

# IN-CLASS STUDENT ACTIVITY 3.1: UNDERSTAND RENDERING ENGINES

## Lesson Objective 3.1:

Understand rendering engines. *Topic:* DirectX®

## Resources, software, and additional files needed for this lesson:

1. A workstation with Windows 7®, Windows Vista®, or Windows XP®
2. Microsoft Visual Studio® or Microsoft Visual C# Express® (2008 or 2010)
3. XNA® Game Studio 2.0, 3.0, 3.1, or 4.0
4. DirectX 11: <http://msdn.microsoft.com/en-us/directx/default.aspx>
5. Internet connectivity

## Guiding questions:

1. What is DirectX and how do you use it?
2. How can audio and video be compressed?
3. When is VSync used?

## Student Activity:

### Directions to the student:

Read the following scenario. Select three samples to explore. Follow the directions to download and build the DirectX samples. Answer the questions below. Share with a classmate by demonstrating the code sample and discussing how it could be used in a game design project.

### Scenario:

Kim has been transferred to the animation department at Adventure Works. Everyone on the entire team is required to know and use DirectX in the production of the current project, Adventures in Space. DirectX is a powerful technology that is designed to make Microsoft Windows-based computers an ideal platform for running and displaying applications rich in multimedia elements such as full-color graphics, video, 3-D animation, and rich audio. Kim is excited to learn more about the potential power of DirectX. His supervisor suggested that he look at the MSDN® Library collection of samples.

### Content:

#### Samples and Code Examples in the MSDN Library

[http://msdn.microsoft.com/en-us/library/dd368187\(v=VS.85\).aspx](http://msdn.microsoft.com/en-us/library/dd368187(v=VS.85).aspx)

- The following hyperlinks to samples do not work at the above-referenced Uniform Resource Locator (URL) for SDK 7.1:
  - Direct 3D Interop
  - MSAA Rendering
  - SaveAs ImageFileSample

Respond to the following questions.

1. Did you have any problems building the sample projects? If so, how did you solve them?
2. What did you learn through each sample in this exploration that can be applied to a game design project?
  - a.
  - b.
  - c.
3. How does what you learned relate to the objective of this lesson?