



Center for Talent Development  
Northwestern University  
School of Education & Social Policy

## Accelerated Weekend Experience Course Syllabus

**Date: June 11 & 12, 2016**  
**Instructor names: TJ Leone**

### **Course Title: Animation: GIFs & Sprite Sheets (Gr. 5-6)**

#### **Course Description:**

Graphics Interchange Formats (GIFs) are all around us in social media and elsewhere on the web. Along with sprite sheets, animated GIFs are a way of storing images for animation in a variety of applications, including web page animations that use CSS, HTML or Flash, and game development environments like Unity, MonoGame and the PlayStation Suite. Students work with different tools for creating or repurposing sprite sheets, animated GIFs and other images and use them to create animated stories in a Java programming environment.

*Subject area: Technology*

**Learning Outcomes:** Upon successful completion of this course, students will:

- a. Use math operations and screen coordinates in Java programs to place images and draw figures.
- b. Use Java conditional statements and loops to create visual effects.
- c. Use applications to create or modify sprite sheets and animated GIFs.
- d. Create animated stories in with sprite sheets and animated GIFs through Java programming.

#### **Resources and Materials:**

**a. Supplies to be brought to class each day:**

- i. Notebook
- ii. Pencils/Pens
- iii. Folder
- iv. Lunch, snack, and water bottle

**b. Suggested Books & Websites for further study:**

- i. <http://tjleone.com/animation.htm>

**Instructor Biographies:** Since 2002, TJ Leone has taught K-12 CTD students in math and computer science. He also taught children in pre-K through middle school at Montessori schools. TJ's programming career included work in both industry and academia. For a number of years, he worked for a number of years as an educational software developer for Northwestern's School of Education and Social Policy. He holds a Montessori teacher certification from the Association Montessori Internationale and is a Sun certified Java programmer. His education includes graduate work at Northwestern in both learning science and computer science.

**Schedule:**

<b>Saturday</b>	
9-9:30	Get to know you/Pre-assessment
9:30-10:30	Course overview. Intro to programming and media.
10:30-10:40	Snack/Stretch break
10:40-11:45	Pair programming assignment: manipulating still images with Java.
11:45-12:30	Lunch
12:30-1:15	Review of first image manipulation. Manipulating images with loops.
1:15-2:15	Pair programming assignment: image manipulation with loops
2:15-2:30	Recap/Exit slips

<b>Sunday</b>	
9-9:30	Go over exit slip questions
9:30-10:30	Finding and creating animated GIFs. Programming a GIF animation.
10:30-10:40	Snack/Stretch break
10:40-11:45	Pair programming activity with animated GIFs
11:45-12:30	Lunch
12:30-1:15	Finding and creating sprite sheets. Programming a sprite sheet animation.
1:15-2:15	Pair programming activity with sprite sheets.
2:15-2:30	Wrap up/clean up/last minute questions

*Exit Slip:*

- What was your favorite part about today? Why?
- What is something new you learned today?
- What do you think is a challenge for people in this field?
- Is there something we did not cover that you would like us to tomorrow?
- Any other feedback? (Positive or negative! I want to know!)

*Instructors are required to thoroughly review any third-party web sites they intend to use in their courses for inappropriate content. However, because web content continuously changes, CTD disclaims any responsibility for any of the content contained on third-party web sites used in course materials. If you become aware of anything that may be inappropriate, please notify CTD staff immediately.*