Grade 8 review: multimedia presentations

You have all seen movies at the movie theater and some of you may have made your own home movies of family vacations, celebrations, etc. You may have noticed that these home movies usually have some things in common:

- The image is shaking in all possible directions.
- The shots are either long and boring or very short.
- The angle of the camera is rarely anything but the cameraman's shoulder height (which is also boring)....and so on.

Well, it doesn't have to be like this! As a matter of fact, every video you make and even your other media creations can be made to look a lot better if you take the time to plan some things first.

OK, so let's see how the professionals do it, to get some inspiration and maybe to borrow some of their tools to help plan our own creations.

The Script

For the first part of your plan, you need to answer a very important question:

- What am I going to talk about?
- What is my movie about?

Remember, it doesn't have to be a masterpiece just yet! Even a simple movie about you and your classmates on a regular day at school is a very good idea for your first, carefully planned movie.

The first portable camera that was small enough to be practical for photography, was envisioned by Johann Zahn in 1685.

A script has three important components: heroes, action and dialogue. The "action" is written in the present tense and is a description of what is happening at a particular moment or what your characters are doing. The "dialogue" is all the things your characters say. The "heroes" are the main characters of your movie. For example, a very small part of a script, containing both action and dialogue, could be something like this:

One more thing you need to know is that in a script, the story is divided into scenes.

A scene is the action happening in a specific place at a specific time. For example, when you are in the classroom during a lesson, this could be the "lesson scene," but, when the bell rings and you go out to recess, the scene changes because the location has now changed.

You don't have to write every detail about the environment the scene is taking place. This is a job for the director. He has the final word, after he discuss all the details with the rest of the crew (director of photography, sound engineer, set designer etc).

Découpage

Once you have your script, the next stage is to plan in more detail how your scenes are going to look. This is called découpage. In découpage, you break every scene down into "shots." A shot starts from the time you press the record button on the camera and ends when you press it again to stop recording. As

you can imagine, a scene typically consists of multiple shots, but sometimes a director can choose to shoot a whole scene in a single shot, without stopping and relocating the camera.

So, you break your scenes down into shots and you also plan and write down how each shot is going to be. For example, for each shot, you note down how far or close the camera is going to be to each character, the angle of the camera, e.g. if it is going to be somewhere high, looking down on the character, the movement of the camera and details about what we see and hear in each shot.

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When you are typing or writing for many hours, take a break occasionally. You need to rest your wrists, or you might suffer from CTS (Carpal Tunnel Syndrome).

Storyboard

For the final part of your film planning, you are going to create your movie's storyboard. Don't worry, though; it's not that difficult, although it does require some drawing skills. The storyboard is like a comic of your whole movie. You have already done most of the work during découpage. Now, you are just going to draw what each shot should look like.

Essentially, you put all the details you have written for each shot into a picture. You can also include arrows or instructions that indicate movement.

Once you finish your storyboard, you are done with all the hard work. You can now go out and shoot your movie. It will be easy, if you have planned it carefully and follow your storyboard.

Capture and edit multimedia.

You have all seen great photographs and movies and listened to great songs. Wouldn't it be nice to be able to create something yourself and share it with your friends? Well, it's not that difficult! We are surrounded by many devices that can help. Digital cameras, mobile phones, video cameras and, of course, computers. All these devices produce media files which contain your work. But you need to know which ones are your photos, your videos and so on. So, firstly let's learn how to distinguish these media files.

Media files

Each file has a name and an extension, for example "myschool.jpg." In this example, ".jpg" is the extension of the file, which shows what type of file it is. "myschool.jpg" is a JPEG photo file.

You can easily identify different media files on your computer by checking their extension.

Here are the most common file types for your media files:

- Image file (picture, drawing or photo)
- Image file (vector drawing) .jpg, .png, .gif, .bmp, .tif
- Image file (vector drawing).ai, .eps, .svg, .dwg
- Sound File .wav, wma, .mp3, .aac

- Video .avi, .wmv, .mpg, .mp4, .mkv, .3gp, .mov

So how are you going to capture your own videos? Until recently, the most popular device was the video camera. Today, more and more devices have video capabilities. If you don't have a video camera, you can use your mobile phone, your compact digital camera, your DSLR or even your computer's webcam.

Have you ever wondered why a video from a digital video camera looks better than one from a mobile phone? Well, a video camera only has one job: to capture video, so it does it quite nicely, but a mobile phone has so many more functions and such a small size that it can't perform every task perfectly. So, remember that when it comes to video quality, an important factor is the source device that was used to capture it.

You may also have noticed that some newer devices support "HD video". These HD devices also produce better video quality than older ones. HD stands for High Definition and compared to older SD (Standard Definition) video it has higher resolution, which means the video picture or frame is bigger, so it is sharper and clearer. Nevertheless, this better video quality comes with higher space requirements. HD video tends to be considerably larger than SD

Compression

Now imagine this: You have used your family's video camera to capture your school's theatrical performance and now you want to upload the video onto YouTube for your friends to watch and also to save a copy onto your computer for your archives. Chances are that you will come across a very common problem: the video file created by your camera is probably very large, even larger if you have an HD video camera, so it will take up lots of space on your computer and also take a lot of time to upload to YouTube.

So, what are you going to do? You are simply going to compress your file. With compression, a file is changed to take up less space. But be careful, when you compress a file, you lose some quality. Don't worry though; there are many advanced compression methods which guarantee a file much smaller than the original with only a negligible loss of quality, that is not even visible.

Codecs and containers

There are many different compressions that you can use to make a video smaller in size. These are called codecs. A codec compresses a video file so that you can store it on your computer, but also decompresses the stored file so that you can watch it. Your computer comes with many pre-installed codecs, but you can always add more if you want.

So, a good question would be if a video file extension shows us the compression type that was used - the codec of the video. The answer is no! Video file extensions show the type of the container. A container is a collection of files that appears to you as a single file. Most of the time, a container includes a video codec and an audio codec, but it can also include other things like subtitles.

If you have a media file that your computer can't play because it doesn't have the right codec installed, then you have two options. You can either install a media player program like VLC that supports lots of different formats, or you can install a codec pack, which is a collection of popular codecs that will be added to your computer.

Sound files

You have probably heard of MP3. Chances are you have some MP3 songs on your computer and your portable media player or smartphone. But what exactly is MP3?

Well, MP3 is the most common digital audio format today. You can recognize MP3 files by their extension ".mp3". You may be wondering why it is so popular. It is because it takes up considerably less space to have a song in MP3 format than in other formats. And that is because in MP3 files, the audio data is compressed.

There are two main types of sound files: Uncompressed audio files and compressed audio files. The difference is that an uncompressed audio file sounds exactly like it was recorded, so it has the best possible quality, but takes up a lot of space, whereas a compressed audio file is much smaller in size, but suffers from some loss in quality.

The most popular compressed audio formats are MP3 and WMA (Windows Media Audio). The most common uncompressed audio format is WAV.

OK, now that you know some things about the types of sound files, when you create a sound file, you must always as yourself two things:

- What is the content, music or speech?
- Where is it going to be used? Computer, Hi-Fi, Home Cinema, or transmitted over the Internet?

If it's music, you will probably want a high quality sound file, but not if it's only speech, because the human voice is not as complex as music.

Secondly, if you want to store your sound files on your computer or play them on your Hi-Fi audio system, size is not that important, but if you are going to upload them onto a website or send them to a friend, you will probably want a small file size for quick transfer.

Once you answer these questions, you must also learn about two very important audio characteristics that feature in every recording or sound editing program: sample rate and bit rate. Sample rate is how detailed the sound is going to be. Bit rate is used to determine the degree of compression.

The higher the sample rate and bit rate, the higher the quality but also the storage space required.

So, how do you decide what kind of sound file you need?

It's quite simple, actually. If you want the best possible quality and you don't care much about space, then you can use an uncompressed sound format like WAV or a lossless compression format. With lossless data compression, you get a smaller file without any loss in information, and you can use it in any kind of data file.

Generally, try to follow these guidelines:

For music, the most common sample rate is 44,1 kHz (also used for CD audio). Do not go lower than that when working with music. Some common bit rates for music are 128, 192 and 320 kbit/s. The lower the rate, the smaller the file and the more significant the quality loss

For your voice, since it is not as complex as music, you can use a sample rate of 22.05 kHz and a bit rate between 64-128 kbit/s.

Don't compress a file below 128 kbit/s because after that point the loss in quality starts to be noticeable. On the other hand, if you want near excellent sound quality but not a huge file, you can use a sample rate of 44,1 KHz and a bit rate of 320 kbit/s.

Image file

To take photos, we use digital cameras. You probably already have a compact camera lying around your house, but even if you don't, today's smartphones can take pretty decent photos. You probably have noticed some differences between photos taken with a digital camera and those with a smartphone: cameras produce bigger, sharper and clearer photos. This is because cameras have better lenses and bigger image sensors, which are very important for the quality of a photo. You may have also noticed something like "14 MP" written on your digital camera or even on some of the latest smartphones. This means that the camera can produce photos of 14 MegaPixels or 14 million pixels. But, what is a pixel anyway?

Every digital image consists of little squares put together side by side. Every such square has a color, so when all of them are combined they make the image we see like a mosaic of tiny colored tiles. These little squares are called pixels. So, an image of 14 MegaPixels consists of 14 million of those little colored squares, or pixels.

So, the interesting question is, to what extend do megapixels matter? Is a camera with 14 MP better than a camera with 10 MP?

Well, generally the answer is yes, because more megapixels mean more detail in the picture. But be careful, megapixels alone don't take a picture better than another.

For example, a photo taken with an 8 MP smartphone doesn't necessarily look better than the one taken with a 5 MP digital camera! That's because a camera has a bigger and better lens than the phone, so the picture will be clearer and sharper, even though a little smaller in size. The quality of the lens is very important especially for low light, night or sports photography.

Importing media

Digital cameras are great multimedia devices, as they let you take photos as well as video. After you take a photo with your camera or shoot a video, you want to import or transfer the files to your computer for editing and storing.

To store photos and videos on your computer:

- Connect your camera to your computer. You usually connect it via a USB cable. Alternatively, if your computer has a card reader, you can also insert the camera's memory card directly into the card reader.
- After your computer recognizes your device, the AutoPlay window 1 will appear.
- Click Open folder to view files.
- The window that contains your camera files will appear.
- Cut or Copy and Paste them to where you want.