### **Video and Audio**

### **Duration: 1 Week**

### **Summary**

This lesson introduces a third type of computational artifact: those that are videos. It does so by introducing the YouTube video editor, a free cloud-based tool that is similar to the basics of iMovie and other video editing applications.

The readings and video lectures are essentially tutorials on capturing screen video and using the YouTube video editor. They show the basic concepts in video editing such as timelines, combining clips, trimming, splitting, sound tracks, and transitions (which are very similar to those in iMovie and other video editing applications).

The assignment has students create an online video by combining original video clips that they shoot with their phone, or a recording device provided by the teacher. The clips are themed on an interview with friends and/or family about the person's view of the impact of the student's Computing Innovations topic. For instance, a student whose topic is "The Impact of Email" would interview one or two friends and/or family about their view on the impact of email. The assignment requires skills such as editing clips to essential content, combining clips, adding text and transitions, and adding music. The student produces a YouTube video both for this assignment and as an artifact to be used in the Computing Innovations project. The assignment also has the students use the Screencastify extension to the Chrome browser (free easy installation into Chrome) to capture their screen and voice as they narrate a web page about their innovation topic.

### **Learning Objectives**

* Use computing tools and techniques for creative expression. [AP CSP P2, LO 1.3.1]
* Capture original video and create with it.
* Explain how digital audio and music can be created by synthesizing sounds, by sampling existing audio and music, and by recording and manipulating sounds, including layering and looping.
* Create a computational artifact using tools and techniques to solve a problem. [AP CSP P2, LO 1.2.2]
* Create a new computational artifact by combining or modifying existing artifacts. [AP CSP P2, LO 1.2.3]
* Capture screen activity and voice as a video.
* Describe what youTube is and its policies.
* Use a video editing tool to:
  + Combine video clips
  + Crop video clips
  + Add an audio sound track (music or voice) to video clips
  + Add text captions to video clips
  + Add video transitions between clips
  + Add audio track(s) to the video
  + Publish video for wide dissemination (e.g. youTube)
* Analyze the correctness, usability, functionality, suitability of computational artifacts. [AP CSP P4, LO 1.2.5]

### **Course Material**

* Watch: [Screencastify](https://www.youtube.com/watch?v=2tlE2wwVXg8) [2:54]
* Read: [YouTube](http://en.wikipedia.org/wiki/YouTube)
* Watch: [Meet the YouTube Video Editor](https://www.youtube.com/watch?v=c56pD6pbUr8) [2:03]
* Watch: [How to Edit Videos Using the YouTube Video Editor](https://www.youtube.com/watch?v=43Nvd12yqxU) [12:47]
* Read: [YouTube Video Editor Help](https://support.google.com/youtube/answer/4522397?rd=1)

### **Assessments**

* Conceptual Quiz:
  + [Video Editing](https://docs.google.com/document/d/1hhSpEMc8UXsvBZWGisGokf99mUmyaNaN5EsEt0e1PYs/edit?usp=sharing) (requires access)
* Practical Assignment:
  + [Video Editing and Production](https://drive.google.com/open?id=15R5w6rxfUqvmUEhtOThBu0sq8WVMs3MBkLP3B5Kul5U) | [Grading Rubric](https://drive.google.com/open?id=17pYO4HRh_LFu9A27TEoRGrZC95j8ja_zPnTsfNOGLEA) | [Answer Key](https://docs.google.com/document/d/1do38XbMOID9wec7iJMSl8_tm4eihHndnQ0lIrsTsKcU/edit?usp=sharing)