High School Computer Studies Curriculum: Foundations of 3D Graphics and Animation

**Standard 1: Creativity and Innovation**

*Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.*

*Students will be able to:*

- **F3DGA.1.1** Apply existing knowledge to create and design original 3D models and 3D environments.
- **F3DGA.1.2** Create original 3D works as a means of personal expression.
- **F3DGA.1.3** Use 3D models and animations to represent complex environments.

**Standard 2: Communication and Collaboration**

*Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.*

*Students will be able to:*

- **F3DGA.2.1** Interact, collaborate, and publish original works by employing a variety of digital environments and media.
- **F3DGA.2.2** Communicate information and ideas effectively in a 3D environment.
- **F3DGA.2.3** Contribute to project teams to produce 3D models or environment.

**Standard 3: Research and Information Fluency**

*Students apply digital tools to gather, evaluate, and use information.*

*Students will be able to:*

- **F3DGA.3.1** Plan strategies to identify and gain necessary skills needed to complete 3D environments.
- **F3DGA.3.2** Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media in the creation of original 3D works.
- **F3DGA.3.3** Evaluate and select information sources and software to complete 3D skills and 3D specific tasks.
- **F3DGA.3.4** Apply skills to general an appropriate product which demonstrates application of digital tools and 3D knowledge.

Adapted from the ISTE National Educational Technology Standards (NETS•S) and Performance Indicators for Student 2007

*Singapore American School, September 28, 2010*
### Standard 4: Critical Thinking, Problem Solving, and Decision Making

*Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.*

**Students will be able to:**

- **F3DGA.4.1** Identify and select proper tools to create and design 3D models and environments.
- **F3DGA.4.2** Plan and manage activities to develop a design a 3D project.
- **F3DGA.4.3** Collect and analyze different possible solutions to designing and creating 3D shapes and objects.
- **F3DGA.4.4** Consider multiple methods and procedures required in designing and creation in a 3D space.

### Standard 5: Digital Citizenship

*Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.*

**Students will be able to:**

- **F3DGA.5.1** Advocate and practice safe, legal, and ethical use of intellectual property.
- **F3DGA.5.2** Exhibit a positive attitude toward using technology that supports learning, and productivity.
- **F3DGA.5.3** Demonstrate personal responsibility for lifelong learning.
- **F3DGA.5.4** Exhibit leadership for digital citizenship.

### Standard 6: Technology Operations and Concepts

*Students demonstrate a sound understanding of technology concepts, systems, and operations.*

**Students will be able to:**

- **F3DGA.6.1** Understand and use 3D software and hardware systems.
- **F3DGA.6.2** Select and use the proper tools within the application to create 3D products effectively and productively.
- **F3DGA.6.3** Troubleshoot and evaluate 3D models and environments to ensure final product represents prescribe requirements.
- **F3DGA.6.4** Transfer current knowledge to develop and create original works which demonstrate advanced skills and more independent works.