD based on the advice offered by the playtesters. In a group discussion, the students will read over the notes and comments given by the playtesters. They will decide what to change, leave them same, or omit in the game.

2. Group Work (15min)

The students will spend the next 15 minutes making edits to the paper prototype.

3. Conclusion (10min)

The students will present a Walkthrough the game once the edits have been made in order the check the edits they made.

Game Design 7. Maquette Building

Population:

This lesson was created for young adults between the ages of 15-17. There are 16 participants in the class and one instructor.

Objective:

In this lesson students will create a 3D Maquette version of their level/game based on the paper prototype. In order to complete this exercise, students should have gone through the playtest process and made edits to their design based on the feedback they received from the playtesters. The final Maquette is intended to serve as a 3D prototype that the students can refer to when they create the levels of their game in Unreal Editor. The focus of the Maquette is the layout and pathway for the player to navigate.

Instructors' Prerequisites:

The instructor should have been present during the following lessons: Game Design Module 3, Game Design Module 4, Game Design Module 5, and Game Design Module 6.

Student Perquisites:

Game Design 3. Paper Prototyping
Game Design 4. Game Design Documents
Game Design 5. Playtest I
Game Design 6. Playtest II

Duration:

1 hour

Students Objectives:

1. Students will create a final 3D prototype (Maquette) version of their game using mixed media art materials. Students in groups will create the Maquette in one work period. The Maquette will be based on edits made to the game design following the feedback given during the playtest sessions. The students will later use this Maquette to refer to when blocking the level and creating the pathways and terrain in Unreal Editor.

Vocabulary:

Maquette, 3D Prototype, mixed media

Materials:

- A square piece of wooden board (recommended size 3x3 feet) to serve as the base of the Maquette.

- Fast drying modelling clay or play dough to model the terrain out of. We recommend using brown play dough because of its earthy colour; it is inexpensive, and fast drying. (The instructor should prepare the dough in advance to save time in class.)

- Small boxes for creating structures, houses, and buildings

- Newspaper, coloured tissue paper

- Assorted materials that the students will need to add details to the Maquette (suggestions: broken twigs to resemble trees, rocks, stones, pebbles, sand, etc.)

- White glue or glue gun

- Digital camera

- A copy of the GDD and the paper prototype for reference

Game Design 7. Maquette Building (continued)

Preparation:

Before the class, the instructor needs to discuss what kind of art materials students will need to create their maquette. This way the instructors and students can gather the materials to bring the class.

Procedure:

Introduction (10min)

Explain to the students that they will work as a group to create a 3D maquette of their paper prototype during this work period. Talk about how the 3D maquette will help them later on when they block the levels and create the terrain for their game. Before starting on building the maquette, have the students look over the paper prototype and GDD. Spend a few minutes discussing how the maquette will be mapped out according to the paper prototype version.

Maquette Building (45min)

Lead the students through the maquette building process. First have them start by layering the pre-cut support board with the modelling clay or play dough. Make sure students have the GDD and paper prototype on-hand to refer to for mapping out the terrain. Tell students to crumple newspaper and layer it with the clay to create volume for hills or bumps in the terrain. Once the modelling clay/play dough is layered over the base, students can start laying down pebbles to mark the pathway in the game. Recommend to the students that they use the stones and twigs to represent any boulders, rocks and trees that might be part of the landscape. Also suggest that they use the small boxes for structures or buildings in the game. Coloured paper might be used to create water, rivers, streams, fire, or swamps. These suggestions pertain to creating a natural environment. The instructor can guide the students to bring in the appropriate materials to create a futuristic environment, the interior of a building, or any other specific setting for the game.

Guide the students throughout the rest of work period.

Closure (5min)

Have students go through their GDD and Walkthrough the maquette model to make sure the layout is correct according to their plans. Make any last adjustments now before the modelling clay or clay dough dries. Have someone take photo documentation of the maquette for reference.

Game Design 8. Introduction to Concept Art and Character Design

Population:

This lesson was created for young adults between the ages of 15-17 and is intended as an introduction to concept art for video game design. There are 16 participants in the class, one instructor, and one mentor per group.

Instructors' Prerequisites:

- The instructor should be knowledgeable with concept art created for video games and comic books.

- The instructor must also have experience with character development for games and be able to provide guidance to students in this process.

- The instructor must have experience teaching drawing skills as there is short drawing exercise at the end.

Students' Prerequisites:

- The students should have some basic drawing skills for sketching out concept art designs in this lesson.

- They should also have developed their game idea with, completed the paper prototype and GDD template.

Duration:

45 minutes.

Objectives:

1. Students will learn about the role of concept art for video game design.

2. Students will learn about character development.

3. Students will be mentored with the developmental or technical aspects of their concept art.

Vocabulary

Concept art, character development, Stereotypes, Attractiveness, Halo Effect, Baby Effect, Environment, Setting, Atmosphere, Exaggeration, Expression.

Equipment, Software, Materials:

- Computer and projection screen for slide presentation
- Large table with enough room for participants to work on their sketches
- Drawing pencils, erasers for each student
- White drawing paper ranging in size from 8 x 11 to 20 x33
- Completed GDD for reference

Preparation:

The instructor should prepare a slide presentation with visual examples of concept art created for video game design. The slide presentation should also give examples to highlight examples of heroes and villains who convey the Attractiveness, the Halo Effect, and the Baby Face Effect as discussed in Katherine Isbister's Better Game Characters by Design (see below). This is to help students give visual cues to the player about personalities and traits behind the characters in the game.

Game Design 8. Introduction to Concept Art and Character Design (continued)

Web Resources & Books:

Concept Art for the Iron Man video game
http://marvelcomics.com/news/vgstories.1522.Iron_Man_Video_Game_Concept_Art
Hart, C. How to Draw Comic Book Heroes and Villains. New York: Watson-Guptill Publications, 1995.
Isbister, Katherine. Better Game Characters by Design: A Psychological Approach (The Morgan
Kaufmann Series in Interactive 3D Technology). San Francisco: Elsevier Inc., 2006.

Procedure:

1. Introduction to Concept Art (5-10min)

A slide presentation prepared by the instructor will be shown give examples of concept art for
popular video games that students are probably familiar with. The reason and importance of con-
cept art will be explained as a visualization of what the game and characters will look like later on.
These drawings will be essential for the smooth transition from pre-production into production,
ensuring that all artists have agreed on a similar scale, level of detail and general style. Such deci-
sions need to be made far enough in advance so that expensive production work is not wasted on
elements that do not fit together or are unappealing to the director.

2. Character Development (10min)

The presenter will discuss character development at this stage of the design process of the game.
When visualizing the character's appearance for the concept art, it is important to think about what
kind of person this character is (evil, innocent, untrustworthy, kind). Explain that these attributes
need to be expressed to the player visually, so that they can quickly make these associations dur-
ing the game play. For instance, a strong man with a symmetrical face and a strong chin is usually
associated with the strong hero. Whether he is represented as young or old will also affect the
players' association with the character. For example, an old man may represent powerful wisdom
or physical weakness from old age. A young man may represent health and physical strength. A
character with an asymmetrical face and a convex body is going to be perceived as less attractive to
the player. Show a range of video game characters from heroic, deranged, helpless, conniving, etc.
and identify how their appearance was designed to convey information about them.

3. Assign (5min)

As a group, participants will decide on who wants to work on the concept art for characters, ob-
jects, weapons, buildings, and environment.

4. Drawing Basics (10min)

The instructor will demonstrate the conventions of drawing super heroes and villains based on
popular characters. Show the students how to exaggerate features in order to emphasize the per-
sonality of a character. For instance, a strong jaw line re-enforces a powerful masculine figure. Em-
phasis on eyebrows can dramatically change a character's expression. Also show the how the cute
factor (large eyes, big head, small body) can be applied to a character to entice a nurturing reaction
from the player. The instructor needs a paper or a black board to draw the examples.

5. Sketches (10min)

The students will spend the remainder of the session beginning to sketch out their concept art. The
mentors will help students individually with any conceptual or technical questions that may arise.
The students will also be given the next session to work on their concept art as well.

Game Design 9. Drawing Basics for Concept Art

Population:

This lesson was created for young adults between the ages of 15-17 and is work session for students to continue developing their concept art from "Concept Art I: Introduction to Concept Art and Character Design." There are 16 participants in the class, one instructor, and one mentor per group.

Instructors' Prerequisites:

- **The instructor should be knowledgeable with concept art created for video games and comic books.**

- **The instructor must also have experience with character development for games and be able to provide guidance to students in this process.**

- **The instructor must have experience teaching drawing skills, as this is a work session.**

Students' Prerequisites:

- Game Design Module 8. Introduction to Concept Art and Character Design

Duration:

45 minutes.

Objectives:

1. Students will learn how to transfer their concept art into technical drawings that will be used as a base for modelling in Blender.

2. Mentors will assist students with any conceptual or technical questions that arise during this work session.

Vocabulary

Concept art, character development

Equipment, Software, Materials:

-Large table with enough room for participants to work on their sketches
-Drawing pencils, erasers for each student
-White drawing paper ranging in size from 8 x 11 to 20 x 33
-Mylar paper for tracing
-Completed GDD for reference

Preparation:

The instructor should prepare a slide presentation with visual examples of concept art created for video game design. The slide presentation should also give examples to highlight the process of character development.

Web Resources & Books:

Hart, C. How to Draw Comic Book Heroes and Villains. New York: Watson-Guptill Publications, 1995.
Isbister, Katherine. Better Game Characters by Design: A Psychological Approach (The Morgan Kaufmann Series in Interactive 3D Technology). San Francisco: Elsevier Inc., 2006.

Game Design 9. Drawing Basics for Concept Art (continued)

Procedure:

1. Recap (5min)

The instructor will review the previous session and field any questions that the students may have.

2. Work Session (35min)

The students will spend the session working on their concept art. The instructors will work one on one to field any questions the students may have.

3. Conclusion (5min)

The students will present their work so far to make sure that everyone is working on the same path with towards the vision of their game.

Game Design 10. Technical Drawing for Blender

Population:

This lesson was created for young adults between the ages of 15-17 and is a work session for students to continue developing their concept art from "Concept Art I & II." In this session the students will learn how to create a technical drawing based on their concept art. The technical drawings will be later uploaded to Blender and be used as the base for their 3D models. There are 16 participants in the class, one instructor, and one mentor per group.

Instructors' Prerequisites:

> • The instructor should have experience creating technical drawings for 3D modelling.

tudents' Prerequisites:

- Game Design Module 8. Introduction to Concept Art and Character Design
- Students should have some basic drawing skills for sketching out concept art designs in this lesson.
- Students should already have a character design drawn in the previous sessions (if not, they should have an idea already).
- Students should have developed their game idea in previous session, completed the paper proto-type and GDD template.

Duration:

45 minutes.

Objectives:

1. Drawing a character in front and side views using technical drawing techniques.

Vocabulary

Technical drawing, height lines, anatomy, neutral expression, T-pose.

Equipment, Software, Materials:

-Large table with enough room for participants to work on their sketches
-Drawing pencils, erasers for each student
-White drawing paper ranging in size from 8 x 11 to 20 x 33
-Mylar paper for tracing
-Completed GDD for reference

Preparation:

The instructor should prepare a slide presentation with visual examples of technical drawings created for video game design. The slide presentation should also give examples to highlight the process of character development for use in 3D software.

Web Resources & Books:

SIMBLET, S. & DAVIS, J. Anatomy for the Artist. Dk Pub, 2001.

Game Design 10. Technical Drawing for Blender (continued)

Procedure:

1. Introduction to T-pose Drawing (5-10min)

A slide presentation prepared by the instructor will be shown to give examples of concept art and their relative technical drawings for popular video games that students are probably familiar with. The reason and importance of having a technical drawing and drawing them in a T-pose will be explained.

2. Character Sketching in T-pose (10min)

Show an example to the students about how to draw a front and side view of a character using horizontal lines to keep the same proportions on the smart board or on a projector.

3. Drawing (20min)

The students will spend the remaining time of the session to start drawing their concept art in a T-pose. The mentors will help students individually with any conceptual or technical questions that may arise. The students will also be given the next session to work on their drawing as well.

The students can use the tracing paper to further refine their concept as a new transferred version.

Note: If students have a hard time with proportions, it is possible to just take a picture of someone in T-pose and print it in order to trace over it with the tracing paper.

Game Design 11. Finalize Technical Drawing for Blender

Population:

This lesson was created for young adults between the ages of 15-17 and is work session for students to continue developing their concept art from "Concept Art I, II & III" In this session the students will continue working on their technical drawing based on their concept art. The technical drawings will be later uploaded to Blender and be used as the base for their 3D models. There are 16 participants in the class, one instructor, and one mentor per group.

Instructors' Prerequisites:

•The instructor should have experience creating technical drawings for 3D modelling

Students' Prerequisites:

- Game Design 8. Introduction to Concept Art and Character Design
- Game Design 9. Drawing Basics for Concept Art
- Game Design 10. Technical Drawing for Blender
- The students should have some basic drawing skills for sketching out concept art designs in this lesson.
- Students should have developed their game idea in previous session, completed the paper prototype and GDD template.
- The students should already have a character design drawn in the previous sessions (if not, they should have an idea already).

Duration:

45 minutes.

Objectives:

1. Students will learn how to transfer their concept art into technical drawings that will be used as a base for modelling in Blender.

2. The instructors will mentor students on concept art during this work session.

Vocabulary

Technical drawing, height lines, anatomy, neutral expression, T-pose.

Equipment, Software, Materials:

-Large table with enough room for participants to work on their sketches
-Drawing pencils, erasers for each student
-White drawing paper ranging in size from 8 x 11 to 20 x 33
-Mylar paper for tracing
-Completed GDD for reference

Preparation:

The instructor should prepare a slide presentation with visual examples of technical drawings created for video game design (it could run in background just to inspire the students). The slide presentation should also give examples to highlight the process of character development for use in 3D software.

Web Resources & Books:

SIMBLET, S. & DAVIS, J. Anatomy for the Artist. Dk Pub, 2001.

Game Design 11. Finalize Technical Drawing for Blender (continued)

Procedure:

1. Recap (5min)

The instructor will review the previous session and field any questions that the students may have.

2. Work Session (30min)

The students will spend the session working on their concept art. The instructors will work one on one to field any questions the students may have.

3. Conclusion (10min)

The students will present their work so far to make sure that everyone is working on the same path towards the vision of their game.

About this module

The lessons in this module are meant to take students step by step through the technical skills needed to create a game. Skills range widely, including digital art, animation, level design, programming, and sound engineering. Students will learn the software and skills needed to implement their game design

Technical 1. 3D Production Pipeline

Population:

This presentation guide was created for young adults between the ages of 15-17. There were approximately 10 students participating in the workshop and one instructor.

Instructors' Prerequisites:

The instructor must be knowledgeable and experienced in the game development process in order to give this presentation. The instructor must find pertinent examples and be able to properly answer questions the students might have on this topic. This can be gleaned from either viewing 'making-of' documentaries, participating in independent projects or, preferably, by having professional experience.

Students' Prerequisites:

- An interest in game design and the individual steps required to finish a polished product.

Duration:

45 minutes.

Objectives:

1. Students will learn about the various steps required to produce a full-fledged game. The key to successfully explaining the steps is to have visual (both still and animated) examples. Also, to retain their interest, use recognizable and recent games.

2. By the end of the lesson, students should know that any and all types of 3D animation or environments require much more than simple modelling and animating. They should be aware of in-between jobs such as 'rigging' and 'lighting' that are just as essential. Also, much emphasis is to be put on concept development.

Vocabulary

Pre-Production, Concept, Modelling, Rigging, Texturing, Lighting, Post-Production, Particles, Compositing

Equipment, Software, Materials:

Smart Board, Digital Projector

Preparation:

The visual examples for each step of the pipeline should be loaded and easily accessible on the presentation machine. Students should be seated with computer screens turned off for the lecture. Remember, to retain interest, these examples should be from the most recent and recognizable games as possible.

Web Resources & Books:

Lesson structure is original and gleaned from experience in a professional capacity.

Procedure:

1. Pre-Production

Emphasis should be given to explaining the requirements of this step in the production process. Note that pre-production (which includes story drafting, character design, environment design, storyboarding, scripting etc.) is essential to creating a fluid, coherent, and enjoyable game or film. Specific examples such as 3D films of Pixar help solidify this statement, especially in their 'making of' documentaries usually found in the special features of DVDs.

Technical 1. 3D Production Pipeline (continued)

2. Production

Though this is the portion that most students feel they know most about, introducing concepts such as 'rigging' and 'lighting' should broaden their view. Show and explain how the 3D skeleton works to aid animators. Show and explain how 'skinning' is necessary for the model to bend properly. Show how lighting can greatly affect the mood of a scene by comparing two images.

3. Post-Production

Note that not all elements in a 3D environment are actually three-dimensional. Programs such as Adobe's "Affect Effects" can be used to enhance the drama by adding fire, fog, smoke, etc., which would take too long to render in the actual 3D software. Remind the students that games, like films, require many additional mood-affecting details such as sound effects and music. Examples should include memorable intonations, such as the loading and firing of a weapon.

4. Film Presentation

At this point, after explaining the steps, most 3D films include in their special features the steps of their specific production process. Showing one of these films is beneficial to showing what can and is being done in the industry.

5. Questions

Assuming the instructor has the knowledge to do so, conclude the presentation with a question period. Students may have question pertaining to software, companies, or the requirements of specific tasks within the production pipeline.

3D Production Pipeline Reference Sheet

Pre-Production:

Concept Art & Story: The first step of any project begins with an inspired idea.

- Writers devise a general story, translate it to script format, edit, and storyboard it until perfection.

- A large production company (i.e. Dreamworks) generally hires only 2 or 3 concept artists to guarantee a steady style throughout a project for characters, set, and props.

Production:

Modelling: Editing and sewing shapes to compose 3D meshes of characters, props, sets etc.

Rigging: Adding a skeleton and control handles to the modeled meshes that allow animators to manipulate the models (one of the most tech-heavy jobs).

Texturing/Lighting: Giving color and surface to models through either painting in Photoshop or editing texture photographs. Lighting adds mood to a scene.

Animation: Uses the rigger's skeleton and control handles to give life/movement to a model.

Post Production:

Particle and Special Effects: Fastest console engines allow for in-game rendering of details such as particles (dust in the light, sparkles) and other special effects (water and fire simulation).

Rendering, Editing & Compositing: In a film, rendering outputs single image frames from a complex 3D scene. Compositors perfect individual shots for realism (such as camera blur effects) and editors piece scenes together, sync with sounds and music, and add final touches.

Technical 2. Levels & Naming Conventions

Population:

This 15-minute presentation was created for young adults between the ages of 15-17. It is an introduction to naming conventions for files that are used by multiple people on a common project. The students will use these type of naming conventions and folder structures as they work together. There are 16 participants in the class and one instructor.

Instructors' Prerequisites:

The instructor should be very familiar with naming conventions and folder structures as used professionally in the video game industry.

Students' Prerequisites:

The students should have a general idea of the different kind of files required to make a video game such as 2D art, 3D art, animations, textures, audio, and code.

Duration:

20 minutes.

Objectives:

1. Students will learn about the naming conventions and folder structure typically used for the production process in the video game industry.

2. Students will later use these naming conventions and folder structures in order to organize, store, and share their work during the creation of their own project.

Vocabulary

Naming convention, Camel Caps, alpha numeric, folder structure.

Equipment, Software, Materials:

-Smart Board

Preparation:

The instructor must prepare presentation slides pertaining to this introductory lesson. The slide show should cover all of the rules of naming conventions and folder structures with examples, such as:

-A breakdown of what a folder structure looks like.
- An example of how to name a file with as much specific information about it as possible.
-Naming all files with a capital letter at the beginning of each word.
-Numbering must always start at _01 and must always be two digits long.
-Do not use numbers, symbols, punctuation or spaces in the name.
-Assets should be saved only using alpha numeric values (a.b.c...123...0...underscocres).
-Files generally saved as <ObjecName>_XX (PineTree_01)
-For collisions, simply add the suffix COL at the end of the name. (PineTree_01_COL)
-Textures should be saved under the name it is being used for and include the type of texture it is.
For example _D for diffused texture, _S for specular, etc. (PineTree_01_D)
-Include any other information not listed here that pertains to name conventions & folder structures.

Web Resources & Books:

Naming convention and folder structure PowerPoint
Refer to KSS Skins 1.0 blog for information on naming conventions.
http://www.Skins.abtec.org/?page_id=465

Technical 2. Levels & Naming Conventions (continued)

Procedure:

1. Introduction (5min)

Explain what a naming convention is in the context of video game production and how this helps organize common files worked on by several people on a project. Show an example of how a folder structure looks and point out how it is broken down. Inform the students that this is how they will be managing their files on the project. Also point out that this is the same system of organization that is used at the professional level.

2. Presentation of the naming convention and folder structure (5min)

Go through the PowerPoint presentation and make sure the students understand the underlying rules outlined in the presentation.

3. Conclusion (5min)

Review the reasons why we use a naming convention and folder structure. Instruct the students where to find resources about naming conventions such as on the blog. Show the students where they will be storing their folders where it is on the server or a hard drive.

Naming Convention Handout

This handout is based on Ubisoft's naming conventions.

What?

A naming convention is a convention for names. It is particularly useful when multiple people use common files for a common project.

Why?

A good naming convention makes it easy to find related files and therefore less time is lost finding them.

How?

By setting up a folder structure and rules that everyone should follow.

Folder Structure

Here is an example how folders are typically structured in the game industry:

Rise of the legends
Level
Packages
Concept arts
Meshes
Static Meshes
Props
SkyBox
Skeletal Meshes
Characters
Weapons
Textures
Props
SkyBox
Characters
Weapons
Others
Animations
Characters
Weapons
Sounds

Basic Rules

The idea is to have as much as possible the same name for the different parts of a whole object. For example, if you create a character and call it Eve_01, then all the textures associated with it will be called Eve_01_head_D.

Naming Convention Handout (continued)

Have as specific of names as possible.

For example if you know you will create 10 kinds of trees, but all of them are of a different type, you should name them more specifically. For instance, instead of

Tree_01.obj
Tree_02.obj
Tree_03.obj
have
PineTree_01.obj
MapleTree_01.obj
MapleTree_02.obj

All the files must be written using one capital letter at the beginning of each word.

(called Camel Caps convention)

For example,
Bow_01.obj
BigBow_01.obj
MetalArrows_01.obj

Any numbering must always start at 01 and must always be 2 digits long.

So, instead of
Example_1.obj
use
Example_01.obj

Assets must only use alpha numeric values (a,b,c ...123...0 and underscores). Do not use things like the following in any form of naming &,.#$^()... etc. Above all, DO NOT use punctuation or spaces in the name. Use a number ending for master objects. A letter is added for child objects (see childObjects).

Convention

General rule
Usually, for any file, the convention
<ObjectName>_XX
will be used.
Example
PineTree_01

Child objects

Add a lowercase letter at the end when you have a child object (for a table, a child would be its legs):
<ObjectName>_XXx (small x is a letter from a to z for the child)
Example
DinningTable_01a Child object a
DinningTable_01b Child object b

Naming Convention Handout (continued)

Broken Mesh

A broken mesh is a mesh that changes state when the user "breaks" it in game. For example, if you have a trash can that can be broken when the player attacks it, then you need, for instance, 3 different meshes of this trash can – each of which is a state of the can being broken down. (normal state, partially broken state and totally broken state)

For broken mesh, add the suffix _bk1. _bk stands for broken and the number is the state:

\<ObjectName\>_XX_bkXX (last X is a number from 1 to 9 for the broken state)
\<ObjectName\>_XXx_bkXX (same as above but for a child object)
Example
TrashCan_01 original trash can
TrashCan_01_bk1 partially broken state
TrashCan_01_bk2 totally broken state
TrashCan_01a_bk1 for the cap of the trash can

Collisions

For collisions, you simply add the suffix _COL at the end of the name:
\<ObjectName\>_XX_COL
Example
PineTree_01_COL

Textures

Textures are a little special in that they have multiple files.

Usually, to have create a shader, 3 maps must be made – the diffuse, the specular and the normal map. The diffuse sets the colors to be applied on the object. The specular is a black and white map where the white tells where highlights should appear while black areas appear matte. The normal map is a kind of height map that helps create more details on a simple mesh. So far, you have seen and created mostly only diffuse passes.

Unique/Objects textures must be named like the object it is for.

Tiling textures name must be a description of the texture.
\<TextureName\>_XX_D diffuse texture
\<TextureName\>_XX_S specular texture
\<TextureName\>_XX_N normal texture

Example

PineTree_01_D
OldConcrete_01_D Non-unique tiling texture, not named for a specific object
SmallKitchenWall_01_S   Unique tiling texture, named for a specific object

Materials/Shaders

(The person that will create the shaders in Unreal must follow this convention.)
Unique/Objects textures must be named like the object it is for.
Tiling textures name must be a description of the texture.
\<TextureName\>_XX same as its texture minus the ending tag
Example
OldConcrete_01
PineTree_01
SmallKitchen_01

If you need to create two different materials with the unique textures you will have to add a one-word description after the ending number.
\<TextureName\>_XX_S
Example
FoldingChair_01_Metal
FoldingChair_01_Plastic

Technical 3. Welcome to Second Life

Population:

This lesson was created for young adults between the ages of 15-17 and is intended as an introduction to Second Life, an online virtual world. There are 16 participants in the class and one instructor.

Instructors' Prerequisites:

The instructor must have enough experience using Second Life to introduce the basics, such as flying, teleporting, editing their avatar appearance, searching for people and places, and requesting friendship. The instructor should explore Second Life and get familiar with places of interest such as art and performance sites. The instructor must also be familiar with machinma created in Second Life in order to provide examples of storytelling in virtual environments.

Students' Prerequisites:

- No previous experience with Second Life is necessary.

Duration:

45 minutes.

Objectives:

1. Students will be introduced to and explore the online virtual world, Second Life. Students will learn how to walk, fly, teleport, and search for people and places in the virtual world by going through the tutorials at "Help" Island.

Vocabulary

New Media, Online Virtual World, MUD (multiple user dimension), Machinima

Equipment & Materials:

-Access to computer lab with one computer per student
-Smart board

Preparation:

The instructor must create a set of dummy accounts in Second Life (one account for each participant in the workshop). These accounts are for students to use only during workshops and Day 5's under the supervision of instructors. The passwords aren't given out, rather the instructors sign in the students.

It is less confusing to create a set of accounts with the same last names. In the case of Skins, the instructors use numbers and salutations in the Mohawk language as first names for the dummy accounts. Also create the same password for all accounts.

Before the workshop, create a table with the SL names and a space to write the students name beside it.

WEB RESOURCES & BOOKS:

www.secondlife.com
Platel, Rufer –Bach, & Weber. (2008). Creating Your World: The Official Guide to Advanced Content Creation for Second Life. USA : Wiley Publishing.
Building Tutorials can be found on the Second Life Wiki at:
http://wiki.secondlife.com/wiki/Video_Tutorials

Technical 3. Welcome to Second Life (continued)

Procedure:

1. Introduction to Second Life (5min)

Introduce students to Second Life. Ask if anybody is familiar with or has used SL, and if so, what experience they have with it. Give a brief explanation of the difference between a virtual world and a game and what kinds of things people do in SL (socialize, shop, build, make art, machinima, etc). Also, explain to them how Second Life is an option for storytelling through machinima, as well as learning the basics of 3D modelling using the building tools.

2. Help Island Tutorial (35min)

On the Smart Board, show students a walkthrough of "Help Island" where they will do a tutorial on getting started, learning how to fly, teleporting, and editing their appearance. Show them your own avatar walking through the beginning and explain how to point and click on the tutorial signs. (5min)

Explain to students that they will have an account to use during workshops and day 5's but will not have access to the password. Explain that they can set up their own account at home if they wish to use SL outside class time. Read out the names for the accounts and ask students to choose one. Record their names on the sheet. (5min)

Instructors will go around and log in students. Tell students that they will have half an hour to go through the tutorials on "Help Island." (30min)

3. Conclusion (5min)

Before logging out, make sure that everyone in the class has invited each other as Friends in SL if they haven't done so already.

Technical 4. Intro to Building in Second Life

Population:

This lesson was created for young adults between the ages of 15-17 and is intended as an introduction to Second Life, an online virtual world. There are 16 participants in the class and one instructor.

Instructors' Prerequisites:

The instructor should have some experience with Second Life.

Students' Prerequisites:

No previous experience with Second Life necessary.

Duration:

45 minutes.

Objectives:

1. Students will learn about the fundamentals of 3D modelling by creating a simple snowman in Second Life. Students will be introduced to the x,y, & z axis which will be relevant to the 3D modelling software (Blender) taught in later workshops.

Vocabulary

New Media, Online Virtual World, MUD (multiple user dimension), 3D modelling, X, Y, Z axis, Textures

Equipment & Materials:

-Access to computer lab with one computer per student
-Smart board

Preparation:

Instructors must create a set of temporary accounts in Second Life, one account for each participant in the workshop. These accounts are for students to use only during sessions under the supervision of instructors. The passwords aren't given out, rather the instructors sign in the students. It is less confusing to create a set of accounts with the same last names. Before the session, create a table with the SL names and a space to write the students name beside it.

Web Resources & Books:

www.secondlife.com
Platel, Rufer –Bach, & Weber. (2008). Creating Your World: The Official Guide to Advanced Content Creation for Second Life. USA : Wiley Publishing.
Building Tutorials can be found on the Second Life Wiki at:
http://wiki.secondlife.com/wiki/Video_Tutorials

Procedure:

1. Building Basics (10min)

Explain the basics of building in SL by walking through how to build a basic snowman. On the Smart Board, create a snowman using 3 spheres for the body, and other shapes to make a hat, eyes, nose, etc. Explain how the XYZ vertices work and how this is a fundamental part of any 3D modelling program. Also show them how to link prims, stretch and rotate an object, edit individual parts, apply colour and texture, and save and name an object. (10-15min)

Technical 4. Intro to Building in Second Life (continued)

Before logging students in, show them how to search for AbTeC Island (since they will still be on Help Island or shopping) and to set it as a landmark on their map.

Instructors will log students in. Tell students that they have 35 minutes to work on their snowman and that they can continue to edit their appearance after making the snowman.

2. Work Period (30min)

Students work on creating their snowmen.

3. Conclusion (5min)

Tell students to name their snowmen if they haven't done so already. Also remind them the difference between "taking" and "deleting" an object in case they want to keep their snowman.

Have students turn off their screens for two minutes and show them how to send a postcard in SL. Show them how to take a snapshot of their avatar with the snowman and send it to abtec.org so that it can be posted to the wiki.

Students turn on screens, take snapshots, and send.

Technical 5. Welcome to Blender

Population:

This presentation was created for young adults between the ages of 15-17. There are 16 participants in the class and one instructor.

Instructors' Prerequisites:

The instructor has a high level of experience with Blender—a free open source cross platform suite of tools for 3D creation.

Students' Prerequisites:

No previous experience with Blender necessary.

Duration:

45 minutes.

Objectives:

1. Students will be introduced to using Blender 3D program and what can be done using such software.

Vocabulary

Open Source, NURBS, Polygons, T-pose

Equipment, Software, Materials:

- A digital projector for showing a PowerPoint presentation
- White board, dry erase markers
- Individual computers for each student
- Blender installed on each computer
- Python plug-in

Preparation:

- Install Blender and the Python plug-in at each workstation
- Prepare a slide presentation that includes images of a simple object to start modelling (in this case, a lamp).

Web Resources & Books:
Joan of Arc Complete 3D character tutorial: **http://www.3Dtotal.com/ffa/tutorials/max/joanofarc/joanmenu.asp**
Blender Community: **http://www.blender.org/**

Procedure:

1. Introduction - Recap of the steps to 3D production (5min)

Start out by going over what was covered in the presentation 3D Production Pipeline. The production of a character requires several steps: concept, modelling, UV mapping, texturing, rigging, animating, and rendering. A full tutorial of this exists at 3Dtotal.com for students who are interested in self-learning.

Technical 5. Welcome to Blender (continued)

2. Intro to Blender 3D (15min)

All these steps can be done using the free and open source 3D software Blender. Introduce this product's website, hardware requirements, and community. Show some examples of films and images made in Blender: photo real, stylized, and abstract. Note that many complex objects that appear in Second Life could be made using such software.

3. Reminders of 3D Modelling (10min)

Before even opening the software, introduce other examples that could be used such as Maya and 3Dsmax. Explain the difference between NURBs vs. Polygon modelling. And, most importantly, remind students that 3D software is prone to crashing. SAVE. SAVE. SAVE!

4. T-pose and Concept (10min)

Before modelling, a proper template should be used that will allow you to trace the most important curves of the character or object's shape. This image, usually drawn by hand, should have a dead center front and side view with arms up, legs apart, and no overlaps. Show examples. A more in-depth section on concept art and technical drawing for Blender is covered in the Game Design Module.

5. Prep for Modelling (5min)

In the following session, the students will begin modelling a human form as their first exercise in Blender. Prepare the students for the next session by drawing out on the White Board the breakdown of the model into the pieces to be modeled and manipulated such as the head, torso, and limbs. The software specifics should be taught soon after this presentation as the students build this object in 3D.

Technical 6. Intro to Modelling in Blender

Population:

This lesson was created for young adults between the ages of 15-17. There are 16 participants in the class and one instructor.

Instructors' Prerequisites:

-The instructor must be knowledgably and experienced with building 3D models using Blender.

Students' Prerequisites:

- Technical 5. Welcome to Blender
- Basic experience with 3D environments such as Second Life or Blender is a plus but not required.

Duration:

45 minutes.

Objectives:

1. Student will receive hands-on training with the interface and the basics of 3D modelling in Blender.

2. Students will use the instruction taught in this lesson to create a lamp in Blender.

Vocabulary

3D modelling, Primitive models, meshes, scale, rotate

Equipment, Software, Materials:

- Computer workstation each student
- Blender installed on each computer

Preparation:

The instructor must prepare an image of a simple lamp design for the students to be modeled in 3D.

Web Resources & Books:

http://www.blender.org/education-help/
Blender Short Cuts Handout - **http://www.skins.abtec.org/wp-content/uploads/2009/04/blender1.jpg**

Procedure:

1. Introduction to the Blender Interface (10min)

Explain how Blender is used to create very elaborate 3D models. Before the students turn on their workstations, go through the interface and explain what the main windows are (such as the 3D view and the buttons window). Next, show the different camera navigation controls and explain how they are helpful in displaying different view angles of the model when working on it. Place Blender examples of a monkey head model to show how the number pad controls can be used to quickly jump to the different views (top, front, side).

2. Modelling a Lamp (10min)

Show the students how to open the image file of the lamp they will be creating in Blender. Step by step, explain to them how to create new primitive meshes (spheres, cylinder, etc.). Demonstrate to the students how to create, place, scale, and rotate the different prims to create the finished lamp. A print out of the shortcuts should be made available to the students as a reference (see "Web Resources" above).

Technical 6. Intro to Modelling in Blender (continued)

3. Work Session (20min)

Answer any questions as they arise, and repeat parts of the lesson if necessary. Let the students repeat what you just demonstrated. Encourage students to take it further with creating their own details on the lamap if some of them finish early.

4. Conclusion (5 min)

Conclude by having the students save their lamp using the naming conventions taught earlier in the series.

Technical 7. Modelling a Wooden Manikin I

Population:

This lesson was created for young adults between the ages of 15-17. There are 16 participants in the class and one instructor.

Instructors' Prerequisites:

The instructor should have a strong understanding of Blender (here, using version 2.47) and have enough experience to foresee wrong keystrokes that the students might make. The instructor should also be familiar with the box modelling technique used.

Students' Prerequisites:

Technical 5. Welcome to Blender
The students should have some knowledge of the interface (camera controls, 3D cursor).

Duration:

45 minutes.

Objectives:

1. Students will be introduced to the Blender interface and its tools.
2. Students will prepare the interface to start modelling on top of the background images.

Vocabulary

Vertex, edge, face, normal, move, rotate, scale, selection, extrusion, mirror, front view, top view, side view, modifier, 3D cursor, gizmo, X, Y, Z axis.

Equipment, Software, Materials:

-Access to computer lab with one computer per student
-Download the newest version of Blender to each computer (along with Python to avoid problems)
-Smart board, digital projector

Preparation:

The instructor needs to prepare a tutorial with all the steps students can refer to afterward. The instructor should also prepare a sheet with all the Blender shortcuts for reference. Both the tutorial and the shortcuts should be posted to the blog.

For this exercise, the instructor needs to prepare the front and side view of a simple character, in this case a wooden manikin.

Web Resources & Books:

Blender website: **http://www.blender.org/**
Tutorial made: **http://skins.abtec.org/wp-content/documents/ManikinTutorial.pd-f**Blender shortcuts list: **http://www.Skins.abtec.org/wp-content/uploads/2009/04/blender1.jpg**

Procedure:

1. Introduction (10min)

Start out by reviewing the previous session Technical Module 5. Welcome to Blender where the students were introduced to Blender and the type of work that can be created with it. Explain how vertex manipulation is used for editing the vertices of the model within the edit mode. Let students know that this will be covered more in-depth in the next lesson.

Technical 7. Modelling a Wooden Manikin I (continued)

2. Prepare the Interface (15min)

Students will now learn how to prepare the interface before starting to work on modelling. Show the students how to split the interface in a front and side view and upload the two background images. Show students how to set the image to front and side view and centered at 0,0,0. After explaining how to do this, allow students 10 minutes to split the image and set it to front and side view.

3. Conclusion (5min)

Make sure the students save their file so that it is ready for them to work on the time. Let students know that they will begin modelling the character in the next step.

Technical 8. Modelling a Wooden Manikin II

Population:

This lesson was created for young adults between the ages of 15-17. There are 16 participants in the class and two or more instructors.

Instructors' Prerequisites:

The instructor should be comfortable using Blender (here, using version 2.47) enough to foresee wrong keystrokes that the students might make. The instructor should also be familiar with the box modelling technique used.

Students' Prerequisites:

The students should have prepared their interface to start modelling on top of the background images.

Duration:

45 minutes.

Objectives:

1. Students will learn vertex manipulation for Blender.

2. Students will learn the box modelling technique using selection and extrusion.

3. Students will begin modelling the torso of the wooden mannequin.

Vocabulary

Vertex, edge, face, normal, move, rotate, scale, selection, extrusion, mirror, front view, top view, side view, modifier, 3D cursor, gizmo, X, Y, Z axis.

Equipment, Software, Materials:

-Access to computer lab with one computer per student
-Download the newest version of Blender to each computer (along with Python to avoid problems)
-Smart board

Preparation:

The instructor needs to prepare a tutorial with all the steps students can refer to afterward. The instructor should also prepare a sheet with all the Blender shortcuts for reference. Both the tutorial and the shortcuts should be posted to the blog.

Prepare a file with the front and side view already in place for the students who would have missed last class.

Web Resources & Books:

Blender website: **http://www.blender.org/**
Tutorial made: **http://skins.abtec.org/wp-content/documents/ManikinTutorial.pdf**
Blender shortcuts list: **http://www.skins.abtec.org/wp-content/uploads/2009/04/blender1.jpg**

Procedure:

1. Introduction (5min)

Go over what the students learned in the previous class where they set the interface, split the screen, and uploaded the background image. Today the students will begin modelling the torso. Explain and demonstrate how to use vertex manipulation to build the model. Also explain and demonstrate how extrusion works.

Technical 8. Modelling a Wooden Manikin II (continued)

2. Start Modelling the Torso (40min)

Have the students open the file they started during the last class. They will spend the remainder of the period working on the torso. Explain that they only need to model half the torso, as they will learn how to mirror it later to save time. Make sure the students model the front and side view. The instructors will help students as questions arise. Encourage students to try and finish the torso during this period so they can move on to the arms and legs in the next session.

3. Conclusion (5min)

Have everyone save their file and let them know that they will be continuing to work on the arms and legs next.

Technical 9. Modelling a Wooden Manikin III

Population:

This lesson was created for young adults between the ages of 15-17. There are 16 participants in the class and one instructor.

Instructors' Prerequisites:

The instructor should be comfortable using Blender (here, using version 2.47) enough to foresee wrong keystrokes that the students might make. The instructor should also be familiar with the box modelling technique used.

Students' Prerequisites:

Students should have started the model and finished with the torso of the character. They should be ready to work on the limbs.

Duration:

45 minutes.

Objectives:

1. Students will continue working on their mannequin by creating the arms and legs.

Vocabulary

Vertex, edge, face, normal, move, rotate, scale, selection, extrusion, mirror, front view, top view, side view, modifier, 3D cursor, gizmo, X, Y, Z axis.

Equipment, Software, Materials:

-Access to computer lab with one computer per student
-Download the newest version of Blender to each computer (along with Python to avoid problems)
-Smart board

Preparation:

The instructor needs to prepare a tutorial with all the steps students can refer to afterward. The instructor should also prepare a sheet with all the Blender shortcuts for reference. Both the tutorial and the shortcuts should be posted to the blog.

Prepare a file with the background images and the torso finished for the students to catch up (if needed).

Web Resources & Books:

Blender website: **http://www.blender.org/**
Tutorial made: **http://skins.abtec.org/wp-content/documents/ManikinTutorial.pdf**
Blender shortcuts list: **http://www.skins.abtec.org/wp-content/uploads/2009/04/blender1.jpg**

Procedure:

1. Introduction (5min)

Make sure everyone has the torso finished. Demonstrate the next step, which is extruding the legs and arms of the mannequin. Make sure to point out that only the leg and arm need to be created because they will be mirrored in the next class. Point out that the hands and feet are simple but require some attention to detail, such as the fingers.

Technical 9. Modelling a Wooden Manikin III (continued)

2. Model the Limbs (35min)

Students will open their files and begin extruding the legs and arms. The instructors will help students with any problems or questions that arise. Remind students periodically to save their work just in case.

3. Conclusion (5min)

Wrap up by having the students save their work. Let students know that they will be creating the head in the next class.

Technical 10. Modelling a Wooden Manikin IV

Population:
This lesson was created for young adults between the ages of 15-17. There are 16 participants in the class and one instructor.

Instructors' Prerequisites:
The instructor should be comfortable using Blender (here, using version 2.47) enough to foresee wrong keystrokes that the students might make. The instructor should also be familiar with the box modelling technique used.

Students' Prerequisites:
The students should have very little knowledge of the interface. Knowing how to select can be helpful as well as the terminology used.

Duration:
45 minutes.

Objectives:
1. Students will create the head for their mannequin.

Vocabulary
Vertex, edge, face, normal, move, rotate, scale, selection, extrusion, mirror, front view, top view, side view, modifier, 3D cursor, gizmo, X, Y, Z axis.

Equipment, Software, Materials:
-Access to computer lab with one computer per student
-Download the newest version of Blender to each computer (along with Python to avoid problems)
Smart board

Preparation:
The instructor needs to prepare a tutorial with all the steps students can refer to afterward. The instructor should also prepare a sheet with all the Blender shortcuts for reference. Both the tutorial and the shortcuts should be posted to the blog.

Web Resources & Books:
Blender website: **http://www.blender.org/**
Tutorial made: **http://Skins.abtec.org/wp-content/documents/ManikinTutorial.pdf**
Blender short shortcuts list: **http://www.Skins.abtec.org/wp-content/uploads/2009/04/blender1.jpg**

Procedure:
1. Introduction (5min)

Make sure everyone has finished the torso and limbs of the character. Show the students how to create the head by either extruding from the torso, or start from a cylinder and attach it to the body afterward.

2. Make (Half of) the Head (35min)

Students will spend class creating the head of the mannequin. If there is still time left, show students how to tweak the vertices on the body to make sure everything is well done (no flying vertices or messy geometry). Remind students to save their work throughout the period.

Technical 10. Modelling a Wooden Manikin IV (continued)

3. Conclusion (5min)

Almost there! Have students save their work. Let them know that next class the will be mirroring and finishing the model.

Technical 11. Modelling a Wooden Manikin V

Population:

This lesson was created for young adults between the ages of 15-17. It is intended as an introduction to building a character using Blender, a 3D modelling tool. There are 16 participants in the class and one instructor.

Instructors' Prerequisites:

The instructor should be comfortable using Blender (here, using version 2.47) enough to foresee wrong keystrokes that the students might make. The instructor should also be familiar with the box modelling technique used.

Students' Prerequisites:

Students should have finished modelling half of the character and be ready for the mirror.

Duration:

45 minutes.

Objectives:

1. Learn the mirroring (mirror modifier) of an object.

2. Learn how to use Modifiers (mirror).

3. Learn how to round out the edges.

Vocabulary

Vertex, edge, face, normal, move, rotate, scale, selection, extrusion, mirror, front view, top view, side view, modifier, 3D cursor, gizmo, X, Y, Z axis.

Equipment, Software, Materials:

-Access to computer lab with one computer per student
-Download the newest version of Blender to each computer (along with Python to avoid problems)
-Smart board

Preparation:

The instructor needs to prepare a tutorial with all the steps students can refer to afterward. The instructor should also prepare a sheet with all the Blender shortcuts for reference. Both the tutorial and the shortcuts should be posted to the blog.

Web Resources & Books:

Blender website: **http://www.blender.org/**
Tutorial made: **http://Skins.abtec.org/wp-content/documents/ManikinTutorial.pdf**
Blender shortcuts list**: http://www.Skins.abtec.org/wp-content/uploads/2009/04/blender1.jpg**

Procedure:

1. Introduction (5min)

Make sure everyone has their character finished so they are ready to mirror and tweak. Demonstrate how to mirror that character. Show how to use the snape tool to make sure the centerline is straight. Next, demonstrate how to smooth the edges and place the vertices to finalize the modelling by rounding the edges of the model. Next, demonstrate how to round the edges of the model in order to smooth out the edges.

Technical 11. Modelling a Wooden Manikin V (continued)

2. Mirror and Touch Ups (35min)

Students will spend the remainder of the class mirroring and rounding their models. The instructor will help the students with any questions or problems that come up.

3. Conclusion (5min)

Review the whole process of creating a character from scratch. Congratulate the students on building their first model. They are now ready to use these techniques to build the characters and objects for their own game.

Technical 12. Textures 1: Introduction to Photoshop

Population:

This lesson was created for young adults between the ages of 15-17. There are 16 participants in the class and one instructor.

Instructors' Prerequisites:

-The instructor must have enough experience using Photoshop that they feel comfortable teaching this beginner level lesson.

Students' Prerequisites:

- No previous experience with Photoshop is necessary.
- A basic understanding of Second Life is required.

Duration:

45 minutes.

Objectives:

1. Students will be introduced to the Photoshop workspace and its basic tools. The lesson covers documents, layers, shapes, color, paint bucket, brushes, eraser, and saving files.

Vocabulary

Pixel, RGB, Canvas, Layers, Opacity, UV Map, Textures

Equipment, Software, Materials:

-Access to computer lab with one computer per student.
-Photoshop installed on each computer.

Procedure:

1. Introduction to Photoshop (10min)

Introduce Photoshop to the students. Explain that Photoshop is a powerful digital image manipulation software. Show a couple examples of the different sorts of results that Photoshop can achieve. Explain that Photoshop will be used to create the textures for all the 3D models that the students make.

2. Photoshop Basics (10min)

Open Photoshop. Show students how to create a new file. Take a moment to point out the width and height fields, the unit of measure (pixel, inches, cm, etc.), resolution, and color mode. Have each student create a new file.

Introduce the Color Picker and briefly explain RGB. Introduce the Paint Bucket tool. Have each student select a color and use the Paint Bucket Tool to change the color of the background.

Introduce the Paint Brush tool. Show students how to change the brush and its size. Have students draw on their canvases.

3. Photoshop Layers (10min)

Introduce the concept of Layers using the metaphor of sheets of glass. Explain that each layer is like a sheet of glass and that a Photoshop file is like a stack of these sheets of glass. If you draw something on the bottom layer, it is visible as long as nothing on a higher layer obscures it. Demonstrate how to add, move, and delete layers. Explain the function of layer locking (the lock icon) and visibility (the eye icon). Introduce the concept of opacity. Stress the importance of organizing the elements of Photoshop documents in layers. Emphasize the importance of always knowing which layer you are currently working on. Have students experiment with layers.

Technical 12. Textures I: Introduction to Photoshop (continued)

4. Photoshop Tools (10min)

Briefly introduce the Marquee Tools, Move Tool, Lasso Tool, Crop Tool, Eraser Tool, Eyedropper Tool and Type Tool. Have students experiment with each tool as it is introduced.

5. Conclusion (5min)

Explain to students that in the next lesson, they will continue to learn how to use these basics in "Textures II."

Technical 13. Textures II: Intermediate Photoshop

Population:

This lesson was created for young adults between the ages of 15-17 and is intended as an introduction Photoshop and creating clothing for Second Life using Photoshop. There are 16 participants in the class and one instructor.

Instructors' Prerequisites:

-The instructor must have enough experience using Photoshop that they feel comfortable teaching this beginner level lesson.
-The instructor must have basic understanding of UV mapping and clothing in Second Life.

Students' Prerequisites:

- Students must have attended Technical Module 12 or have similar experience
-A basic understanding of Second Life is required.

Duration:

- 45 minutes.

Objectives:

1. Students will review what was covered in Technical Module 12, which covered the Photoshop workspace and its basic tools.

2. Students will learn the basics of making clothing in Second Life. Students will be introduced to very simple UV maps and shown how a 2D image translates into 3D clothing.

Vocabulary

Pixel, RGB, Canvas, Layers, Opacity, UV Map, Textures

Equipment, Software, Materials:

-Access to computer lab with one computer per student.
-Photoshop installed on each computer.

Preparation:

Download Linden Lab Clothing Templates, available for download at http://static.secondlife.com/downloads/textures/fashion/All_Fashion_Design_Templates.zip.

Linden Dollars for Texture Upload: Prior to class, the instructor should distribute 10 Linden dollars to each students' Second Life account. This is in order for students to upload their finished T-shirt texture to Second Life. (10L = $0.34USD). Visit LindeX™ Exchange at https://secure-web13.secondlife.com/currency/buy.php for more information.

Web Resources & Books:

How to Make a Shirt in SL **http://www.youtube.com/watch?v=k9tgRUs4zLA**
Introduction to Second Life Clothing **http://nicolaescher.com/tutorials/clothing-in-second-life.php**
Tutorial with UV map **http://nicolaescher.com/tutorials/creating-your-first-shirt.php**
SL Wiki **http://wiki.secondlife.com/wiki/Clothing_Tutorials**
Linden Lab Clothing Templates **http://static.secondlife.com/downloads/textures/fashion/All_Fashion_Design_Templates.zip**

Technical 13. Textures II: Intermediate Photoshop (continued)

Procedure:

1. Recap Textures I (10min)

Review and briefly demonstrate the basics of Photoshop that were introduced in "Textures I: Introduction to Photoshop" such as the colour picker, RGB, paint bucket, layers, and tools.

2. Photoshop History (5min)

Show the students the History Window. Explain how actions can be undone and redone by selecting the action from the list of recent activity.

3. Saving Files in Photoshop (5min)

Explain that Photoshop has a special file type, .psd. Explain that this file type preserves the layers of the Photoshop file. Emphasize the importance of always saving documents as .psd so that images can easily be edited. Introduce the other digital image formats (.jpeg, .png, etc). Explain that when files are saved using these formats that the layers are compressed into one layer and that these formats are the ones that will be used when you want to post images on the blog, or import them to Unreal or Second Life. Stress the importance of having both .psd for editing and the image format for actually using.

4. Creating a Shirt for Second Life in Photoshop (20min)

Briefly introduce the concept of UV maps. Have students download the Linden Labs Clothing Templates. Students should then open the Upper Body Template. Show the students the different shirts on each layer of the document. Simply explain how the 2D image becomes a shirt in Second Life. Have students create their own shirt using the tools that have been introduced during the lessons Textures I & II.

5. Upload Shirt to Second Life (5min)

The lesson concludes with the students uploading their T-Shirt texture to Second Life and editing their appearance to wear it.

Technical 14. Animation Principles I

Population:

This presentation was created for young adults between the ages of 15-17. It is an introduction to the12 principles of animation. There are approximately 16 students and one instructor.

Instructors' Prerequisites:

The instructor must have basic experience animating and know the 12 principles of animation.

Students' Prerequisites:

No previous experience with animation necessary.

Duration:

30 minutes.

Objectives:

1. Students will learn a general understanding about the 12 principles of animation.

Vocabulary

Squash and stretch, Anticipation, Staging, Straight Ahead Action and Pose-to-Pose, Follow Through and Overlapping Action, Slow In and Slow Out, Arcs, Secondary Action, Timing, Exaggeration, Solid Drawing, Appeal

Equipment, Software, Materials:

-Digital Projector, smart board, computer, Internet connectivity

Preparation:

The instructor needs to prepare in advance a PowerPoint presentation with examples of the 12 principles of animation. Also make sure you to test the YouTube video prior to class (it's better to download it).

Web Rsources & Books:

http://www.animationtoolworks.com/library/article9.html
http://www.youtube.com/watch?v=gANwlbRKuOw
http://en.wikipedia.org/wiki/12_basic_principles_of_animation
http://billysalisbury.com/tutorials_principles.htm

Procedure:

1. Explaining the 12 Principles of Animation (20min)

Go through and explain each of the 12 principles with visual examples on the PowerPoint presentation.

1.Squash and Stretch

In the bouncing ball animation, it's important to exaggerate movements and their effect in order to communicate the motion—the ball squashes against the floor and stretches as it accelerate away from it and back to it. It's usually very subtle in realistic animations but very visible in cartoony animations.

Technical 14. Animation Principles I (continued)

2. Anticipation

The movements that prepare for the action. Like leaning slightly backwards before running or leaning forward and bending the knees before jumping.

3. Staging

Camera position, frame composition, close up, mid range, and long-range shots. It is not very relevant in games since the player mainly controls the camera, but it's good to keep it in mind.

4. Straight Ahead Action and Pose-to-Pose

Straight Ahead is when frames animate in order—there's less control over timing and it's usually done with fast action shots. Pose-to-Pose is when you set the main poses of the scene first and control the timing before you start working on the frames inbetween.

5. Follow Through and Overlapping Action

When a character stops or changes direction and its clothes, long hair, and/or trail doesn't stop right away but they keep moving in the original direction for a little bit before starting to move in the new direction.

6. Slow In and Slow Out

Things don't suddenly start and stop moving, they slowly accelerate and decelerate (like cars).

7. Arcs

The motion of the object/character comes from paths/arcs. In humans, the arcs are usually smooth with no sharp points since the movements are normally fluidly smooth.

8.Secondary Action

Secondary Action is used to support and enrich the main action. For example, an angry character walking towards another character—the main action is the walk, the secondary action could be arm swings and possibly dialog. It shouldn't distract the main action but support it.

9. Timing

Timing actions conveys the right mood and feel of the scene. It is not very relevant with gaming since it mostly determined by the player.

10. Exaggeration

Perfectly realistic poses and movements might not be enough to communicate the story. Usually exaggerating them help.

11. Solid Drawing

In our case, solid drawing is solid modelling. A solid model is well proportioned with a sense of weight and volume.

12. Appeal

Appeal is not just cute and cuddly. The character's design needs to be clear and easy to understand. The story development should work towards communicating the idea and the mood.

2. Play the Video

Play the Humanoid Animation video (http://www.youtube.com/watch?v=gANwlbRKuOw) and point out the different principles being applied during the production of the animation. (2min)

Technical 15. Animation Principles II

Population:
This lesson was created for young adults between the ages of 15-17. This is a continuation of Animation Principles I. There are approximately 16 students and one instructor.

Instructors' Prerequisites:
Knowledge and research on the principles of animation, namely 'Straight Ahead' vs. 'Pose-to-Pose'.

Students' Prerequisites:
Technical 14. Animation Principles I

Duration:
45 minutes.

Objectives:
1. Following a presentation on the 12 Principles of Animation, the objective of this lesson is to review, in greater detail, the principle of 'Pose-to-Pose' vs. 'Straight Ahead' animation and their pros and cons.

2. The principles of animation are put into practice using a 'draw a bouncing ball' exercise.

3. By the end, these principles will be tied together with 3D animation.

Vocabulary
Stretch/Squash, Straight Ahead, Pose-to-Pose

Equipment, Software, Materials:
Computer, digital projector
A print out for every student of the 'bouncing ball' template.
Pencil and erasers

Preparation:
- Video examples should be loaded onto the presentation computer
- Bounce exercise papers should be printed and ready to pass out

Web Resources & Books:
Animating Straight Ahead and Pose-to-Pose: **http://anipedia.thebackalleys.com/index. php/Animating_Straight_Ahead_and_Pose_to_Pose**
Straight Ahead Action and Pose-to-Pose Action: **http://www.evl.uic.edu/ralph/508S99/ straight.html**

Procedure:
1. Explanation

Present the differences between the two methods of animation, using video examples as necessary (see attached presentation notes). Note how these principles of animation still relate to computer graphics.

2. Draw a Bouncing Ball

Hand out the bouncing ball exercise sheet. Show the video examples of both a 3D and a 2D bouncing ball animation. Note the stretch, squash, spin, acceleration, and deceleration when the ball rises, falls, and hits the floor. Allow them a few minutes to draw what they think would happen during every key frame. Go around and correct and explain errors as necessary. Most students will attempt to draw plain circles in every key frame.

Technical 15. Animation Principles II (continued)

3. 3D Animation Pipeline

Present quickly how animation is done in 3D. Though the principles remain the same, the tools are very different. Characters need to be rigged, skinned, and given hair and cloth simulation dynamics before the animators can start their work. Compare this to traditional 2D sketch animation. Show an example of how complex a facial rig can be for every muscle in the face. Much anatomical study of muscular structure is needed.

4. Conclusion

Tie everything together by reminding students that, despite the medium, animation of any type almost always relies on these same fundamental principles. Point them to any relevant reference material.

Straight Ahead Action and Pose-To-Pose Action

Straight Ahead Action

Straight Ahead action is so called because an animator literally works straight ahead from the first drawing in the scene. This process usually produces drawings and action that have a fresh and slightly zany look, because the whole process is kept very creative.

Straight Ahead action is used for wild, scrambling actions where spontaneity is important.

Pose-To-Pose Action

In Pose-to-Pose animation, the animator plans his action, figuring out just what drawings will be needed to animate the scene. Pose-to-pose is used for animation that requires good acting, where poses and timing are important.

Relevance in CGI

Pose-to-Pose action is an important tool in computer animation. Objects are built in a hierarchy, where each layer of the hierarchy has an associated transformation. Animation is then built up one transformation at a time from one pose to the next. For example, when animating a person walking, you would first set the pose position for the hips at the start of the motion, and then you would adjust the hip translation for the end of the action. Then building upon this original pose, you would transform other objects in the model, until you had traversed the hierarchy. All of your actions must be well thought out, and the timing and poses planned so that even in the early stages, the action is clear.

Straight Ahead: The Creative Method

Pros

It's passionate and fiery, it's usually done recklessly, but it has the vitality of improvisation, as opposed to Pose-to-Pose (no pun intended, folks).

It's creative—we take the actions as it comes along. We basically go with the flow.

Feeling the Character. Sometimes, the unconscious mind kicks in and animators can "hear" or "feel" the character they are animating "telling" them how to draw them or what should happen next.

It can produce surprises or magic. Creating and animating on the spur of the moment may cause one to animate something that no one really saw before, opening up a new route.

It's Fun.

Cons

Things Wander, or characters and their features begin to grow or shrink. Things may not arrive at the right place.

Time Stretches, or the shot goes on longer than it may have been intended, things don't arrive at the right time.

Hard to Control. Directors have a hard time seeing what you'll be going for and hate you for it. However, if you're like most people, you're your own Director, so this Con is moot to some of us.

Expensive. Producers don't pay you to make Magic. Which is why they will hate you if you waste time and paper doing multiple straight ahead runs and still don't get it right. Again, if you're an independent animator, this Con isn't that big of a deal, but it shows that you could waste a lot of time if you rely only on straight ahead runs.

Hard to Clean up After. If you're working with other animators or assistants, they will often not know what it is you're trying to accomplish, making it harder for them to make sense of it all and tween and hook up the shots right.

Hard on the Nerves. Doing straight ahead runs can prove to be excessively challenging, and doing them too much can lead to Mad Artist syndrome. This also puts more stress on deadlines.

Straight Ahead Action and Pose-To-Pose Action (continued)

Pose-to-Pose: The Controlled Method

Pros

Easier to Control, since there are "guideposts" within the movie, it is a lot easier to have all the angles set in stone before the production is in its final stage.

Organized, once again, the guideposts are much help to animators. It keeps the movie looking right, so the animator knows how to make the movements.

Consistent, this style keeps animations looking clean. Even though the Straight Ahead Action style has consistency as one of its cons, the Pose-to-Pose style is very consistent, and if done right, can lead to very clean animation with lots of flow.

Producers/Clients Love It There's no improvisation, so there's little chance of straying away from what the producer or client wants. Realistically, Animators are paid to deliver on time with the best results, not to make "magic."

Cons

Time Consuming, due to the nature of the style, animations take longer to finish. The guideposts add an extra step that may take a lot of time. It's questionable whether this can be considered a con; in the end, it's quality vs. quantity (or in this case, quantity done over a certain period of time.

No Surprises There's no magic, no improvising. So it's a lot less fun than straight ahead. Only the really good animators can make a pose-to-pose animation and make it look visually interesting.

Jerky Animation Since we're forced to work between guideposts, time begins to tighten, unlike Straight ahead, where it begins to loosen. With that, animators have to draw all the frames they need, sometimes tweening mechanically and evenly spacing the drawings (straight in-betweening). When doing Pose-to-Pose, one's animation may look like something out of an amateurly-made CGI animation. The computer generates the in-betweens with dubious neutrality, favoring nothing, easing only if told to, no imagination, resulting in some pretty jerky animation. It contains none of, or a severely smaller amount of, the fluidness of straight-ahead animation type.

Cold and Calculated. The polar opposite to Straight Ahead's passion and recklessness, Pose-to-Pose is considered too literal, too cold and planned out. The passion seems to have been lost, and may result in some pretty bland animation.

Straight Ahead: http://ca.youtube.com/watch?v=5T4wvZiyWoA

Pose-to-Pose: http://ca.youtube.com/watch?v=S9hQsfEjjDc&NR=1

Poses: http://ca.youtube.com/watch?v=P3wca-7H9MI&feature=related

Smoothed: http://ca.youtube.com/watch?v=62V1x2Nl2os

Two balls a bouncing (heavy and light): http://ca.youtube.com/w

Technical 16. Introduction to QAvimator

Population:

This lesson was created for young adults between the ages of 15-17. It is intended as an introduction to making animations using QAvimator, an animation tool for Second Life. The skills learned in QAvimator can be later transferred to animating models in Blender. There are 16 participants in the class and two or more instructors.

Instructors' Prerequisites:

The instructor should be comfortable using QAvimator and know about animation in general.

Students' Prerequisites:

Technical 14. Animation Principles I

Technical 15. Animation Principles II

The students do not need any prior knowledge of the software. It would be good to teach them the principles of animation first as the theory part and practice these principles in this module.

Duration:

45 minutes.

Objectives:

1. Students will be introduced QAvimator's interface.

Vocabulary

Animation, timeline, viewport, camera controls, key, frame, frame per second (fps), loop, .bvh format, X, Y, Z axis.

Equipment, Software, Materials:

-Access to computer lab with one computer per student
-Download the newest version of QAvimator to each workstation
-Smart board, digital projector

Web RsourcesS & Books:

Qavimator website: **http://www.qavimator.org/**

Qavimator Beginners Guide: **http://wiki.qavimator.org/index.php/Beginner%27s_Guide**

Useful tutorial that explains all: **http://www.youtube.com/watch?v=h_-3c_aC-O4**

Procedure:

1. Introduction to QAvimator (5min)

Introduce the students to QAvimator, the animation software for Second Life. Tell the students that the skills they will be learning in QAvimator are similar to animating in Blender, which they will be doing later on. Explain some of the benefits of QAvimator such as easy rigging and exporting to Second Life.

Technical 16. Introduction to QAvimator (continued)

2. Interface (20min)

Open up QAvimator and guide students through the interface. They can follow you on their own screens and test out the various functions as you move through the demonstration. First show the main components such as the "viewport" and camera controls, which allows the user to look at the figure from various perspectives. Point out the "avatar tab" which changes the figure to either female or male. Explain that this does not change the sex of the avatar when used in Second Life. Beside the sex option is an option to change the size of the avatar. Show the "timeline" which shows the sequence of when and where movements occur in an animation. The "slider" function moves the animation frame by frame.

Explain how to calculate the total number of frames according to the FPS.
Keyframe defines the start and end points of a body movement.

3. Show Rotations (15min)

Show how to rotate a body part and how the key frame appears automatically.
Go to a new frame and show it again.
Use the playback button and explain the loop in and loop out.

4. Conclusion (5min)

Inform students that the next lesson involves making a jump in QAvimator and exporting it to Second Life.

Technical 17. Make a Jump in QAvimator

Population:

This lesson was created for young adults between the ages of 15-17. It is intended as an introduction to making animations using QAvimator, an animation tool for Second Life. There are 16 participants in the class and one instructor.

Instructors' Prerequisites:

The instructor should be comfortable using QAvimator and know about animation in general. The instruction must have experience exporting animations to Second Life.

Students' Prerequisites:

Technical 14. Animation Principles I

Technical 15. Animation Principles II

Technical 16. Introduction to QAvimator

Students must have beginner level experience using Second Life.

The students should have been introduced to the QAvimator interface and be ready to make an actual animation.

Duration:

45 minutes.

Objectives:

1. Students will create an animation in QAvimator and export it to Second Life.

Vocabulary

Animation, timeline, key, frame, frame per second (fps), loop, .bvh format, X, Y, Z axis.

Equipment, Software, Materials:

-Access to computer lab with one computer per student
-Download the newest version of QAvimator to each workstation
-Smart board, digital projector

Preparation: The instructor needs to send 10 Linden Dollars to each student Second Life account prior to class in order for students to upload their animation.

Web Resources & Books:

QAvimator website: http://www.qavimator.org/
Good tutorial that explains all: **http://www.youtube.com/watch?v=h_-3c_aC-O4**
Jump animation: **http://www.Skins.abtec.org/wp-content/uploads/2009/01/jump.jpg**

Procedure:

1. Introduction (5min)

Introduce students to today's lesson where they will be creating their first animation with QAvimator and export it to Second Life. They will each be expected to create a jump animation. Explain what anatomical movements to look for when animating a jump, such as anticipation, action, and exaggeration.

Technical 17. Make a Jump in QAvimator (continued)

2. Make the Animation (20min)

Give the students the next 20 minutes to create their jumping animation. Have them open QAvimator and first change the total number of frames to 45 or 60 to lengthen the animation. From here they can create the key poses of the jump. Show them the attached jump.jpg as a guide they can follow on their own for key framing the movements. Tell students to exaggerate the poses. Also, point out that Second Life has a height limit for animations, so they should make a "small" jump.

3. Export the Animation (15min)

After the students finish creating their jump have them follow these steps to export the animation.

1. Save the file as a .bvh format

2. Login to Second Life

3. Import the jumping animation for 10L$

4. Remember to preview the animation a few times to make sure all the settings are ok.

5. Try out your animation!

4. Conclusion (5 min)

By now there should be a group of jumping avatars in Second Life! Ask one of the students to take a snap shot of the avatars jumping in SL and post it to the blog.

Technical 18. Unreal: From Sketches to a Finished Level

Population:

This presentation was created for young adults between the ages of 15-17.

Instructors' Prerequisites:

-The instructor must have experience in the general pipeline of creation of game levels.

Students' Prerequisites:

- Basic experience with 3D environment (Second Life or Blender) is a plus but not required.

Duration:

30 minutes.

Objectives:

1. Students will be given an overview of the entire of process of creating a level and a game.

Vocabulary

Game Design, Concept Art, Modelling, Static Meshed, Skeletal Meshes, UV mapping, Texturing, Materials, Rigging, Skinning, Level designing, Level blocking, Lighting, Kismet, Particle Effects, Sounds, Terrains, Dressing up Levels, Level optimization, Play testing, Debugging.

Equipment, Software, Materials:

- The Making of Unreal Tournament 3 that comes in the bonus DVD of the collector's edition.
- A computer, projector, and speakers to play the video and use the PowerPoint presentation.

Web Resources & Books:

Bonus DVD tutorials that comes with the Collector's Edition of Unreal Tournament III.

Procedure:

1. The Making of Unreal Tournament (20min)

Play the Making of Unreal Tournament 3 that comes in the bonus DVD of the collector's edition.

2. Level Creation Pipeline (10min)

Present the Level Creation Pipeline PowerPoint presentation (notes are on the slideshow).

Technical 19. Unreal: Level Creation Demonstration

Population:
This lesson was created for young adults between the ages of 15-17. There are 16 participants in the class and one instructor.

Instructors' Prerequisites:
-The instructor must have enough experience building quick subtractive maps in the Unreal editor, which includes using BSP brushes, lighting, and using packages, static meshes and dynamic meshes.

Students' Prerequisites:
- Basic experience with 3D environment (Second Life) is a plus but not required.

Duration:
45 minutes.

Objectives:

1. Give the students a quick overview of the general process of creating a map in Unreal.

2. Explain the difference between the two map types (Subtractive vs. Additive).

3. Show how the BSP brush is used to quickly create rooms and geometry.

4. Intro to Lighting and using the Properties window.

5. Introduce them to the concept of packages and the Generic browser.

6. A quick overview of the different assets included in packages (Skeletal Mesh vs. Static Mesh, and Material vs. Texture).

7. A quick demo on how to apply Materials to walls, and placing static meshes in the scene.

Vocabulary
Game engines, Level design, subtractive map, additive map, BSP brushes, packages, Generic browser, static meshes, skeletal meshes, Materials, Textures.

Equipment, Software, Materials:
- The instructor needs a computer capable of running the Unreal editor. System Requirements: "Can you run it?"
- An installed copy of the game Unreal Tournament III that includes the Editor.

Preparation:
-   Test the Unreal Editor and all the features to avoid unexpected but possible crashes.

Web Resources & Books:
Bonus DVD tutorials that comes with the Collector's edition of Unreal Tournament III.

Procedure:

1. Introduction to the Unreal Interface (5min)

Explain what a game engine is and how it is used to make a game. Draw parallels between its interface and other 3D program's interfaces (Blender).

Technical 19. Unreal: Level Creation Demonstration (continued)

2. Maps and Editor (15min)

You will explain the difference between the two types and the different uses for each (indoors vs outdoors), and then continue to demonstrate how to start building a Subtractive using the BSP brush. You will also need to create lights as you are constructing to make the rooms you are creating visible. Demonstrate how the properties editor works with lights and show the different light properties that can be easily changed (brightness, fall off, color). Now would be a good time to explain light rebuilding and what the engine is doing in the background while rebuilding lights (baking the light shadow values in order to speed the performance in the game). Continue building different subtractive rooms and hallways between them and creating additive pillars and walls to reinforce their understanding of the different types.

3. Packages and Assets (25min)

Explain the concept of packages and how all the assets built for the level set in packages and how a package files is different from a level file. Open up few packages that come with the game and show different kinds of assets that are included. Now is a good time to go over the main types of assets (static meshed, skeletal meshes, textures, materials) and explain the difference between each.

Now continue the demo by applying materials to the walls of the rooms you've been creating. Briefly show how to use the Surface Properties window the scale and better fit the textures onto the walls.

Open up the generic browser again and look for interesting static meshes to place in the rooms. Try to find a static mesh of a light source (light bulb or a lamp post) and explain how even though it looks like its glowing it is not actually emitting light and effecting the surrounding and how you need to create a light separately and place it near it. You can also place a nicely detailed mesh then switch between Lit and Unlit mod to show how a lot of the details are actually in the textures/materials and how it is one of the main features that makes Next Gen games look as good as they do.

You can add a static mesh as a dynamic mesh and test play the game just show some interactivity, it would also be a good demonstration of the different light channels and how to make a light effect dynamic objects and cast dynamic shadows.

6. Questions (5min)

Answer any questions the students might have. Also don't forget to emphasize that making an original level/game takes much more effort than this deceivingly simple demo.

Technical 20. Unreal: Level Creation I

Population:

This lesson was created for young adults between the ages of 15-17. There are 16 participants in the class and one instructor.

Instructors' Prerequisites:

-The instructor must have experience with building and additive subtractive maps in the Unreal editor, which includes using BSP brushes, lighting, packages, static meshes (including sky domes), and collision volumes.

Students' Prerequisites:

Technical 19. Unreal: Level Creation Demonstration

Basic experience with 3D environment (Second Life or Blender) is an plus but not required.

Duration:

45 minutes.

Objectives:

1. The students will get hands on training with the interface and basics of the Unreal Editor.

2. Explain the difference between the two map types (Subtractive).

3. Show how the BSP brush is used to quickly create rooms and geometry.

4. Intro to Lighting and using the Properties window.

5. Introduce them to the concept of packages and the Generic browser.

6. Checking and using of the different assets included in packages (Skeletal Mesh vs Static Mesh, and Material vs Texture).

Vocabulary

Game engines, Level design, subtractive map, additive map, BSP brushes, packages, Generic browser, static meshes, skeletal meshes, Materials, Textures.

Equipment, Software, Materials:

- The instructor and the students need computers capable of running the Unreal editor. System Requirements: "Can you run it?"
- Installed copies of the game Unreal Tournament III that include the Editor.

Preparation:

- Test the Unreal Editor and all the features to avoid unexpected but possible crashes.

Web Resources & Books:

Bonus DVD tutorials that comes with the Collector's edition of Unreal Tournament III.

Technical 20. Unreal: Level Creation I (continued)

Procedure:

1. Introduction to the Unreal (15min)

Start with a brief overview of the interface. Quickly explain the camera controls. Start with a subtractive map; explain how to use BSP brushes to subtract a simple room. Add a light to the room and move it then explain the camera controls again and let the students practice for a min. Then have them experiment with the light properties (brightness, scale, fall off and color)

2. Dressing Up the Map (30min)

Remind the students of the concept of packages and the main different assists. Then start applying materials to the walls of the subtracted room, and then use the surface properties to modify and fix the texture placement on the walls. Have the students practice that for few min, repeat if necessary. (10min)

Now start opening more packages and placing static meshes, also subtract another room and a hallway/doorway between them and start applying materials and placing static meshes in the other room. (10min)

Give the students time to practice and encourage them to be creative. Answer any questions they may have during this time. (10min)

Technical 21. Unreal: Level Creation II

Population:

This lesson was created for young adults between the ages of 15-17. There are 16 participants in the class and one instructor.

Instructors' Prerequisites:

-The instructor must have experience with building and additive subtractive maps in the Unreal editor, which includes using BSP brushes, lighting, packages, static meshes (including sky domes), and collision volumes.

Students' Prerequisites:

Technical 19. Unreal: Level Creation Demonstration
Technical 20. Unreal: Level Creation I
- Basic experience with 3D environment (Second Life or Blender) is an plus but not required

Duration:

45 minutes.

Objectives:

1. The students will get hands on training with the interface and basics of the Unreal Editor.

2. Explain the difference between the two map types (additive).

3. Show how the BSP brush is used to quickly create rooms and geometry.

4. Introduction to Lighting and using the Properties window.

5. Introduction to the concept of packages and the Generic browser.

6. Checking and using of the different assets included in packages (Skeletal Mesh vs Static Mesh, and Material vs Texture).

Vocabulary

Game engines, level design, subtractive map, additive map, BSP brushes, packages, Generic browser, static meshes, skeletal meshes, Materials, Textures.

Equipment, Software, Materials:

- The instructor and the students need computers capable of running the Unreal editor. System Requirements: "Can you run it?"
- Installed copies of the game Unreal Tournament III that include the Editor.

Preparation:

-   Test the Unreal Editor and all the features to avoid unexpected but possible crashes.

Web Resources & Books:

Bonus DVD tutorials that comes with the Collector's edition of Unreal Tournament III.

Technical 21. Unreal: Level Creation II (continued)

Procedure:

1. Introduction to Additive Maps (35min)

Remind the students how subtractive maps work and explain how additive maps are different. Start a new additive map and using a BSP brush, create a piece of floor, and light it. Then playtest the map to show the problem with empty space and the importance of a sky box/dome. Have the students try it for themselves and prepare for placing the sky dome. Open up the Package UN_Sky.upk, which is in the Environments folder. Choose a sky dome static mesh and place it in the center of the map, adjust the scale if necessary. Playtest the map to show how it fixed the problem but the empty space is still visible through the bottom. Explain how normally levels are usually designed to not all the player to reach the edge and look down below the horizon line (by using the landscape, walls, invisible walls (collision volumes, etc.). Then explain how it is still a good idea to duplicate the sky dome and flip it. Demonstrate that by duplicating the sky dome and scaling it by -1 on the Y-axis from the bottom toolbar. (20min)

Have the students try it and experiment. Repeat parts of the lesson if needed. (15min)

2. Collision Volumes (10min)

Quickly explain what volumes are and the different uses. Demonstrate how to use the BSP brush to create blocking volumes to the edges of the map to avoid players falling over the edges. Allow students the rest of the period to try out.

Technical 22. Audacity

Population:

This lesson was created for young adults between the ages of 15-17. It is an introduction to the fundamentals of digital sound recording. There are 16 participants in the class and one facilitator or a guest sound recorder.

Instructors' Prerequisites:

The students will be introduced to Audacity which is a free open source software used for recording digital audio. The instructor must be experienced in using Audacity in order to lead this course. The instructor must also be able to give an introductory explanation of the basics of sound such as sound waves, wavelength, amplitude, and frequency.

Duration:

45 minutes.

Objectives:

1. Students learn how to record and edit digital sound files using Audacity, free open source software.

2. A few students will volunteer to demonstrate how to record, edit, and save a sound file.

Vocabulary

Sound Recording, Sound Files, Format, Sound Waves, Amplitude, Frequency, Wavelength, Fade-In, Fade-Out, Tracks, Mono Recordings, Microphone, Mp3, Wma, In-Put, Out-Put, Volume, Pitch, Speed, Tempo, Echo, Sound Meters, Compression, Filters, Export

Equipment & Materials:

Computer, Digital Projector, Microphone

Software: Audacity (http://audacity.sourceforge.net)

Instruments/Objects for making sound: Drums, rattles, and any other objects to create sound for recording during the in class demonstration.

Preparation:

- Audacity must be downloaded to the presentation computer prior to instruction.
- The instructor should prepare presentation slides that give visual examples that help explicate terms described such as sound waves, wavelengths, amplitude, and frequency.

Procedure:

1. Introduction to Digital Sound (5min)

Begin the session by introducing what digital sound is to the students and what role it will play later in their game creation process. Give a description of digital sound as being made up of digital signals for reproduction. This will be followed by an overview of the basics of sound by identifying sound waves, wavelengths, amplitude, and frequency. Use a PowerPoint slide show to provide visual diagrams to help exemplify the descriptions.

2. Introduction to Sound Recording (15min)

The students will be introduced to Audacity, which is a free open source software used for recording and editing digital audio. Using the digital projector, give the students a tour of Audacity's user interface. First, show the students how to install a microphone through the computer's headphone jack. From here, explain the basic play, record, stop, forward, and backward functions located at the top right of the screen.

Technical 22. Audacity (continued)

Also, show the students how to use the input and output volume buttons located at the top left of the screen. Explain what "tracks" are and how recorded sounds can be layered and edited together to create different effects. Since the students will record live audio for their opening narrative, cut scenes, and sound effects, make sure to show them how to set up recording from the "Microphone" for picking up sound externally from the computer. Alternatively, if the recording function is set to "Mono Recorder," the audio will only record sounds from the computer such as games, videos, or songs. Also, explain the role of filters and how they function to process sound signals. Take away background sounds. (10min)

At this point, give the students a short demonstration of sound recording based on what they have learned so far. Select a volunteer to come up create sound using a noisemaker, rattler, or drum. Create a short 10-second recording of this sound and play it back for the students. Show the students how to save the recording as either an mp3 or wma sound file. (5min)

3. Introduction to Editing (10min)

Next, the students will learn how to use Audacity's editing tools to manipulate the recording you just created. Go through the tool bar and demonstrate how to use the selection tool to choose certain portions of the recording. Demonstrate how a selected area can be cut, copied, and pasted. Go through the "Sound Effect" section of the tool bar and demonstrate how to control pitch, speed, and tempo. Also under "Sound Effects," show the students how to fade in, fade out, and apply effects such as "Wah wah."

4. Exporting Sound (5min)

Take a few minutes to show students how to export the sound file from Audacity in either an mp3 or wma file to the computer hard drive.

5. Creating a Sample Sound Recording (10min)

As a group, the students spend the remainder of the session recording, saving, and editing live audio with the help of the instructor. Ask for two volunteers to come up—one person to create sound and another to practice record and experiment with different editing functions. Have the volunteer practice saving the sound file at the end of the session.

Technical 23. Sound Walkthrough

Population:

This lesson was created for young adults between the ages of 15-17. There are 16 participants in the class, one instructor, and one mentor per group.

Instructors' Prerequisites:

A general knowledge of sound design elements and game soundtracks. An instructor with a background in film would be a positive asset as will any very observant game player.

Students' Prerequisites:

- Technical 22. Audacity
- Completed paper prototype.

Duration:

45 minutes.

Objectives:

1. To teach the students to critically consider what individual sounds are needed to create a convincing world environment.

2. To make a sound asset list of every audio file needed for their specific game play.

Vocabulary:

White noise, ambient, atmosphere

Equipment, Software, Materials:

Paper prototype

Preparation:

Because this lesson is a learn-as-you-go discussion, no presentation preparation is necessary. However, knowledge of the game mood, general style, and the script or paper prototype are essential to producing a proper sound asset list.

Web Resources & Books:

Somers, Eric. "Abstract Sound Objects to Expand the Vocabulary of Sound Design for Visual and Theatrical Media."

http://www.icad.org/websiteV2.0/Conferences/ICAD2000/PDFs/Somers.pdf

Procedure:

1. Introduction (5min)

Lead the discussion with a reiteration of the script and intended mood of the game. Encourage the students to think of movie soundtracks that successfully conveyed the visual mood. Bring up the example of now famous audio tracks such as the "Jaws" theme, "The X-Files", etc. The instructor also needs to list the different kinds of sounds to pay attention to such as human, creature/monster, animal, nature, unnatural sounds, and ambiance.

2. Ambient (10min)

Environment: Assign a student to be the secretary of the group and write down the sound effects as they are listed.

Technical 23. Sound Walkthrough (continued)

First, after having reminded people of the game mood, start at the very beginning of the game and discuss the setting. Ask what background noise one would expect to hear in this environment if it were real, such as traffic, wind, people chatting, and animal life. Have these ambient noises added to the list.

3. Music (10min)

As discussed in the introduction, music is always a key element to setting the mood of any theatrical media. However, sometimes the absence of music is equally effective. Though music composition will come much later in the process, examples can be listed for a style type. Hard or soft? Eerie or J-pop peppy? Encourage students to list existing film or game examples. Note that there may be more than one music file in environment versus in battle.

4. Sound Effects (15min)

This last section is the most important part of the exercise. Starting at the beginning, have the students 'Walkthrough' the character actions. At every step, literally, have them list a sound effect for character actions. Starting with the sound of 'steps' (heavy or light, fast or slow), breathing, etc.

As obstacles and interactions begin, again encourage them to consider everything that would make a sound. Every character has to walk, breathe, and perhaps speak. If the environment changes, the step sounds may change (linoleum flooring vs. gravel roads).

In battle, breathing may be fast. What sounds do they make when hitting or being hit?

For weapons, have them write out every sound a weapon would make (load, shoot, out of ammo).

Similarly, enemies have the same sounds effects as characters. List them.

5. Conclusion (5min)

Go through the game start to finish quickly and double check the asset list. Have it organized and finalized with sounds put into categories (such as per character, per environment, etc.) by the end of the session.

Technical 23. Select Sound From Library

Population:

This lesson was created for young adults between the ages of 15-17. There are 16 participants in the class, one instructor, and one mentor per group.

Instructors' Prerequisites:

Research on current free online sound databases.

Students' Prerequisites:

Technical 21. Audacity
Technical 22. Sound Walkthrough

Duration:

45 minutes.

Objectives:

1. To demonstrate to students that even with limited resources, they can find even the most obscure sound effects for their game project through search.

2. Most sound databases/libraries have millions of files and similar search methods. Students learn to use synonyms to find sounds.

Vocabulary

- Database, library, keywords, thesaurus

Equipment, Software, Materials:

- Every student should have his or her own computer with Internet access
- Server space or flash drive to save sounds on
- Access to either an online or hardcopy thesaurus
- Headphones for each student

Web Resources & Books:

Free Sound Library with search capabilities - http://www.findsounds.com/
(These sources change regularly. Have a few backup library URLs prepared.)

Procedure:

1. Divide Asset List

The asset list should by now be complete in Sound II. Have you and the students go through the list and choose which sounds can/should be recorded and which easier ones (such as footsteps, breathing, birds, fire crackling etc.) can be more economical and easier to simply find in a library. Have a new list compiled.

2. Intro to Sound Libraries

Explain the purpose of sound libraries and where professional resources exist (such as the Concordia Sound Library available to students in the media labs). These include millions upon millions of sound files from 'creature growl' to 'toe nail clipping'. The difficulty is sorting through the mass to find the exact file you want. This is made even more difficult when trying to find these sound files for free. Have the students open a web browser and try to find a 'walking' sound file.

Technical 23. Select Sound From Library (continued)

3. Search Practices

Though the sound is pretty common and generic, some students may be having difficulty finding one that is actually free, in good quality or finding one at all. Explain that the keyword 'footsteps' may have been a better choice to search or even perhaps 'skipping' or 'jumping' or 'running'.

Synonyms MUST be used in searching for a proper sound file. Have them list how many other words there could be for a 'drop' action (i.e.: thunk, thud, boom, smash, etc.).

Have them open a well-known online search engine such as www.findsounds.com. 'Footsteps' search will yield over 100 results. Have them listen few several files until they find a proper quality one.

4. Exercise

Referring to the newly compiled list of sound effects that can be found, assign each student a few keywords of sound files they should find for their game. Have them save each on a USB key or on a mutual server space in a 'sounds' folder. For sounds that can't be found, move them into the 'to be recorded' list. By the conclusion, most of the asset list sounds should have been found and, ideally, multiple choices will be available.

Technical 24. Record Narrative/Voice/Sound Effects

Population:

This lesson was created for young adults between the ages of 15-17. There are 16 participants in the class, one instructor, and one mentor per group.

Instructors' Prerequisites:

- Proper knowledge the previous sound lessons and gaming project
- General knowledge of sound design and effects in both games and/or cinema

Students' Prerequisites:

Technical 21. Audacity
Technical 22. Sound Walkthrough
Technical 23. Select Sound from Library

Duration:

45 minutes.

Objectives:

1. To be fully prepared to stage a recording session, which would capture all the remaining sounds and music needed for game completion.

2. To comprehend the farfetched creativity that goes into some of cinema's most popular sound effects (i.e.: light saber = fluorescent light buzz)

Vocabulary:

Stinger, music modes (intro, suspense, action, victory, failure), narrative.

Equipment, Software, Materials:

- Large table with enough room for participants to discuss and write notes
- Projection screen with DVD player or video streaming Internet access
- A 'special features' film focusing on sound design (available in the special features of any film worked on by Ben Burt such as Star Wars and Wall-E)
- A few random kitchen supplies that could be used to produce sound effects (i.e. an empty can, a rubber elastic, a pencil etc.)

Preparation:

Research on famous movie and/or game examples with memorable sound design (e.g. Star Wars, Wall-E, Jaws, Metal Gear Solid, etc.). Have sound bytes available.

Web Resources & Books:

Viers, Rick "The Sound Effects Bible: How to Create and Record Hollywood Style Sound Effects".

Procedure:

1. Introduction

Before even touching on game sound design, play some sound file examples and ask the students to place them. The buzz of a light saber, the babbling of Wall-E, the music of Jaws, Indiana Jones, Jack Bauer's cell phone ring, etc. All of these are easily recognizable because they so successfully translated a mood. Play some famous game sound files (Final Fantasy victory, Metal Gear Solid's "You've been discovered," Resident Evil Zombie moans, etc.). Though these are more obscure, they were equally successful within their smaller audiences. Encourage the students to bring up other examples. If possible, search and play them for the class.

Technical 24. Record Narrative/Voice/Sound Effects (continued)

2. Film

Play the sound design film found in the special features of any of the key films just brought up as examples. The most famous would be four-time academy award winner Ben Burtt for his work on Star Wars, Wall-E, Indiana Jones, and E.T.

3. Review & New Sound Effects Asset List

Bring back out the paper prototype of the student's game and the sound asset list. Focus on those sound effects that were not found in any of the online libraries. How could these be recorded? For example, a bow and arrow launching sound – this would be an example of a stinger (…) in Unreal Tournament – could be created by closely recording the launching of an elastic band. During this time, a new asset list of missing sounds and what could be used to create said sounds should be compiled. These objects must be easily obtainable and easily brought into a recording studio.

4. Voice Acting

Though dialog is option in the game creation process, the students may wish to have simple reactive expletives for their character such as grunts or heavy breathing. These decisions should be finalized and a voice actor chosen based on the character traits discussed in previous lessons.

5. Music

Review the chosen mood from the paper prototype and previous lessons. Depending specifically on their specific game, try to find examples of such music, what instruments, singers, editing, etc. would be needed. Again, depending on their type of game, remind students that most typical action games include several types of intersecting music scores such as 'intro', 'suspense', 'action', 'victory' and 'failure'. These are all short, loop-able soundtracks and some can be silent. Each type has an auto placement within the Unreal Engine.

6. Conclusion

Review the new asset list. What instruments will be needed for missing sound effects and music? Voice actors? Music types? Hand out assignments for finding such items or planning the music layout. By the end of the session, the students should be prepared for a potential final recording session that would complete the sound design section of their game development process.

Technical 25. Uploading/Placing Sound & Music into UT3

Population:

This lesson was created for young adults between the ages of 15-17. There are 16 participants in the class, one instructor, and one mentor per group.

Instructors' Prerequisites:

- Proper knowledge the previous sound lessons and gaming project
- General knowledge of sound design and effects in both games and/or cinema
- General knowledge of UT3 interface

Students' Prerequisites:

Technical 21. Audacity
Technical 22. Sound Walkthrough
Technical 23. Select Sound from Library
Technical 24. Record Narrative/Sound/Voice Effects

Duration:

45 minutes.

Objectives:

1. To organize previously recorded and/or gathered files into a master folder divided by subject (music/sound effects/narration/character vocals).

2. Bring these files into Unreal Engine and place proper cues and markers to trigger them.

Vocabulary:

Stinger, Music Maps (intro, suspense, action, victory, failure), Cues

Equipment, Software, Materials:

- A computer station for each student with internet access and Unreal Engine.
- Projection screen with Internet access for teacher examples.
- Audacity or other sound editing software in case files need tweaking.

Preparation:

A library of sounds recorded and/or gathered previously to enter into the game engine.

Web Resources & Books:

Isaza, Miguel "Tutorial: game Audio with Unreal Engine 3" (a downloadable UT3 map with in-engine explanations on how game audio can be triggered). **http://designingsound.org/2009/10/tutorial-game-audio-with-unreal-3-engine/**
Sonic Wallpaper "UT3 Tutorial: Adding Custom Music and Map Stingers". **http://www.sonicwallpaper.com/unreal/ut3/CustomMapMusic.htm**

Technical 25. Uploading/Placing Sound & Music into UT3 (continued)

Procedure:

1. Introduction

Review the previous lessons and play through the collected sound bytes. Along with the class, listen to each individual file to be reminded of its content, reviewing all elements that are expected to have an audible positioning within the game, and discuss where they should be placed.

2. Organize

Organize all files (if not done so already) into sub folders within a master "sound" folder all within your Unreal project folder. These should be named music/sound effects/narration/character vocals. For files gleaned from libraries, make sure they have the .wav extension. If not, convert them using audio editing software.

3. Upload

Bring all files into the Unreal library by choosing File> Import then navigating to your .wav files. In the dialog box, make sure "bAutoCreateCue" is checked and uncheck "bIncludeAttenuationNode". This will ensure that files are playable within engine, even if they are not assigned to an ambient actor. Make sure to save it in the same "package" as your game map.

4. Adjusting Individual File Attributes

Begin in your music files first. Assuming previous lessons were followed, there should be several versions of map music relating to the game states of intro, suspense, action, victory, and failure. In the generic browser, navigate to your sound files' cue nodes. Right click to bring up the "Sound Cue Editor". Here you can adjust compression quality (if you later find your music drains too much processing power), duration, looping, and volume (1 is the max volume).

5. Create Music MAP & Actor Stingers

Find your map's package in the Generic Browser, then right click in the main section and select "New UT Map Music". This will create a default map of your background music where you can apply files for different player "states" (i.e. battle, ambient, victory). Name your music map and the properties screen should open. The default UTMapMusic states are Action/Ambient/Intro/Suspense/Tension/Victory and there are listed several other "Stinger" events that can have cues applied such as Died/DoubleKill/Kill/ScoreTie etc., not all of which will apply to the students' game. Here many of the "player" vocal recordings can be used for key Stinger events such as "Died" or "Kill". If necessary, students can choose from existing Unreal libraries to find sounds.

With the Generic Browser AND the MyMapMusic Properties window open, navigate to the desired sound CUE (not sound file) and apply it to the desired music property by hitting the green arrow beside "TheCue" box. Within the property box you can also change the tempo of the music and the speed of its cross-fade to a new music file when a state change occurs.

6. Apply Music Map

In order to test the properties of the music map in real time, it must be assigned to the level. To do this, click on the "Scene Manager" tab in the Generic Browser, click on "PersistentLevel", then scroll and locate "WorldInfo". Expand the "UTMapInfo" or, if absent, click on the blue arrow to generate new Map Info. There, using the same method as when applying music files to the map, apply the map to the "MapMusicInfo" bar by selecting it in the browser, then click the green arrow.

Now students may test their music real-time and adjust cross-fading, volume, and tempo as they see fit.

Technical 25. Uploading/Placing Sound & Music into UT3 (continued)

Procedure:

7. Adding "Ambient" Sounds

Certain items within the level may have specific sounds attributed to them, but can only be heard when the player in within a certain range. Take for example, a roaring fire. Assuming we have a "RoaringFire.wav" sound file with a cue saved into our package, we then select the cue from the browser, move to the level navigation window, right-click>add actor>add ambient sound. A key icon representing the sound file will appear within the map and can be positioned. Within the properties of the sound actor we can edit its radius (what distance a player has to be in order to hear the sound), pitch modulation, tempo, etc. All these can also be edited within the cue properties as well.

8. Conclusion

Navigate through the level to test volume, cross-fades, tempo, and ambient radius, adjusting as deemed necessary. Using these tools, students should now be equipped to apply the majority of their sounds to the map as ambient actors, background music, and event stingers. In real time testing, their world is instantly and easily given new dimensionality through the power of audio.

Publishers: Jason E. Lewis, Skawennati Tricia Fragnito
Editors: Beth Aileen Lameman, Bea Parsons
Coordinator: Bea Parson

Play 1. Beatrice Parsons, Beth Aileen Lameman
Play 2. Beatrice Parsons, Beth Aileen Lameman
Play 3. Beatrice Parsons, Beth Aileen Lameman

Storytelling 1. Beth Aileen Lameman
Storytelling 2. Owisokon Lahache and Bea Parsons
Storytelling 3. Owisokon Lahache and Bea Parsons
Storytelling 4. Owisokon Lahache and Bea Parsons
Storytelling 5. Owisokon Lahache and Bea Parsons
Storytelling 6. Owisokon Lahache and Bea Parsons
Storytelling 7. Beth Aileen Lameman

Game Design 1. Eric Boisevert and Cassandra Lacombe
Game Design 2. Beth Aileen Lameman
Game Design 2. Handout. Beth Aileen Lameman
Game Design 3. Beth Aileen Lameman
Game Design 3. Handout. Beth Aileen Lameman
Game Design 4. Beth Aileen Lameman
Game Design 4. Handout. Beth Aileen Lameman
Game Design 4. Template. Beth Aileen Lameman
Game Design 5. Bea Parsons
Game Design 6. Bea Parsons
Game Design 7. Bea Parsons
Game Design 8. Bea Parsons
Game Design 9. Bea Parsons
Game Design 10. Cassandra Lacombe
Game Design 11. Cassandra Lacombe

Technical 1. Nancy Elizabeth Townsend
Technical 1. Reference Sheet. Nancy Elizabeth Townsend
Technical 2. Cassandra Lacombe
Technical 2. Handout. Cassandra Lacombe
Technical 3. Bea Parsons
Technical 4. Bea Parsons
Technical 5. Nancy Elizabeth Townsend
Technical 6. Mohannad Al-Khatib
Technical 7. Cassandra Lacombe
Technical 7. Handout. Walter Scott
Technical 8. Cassandra Lacombe
Technical 9. Cassandra Lacombe
Technical 10. Cassandra Lacombe

Technical 11. Cassandra Lacombe
Technical 12. Angela Gabereau
Technical 13. Angela Gabereau and Bea Parsons
Technical 14. Mohannad Al-Khatib
Technical 15. Nancy Elizabeth Townsend
Technical 15. Handout. Nancy Elizabeth Townsend
Technical 16. Cassandra Lacombe
Technical 17. Cassandra Lacombe
Technical 18. Mohannad Al-Khatib
Technical 19. Mohannad Al-Khatib
Technical 20. Mohannad Al-Khatib
Technical 21. Mohannad Al-Khatib
Technical 22. Bea Parsons
Technical 23. Nancy Elizabeth Townsend
Technical 24. Nancy Elizabeth Townsend
Technical 25. Nancy Elizabeth Townsend

Skins 4.0

Aboriginal Territories in Cyberspace
Obx Labs
Monday 27 May – Friday 14 June, 2013
Concordia University
Montreal, Quebec

Co-Directors: Jason Edward Lewis & Skawennati Fragnito
www.skins.abtec.org | www.abtec.org | www.obxlabs.net
Skins 4.0 is a workshop that combines instruction in video game design with immersion into Aboriginal stories and storytelling techniques. Designed by the AbTeC research team, it covers Aboriginal storytelling; digital image and sound design; and 3D modelling, animation, and level design.

Note: Split lessons are marked as follows:

-
1:30PM – lesson visual artists

//

1:30PM – lesson gameplay artists

-

Day 1: Introduction
Monday 27 May

Objectives:
1. Introductions and workshop focus.
2. Learn about storytelling in media.
3. Learn about game genres.
4. Start thinking about translating story ideas for a game.

9:15AM – Coffee and muffins [EV5.615]

9:30AM – Welcome! Introduction of the space. Overview of the Objectives and Schedule. Circle of introductions including mentors, instructors, and students. [EV5.615]
Facilitated by: Jason Edward Lewis and Skawennati Fragnito

10:30AM – **Storytelling Module 1. Seeing Red:** Watch a video on Native representations in video games.
Facilitated by: Joseph Tekaroniake Lazare and Skawennati Fragnito [EV5.615]

11:00AM – Presentation by Tehoniehtathe Delisle of *Skahion:hati: Rise of the Kanienkehaka Legends,* the game created in Skins 3.0. [EV5.615]

11:30AM – **Game Design Module 1. What's In a Game?:** Introduction to elements in games and genres.
Facilitated by: Stéphanie Bouchard (Ubisoft) [EV5.615]

12:30PM – Lunch

1:15PM – Mentor Presentation: Owisokon Lahache, artist and educator [EV5.615]

2:00PM – Mentor Presentation: Joseph Tekaroniake Lazare, creator of *By The Rapids* [EV5.615]

2:30PM – **Storytelling Module 2. Translating Stories:** Discuss how stories change with transmediation.
Facilitated by: Joseph Tekaroniake Lazare & Skawennati Fragnito [EV5.615]

3:30PM – **Game Design Module 2. Game Development Process:** Introduction to the process and roles of professional game development.
Facilitated by: Industry Guest Ruben Farrus (Minority) [EV5.615]

4:30PM – Showcase Test Project Game: Show and discuss example game project: *Skahion:hati | Rise of the Kanien'kehá:ka Legends, the Demo*
Facilitated by: AbTeC Research Assistants

4:50PM – Wrap Up

Day 2: Design
Tuesday 28 May

Objectives:
1. Share stories.
2. Decide on a story.
3. Paper prototype games.

9:15AM – Coffee and muffins: welcome and description of the day. [EV5.615]

9:30-11:30AM - Storytelling Module 3. Sharing Stories: Tell and discuss stories.
Facilitated by: Joseph Tekaroniake Lazare, Skawennati Fragnito and Owisokon Lahache [EV5.615]

11:30AM – **Storytelling Module 4. Deciding on a Story:** What makes a good story? Discuss and decide on a story or story elements to adapt to your game.
Facilitated by: Joseph Tekaroniake Lazare, Skawennati Fragnito and Owisokon Lahache [EV5.615]

12:30PM – Lunch

1:30PM – **Storytelling Module 5. Translating Your Story:** Learn about Mechanics, Dynamics and Aesthetics, and discuss ideas for game designs based on your chosen story.
Facilitated by: Alicia Fortier and Skawennati Fragnito [EV5.615]

2:30PM – **Game Design Module 3. Paper Prototyping:** Learn how to make a paper version of a game for testing gameplay.
Facilitated by: Nancy Townsend and Alicia Fortier [EV5.615]

3:30PM to 4:45PM – Work Time: Make Paper Prototype. [EV5.615]

4:45PM – Clean up!

4:50PM – Wrap Up

Day 3: Iterative Design
Wednesday 29 May

Objectives:
1. Playtest paper prototypes.
2. Revise game based on playtesting.
3. Organize game design/rough game script.
4. Organize production process – staying organized.
5. Conceptualize game in an isometric environment.

9:15AM – Coffee and muffins: welcome and description of the day. [EV5.615]

9:30AM – Paper Prototype Playtest: Mentors, instructors, students, and industry guests will play the paper prototype and provide feedback.
Facilitated by: Aboriginal Territories in Cyberspace and Guests [EV5.615]

10:30AM – Discussion and Work Time: Students will revise paper prototype based on feedback.
Facilitated by: Aboriginal Territories in Cyberspace [EV5.615]

11:30AM – **Game Design Module 4. Production Pipeline/Game Development Workflow I:** Learn the various steps for production and how to keep organized.
Facilitated by: Nancy Townsend [EV5.615]

12:00PM – Artist Presentation: Pippin Barr [EV5.615]

12:30PM – Lunch

1:30PM – **Game Design Module 5. Game Development Roles:** Discuss roles, such as designer, artist, animator, and programmer. Participants will select one of the following streams: 1) Visual Artists -- 2) Gameplay Artists
Facilitated by: Nancy Townsend [EV5.615]

2:30PM – **Game Design Module 6. Game Design Document Handout / Game Script and Asset List:** Learn how to fill in a Game Design Document. How to keep organized using script and asset lists in Google docs.
Facilitated by: Nancy Townsend [EV5.615]

3:30PM – Work Time: Students will finalize the paper prototype and fill in the Game Design Document.
Facilitated by: Nancy Townsend and Alicia Fortier [EV5.615]

4:50PM – Wrap Up

Day 4:
Concept Art, Technical Drawing, Intro to Blender // Sound & Audacity
Thursday 30 May

Objectives:
1. Introduce drawing/concept art references.
2. Apply learned skills in drawing/sourcing concept art.
3. Technical drawing.
4. Introduction to Blender.

//
1. Learn about sound and its effect on games.
2. Gather sounds.
3. Record sounds.
4. Learn skills in Audacity for sound editing.
5. Begin editing sound.

9:15AM – Coffee and muffins: welcome, and description of the day. [EV5.615]

9:30AM – **Art Module 1. Introduction to Concept Art and Character Design + Artist Presentation:**
See examples of concept art and learn about character development.
Facilitated by: Teyowisonte Thomas Deer [EV5.615]

10:30AM – **Art Module 2 + Artist Presentation:Drawing Basics for Concept Art:** Learn drawing
techniques.
Facilitated by: Teyowisonte Thomas Deer [EV5.615]

//

10:30AM – **Sound Module 1. Sound Walkthrough Part I:** Learn about sound design elements and game
soundtracks.
Facilitated by: Travis Mercredi [EV5.635]

11:30AM – Work Time: Work on Concept Art [EV5.615]
Facilitated by: Veniamin Chukhovich (environments/objects) and Teyowisonte Thomas Deer (characters)
[EV5.615]

//

11:30AM – **Sound Module 2. Sound Walkthrough Part II:** List the sound elements you will need for your
game.
Facilitated by: Travis Mercredi [EV5.635]

12:30PM – Lunch

1:30PM – **Art Module 3. Technical Drawing for Blender:** Learn how to transfer concept art into technical drawings.
Facilitated by: Veniamin Chukhovich [EV5.615]

//

1:30PM – **Sound Module 3. Select Sounds from Library:** Learn how to find sounds in the CDA library and online.
Facilitated by: Nancy Townsend [EV5.635]

2:30PM – **Game Design Module 7. Levels & Naming Conventions/Using SVN:** Learn how to name files and keep organized.
Facilitated by: Nancy Townsend [EV5.615]

3:00PM – **Art Module 4. Intro to Blender Interface:** Learn how to use Blender, a free suite of tools for 3D creation.
Facilitated by: Charlotte Fisher [EV5.635]

//

3:00PM – **Sound Module 4. Record Sound Effects:** Learn how to make and record audio.
Facilitatied by: Travis Mercredi [Recording Studio]

4:00PM – **Art Module 5. Intro to Modelling in Blender:** Learn basics of 3D modelling.
Facilitatied by: Veniamin Chukhovich [EV5.635]

//

4:00PM – **Sound Module 5. Audacity:** Learn how to edit digital sound files using Audacity, free sound software.
Facilitatied by: Travis Mercredi [EV5.615]

4:45PM – COMMIT & UPDATE SVN

4:50PM – Wrap Up

Day 5:
Blender & Modelling // Introduction to Construct 2
Friday 31 May

Objectives:
1. Learn more advanced modelling.
2. Apply learned skills in modelling.

//

1. Introduction to Construct 2, game creation software.
2. Learn about level maps.
3. Begin creating level maps.

9:15AM – Coffee and muffins: welcome, and description of the day. [EV5.615]

9:30AM to 12:30PM – Art Module 6. Modelling II: Import technical drawings into Blender. Learn proper placement methods for modelling. Learn how to model on top of a background image, including box modelling for a torso, and how to make limbs.
Facilitated by: Sahar Homami [EV5.635]

//

9:30AM – **Game Engine Module 1. Navigating Construct 2 References:** Learn how to find and read documentation online.
Facilitated by: Alicia Fortier [EV5.615]

10:30AM – **Game Engine Module 2. Intro to Construct 2 Interface:** Project folders and keeping organised in Construct 2. Learn about the basics of Construct 2.
Facilitated by: Alicia Fortier [EV5.615]

11:30AM – **Game Engine Module 4. Sprites and Construct 2:** Importing Sprites into the Game
Facilitated by: Charlotte Fisher [EV5.615]

12:30PM – Lunch

1:30 – Work Time: Modelling. [EV5.635]

//

1:30PM – **Game Engine Module 5. Behaviours:** Learn about Behaviours and begin adding to assets.
Facilitated by: Jeremy Alvarez [EV5.615]

2:30PM – to 5:00PM – Work Time: Modelling. [EV5.635]

//

2:30PM – **Game Engine Module 3. Level Map:** Learn how to create a level map. Learn about obstructions.
Facilitated by: Daria Khomyakova [EV5.615]

3:30 to 5:00PM – Work Time. [EV5.635]

4:45PM – COMMIT & UPDATE SVN

4:50PM – Wrap Up

Day 6:
UV-Mapping, Texturing //
Importing sprites and Adding Behaviours in Construct 2
Monday 3 June

Objectives:
1. Learn about UV-mapping and UV-map models.
2. Gathering textures
3. Learn about materials/shaders.
4. Apply textures to models.

//
1. Learn how to import sprites
2. Begin importing placeholder sprites
3. Learn about behaviours
4. Add behaviours to sprites

9:15AM – Coffee and muffins: welcome, and description of the day. Discuss how to coordinate work even though artists, programmers, and level designers are separated. [EV5.615]

9:30AM – **Art Module 7. UV-Mapping:** Learn about the process of unwrapping a 3D model in preparation for texturing.
Facilitated by: Vincent Villemaire

10:30 to 11:15AM – Work Time: begin unwrapping your models.

11:15AM – **Art Module 8. Gathering Textures:** Trip outside to take photos for various textures.
Facilitated by: Nancy Townsend & Sahar Homami [EV5.615 & outside]

//

9:30AM to 12:15PM – Work Time: Build level maps, import placeholder sprites, add behaviours. [EV5.635]

12:30PM – Picnic Lunch

1:30PM – **Art Module 9: Introduction to Photoshop:** Learn the Photoshop workspace and its basic tools, including documents, layers, shapes, color, paint bucket, brushes, eraser, and saving files.
Facilitated by: Veniamin Chukhovich [EV5.635]

//

1:30PM – **Game Engine Module 6. Events and Actions:** Learn about events and actions.
Facilitated by: Daria Khomyakova[EV5.615]

2:30PM – **Art Module 12. Texturing & Materials:** Learn how apply textures to a 3D model using a UV map and materials.
Facilitated by: Vincent Villemaire [EV5.635]

3:30PM – Work Time: Texturing. [EV5.635]

//

2:30PM – Work Time: Build level maps, import placeholder sprites, add behaviours. [EV5.635]

4:45PM – COMMIT & UPDATE SVN

4:50PM – Wrap Up

Day 7: Animation // Sound Integration
Tuesday 4 June

Objectives:
1. Learn about animation.
2. Learn about and apply skills in 3D animation.

//
1. Learn how to import sprites.
2. Enrich the levels--continue with work on sound, doors, etc.
3. Record more sound if needed, and if the time and resources permit.

9:15AM – Coffee and muffins: welcome, and description of the day. [EV5.615]

9:30AM – **Animation Module 1. Animation Principles:** Learn about the 12 principles of animation.
Facilitated by: Andrew Lunga [EV5.615]

//

9:30AM – **Game Engine Module 7. Game Ambiance:** Inserting sounds and music in Construct 2.
Facilitated by: Jeremy Alvarez [EV5.635]

10:30AM to 12:30PM – **Animation Module 2. Skeleton Tools in Blender:** Learn about rigging and skinning.
Facilitated by: Andrew Lunga [EV5.635]

//

10:30AM to 12:30PM – Work Time: Insert collected sound. Continue gathering and editing sound, if needed.
[EV5.615]

12:30PM – Lunch

1:30PM – Presentation: KO-OP Mode, a collective of independent game developers. [EV5.615]

2:30PM – Work time: Animation [EV5.635]

//

2:30PM – Work Time: Insert collected sound. Continue gathering and editing sound, if needed.

Continue inserting sprites and adding behaviours, events and actions. [EV5.635]

3:30PM – Work Time: Animation [EV5.635]

//

3:30PM – Work Time: Insert collected sound. Continue gathering and editing sound, if needed.
Continue inserting sprites and adding behaviours, events and actions. [EV5.635]

4:45PM – COMMIT & UPDATE SVN

4:50PM – Wrap Up

Day 8: Animation & Sprites // Heads Up Display
Wednesday 5 June

Objectives:

1. Finish animations for sprite rendering.
2. Sprites: rendering 3D models to 2D representation.

//

1. Learn about Heads Up Displays (HUD)
2. Implement HUD

9:15AM – Coffee and muffins: welcome, and description of the day. [EV5.615]

9:30AM – **Animation Module 4. Animation Tools:** Learn about the timeline.
Facilitated by: Andrew Lunga [EV5.635]

//

9:30AM – Work Time: Insert collected sound. Work on levels. Work on actions and events. [EV5.615]

10:30AM – **Animation Module 5. Animation:** Learn how to animate.
Facilitated by: Andrew Lunga [EV5.635]

//

10:30AM – Work Time: Insert collected sound. Work on levels. Work on actions and events. [EV5.615]

11:30AM – Work Time: Animation [EV5.635]

//

11:30AM – Work Time: Insert collected sound. Work on levels. Work on actions and events. [EV5.635]

12:30PM – Lunch

1:30-3:00PM – Work Time: Animation [EV5.635]

//

1:30-2:00PM – **Game Engine Module 8. The User Interface and Heads Up Display (HUD) Part 1:**

Learn about the heads up display, and decide on which elements must be incorporated into the game.
Facilitated by:Alicia Fortier [EV5.615]

2:00-3:00PM – **Game Engine Module 9. The User Interface and Heads Up Display (HUD) Part 2:**
Begin creating the HUD based on elements chosen in Part 1. Use placeholders as needed, while designated HUD artist creates elements needed.
Facilitated by: Alicia Fortier [EV5.615]

2:30PM – **Animation Module 6. Sprites:** Rendering a 3D model/animation into a 2D sprite.
Facilitated by: Charlotte Fisher [EV5.635]

//

2:30PM – Work Time: UI/HUD [EV5.615]

3:30 to 4:45PM – Work Time: Continue rendering out finished, animated and static (priority) models [EV5.635]

//

3:30 to 4:45PM – Work Time: UI/HUD [EV5.635]

4:45PM – COMMIT & UPDATE SVN

4:50PM – Wrap Up

Day 9: Sprites & Work Time
Thursday 6 June

Objectives:

1. Assemble sprite sheets in Photoshop
2. Work time: rendering sprites and assembling into sheets

//

1. Implement new sprites
2. Work time: priority tasks

9:15AM – Coffee and muffins: welcome, and description of the day. Set priority tasks. [EV5.615]

9:30AM – **Animation Module 7. Sprite Sheets:** Learn how to assemble a sprite sheet in Photoshop. Facilitated by: Charlotte Fisher [EV5.635]

//

9:30AM – Work Time: Area of priority, as determined by welcome meeting. [EV5.615]

10:30AM – Work Time: Continue rendering and prepping priority sprites for game. COMMIT so that programmers can begin implementing them. [EV5.635]

//

10:30AM – Work Time: Area of priority, as determined by welcome meeting. [EV5.635]

11:30AM – Work Time: Continue rendering and prepping priority sprites for game. COMMIT so that programmers can begin implementing them. [EV5.635]

//

11:30AM – Begin replacing placeholder sprites with new ones. [EV5.635]

12:30PM – Lunch

1:30PM to 4:15PM – Work Time: Continue prepping priority sprites for game. COMMIT so that programmers can implement. Prepare for first playtest (talk with team to know what is needed). [EV5.635]

//

1:30PM to 4:15PM – Replace placeholder sprites with new ones. Prepare for first playtest (talk with team to know what is needed).[EV5.635]

4:15PM – COMMIT & UPDATE SVN

4:30PM – Group meeting: updates, status, concerns.

Day 10: First Playtest!
Friday 7 June

Objectives:
1. Playtest I!
2. Discuss with group.
3. Work time: make changes.

9:15AM – Coffee and muffins: welcome, and description of the day. [EV5.615]

9:30AM – Playtest I [EV5.635]

10:30 AM – Group Discussion [EV5.615]

11:30AM – Work Time: Area of priority, as determined by group discussion. [EV5.635]

12:30PM – Lunch

1:30 to 4:45PM – Work Time: Area of priority, as determined by group discussion. [EV5.635]

4:45PM – COMMIT & UPDATE SVN

4:50PM – Wrap Up

Day 11: Work day
Monday 10 June

Objectives:
1. Continue working on areas discussed after first playtest.
2. Complete priority tasks.

9:15AM – Coffee and muffins: welcome, and description of the day. [EV5.615]

9:30AM to 12:30PM – Work Time: Area of priority, as determined by welcome meeting. [EV5.635]

12:30PM – Lunch

1:30PM to 4:45PM – Work Time. [EV5.635]

4:45PM – COMMIT & UPDATE SVN

4:50PM – Wrap Up

Day 12: Second Playtest!
Tuesday 11 June

Objectives:
1. Playtest II!
2. Group discussion.
3. Work on priority tasks, as discussed by group.

9:15AM – Coffee and muffins: welcome, and description of the day. [EV5.615]

9:30AM – Playtest II [EV5.635]

10:30AM – Group Discussion [EV5.615]

11:30AM – Work Time: Area of priority, as determined by group discussion. [EV5.635]

12:30PM – Lunch

1:30PM to 4:45PM – Work Time. [EV5.635]

4:45PM – COMMIT & UPDATE SVN

4:50PM – Wrap Up

Day 13: Crunch Time!
Wednesday 12 June

Objectives:

1. Work day.
2. Complete priority tasks.

9:15AM – Coffee and muffins: welcome, discuss priorities for the work day. [EV5.615]

9:30AM to 12:30PM – Work Time: Area of priority, as determined by welcome meeting. [EV5.635]

12:30PM – Lunch

1:30PM to 4:45PM – Work Time. [EV5.635]

4:45PM – COMMIT & UPDATE SVN

4:50PM – Wrap Up

Day 14:Final Crunch!
Thursday 13 June

Objectives:

1. Continue working on tasks.
2. Playtest III - short group playtest
3. Finish game
4. Prepare for playtest with guests tomorrow

9:15AM – Coffee and muffins: welcome, and description of the day. [EV5.615]

9:30AM to 12:15PM – Work Time: Area of priority, as determined by welcome meeting. [EV5.635]

12:15PM – COMMIT & UPDATE SVN

12:30PM – Lunch

1:30PM – Playtest III - Last Chance! Short playtest to address last-minute issues. [EV5.635]

2:00PM – Group Discussion

3:00PM to 4:45PM – Work Time: Area of priority, as determined by group discussion. [EV5.635]

4:45PM – COMMIT & UPDATE SVN

4:50PM – Wrap Up

Day 15: Finish the Game + Celebrate!
Friday 14 June

Objectives:

1. Group photos.
2. Final Playtest, with guests.
3. Discussion with guests
4. Final group discussion with the Skins team
5. Celebrate!

9:15AM – Group photos! Coffee and muffins. [EV5.615]
Note: For last-minute changes, this is also your deadline to commit and update (9:15AM).

10:00AM – Final Playtest, with guests. [EV5.635]

11:00AM – Presentation of the game script and story.
Facilitated by: Skins 4.0 Participants. [EV5.615]

11:30AM – Discussion, critique, feedback [EV5.615]

12:30PM – Lunch

1:30PM – Final Wrap Up Meeting