## **Developing An Explainer Video**

***A Bare Bones Outline For Planning Your Video***

1. What 2-3 learning goals do you want this video to achieve?

* A
* B
* C?

1. How will you hook the audience?
   * Is there a situation that is relevant or familiar to viewers where they would need to apply the knowledge or skills of those learning goals?
   * Is there a way to make what viewers cannot see visible or understandable?
   * Are there any visuals that would help bring the topic to life?
2. Logistics of creating the video

* What format or style do you want to use?
* Do you want to be formal, informal, serious, silly?
* How long do you want the video to be?
* What do you want to say, and how will you say it?
* How will you reinforce what you say visually?

***Storyboarding the Video***

Storyboards help you organize ideas, plan what you need to make or do, and delegate assignments fairly. Dedicated storyboarding software is available, but a Word or Google Docs table works just as well.

Think of a 2- or 3-column table like the one below as a vertical storyboard with the visuals, script sections, transitions, and timing in parallel.

|  |  |  |
| --- | --- | --- |
| **Visual Half of Storyboard** | **Narration or Script Half of Board** | **Timeline (optional)** |
| Sketch of visual, or actual image | Section of the narration or script text to be provided while image displays | 0:00.00 to 0:08.00 |
| Transition to next image  (*Omit if transitions are simple*) | Notes or explanation of transition  (*if needed*) | 0:08.01 to 0:09.50 |
| Next visual or image | Next section of narration or script. | 0:09.51 to 0:017.30 |
| Visuals continue in order of appearance. Gaps in table indicate missing assets. | Script segments are divided so they match corresponding visuals | Omit if you do not find it helpful |

***Writing the Script***

One of the biggest challenges for scientists is to tell a compelling story. To understand why, watch Randy Olson’s "Connections" TEDMED talk at: <https://www.youtube.com/watch?v=ERB7ITvabA4>.

In it he outlines an **And-But-Therefore** template for storytelling. His key points:

* Scientists love the “and” part. It is at the center of exposition. However “and” does not create a story. “But” creates a source of tension. “Therefore” creates synthesis.
* Unlike scientists, most people (including students) LOVE narrative stories with “but” and “therefore.”

Once you have a draft script, have someone else read it.

* ***If you do not plan to reuse the video regularly***, try to have at least one other person review it for content accuracy, and if possible, for a clear and compelling story.
* ***If it is a script for a video you will use repeatedly or for a long time***, plan (and budget time) to review it more deeply. Ask several people for their advice and suggestions.
  + Have a subject matter expert check the accuracy of what is said AND shown.
  + Give it to colleagues and friends to evaluate for STORY logic and flow.
  + Give to students to review for clarity. Revise it based on their feedback.
* Ideally, repeat the entire review cycle 2-3 times, or after every major revision.

***Technical Guidelines for Creating Videos***

Most software can export videos at varying resolutions and sizes, from files for tiny phone screens up to high-definition movies for 30-inch screens. Even if you are not posting videos to YouTube, a good rule of thumb is to format videos on the high end of their recommendations. The current guidelines are located at:

<https://support.google.com/youtube/answer/6375112?hl=en&ref_topic=2888648>

There are two reasons to follow their guidelines. First, they represent the quality level students expect. Second, YouTube guidelines improve accessibility. Your students are less likely to encounter problems viewing your videos if you adhere to the YouTube guidelines.

As of 2021, recommendations for YouTube educational videos are:

* 1080p resolution or higher
* 1920 x 1080 in size or larger
* 16:9 width:height ratio
* File format should be .MP4, .M4A, or .MOV.

***Building the Video Itself***

**Powerpoint is fine for a simple narrated set of slides or photos**. It is not bad at animations either. If you want to create more complex videos you have several open-source and licensed commercial software options. Personally, I use a mix of both. For example, I rely on Audacity for recording and editing the audio but use Camtasia for constructing visual tracks and adding annotation. These are tools I know **and have used at least once**.

|  |  |  |
| --- | --- | --- |
| **Tasks** | **Open Source** | **Commercial** |
| Video Editing | **Open Shot**  <https://www.openshot.org/>  A bit unstable, so I recommend saving files frequently. Works well otherwise. Lacks some of the stock annotation options of Camtasia, but these can be embedded using vector art. | **Camtasia**  <https://www.techsmith.com/video-editor.html>  Probably the most popular choice for education. Good balance between range of tools, simplicity.  **Adobe Premiere Pro (Creative Cloud)**  <https://www.adobe.com/products/premiere.html>  The industry standard; overkill for educational use. |
| Audio Capture, Editing | **Audacity**  <https://www.audacityteam.org/>  Better than most professional tools. | **Adobe Audition (Creative Cloud)**  <https://www.adobe.com/products/audition.html>  Again, overkill for educational work. |
| Content Libraries | **Wikimedia Commons**  <https://commons.wikimedia.org/>  **Pixabay**  <https://pixabay.com/>  **Cornell Wildlife Media Archive**  <https://www.macaulaylibrary.org/>  World’s largest collection of audio files, videos and still photos. Liberal licensing for education. | **Adobe Stock (Creative Cloud)**  <https://stock.adobe.com/>  **Shutterstock**  <https://www.shutterstock.com/>  This is the only resource you cannot access through a WFU license. |
| Flow, Schematic, Process Diagrams | **Pencil Project**  <https://pencil.evolus.vn/>  **Libre Draw (part of LibreOffice Suite)**  <http://www.openoffice.org/product/draw.html> | **Powerpoint**  **Google Slides** |
| Vector Image Creation, Editing | **Inkscape**  <https://inkscape.org/en/>  **SVG Editor**  <https://github.com/SVG-Edit/svgedit> | **Adobe Illustrator (Creative Cloud)**  <https://www.adobe.com/products/illustrator.html>  The gold standard. Open source tools work well for basic images, but it takes much longer to finish a task. Illustrator has a faster workflow. |
| Raster Image Editing | **GIMP (GNU Image Manipulation Program)**  <https://www.gimp.org/>  **Pixlr**  <https://pixlr.com/> | **Photoshop (Creative Cloud)**  <https://www.adobe.com/products/photoshop.html>  Once upon a time, this was the best tool for the job. Sadly, Adobe re-engineered it so badly that editing has become a confusing, un-intuitive slog. |