c. **Phase 3 – Post-Production:** Following the storyboard, students edit their films with the help of film mentors and teachers using free software packages. Film mentors guide students with respect to fair use and copyright for music and other licensed materials. Students will receive some LOCC staff support around image and footage research and interviewee and B-roll scheduling to ensure completion of the films. This phase generally takes 4-5 meetings to complete.

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Lesson 8. Rough Cut Edit (1-2 hours + possible outside time)

Overview:

Once students have completed their initial filming, reviewing and assembling the footage allows them to get a sense for where additional footage is required to tell their story. The rough cut is a first draft of a film where the essential pieces are together in order. Once a group is satisfied that they have the basic components assembled, they should show the rough cut to other groups, if possible. The process of giving and receiving feedback, as well as learning how to incorporate that feedback, are critical steps to developing a good film.

Learning Objectives:

• Students use editing software to review their footage and decide which clips to incorporate into their film.
• Students determine the best sequence of shots to convey their story.
• Students evaluate their rough cut to determine when they are ready to show it to others and receive feedback.
• Students give and receive constructive feedback on their rough cut.
• Students determine which suggestions from their peers to incorporate into their film.

Materials: Laptops

Procedure:

Have the students assemble their video according to their storyboard. Do not worry about transitions or minor edits, because this is meant to be a very rough assemblage of the film. Create an editing plan where each student has a role and section that they are responsible for (e.g., one student could review and edit an expert interview, another could work on a particular sequence or skit). This initial cut will be longer than the final cut. Review the rough cut and compare it to their storyboard. Remember that every film is different from its original plan in some way and, in many cases, the final film is better than the initial plan.

Editing

During the postproduction phase, students assemble their footage into their finished film. Students can save time by shooting their films in sequential order, but post-production editing is required for complete and coherent end-products. Editing can be done using free, intuitive software packages (see Resources for suggestions). Most editing software has three basic components—a bin, a timeline, and a viewer. The bin shows all the footage from the camera, but can also be used to hold other footage or
still images. The timeline is a display of all video and audio tracks in the film. Students select footage from their bin and drag it to the timeline to arrange their film. The viewer shows the final film based on the timeline.

**Evaluate**

Students create a rough cut of their film by ordering the best clips from each scene according to their storyboard. Students then share the rough cuts with other groups or the whole class for feedback and constructive critique. Students use guiding questions (addressing science message and presentation) when watching and critiquing the rough cuts of other groups:

- What is the main message of the film?
- Is the science clear and well communicated?
- What was your favorite part of the film?
- Why were certain production decisions made (e.g., graphics, interview footage, humor)?

Students are guided to frame feedback in a positive and constructive way. The teacher should model how to provide constructive feedback and help students phrase their feedback in positive, helpful ways. Students then use their peers’ feedback to create a final cut of their films. Edits could include changing the order of scenes, cutting scenes, or adding clarifying information such as text, images, and graphics. During the creation of the final cut, students add elements such as titles, credits, music, and sound effects (see Resources).
Lesson 9. Revise (3-6 hours + possible outside time)

Overview:

Based on the feedback from their peers, and on their own self-evaluation, students will continue to refine their films. This process is generally more about removing unnecessary footage than adding in new footage, but students may find that they need to re-shoot key scenes to tell their story in the most compelling way. During revisions, students will also want to ensure that transitions between scenes are smooth and that each scene begins and ends at the correct place.

Learning Objectives:

- Students work with their group to evaluate and refine their films.
- Students use editing software to add transitions between scenes.

Materials: Laptops, projectors (optional)

Procedure:

Students review their films and decide as a group where edits are needed. Students can either work together (by sharing a single computer screen or by using a projector) or divide up sections of the films and have pairs or individual students edit independently. All students should have a chance to review the film in its entirety and agree on the edits before the film is complete.
Lesson 10. Titles/Credits/Music and Final Editing (2-3 hours)

Overview:

Students add titles, credits, and additional sound or music to their films. They also review their films and make final edits.

Learning Objectives:

- Students self-evaluate their films and determine where additional sound effects or music are needed.
- Students use appropriate websites to find additional sound material.
- Students create title and credits sequences for their films.
- Students review films and make final changes.

Materials: Laptops, projector (optional), Guide to Creative Commons

Procedure:

As students review their films, they may find that they want to add additional sound effects or music. Students will also want to add in titles at the beginning of their film and credits at the end. Standard title and crediting templates are available in most editing software.

The final editing process can become long and involved, if the students are heavily invested in their films. Encouraging students to share their films with each other, giving and receiving feedback can help identify the most critical edits as well as gaps in the flow of the film.