

The ANIMATION Booklet



विद्यया ऽ मृतमश्नुते



एन सी ई आर टी
NCERT

राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्
NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING



Animation is an art of making pictures come to life, moving them in a way that tells a story or shares a message. It uses different styles like traditional cartoon drawings, computer *animation* or even playing with clay figures, to pull us into films, TV shows and computer games making everything more fun and interesting.

Through *animation*, the brain connects the strings between the real and virtual worlds.

Moreover, real-world contexts can be given more imaginative aspects in order to be retained in the eyes of the viewers. Extremes are used in *animation*, everything is exaggerated. Humour is pushed to its absolute limits.

Although with the incorporation of special effects, a lot can be attained through a live-action film, the best exaggerations are those that can only be achieved through *animation* and appear unachievable in live-action. Situations that cannot be seen in daily life can be easily visualised through animated film.

Cell for National Centre for Literacy (CNCL), is continuously working towards developing resources materials in both print and audio/video for Non-literate learners and Volunteer Teachers. Cell has developed *animated* videos on the themes based on Critical Life Skills e.g. health & hygiene, financial literacy, environmental awareness, digital literacy etc.

The 12 principles of animation

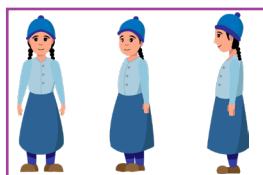
The 12 principles of *animation* were introduced



by two *animators*- Ollie Johnston and Frank Thomas at Disney. They highlighted the same in their book- “The Illusion of Life: Disney *Animation*” (1981). The principles were used to create the illusion that Disney’s characters followed the basic laws of physics.

Principles involved are:

1. Squash and stretch
2. Anticipation
3. Staging
4. Straight ahead and pose to pose
5. Follow through and overlapping action
6. Slow in and slow out
7. Arc
8. Secondary action
9. Timing
10. Exaggeration
11. Solid drawing
12. Appeal



Principles of animation further explained

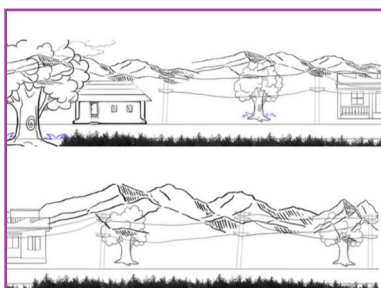
1. Squash and stretch- The purpose of squash and stretch is to give weight and flexibility to the objects being animated.

2. Anticipation- For adding a more realistic approach to the action, so that the audience is prepared for the upcoming scene.

3. Staging- Staging is used to navigate the audience's attention towards the important scene in animation.

4. Straight ahead and pose to pose- Frame by Frame animated scenes, from start to end approach is straight ahead whereas pose to pose includes starting to draw key frames and then filling the interval frames.

5. Follow through and overlapping action- Follow through is an idea that certain body parts might continue to move even after a motion is completed. Overlapping action is the idea that different parts of a body will move at different rates.



6. Slow in slow out- Slow in and slow out principle refers to that almost all movements start slow, build speed and end slowly.

7. Arc- Other than any mechanical action, almost every action follows a trajectory, with which following this principle will allow to add greater realism.

8. Secondary action- Gestures that support the main action to add more dimension to the character animation.

9. Timing- The personality and nature of an animation is greatly affected by the number of frames inserted between each main action.

10.Exaggeration- Through this principle while animating a scene, limits can be extended against the laws of nature such that the action becomes more readable to the viewers.

11. Solid drawing- This principle is about making sure that forms feel like they are in 3D space, with volume, weight and balance.

12. Appeal- Appeal in animation is all about being dynamic. It doesn't necessarily mean 'nice to look at' but instead characters being more 'engaging'.



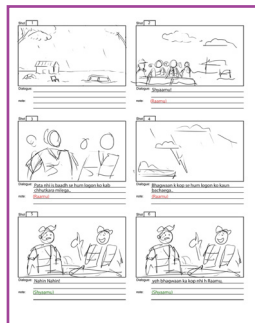


The Production Process

The production process depends upon the type of *animation* used, because of which there can be slight changes in the entire pipeline. 2D *animation* such as Clay *animation*, Stop-motion *animation*, Frame-by-frame *animation*, Cutout *animation* and Rotoscoping *animation* play a unique role in achieving this process whereas 3D *animation* has its own, but major pipeline remains the same.

The Animation Production Pipeline

The *animation* production pipeline is an *animation* industry term which refers to a detailed production workflow followed to effectively convert ideas and concepts into final product. It also involves people, equipment, and software used in sequential order, starting from pre-production to post-production.



1.The Pre-Production Stage



The pre-production stage of *animation* creates the framework for the entire project and determines how the finished *animation* will look in the pipeline.

A strong pre-production stage is essential when beginning any *animation* project in order to

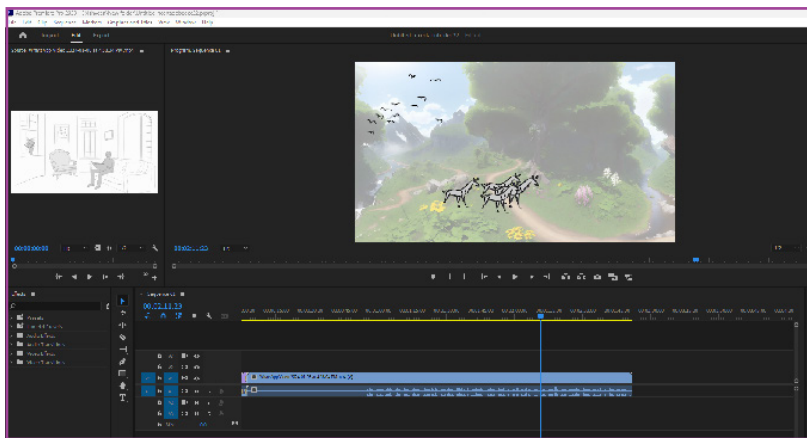


create outstanding animated videos that satisfy the requirements. Additionally, it will facilitate a smoother transition between the *animation* pipeline's later phases.

Pre-production allows us to plan out the timeline for each step, have a clear idea of what will be performed, and devise the best way to carry out the demand. The steps of pre-production in the *animation* production pipeline consist of strategising, story conceptualisation, scriptwriting, rough sound, art direction, character design, storyboarding, and animatics.

2.The Production Stage

Eventually, after everything is set out, then *animation* may begin. When animating, one can use a variety of programs and tools, such as Adobe Animate, Adobe Character Animator, and Adobe After Effects and Procreate.

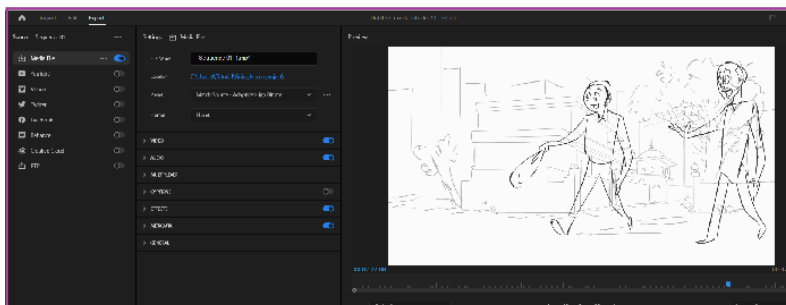


All of the pre-production work carried out including the narrative, storyboard, and character designs will come together at this stage.

This stage consists of key *animation*, *animation* background layout, lighting, final sound design, *animation* color correction, and color grading.

3.The Post-Production Stage

Almost everything has been completed by this stage. This stage consists of compositing and final revisions for the animated video and then a run-through and render of the final animated video.



Cell for National Centre for Literacy (CNCL)
Room No. 307, Third Floor, G.B. Pant Block,
National Council of Educational Research and
Training (NCERT)

Sri Aurobindo Marg, New Delhi 110016
Phone: 011-26592293

Email: cncl.ncert@gmail.com

For more details, visit our website: <https://ncert.nic.in/cncl/>
The above mentioned material is available on the following link:
<https://diksha.gov.in/adult-education.html>.