**Animation**

**Animation** is the process of making the illusion of motion and change by means of the rapid display of a sequence of static images that minimally differ from each other. The illusion—as in motion pictures in general—is thought to rely on the phi phenomenon. Animators are artists who specialize in the creation of animation.

Animation can be recorded with either analogue media, a flip book, motion picture film, video tape, digital media, including formats with animated GIF, Flash animation and digital video. To display animation, a digital camera, computer, or projector are used along with new technologies that are produced.

Animation creation methods include the traditional animation creation method and those involving stop motion animation of two and three-dimensional objects, paper cutouts, puppets and clay figures. Images are displayed in a rapid succession, usually 24, 25, 30, or 60 frames per second.

Animation is 100% artifice, and as such, the synthesis of movement through the sequential use of small fragments of time, which gives rise to this wondrous illusion, is open to manipulation in extraordinary ways.

Animation is an art form which can come from anywhere and which can go to anywhere - from a large production team working in a highly specialised studio or a lone individual working out of a bedroom, to an Imax Cinema screen several metres wide or a mobile phone screen a few centimetres across.

Animation has the capacity to: entertain, exaggerate, simplify, abstract, reveal complex processes, clarify difficult-to-understand concepts, visualise data, be a vehicle for humorous writing, sell product, be an art form, create slapstick sight gags, be a vehicle for insightful social comment, portray the human condition, and tackle difficult and uncomfortable subject manner.

**History**

Early examples of attempts to capture the phenomenon of motion into a still drawing can be found in paleolithic cave paintings, where animals are often depicted with multiple legs in superimposed positions, clearly attempting to convey the perception of motion.[[1]](https://en.wikipedia.org/wiki/Animation#cite_note-Thomas8-2)

An earthen goblet discovered at the site of the 5,200-year-old [Burnt City](https://en.wikipedia.org/wiki/Shahr-e_Sukhteh) in southeastern Iran, depicts what could possibly be the world's oldest example of animation. The artifact bears five sequential images depicting a [Persian Desert Ibex](https://en.wikipedia.org/wiki/Wild_goat) jumping up to eat the leaves of a tree.[[2]](https://en.wikipedia.org/wiki/Animation#cite_note-3)

Ancient Chinese records contain several mentions of devices that were said to "give an impression of movement" to human or animal figures,[[3]](https://en.wikipedia.org/wiki/Animation" \l "cite_note-NeedhamIV-1-4) these accounts are unclear and may only refer to the actual movement of the figures through space.[[4]](https://en.wikipedia.org/wiki/Animation#cite_note-Rojas5-5)

In the 19th century, the [phenakistoscope](https://en.wikipedia.org/wiki/Phenakistoscope) (1832), [zoetrope](https://en.wikipedia.org/wiki/Zoetrope) (1834) and [praxinoscope](https://en.wikipedia.org/wiki/Praxinoscope) (1877). The common [flip book](https://en.wikipedia.org/wiki/Flip_book) were early animation devices that produced an illusion of movement from a series of sequential drawings, animation did not develop further until the advent of [motion picture film](https://en.wikipedia.org/wiki/Film) and [cinematography](https://en.wikipedia.org/wiki/Cinematography) in the 1890s.[[5]](https://en.wikipedia.org/wiki/Animation#cite_note-Soloman10-11-6)

The [cinématographe](https://en.wikipedia.org/wiki/Cin%C3%A9matographe" \o "Cinématographe) was a projector, printer, and camera in one machine that allowed moving pictures to be shown successfully on a screen which was invented by history's earliest film makers, [Auguste and Louis Lumière](https://en.wikipedia.org/wiki/Auguste_and_Louis_Lumi%C3%A8re), in 1894.[[6]](https://en.wikipedia.org/wiki/Animation#cite_note-UCLA-7) The first animated projection (screening) was created in France, by [Charles-Émile Reynaud](https://en.wikipedia.org/wiki/Charles-%C3%89mile_Reynaud), who was a French science teacher. Reynaud created the Praxinoscope in 1877 and the Théâtre Optique in December 1888.[[7]](https://en.wikipedia.org/wiki/Animation#cite_note-Solomon8.E2.80.939-8) On 28 October 1892, he projected the first animation in public, [*Pauvre Pierrot*](https://en.wikipedia.org/wiki/Pauvre_Pierrot), at the Musée Grévin in Paris. This film is also notable as the first known instance of film perforations being used. His films were not photographed, they were drawn directly onto the transparent strip. In 1900, more than 500,000 people had attended these screenings.

Computer animation has become popular since Toy Story (1995), the first feature length animated film completely made using this technique.

**Techniques**

**Traditional animation:**

**Traditional animation (also called cel animation or hand-drawn animation) was the process used for most animated films of the 20th century. The individual frames of a traditionally animated film are photographs of drawings, first drawn on paper. To create the illusion of movement, each drawing differs slightly from the one before it. The animators' drawings are traced or photocopied onto transparent acetate sheets called cels, which are filled in with paints in assigned colors or tones on the side opposite the line drawings. The completed character cels are photographed one-by-one against a painted background by a rostrum camera onto motion picture film.**

**The traditional cel animation process became obsolete by the beginning of the 21st century. Today, animators' drawings and the backgrounds are either scanned into or drawn directly into a computer system. Various software programs are used to color the drawings and simulate camera movement and effects. The final animated piece is output to one of several delivery media, including traditional 35 mm film and newer media with digital video. The "look" of traditional cel animation is still preserved, and the character animators' work has remained essentially the same over the past 70 years.Some animation producers have used the term "tradigital" to describe cel animation which makes extensive use of computer technologies.**

* **Full animation refers to the process of producing high-quality traditionally animated films that regularly use detailed drawings and plausible movement,**[**]**](https://en.wikipedia.org/wiki/Animation#cite_note-Culhane71-29)**having a smooth animation. Fully animated films can be made in a variety of styles, from more realistically animated works those produced by the**[**Walt Disney studio**](https://en.wikipedia.org/wiki/Walt_Disney_Animation_Studios)**(**[***The Little Mermaid***](https://en.wikipedia.org/wiki/The_Little_Mermaid_(1989_film))**, *Beauty and the Beast*,**[***Aladdin***](https://en.wikipedia.org/wiki/Aladdin_(1992_Disney_film))**,**[***The Lion King***](https://en.wikipedia.org/wiki/The_Lion_King)**) to the more 'cartoon' styles of the**[**Warner Bros. animation studio**](https://en.wikipedia.org/wiki/Warner_Bros._Cartoons)**. Many of the**[**Disney animated features**](https://en.wikipedia.org/wiki/Disney_animated_features)**are examples of full animation, as are non-Disney works,**[***The Secret of NIMH***](https://en.wikipedia.org/wiki/The_Secret_of_NIMH)**(US, 1982),**[***The Iron Giant***](https://en.wikipedia.org/wiki/The_Iron_Giant)**(US, 1999), and *[Nocturna](https://en.wikipedia.org/wiki/Nocturna_(Film)" \o "Nocturna (Film))* (Spain, 2007).**
* [**Limited animation**](https://en.wikipedia.org/wiki/Limited_animation)**involves the use of less detailed or more stylized drawings and methods of movement usually a choppy or "skippy" movement animation. Pioneered by the artists at the American studio**[**United Productions of America**](https://en.wikipedia.org/wiki/United_Productions_of_America)**, limited animation can be used as a method of stylized artistic expression, as in**[***Gerald McBoing-Boing***](https://en.wikipedia.org/wiki/Gerald_McBoing-Boing)**(US, 1951),**[***Yellow Submarine***](https://en.wikipedia.org/wiki/Yellow_Submarine_(1968_film))**(UK, 1968), and the**[**anime**](https://en.wikipedia.org/wiki/Anime)**produced in Japan. Its primary use, however, has been in producing cost-effective animated content for media for television (the work of**[**Hanna-Barbera**](https://en.wikipedia.org/wiki/Hanna-Barbera)**,**[**Filmation**](https://en.wikipedia.org/wiki/Filmation)**, and other TV animation studios) and later**[**the Internet**](https://en.wikipedia.org/wiki/The_Internet)**(**[**web cartoons**](https://en.wikipedia.org/wiki/Web_cartoon)**).**
* [**Rotoscoping**](https://en.wikipedia.org/wiki/Rotoscoping)**is a technique patented by**[**Max Fleischer**](https://en.wikipedia.org/wiki/Max_Fleischer)**in 1917 where animators trace live-action movement, frame by frame. The source film can be directly copied from actors' outlines into animated drawings, as in**[***The Lord of the Rings***](https://en.wikipedia.org/wiki/The_Lord_of_the_Rings_(1978_film))**(US, 1978), or used in a stylized and expressive manner, as in**[***Waking Life***](https://en.wikipedia.org/wiki/Waking_Life)**(US, 2001) and**[***A Scanner Darkly***](https://en.wikipedia.org/wiki/A_Scanner_Darkly_(film))**(US, 2006). Some other examples are:**[***Fire and Ice***](https://en.wikipedia.org/wiki/Fire_and_Ice_(1983_film))**(US, 1983),**[***Heavy Metal***](https://en.wikipedia.org/wiki/Heavy_Metal_(film))**(1981), and *[Aku no Hana](https://en.wikipedia.org/wiki/The_Flowers_of_Evil_(manga)" \o "The Flowers of Evil (manga))* (2013).**
* [**Live-action/animation**](https://en.wikipedia.org/wiki/Films_with_live_action_and_animation)**is a technique combining hand-drawn characters into live action shots or live action actors into animated shots. One of the earlier uses was in**[**Koko the Clown**](https://en.wikipedia.org/wiki/Koko_the_Clown)**when Koko was drawn over live action footage. Other examples include**[***Who Framed Roger Rabbit***](https://en.wikipedia.org/wiki/Who_Framed_Roger_Rabbit)**(US, 1988),**[***Space Jam***](https://en.wikipedia.org/wiki/Space_Jam)**(US, 1996) and**[***Osmosis Jones***](https://en.wikipedia.org/wiki/Osmosis_Jones)**(US, 2001).**

### Stop motion animation:

**Stop-motion animation is used to describe animation created by physically manipulating real-world objects and photographing them one frame of film at a time to create the illusion of movement. There are many different types of stop-motion animation, usually named after the medium used to create the animation. Computer software is widely available to create this type of animation; however, traditional stop motion animation is usually less expensive and time-consuming to produce than current computer animation.**

**Puppet animation typically involves stop-motion puppet figures interacting in a constructed environment, in contrast to real-world interaction in model animation. The puppets generally have an armature inside of them to keep them still and steady to constrain their motion to particular joints. Examples include The Tale of the Fox (France, 1937), The Nightmare Before Christmas (US, 1993), Corpse Bride (US, 2005), Coraline (US, 2009), the films of Jiří Trnka and the adult animated sketch-comedy television series Robot Chicken (US, 2005–present).**

**Puppetoon, created using techniques developed by George Pal, are puppet-animated films which typically use a different version of a puppet for different frames, rather than simply manipulating one existing puppet.**

**A clay animation scene from a Finnish television commercial**

**Clay animation, or Plasticine animation (often called claymation, which, however, is a trademarked name), uses figures made of clay or a similar malleable material to create stop-motion animation. The figures may have an armature or wire frame inside, similar to the related puppet animation , that can be manipulated to pose the figures. Alternatively, the figures may be made entirely of clay, in the films of Bruce Bickford, where clay creatures morph into a variety of different shapes. Examples of clay-animated works include The Gumby Show (US, 1957–1967) Morph shorts (UK, 1977–2000), Wallace and Gromit shorts (UK, as of 1989), Jan Švankmajer's Dimensions of Dialogue (Czechoslovakia, 1982), The Trap Door (UK, 1984). Films include Wallace & Gromit: The Curse of the Were-Rabbit, Chicken Run and The Adventures of Mark Twain.**

**Strata-cut animation, Strata-cut animation is most commonly a form of clay animation in which a long bread-like "loaf" of clay, internally packed tight and loaded with varying imagery, is sliced into thin sheets, with the animation camera taking a frame of the end of the loaf for each cut, eventually revealing the movement of the internal images within.**

**Cutout animation is a type of stop-motion animation produced by moving two-dimensional pieces of material paper or cloth. Examples include Terry Gilliam's animated sequences from Monty Python's Flying Circus (UK, 1969–1974); Fantastic Planet (France/Czechoslovakia, 1973) ; Tale of Tales (Russia, 1979), The pilot episode of the adult television sitcom series (and sometimes in episodes) of South Park (US, 1997) and the music video Live for the moment, from Verona Riots band (produced by Alberto Serrano and Nívola Uyá, Spain 2014).**

**Silhouette animation is a variant of cutout animation in which the characters are backlit and only visible as silhouettes. Examples include The Adventures of Prince Achmed (Weimar Republic, 1926) and Princes et princesses (France, 2000).**

**Go motion is a variant of model animation that uses various techniques to create motion blur between frames of film, which is not present in traditional stop-motion. The technique was invented by Industrial Light & Magic and Phil Tippett to create special effects scenes for the film The Empire Strikes Back(1980).Another example is the dragon named "Vermithrax" from Dragonslayer (1981 film).**

**Object animation refers to the use of regular inanimate objects in stop-motion animation, as opposed to specially created items.**

**Graphic animation uses non-drawn flat visual graphic material (photographs, newspaper clippings, magazines, etc.), which are sometimes manipulated frame-by-frame to create movement.At other times, the graphics remain stationary, while the stop-motion camera is moved to create on-screen action.**

**Brickfilm A subgenre of object animation involving using Lego or other similar brick toys to make an animation. These have had a recent boost in popularity with the advent of video sharing sites, YouTube and the availability of cheap cameras and animation software.**

**Pixilation involves the use of live humans as stop motion characters. This allows for a number of surreal effects, including disappearances and reappearances, allowing people to appear to slide across the ground, and other effects. Examples of pixilation include The Secret Adventures of Tom Thumb and Angry Kid shorts.**

**Computer animation:**

**Main article: Computer animation**

**Computer animation encompasses a variety of techniques, the unifying factor being that the animation is created digitally on a computer. 2D animation techniques tend to focus on image manipulation while 3D techniques usually build virtual worlds in which characters and objects move and interact.3D animation can create images that seem real to the viewer.**

2D animation

**A 2D animation of two circles joined by a chain**

**2D animation figures are created or edited on the computer using 2D bitmap graphics or created and edited using 2D vector graphics.[ This includes automated computerized versions of traditional animation techniques, interpolated morphing, onion skinning and interpolated rotoscoping.**

**2D animation has many applications, including analog computer animation, Flash animation and PowerPoint animation. Cinemagraphs are still photographs in the form of an animated GIF file of which part is animated.**

**Final line advection animation is a technique used in 2d animation,[61] to give artists and animators more influence and control over the final product as everything is done within the same department. Speaking about using this approach in Paperman, John Kahrs said that "Our animators can change things, actually erase away the CG underlayer if they want, and change the profile of the arm."**

3D animation

**Main articles: Computer animation and 3D computer graphics**

**3D animation is digitally modeled and manipulated by an animator. The animator usually starts by creating a 3D polygon mesh to manipulate. A mesh typically includes many vertices that are connected by edges and faces, which give the visual appearance of form to a 3D object or 3D environment. Sometimes, the mesh is given an internal digital skeletal structure called an armature that can be used to control the mesh by weighting the vertices. This process is called rigging and can be used in conjunction with keyframes to create movement.**

**Other techniques can be applied, mathematical functions (e.g., gravity, particle simulations), simulated fur or hair, and effects, fire and water simulations.These techniques fall under the category of 3D dynamics.**

**3D terms**

**Cel-shaded animation is used to mimic traditional animation using computer software. Shading looks stark, with less blending of colors. Examples include, Skyland (2007, France), The Iron Giant (1999, United States), Futurama (Fox, 1999) Appleseed Ex Machina (2007, Japan), The Legend of Zelda: The Wind Waker (2002, Japan)**

**Machinima – Films created by screen capturing in video games and virtual worlds.**

**Motion capture is used when live-action actors wear special suits that allow computers to copy their movements into CG characters. Examples include Polar Express (2004, US), Beowulf (2007, US), A Christmas Carol (2009, US), The Adventures of Tintin (film) (2011, US) kochadiiyan (2014, India).**

**Photo-realistic animation is used primarily for animation that attempts to resemble real life, using advanced rendering that mimics in detail skin, plants, water, fire, clouds, etc. Examples include Up (2009, US), How to Train Your Dragon (2010, US), Ice Age (2002, US).**

### Mechanical animation:

Animatronics i**s the use of mechatronics to create machines which seem animate rather than robotic.**

Audio-Animatronics **and** Autonomatronics **is a form of robotics animation, combined with 3-D animation, created by Walt Disney Imagineering for shows and attractions at Disney theme parks move and make noise (generally a recorded speech or song). They are fixed to whatever supports them. They can sit and stand, and they cannot walk. An Audio-Animatron is different from an android-type robot in that it uses prerecorded movements and sounds, rather than responding to external stimuli. In 2009, Disney created an interactive version of the technology called Autonomatronics.**

Linear Animation **Generator is a form of animation by using static picture frames installed in a tunnel or a shaft. The animation illusion is created by putting the viewer in a linear motion, parallel to the installed picture frames. The concept and the technical solution, were invented in 2007 by Mihai Girlovan in Romania.**

Chuckimation **is a type of animation created by the makers of the television series Action League Now! in which characters/props are thrown, or chucked from off camera or wiggled around to simulate talking by unseen hands.**

Puppetry **is a form of theatre or performance animation that involves the manipulation of puppets. It is very ancient, and is believed to have originated 3000 years BC. Puppetry takes many forms, they all share the process of animating inanimate performing objects.**

**12 Principles of Animation**

This action gives the illusion of weight and volume to a character as it moves. Also squash and stretch is useful in animating dialogue and doing facial expressions. How extreme the use of squash and stretch is, depends on what is required in animating the scene. Usually it's broader in a short style of picture and subtler in a feature. It is used in all forms of character animation from a bouncing ball to the body weight of a person walking. This is the most important element you will be required to master and will be used often.

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| ***2. ANTICIPATION*** |

This movement prepares the audience for a major action the character is about to perform, such as, starting to run, jump or change expression. A dancer does not just leap off the floor. A backwards motion occurs before the forward action is executed. The backward motion is the anticipation. A comic effect can be done by not using anticipation after a series of gags that used anticipation. Almost all real action has major or minor anticipation such as a pitcher's wind-up or a golfers' back swing. Feature animation is often less broad than short animation unless a scene requires it to develop a characters personality.

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| ***3. STAGING*** |

A pose or action should clearly communicate to the audience the attitude, mood, reaction or idea of the character as it relates to the story and continuity of the story line. The effective use of long, medium, or close up shots, as well as camera angles also helps in telling the story. There is a limited amount of time in a film, so each sequence, scene and frame of film must relate to the overall story. Do not confuse the audience with too many actions at once. Use one action clearly stated to get the idea across, unless you are animating a scene that is to depict clutter and confusion. Staging directs the audience's attention to the story or idea being told. Care must be taken in background design so it isn't obscuring the animation or competing with it due to excess detail behind the animation. Background and animation should work together as a pictorial unit in a scene.

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***4. STRAIGHT AHEAD AND POSE TO POSE ANIMATION*** Straight ahead animation starts at the first drawing and works drawing to drawing to the end of a scene. You can lose size, volume, and proportions with this method, but it does have spontaneity and freshness. Fast, wild action scenes are done this way. Pose to Pose is more planned out and charted with key drawings done at intervals throughout the scene. Size, volumes, and proportions are controlled better this way, as is the action. The lead animator will turn charting and keys over to his assistant. An assistant can be better used with this method so that the animator doesn't have to draw every drawing in a scene. An animator can do more scenes this way and concentrate on the planning of the animation. Many scenes use a bit of both methods of animation.

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| ***5. FOLLOW THROUGH AND OVERLAPPING ACTION*** |

When the main body of the character stops all other parts continue to catch up to the main mass of the character, such as arms, long hair, clothing, coat tails or a dress, floppy ears or a long tail (these follow the path of action). Nothing stops all at once. This is follow through. Overlapping action is when the character changes direction while his clothes or hair continues forward. The character is going in a new direction, to be followed, a number of frames later, by his clothes in the new direction. "DRAG," in animation, for example, would be when Goofy starts to run, but his head, ears, upper body, and clothes do not keep up with his legs. In features, this type of action is done more subtly. Example: When Snow White starts to dance, her dress does not begin to move with her immediately but catches up a few frames later. Long hair and animal tail will also be handled in the same manner. Timing becomes critical to the effectiveness of drag and the overlapping action.

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| ***6. SLOW-OUT AND SLOW-IN*** |

As action starts, we have more drawings near the starting pose, one or two in the middle, and more drawings near the next pose. Fewer drawings make the action faster and more drawings make the action slower. Slow-ins and slow-outs soften the action, making it more life-like. For a gag action, we may omit some slow-out or slow-ins for shock appeal or the surprise element. This will give more snap to the scene. 

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| ***7. ARCS*** |

All actions, with few exceptions (such as the animation of a mechanical device), follow an arc or slightly circular path. This is especially true of the human figure and the action of animals. Arcs give animation a more natural action and better flow. Think of natural movements in the terms of a pendulum swinging. All arm movement, head turns and even eye movements are executed on an arcs.

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| ***8. SECONDARY ACTION*** |

This action adds to and enriches the main action and adds more dimension to the character animation, supplementing and/or re-enforcing the main action. Example: A character is angrily walking toward another character. The walk is forceful, aggressive, and forward leaning. The leg action is just short of a stomping walk. The secondary action is a few strong gestures of the arms working with the walk. Also, the possibility of dialogue being delivered at the same time with tilts and turns of the head to accentuate the walk and dialogue, but not so much as to distract from the walk action. All of these actions should work together in support of one another. Think of the walk as the primary action and arm swings, head bounce and all other actions of the body as secondary or supporting action.

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| ***9. TIMING*** |

Expertise in timing comes best with experience and personal experimentation, using the trial and error method in refining technique. The basics are: more drawings between poses slow and smooth the action. Fewer drawings make the action faster and crisper. A variety of slow and fast timing within a scene adds texture and interest to the movement. Most animation is done on twos (one drawing photographed on two frames of film) or on ones (one drawing photographed on each frame of film). Twos are used most of the time, and ones are used during camera moves such as trucks, pans and occasionally for subtle and quick dialogue animation. Also, there is timing in the acting of a character to establish mood, emotion, and reaction to another character or to a situation. Studying movement of actors and performers on stage and in films is useful when animating human or animal characters. This frame by frame examination of film footage will aid you in understanding timing for animation. This is a great way to learn from the others.

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| ***10. EXAGGERATION*** |

Exaggeration is not extreme distortion of a drawing or extremely broad, violent action all the time. Its like a caricature of facial features, expressions, poses, attitudes and actions. Action traced from live action film can be accurate, but stiff and mechanical. In feature animation, a character must move more broadly to look natural. The same is true of facial expressions, but the action should not be as broad as in a short cartoon style. Exaggeration in a walk or an eye movement or even a head turn will give your film more appeal. Use good taste and common sense to keep from becoming too theatrical and excessively animated.

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| ***11. SOLID DRAWING*** |

The basic principles of drawing form, weight, volume solidity and the illusion of three dimension apply to animation as it does to academic drawing. The way you draw cartoons, you draw in the classical sense, using pencil sketches and drawings for reproduction of life. You transform these into color and movement giving the characters the illusion of three-and four-dimensional life. Three dimensional is movement in space. The fourth dimension is movement in time.

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| ***12. APPEAL*** |

A live performer has charisma. An animated character has appeal. Appealing animation does not mean just being cute and cuddly. All characters have to have appeal whether they are heroic, villainous, comic or cute. Appeal, as you will use it, includes an easy to read design, clear drawing, and personality development that will capture and involve the audience's interest. Early cartoons were basically a series of gags strung together on a main theme. Over the years, the artists have learned that to produce a feature there was a need for story continuity, character development and a higher quality of artwork throughout the entire production. Like all forms of story telling, the feature has to appeal to the mind as well as to the eye.

Different types of animation

With lenticular printing, you can achieve many different effects. Depending on the number of images and the way they are interlaced, the result will have a different appearance. Most people are familiar with the typical flip animation. By changing the viewing angle you get to see two different images. However, there are many other applications, and below we give you a short explanation about the different possibilities.

**Flip images**

This is the simplest, but often the most effective form of lenticular printing. It consists of 2 or more images and can be produced for both horizontal (display walls) and vertical (postcards) applications. The viewing angle and the location of the person determine which image we get to see.

**Moving/Animation pictures**

This is a variant of the flip. Moving or animation pictures have on average 10 or more images woven together. The background image is stable, but the moving parts are printed in different places. By varying the viewing angle, one gets the impression that the image is moving.

**Zoom effect**

A real attention grabber is the zoom effect. When viewing the lenticular print from different angles, you get the impression that objects zoom in or out. In fact, the image is always the same, but it is interlaced in different sizes.

**Morphing images**

With this type of animation you create a transition from one image to another. The morphing takes place in different stages, so one gets the illusion that one object is gradually transforming into a different object. Good preparation of the images is crucial for a good effect. Morphing software is easy to find on the web.

**3D “depth” images**

Three-dimensional simulations are very popular these days. By creating depth in the image, it takes the visual experience to a higher level. Lenticular printing is the only solution allowing to see 3D images without the help of special 3D glasses.

Images with 3D simulations are more complex. However, simple 3D effects can easily be created in Adobe Photoshop. To add more depth, you can use special software tools like Autodesk 3D Studio Max or others like Maya, Lightwave 3D, Cinema 4D, etc…

Another interesting application is the creation of 3D images from live scenery or people. This can be achieved by means of a camera mounted on a sliding bar. The displacement and the number of shots will depend on the type of picture and the resolution of the used material.

# Types of Animation System

Computer animation is a branch of study in the area of computer graphics and animation technologies. It is a creative field that involves creating moving images (individual characters or real-life scenarios or both) by using various software and other animation tools. All these images are normally created on a computer and then can be converted into movies for big screen shows. Cartoons and animation pictures are an apt example of computer animation. 3-D animation that involves the use of three-dimensional effects is widely preferred. It makes the animated image look as natural as a real-life image.

**ASAS**

One of the popular scripting systems was ASAS (Actor Script Animation Language). The system introduced the concept of an actor. Every actor is an object that has its own animation rules. For example, the object 'car' is an object. It has an in-built coding that makes its wheel rotate in tandem while showing a moving image of the car. This reduces the effort to a great extent that now needs to focus on adding such obvious details.

**Behavioral Animation**

It involved defining the rules of behavior for every identified object or actor. For instance, a hungry dog looks gloomy.

**Procedural Animation**

Procedure is a type of system that shows a series of movement in a period of time. Here, the underlying principal is that of 'Cause and Effect.' For example, a speedy truck caused the roadside dustbin to fly in the air, which fell on the head of a sleeping man.

**Representational Animation**

This system allows an object to change its shape in different ways. This proves to be a inspiring and interesting system that adds value to this computer language.

**Stochastic Animation**

It involves the use of stochastic processes to co-ordinate groups of actors of an animating scene. For instance, a scene of rain involves clouds, rain drops, a wet person, etc.