

A blue parallelogram and a light green parallelogram are positioned on the left side of the slide, overlapping each other and the dark blue background. The blue shape is on the left, and the green shape is to its right, partially overlapping it.

# Squash + Stretch and Anticipation

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# Squash + Stretch





# Squash + Stretch

- One of the first and most significant revelations made by Disney animators was the concept of squash and stretch
- This idea was revolutionary for future animators for generations to come, and ultimately lead to the rest of the 12 principles.
- The main concept of squash and stretch was created to prevent characters from appearing too stiff and rigid, and to give characters more personality.

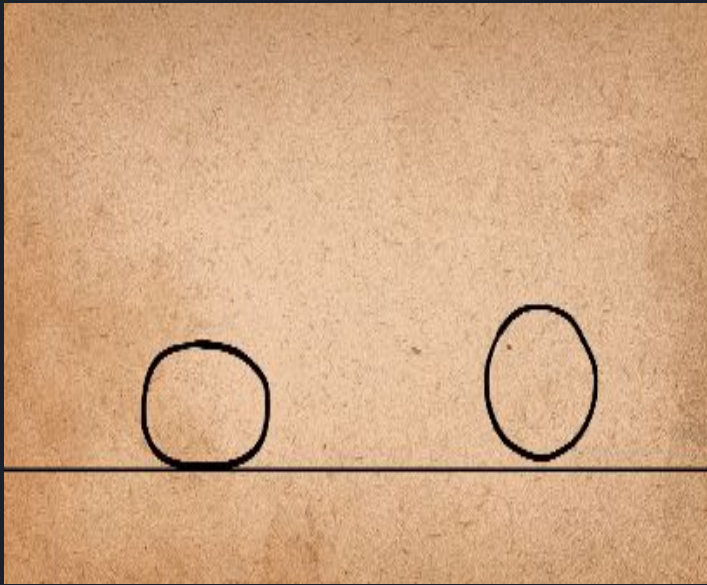


# Squash

- In animation, the concept of squashing occurs from frame to frame in order to create the illusion that a character or object is moving in a realistic but somewhat exaggerated way.
- The concept of squash and stretch involves drawing multiple frames of an object or character to make it contract and expand. Each drawing creates a sense of motion, flexibility and fluidity, deforming the nature of the shape in a way that is still completely recognizable.
- This is done most effectively by including distortions in every line and curve of the object or character. It is the little nuances that almost go unnoticed that create such natural motions.

# Squash

- For example, we see the difference squash and stretch can make in an animation of a bouncing ball, and how the one on the left looks less rigid and more pliable than the one on the right.



**SQUASH & STRETCH**



<https://madnats.files.wordpress.com/2016/09/squash-and-stretch01.gif?w=842>  
[https://aescrpts.com/media/catalog/product/p/a/parameter-squash-and-stretch\\_2\\_1.gif](https://aescrpts.com/media/catalog/product/p/a/parameter-squash-and-stretch_2_1.gif)

# Squash

- Here we see an animation of a rubber man; the squashing of his legs indicates the movement of blood and rubber elasticity for the sake of storytelling. After contraction it is followed by a stretch.



<https://i.makeagif.com/media/6-26-2015/W0ZcQA.gif>



# Stretch

- The second part of the Squash and Stretch principle is stretch, which, like squash, is meant to give a character or object the appearance of doing an action in a more fluid motion without losing the integrity of the original drawing (to the point that it is unrecognizable).
- It is important to consider just how much you want to stretch the object or character so that the animation doesn't end up appearing too rigid or too fluid; creating a balance is key.
- It is also important that once you stretch an animation, you must remember to squash it back down to create a dramatic but realistic effect.



# Stretch

- The reason that squash and stretch go hand in hand is because they are both the after effect of each other. Once you stretch something, it must be squashed back and vice versa.
- Additionally, while stretching an animation, it is important to note that certain parts of the body or object will be squashed as a result. An animator must take every part of the object or character into account, whether it's the shape of an arm getting skinnier and longer as it stretches, or the smaller details on a character's body stretching along with it.
- This attention to detail will make or break the believability of an animation and is therefore crucial to the animating process.



# Stretch

- For example, in the Tom and Jerry GIF on the left, we see Tom's body jumping up in fright, and as he does so, every part of his body stretches with him, from his eyes and ears to each line of fur on his body. As his body stretches, other parts squash and stretch in accordance to his movement.



<https://media.giphy.com/media/MLHzHuG02FVUQ/giphy.gif>



<https://media.giphy.com/media/MLHzHuG02FVUQ/giphy.gif>

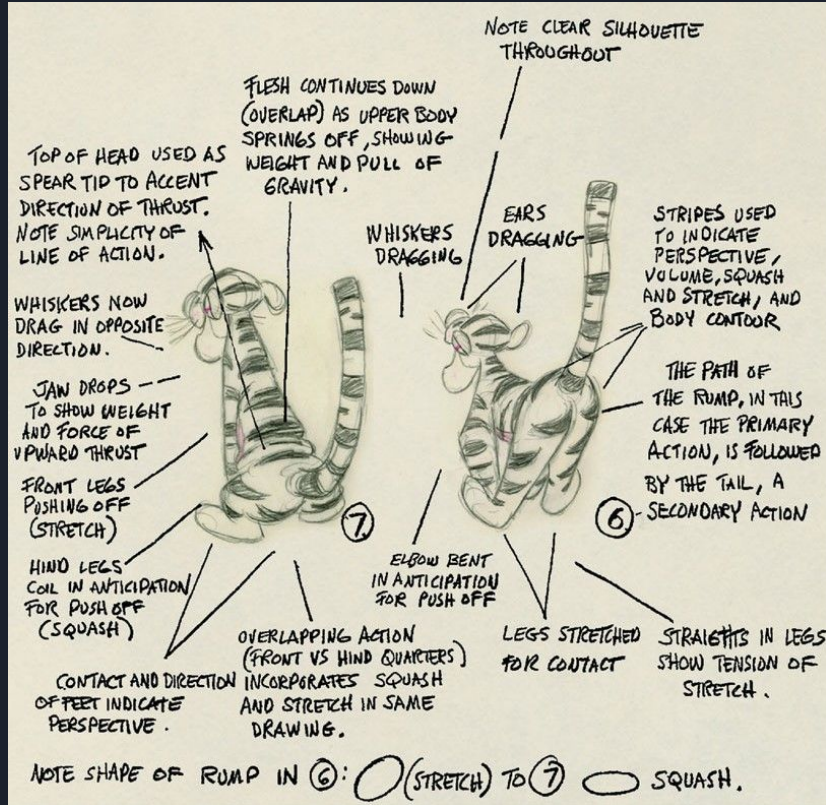
# Stretch

- Here we see a GIF of Tigger from Winnie the Pooh, and as he pulls on his ears, you see his ears stretch while the rest of his face squashes, including his eyes and the stripes on his face.
- This is an example of the cause and effect relationship between squash and stretch that animators focus on.

<https://media.giphy.com/media/RESorRHggFeSAg/giphy.gif>



# Squash + Stretch



- This diagram shows the detailed process of squash and stretch executed properly, taking note of every single part of Tigger's body.
- His stripes squash and stretch in various places depending on his position.
- In the sitting position, his bottom and legs are squashed down and can be perceived this way due to the folds of his fur, the shape of his bottom, and the way his stripes were drawn.
- When his bottom moves up, so do his whiskers, and vice versa when they go down.



# Squash

- <https://www.youtube.com/watch?v=wJL1oW6DICc>

# Anticipation

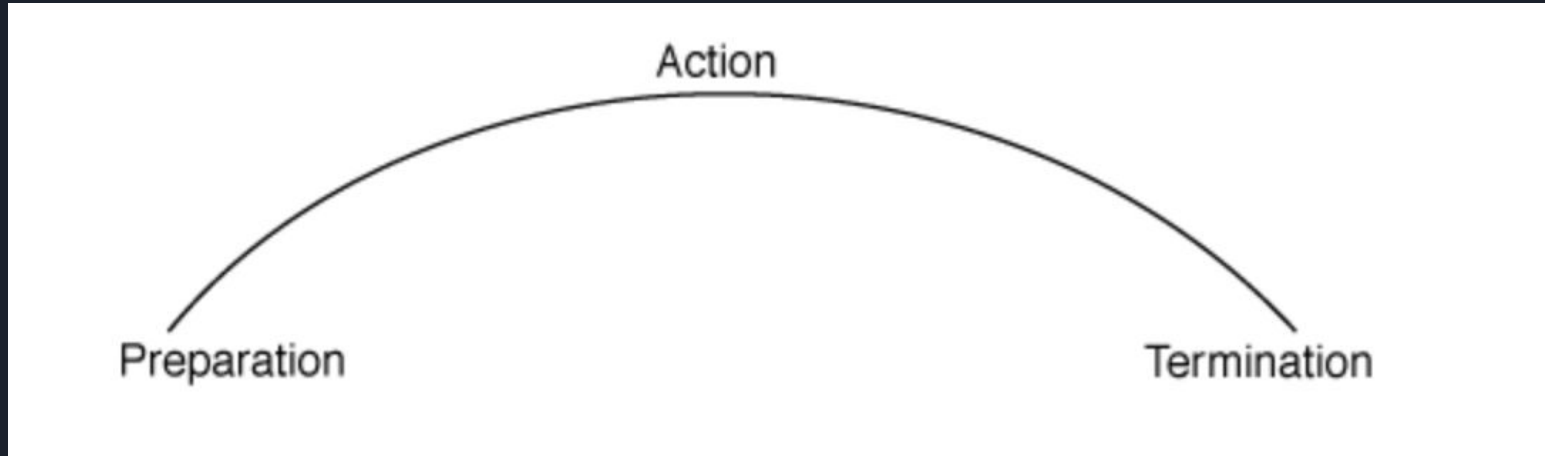




# Anticipation

To anticipate is to expect something to happen or to prepare for an action before it occurs.

- In animation, anticipation helps to set up movement for the next gesture, which gives the proceeding movements fluidity.
- The concept of anticipation foreshadows a movement without directly giving it away.
- During the early stages of animation, anticipation was referred to as “aiming.”



Anticipation occurs during the preparation stage of an action



Brown Bag Films



# Types of Anticipation

- There is a variety of ways to show anticipation. It can be demonstrated through small, expressive movements as well as more extreme full physical movements.
- You can see that in the GIF on the left, the girl's left eyebrow slightly raises before the rest of her facial expression changes. The brow raise sets off the rest of the action.
- The GIF on the right clearly demonstrates the extreme full physical movement of anticipation at the moment that the man first bends his knees down, which then continues with the release of the jump, similar to a spring.

Gif ->



Gif ->



These are another two examples of anticipation in a small expressive movement and in an extreme full physical movement.

- The cats' pupils enlarge as a small anticipation for the rest of the expressions.
- The boy displays anticipation the moment that he raises his right leg to give the idea that he's going to zoom out there.



[Gif ^](#)



[Gif ^](#)

# Citations:

- <https://www.evl.uic.edu/ralph/508S99/squash.html>
- <https://learn.toonboom.com/modules/animation-principles/topic/squash-and-stretch-principle>
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