

Stop Motion Essentials

Stop Motion animation and stop motion video are techniques used to make objects appear to move on their own. Movement is achieved by taking a picture (frame) each time an object is moved. The series of pictures are then played back in sequence as one continuous movie to give the appearance of movement. Creating a stop motion video can be a tedious process of taking numerous pictures, but the results can be impressive.

Storyboard

Creating a storyboard results in a good story with less time spent during the production phase when pictures are taken. The storyboard should show a drawing (frame) for each shot in which movement occurs. Not every small movement needs to be shown as one frame in the storyboard. Arrows and/or a written description may work just as well when multiple frames are needed for certain movements (i.e. objects flying). If a movement that needs multiple frames is being drawing as one shot on the storyboard, make sure to include the number of frames it will need.

Camera Composition

Secure the camera on a tripod, a stand or by some other manner to prevent movement during picture capture. If available take the picture without touching the camera by using an attached cable, using the built in timer, clapping your hands, or using a wireless device to trigger the camera. Frame the composition so that only the scene being shot is in view. In most cases keep the scene framed the same through out the movie. Take some test pictures of the scene to see if the lighting needs to be adjusted. Attempt to keep the lighting the same during the entire shoot, unless changing it is part of the story. Make sure your main characters are always in focus.

Characters

Gather and construct all the characters (objects, clay models, paper cutouts) and their props before beginning to shoot. Exaggerating parts of the character that will be moving (eyes, eye brows, ears, hands, arms, legs) can be helpful. Try not to have too many characters in a scene because it can distract the viewer. Make sure you consider the scale of the characters in relationship to other characters, the background, and props in the scene. Start your video with at least one second of non-movement of characters so as to set the scene for the viewers. Rehearse the movement of the characters based on a storyboard before live shooting.

Background

Gather and construct the background and any necessary background objects before beginning to shoot. Keep your background simple so as not to distract the viewer from the characters in the story. Many times a plain white background is all that is needed. If possible, the background color should contrast with characters. The diorama box, table top or board on the wall which contains the scene's background should be secured so that it will not move when objects in the scene are moved. Any objects that will not move during the video should be secured to prevent accidental movement when characters are moved between shots.

Frames Rate

One frame is one picture captured during production. Normal video plays at 30 Frames Per Second (FPS). Most stop motion video software allows users to control the FPS play back speed. A FPS of at least 12 FPS is suggested for stop motion video. Keep in mind that too low a FPS causes flickering and characters moving in a fast unrealistic manner. Achieving a smooth realistic motion may require between 24 to 30 FPS. A 30 second video at 24 to 30 FPS would require between 720 to 900 frames (pictures) being shot.



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Shooting Frames

Always shoot more frames (pictures) than needed, frames can always be deleted, but are difficult to recreate later. Shoot a frame, slightly move the character(s), shoot your next frame. The slower you want your character to move, the more frames with smaller movements are needed. Shooting frames can be tedious, if the movie is long and has a lot of movement. Shoot at least 6 frames of the same scene to show no movement in the scene. When possible assign team roles to a director (uses storyboard), a positioner (moves characters/objects), and a camera operator (takes pictures). Shoot some frames of the scene without characters in case they are needed later.

Onion Skin

Onion Skin, also known as ghosting, is a feature contained in most stop motion camera software applications to help shoot new frames. After shooting a frame, the photographer can move the character(s) and still see a blurred image of the original character(s). This allows for careful placement of the character(s) in their new position.

Specials Effects

Characters moving, disappearing, appearing, changing size, flying, and morphing to another character are examples of special effects that can be created in stop motion using what are called "stop tricks". The use of miniatures can be used to simulate a variety of scenes. Lights from something as simple as a flashlight focused on specific characters or flashing can produce a needed special effect. Green screens can also be used to create an appropriate background. Shooting half the number of frames of the FPS playback speed can create a unique result.

Claymation Animation

Clay is used to create characters which are the central focus of the story. The clay characters can be shot without a background, in a scene made of non-clay objects, or in a scene made with other clay objects. Sometimes a simple one color clay character with a plain background works well. Plastic beaded armatures and wire armature frames covered in clay can give characters the ability to pose in a variety of positions.

Object Animation

Objects are used as the central characters. Objects can include posable figures, blocks, toys, puppets. Typical examples of objects include super hero figures, LEGO bricks, dominos, Tinker Toys, Scrabble pieces, Lincoln Logs, Erector Sets, or plastic animals. Objects can be shot with or without a background. Simple movements by a limited number of characters works well.

Cutouts Animation

Cutout Animation utilizes flat paper characters, props, and background cutouts made from hand drawings, clipart, magazines, books, and photos. Silhouettes on a contrasting background is an effective technique. Shoot "straight ahead" directly above a table or on a wall (using double sided tape to secure the cutouts). Use a static background or tape down background cutouts that do not need to be moved to prevent movement during shooting.



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Human Animation

Sometimes referred to as Pixilation Animation, humans are the central characters. Humans appear to fly, disappear, walk on their hands, slide across unlikely surfaces, climbing walls, or perform other unexpected actions. Although often used for humorous purposes, Human Animation can be used to create serious videos. Reversing frames can be an effective method for creating a special effect. Backgrounds are usually shot in real environments, but a green screen technique can be used when needed.

Whiteboard Animation

Movement is achieved by drawing each frame on a whiteboard with an erasable pen. Use wet erase markers to keep your whiteboard cleaner after changes. The drawing hand can be left in a frame, if desired, as long as it does not block too much of the drawing. A hand can be used to interact with (i.e. push, pull, stretch, squeeze) elements in the drawing. A simple drawing using a black marker works well. Colors can be used effectively as long as they are purposeful and not distracting.

