



Animation Chef's

# White Hat Recipe Book

# Yellow Hat Recipes



# Yellow Hat Recipes

## Introduction



### What You Will Learn

In the Yellow Hat level you will learn how to combine the basic animation skills from the White Hat area into new variations. These intermediate level exercises will stretch your skills by requiring you to apply more than one principle at a time. You will learn new vocabulary, and basic recipe combinations used for common special effects and traditional animation cliches.

### Why Is This Important?

The cumulative effect of the Yellow Hat level recipes will leave the beginning animator confident in mixing and matching many animation principles simultaneously. Animators will be confident of their ability to tackle any challenge with imagination.



# Recipe 1: Parallax - Motor Boat



## What You Will Learn

By combining the *Spacing is speed*, and *Toggle* animation concepts, you can make this motor boat appear to move fast by creating a *parallax* effect. *Parallax* is the word used to describe the illusion of the foreground moving by really fast while the main thing, in this case the boat, stays still in the middle of the screen.

## Why Is This Important?

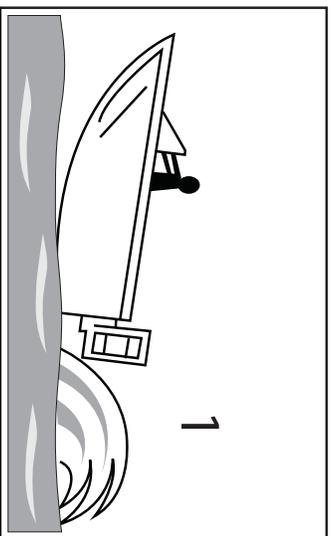
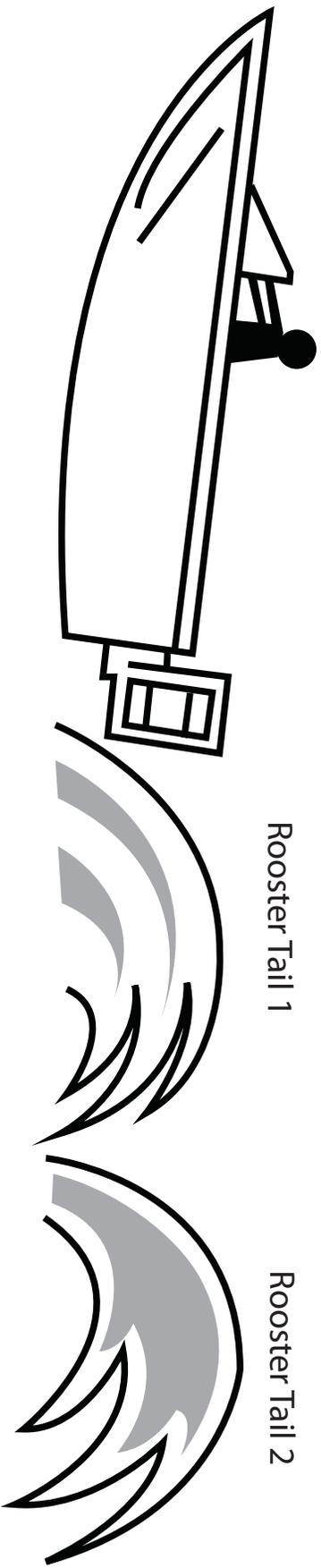
Understanding *parallax* requires the animator to think and plan from a point of view. *Parallax* is a way to focus the audiences attention on the main object or character in scenes with chases or rapidly moving backgrounds and foregrounds. It also requires the three basic animation concepts of *Loops*, *Spacing for speed*, and *Toggle* to be applied simultaneously.



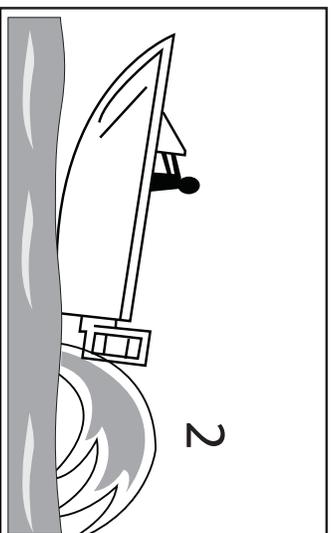
# Steps

## Parallax: Motorboat

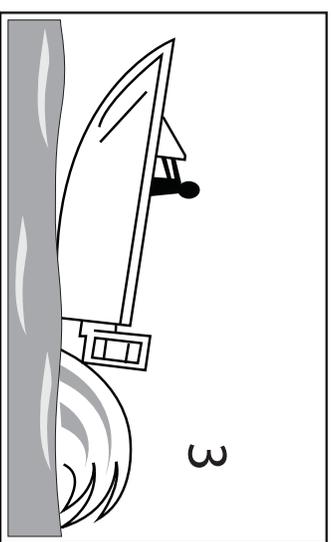
Set up waves as in storyboard #1. Take 1 picture. Move small light waves to right and swap in the other rooster tail in frame #2. Move small light waves again, as in storyboard #3. Swap in rooster tail and take 1 picture. Repeat a few more cycles and loop.



1



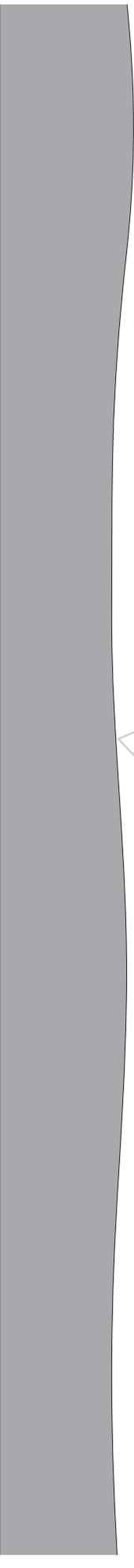
2



3

Small light waves

Use blue paper in this shape as the water's surface.



# Recipe 2: Parallax - Airplane with Clouds



## What You Will Learn

You will learn the spacing required to create the *Parallax* effect with items in the foreground and items in the background of a rapidly moving object. You will learn how to space out clouds surrounding an airplane so that the clouds in the background behave as if they are far away and the clouds in the foreground behave as if they are close up.

## Why Is This Important?

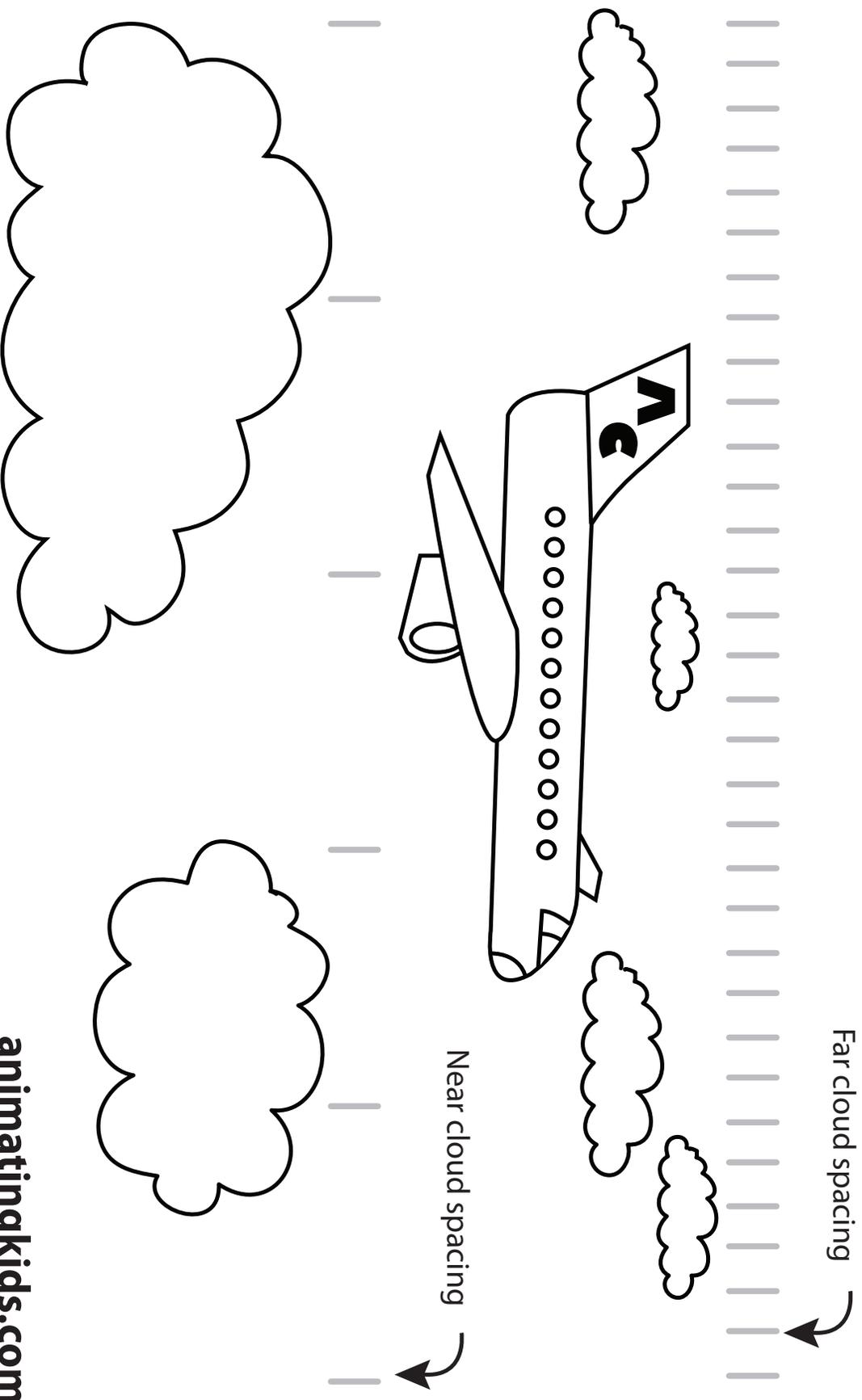
Looping the clouds with fast motion and slow motion spacing demonstrates the animator's ability to account for depth perception in a 2D space. *Parallax* is an illusion of perspective in motion. The beginning animator begins to think about the relation of the animation from the point of view of the camera.



# Parallax: Airplane with Clouds

## Steps

With the plane taped down in the middle of the scene, we are going to move the clouds right to left. Near clouds move fast along bottom notch spacing. Far away clouds move on top, closer notches.



# Recipe 3: Parallax Car



## What You Will Learn

You will learn to organize and keep track of multiple moving parts at the same time. *Parallax* with trees will help us create the illusion the car is moving fast. Additionally, you will *Toggle* two pictures of a road, and spin the tires randomly at the same time. This exercise will test organizational skills, depth perception, spacial skills, and sequential thinking.

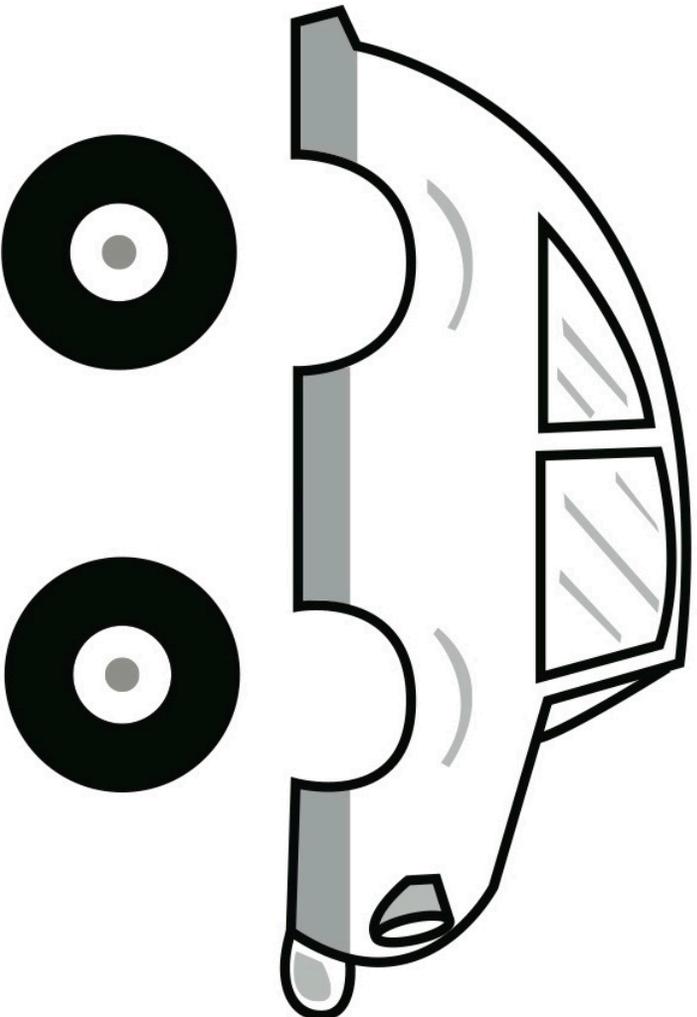
## Why Is This Important?

Keeping track of multiple elements at once is a must for an animator. This exercise uses 9 different cutouts to create parallax. You will be juggling five or six different items for each frame of this animation. Fortunately, this is stop motion animation, so it is impossible to "drop" anything you are juggling.

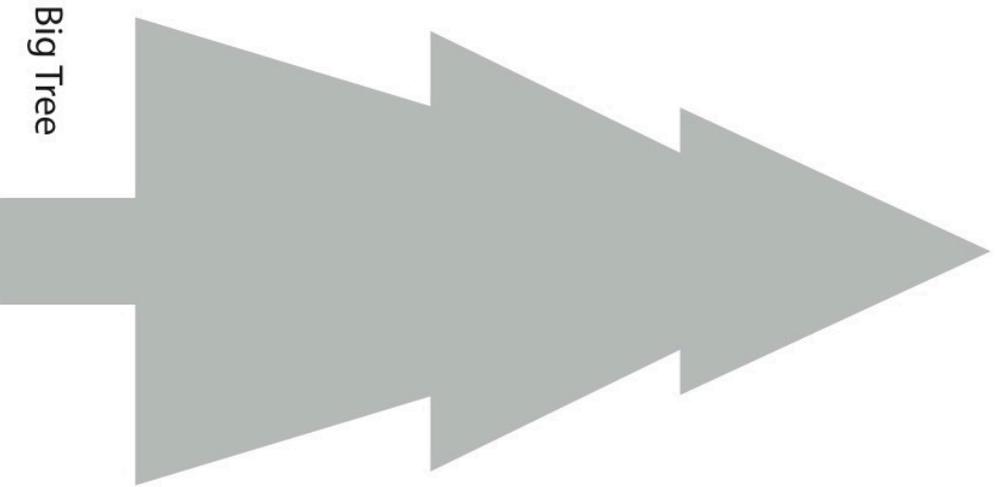


# Parallax: Page 1

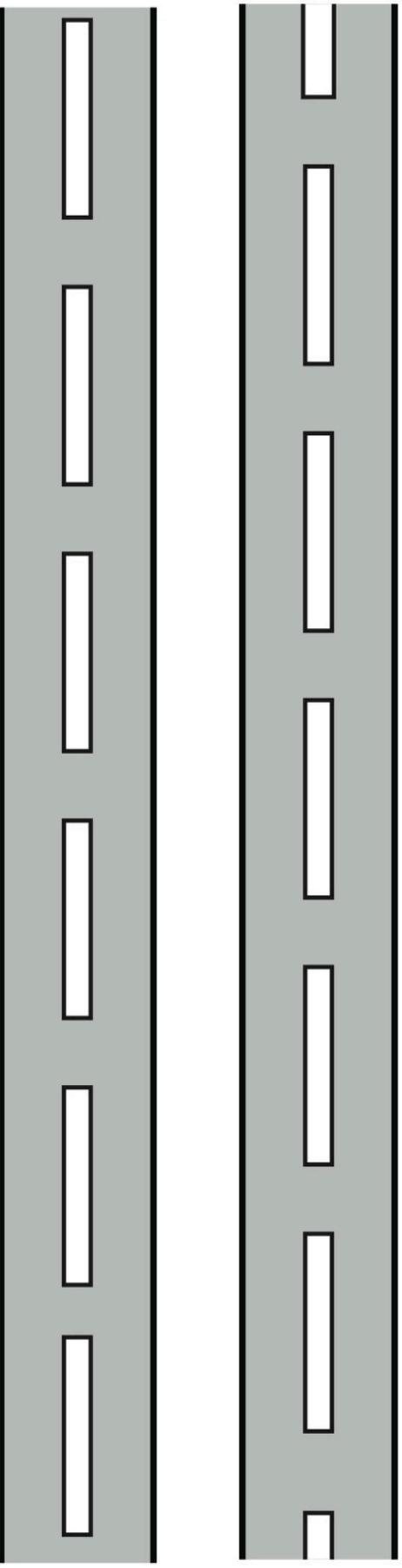
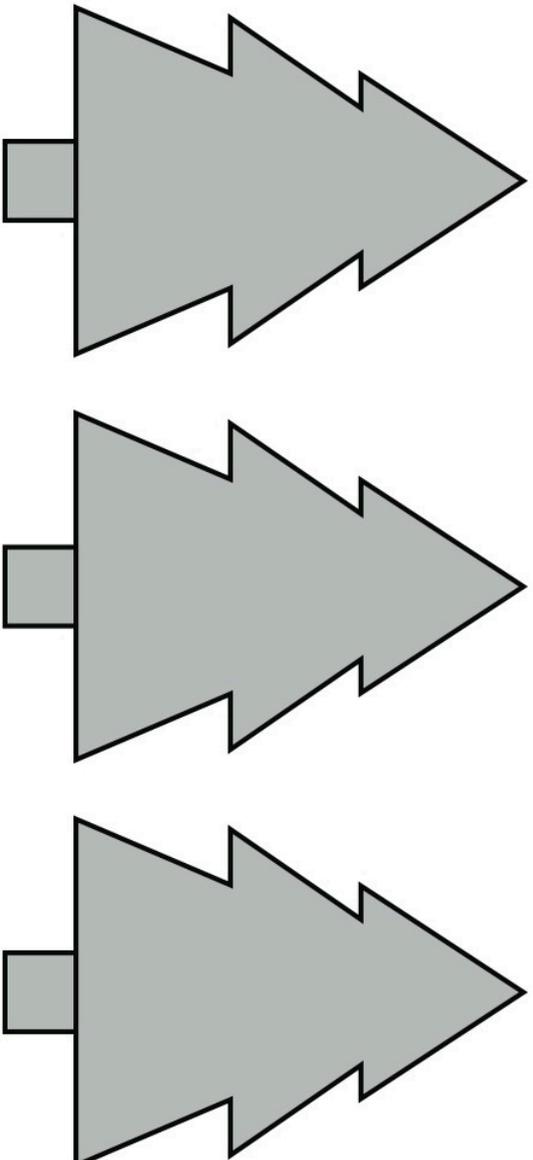
Car



Big Tree



# Parallax: Page 2



# Recipe 4: Moving Away



## What You Will Learn

You will learn how to make an object appear to be moving away from the camera even though it is animated in 2D. In this exercise, the flying saucer is in the foreground in the beginning. You will learn that to move an object to the background requires progressively smaller sizes of the same character timed and spaced in the correct sequence.

## Why Is This Important?

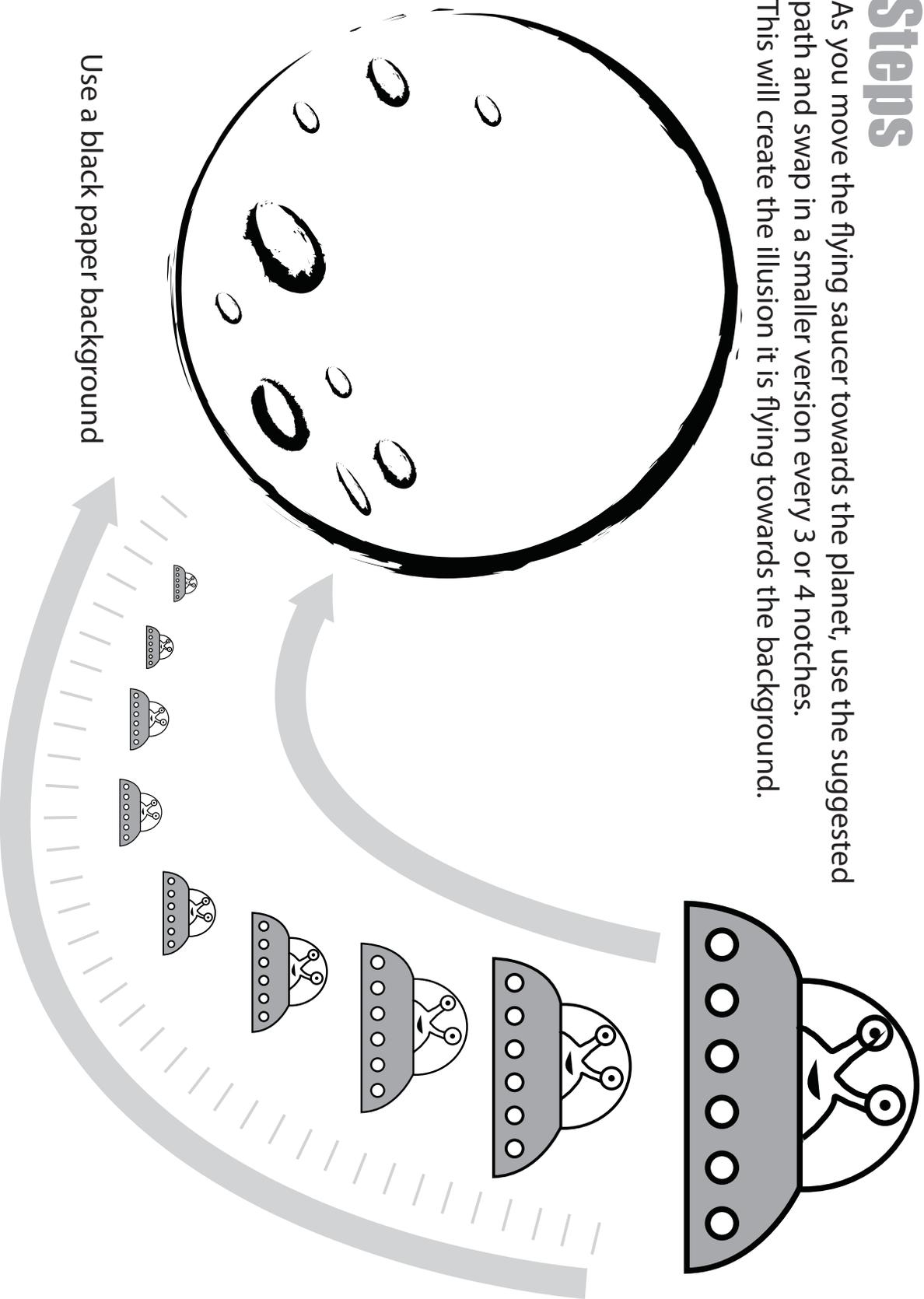
Having the experience of producing a 3rd dimension on a 2D surface is a useful skill. Using multiple sizes of the same character, along with proper timing and spacing, gives an animator the ability to bring another dimension to a table top. This is involved, but it is a great way to create the illusion of depth using cut-paper on a flat surface.



# Flying away = Getting smaller

## Steps

As you move the flying saucer towards the planet, use the suggested path and swap in a smaller version every 3 or 4 notches. This will create the illusion it is flying towards the background.



# Recipe 5: Moving Toward



## What You Will Learn

You will learn how to make a mosquito appear to be moving toward the camera even though it is animated in 2D. You will learn that in order to create an action which moves toward the camera, you will need multiple sizes of the same character timed and spaced in the correct sequence.

## Why Is This Important?

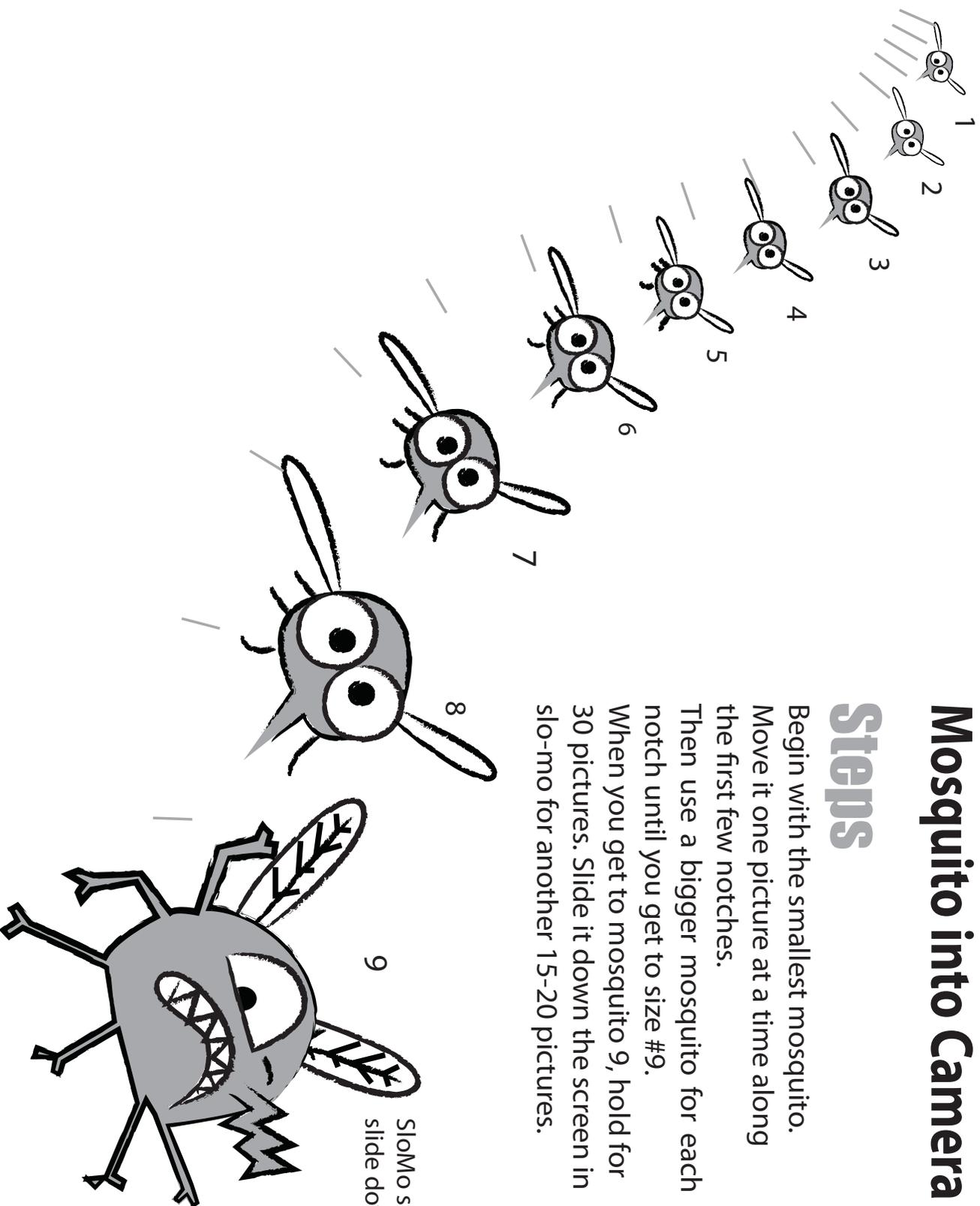
Like the flying saucer recipe, moving toward the viewer uses multiple sizes of the same character, along with proper timing and spacing. Yet another skilled way to create the illusion of depth with cut-paper on a flat surface.



# Mosquito into Camera Lens

## Steps

Begin with the smallest mosquito. Move it one picture at a time along the first few notches. Then use a bigger mosquito for each notch until you get to size #9. When you get to mosquito 9, hold for 30 pictures. Slide it down the screen in slo-mo for another 15-20 pictures.



SloMo spacing for slide down glass.



# Recipe 6: Small Explosion



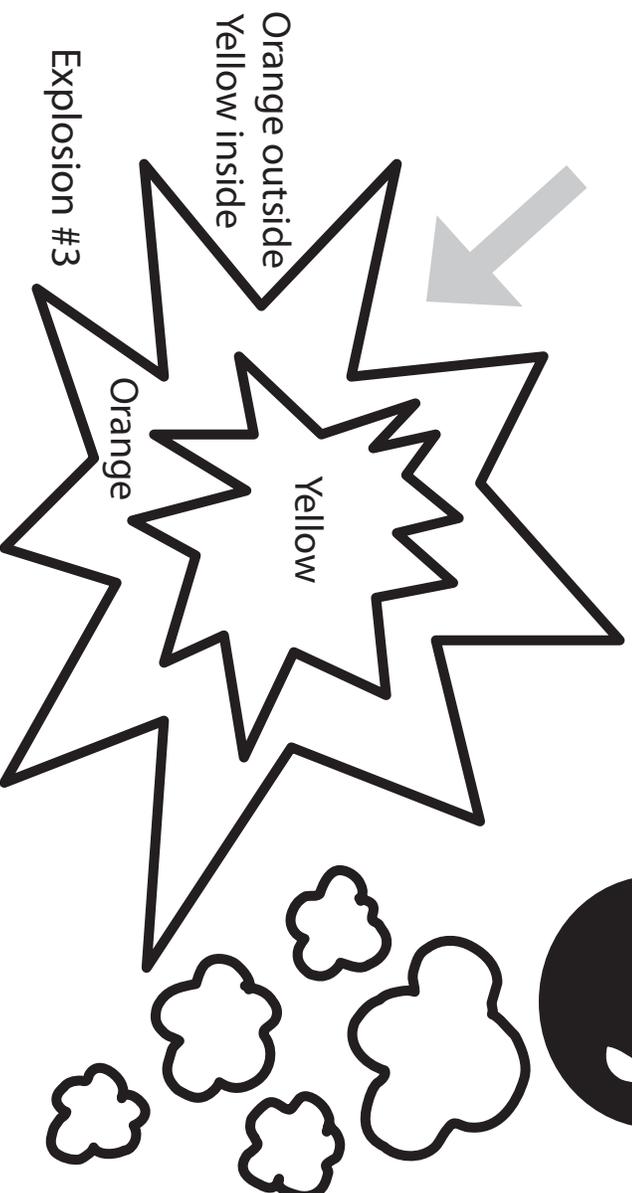
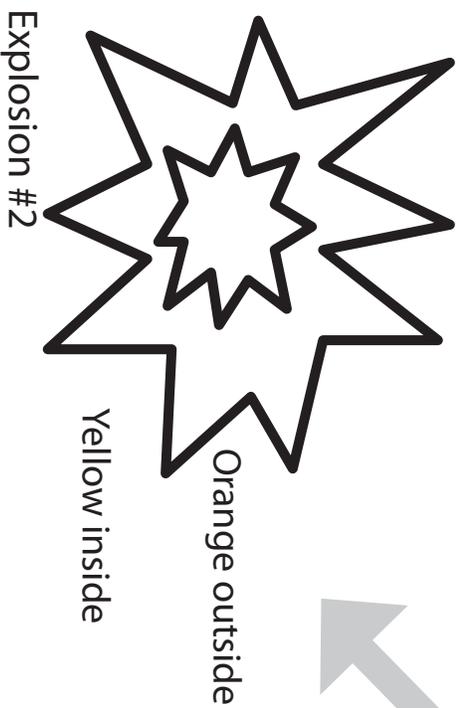
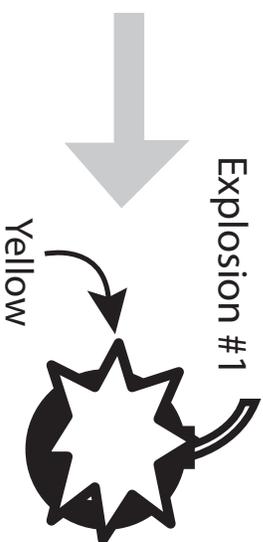
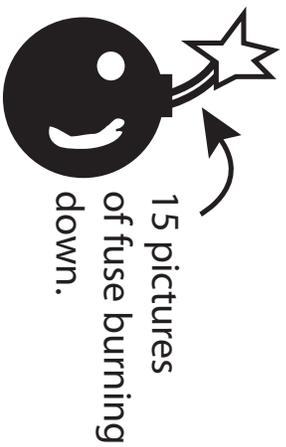
## What You Will Learn

You will learn how to use timing to create impact. A quick action like a small explosion requires careful attention to frames per second. You will learn how to create a speedy action which take place in one spot.

## Why Is This Important?

Sequencing and size ordering play out in a small explosion animation. This recipe requires fast timing. Up to this point, fast animation has been taught in horizontal or vertical directions. In an explosion the action happens in the same place. Swapping out the different sizes creates a crisp pop effect. Of course the sound is very important too, so don't skip that step. Boom!





# Explosion Small

## Step 1

Animate flame going down fuse one picture at a time for 15 pictures.

## Step 2

Overlay explosion # 1 over bomb.

## Step 3

Explosion #2 replaces #1 for 1 picture.

## Step 4

Explosion #3 replaces #2. Spin #3 for 3-5 pictures taking 1 picture after each spin.

## Step 5

Spread all puffy clouds around scene where #3 used to be and take 1 picture.

## Step 6

Subtract 1 cloud after each picture, until all clouds are gone. Take 15 pictures of nothingness.

# Recipe 7: Large Explosion



## What You Will Learn

Again, you will learn how to use timing to create impact. Only this time we are going to fill the space. A giant effect like a large explosion requires careful attention to frames per second. You will learn how to create a speedy action which will go from small to filling the screen in just a few frames.

## Why Is This Important?

Sequencing and size ordering play out in large explosion animations. In a large explosion the difference in the size of the paper is huge and is sometimes hard to get used to. Getting a new animator to make big bold moves is the purpose of this recipe. Remember sound is very important, make a big Boom!



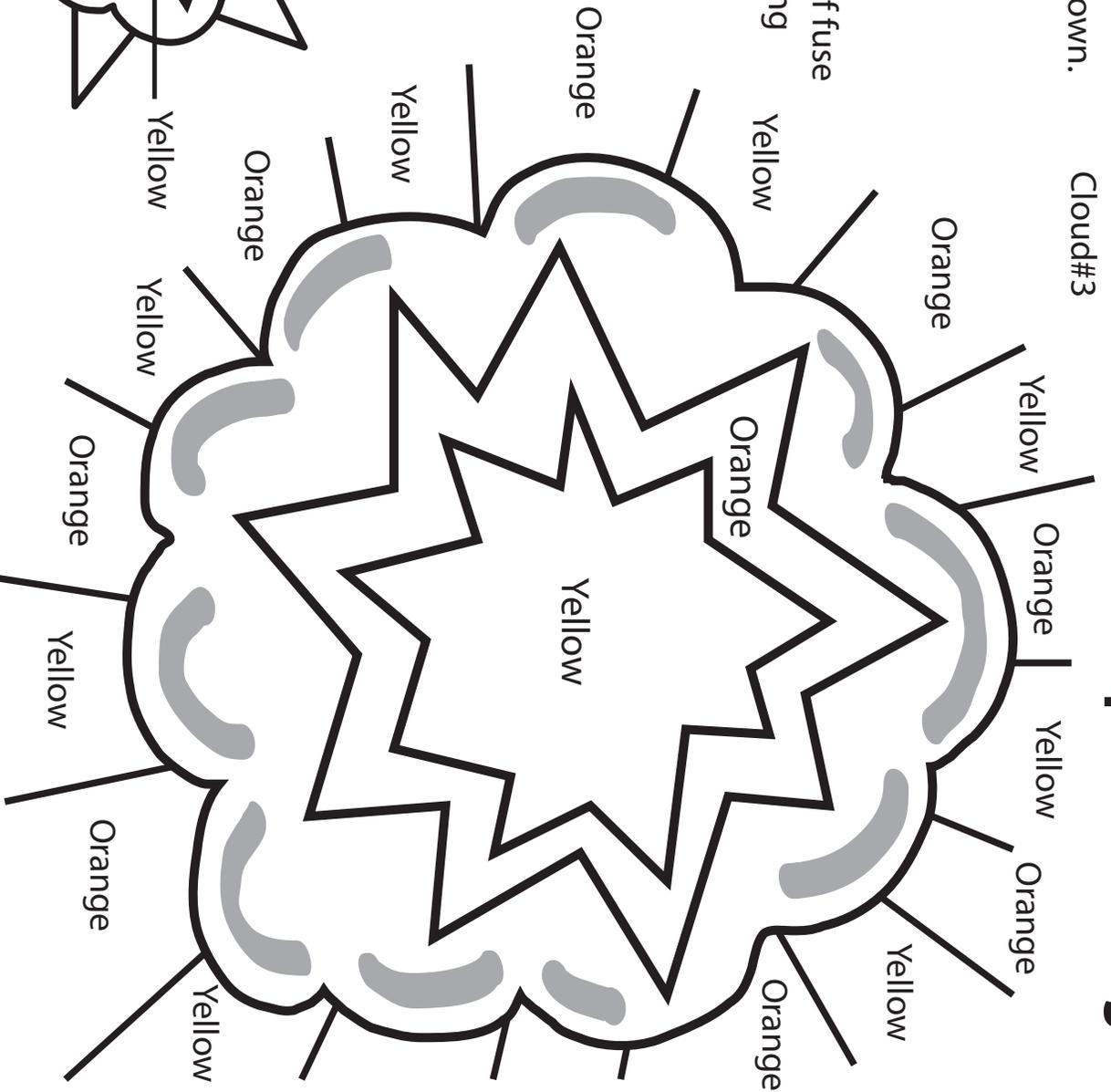
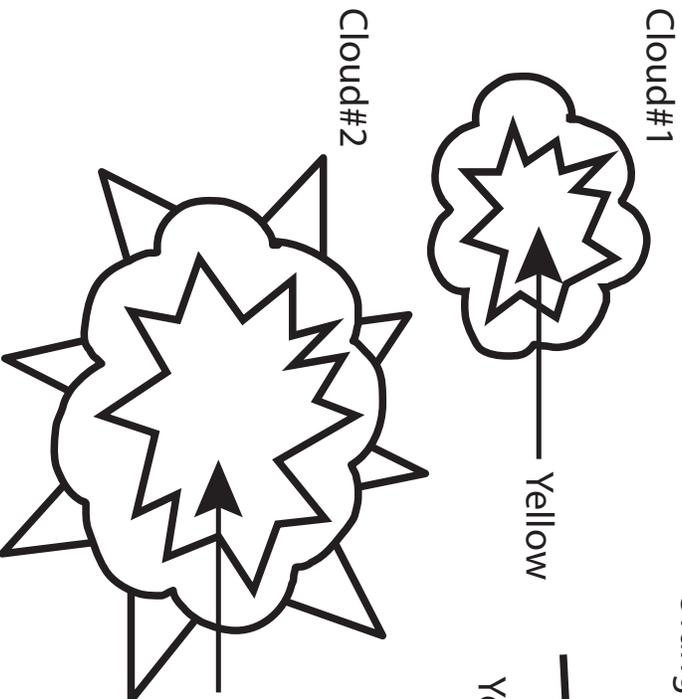
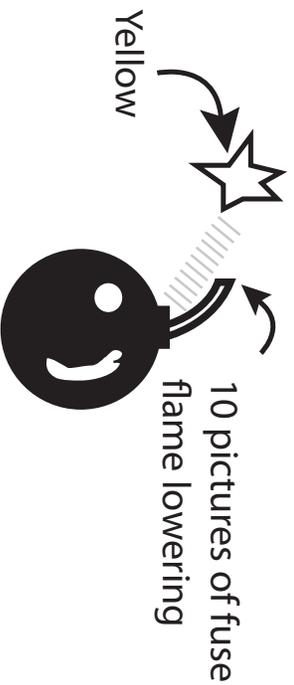
# Steps

Take 15 pictures of fuse burning down.

Cloud #1 for 1 picture.

Cloud #2 for 1 picture.

Cloud #3 Spin for 10-15 pictures.



# Explosion Large

# Recipe 8:

# Poof



## What You Will Learn

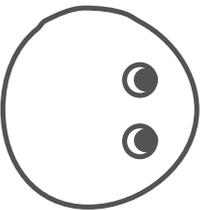
You will learn how to make a poof of clouds to make something disappear or appear. This is a variation on your explosion skills, only softer and more gentle. You will learn how size and timing combine to soften the explosion into a Poof!

## Why Is This Important?

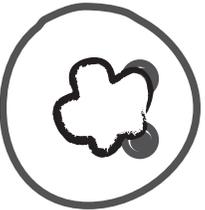
Unlike the earlier recipes for explosions, a poof grows in size and then shrinks. The disappearing effect a poof accomplishes is a great skill an animator will use often. Taking 15 pictures before and after the poof frames is very important. We need to see what is going to disappear before it disappears. Then we nothing after it has disappeared for at least a second, or 15 pictures. Get used to taking 15 pictures of nothing happening. It is a key timing principle.



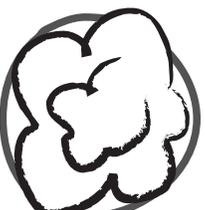
# Special Effects: Poof



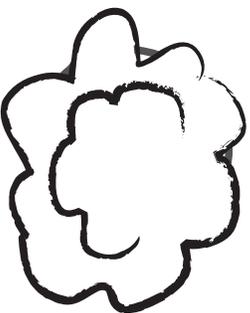
**Step 1**  
15 Pictures



**Step 2**  
1 Picture of  
Cloud 1



**Step 3**  
1 Picture of  
Cloud 2

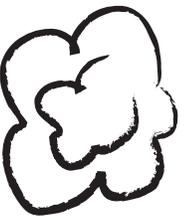


**Step 4**  
1 Picture of  
Cloud 3



**Step 5**

3 Pictures of cloud 4.  
Spin after each picture.



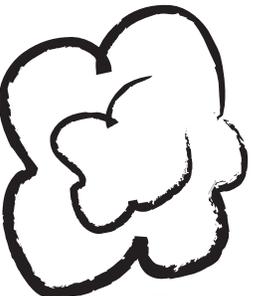
**Step 6**  
1 Picture of  
Cloud 2



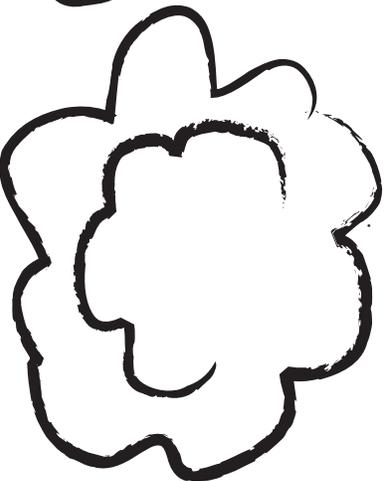
**Step 7**  
1 Picture of  
Cloud 1



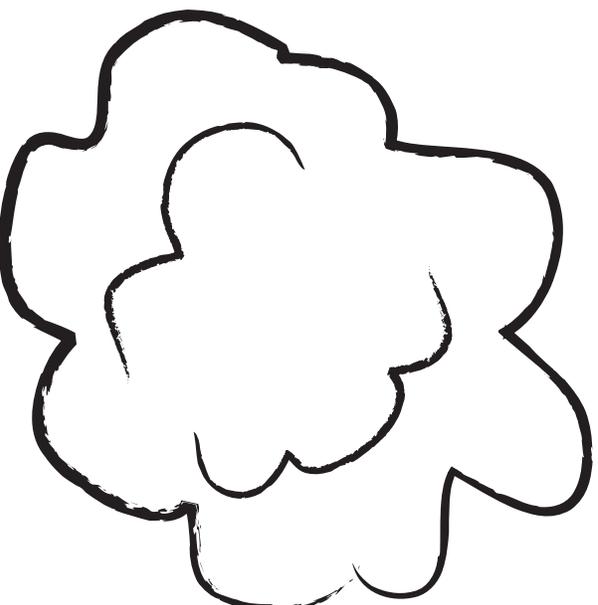
Cloud 1



Cloud 2



Cloud 3



Cloud 4

# Recipe 9: Fighting Cloud



## What You Will Learn

You will learn to cycle a loop of random arms, legs and eyes in a spinning cloud of conflict. The more chaotic the better. Timing and spacing are everything. You will create an effect cartoons have employed for decades.

## Why Is This Important?

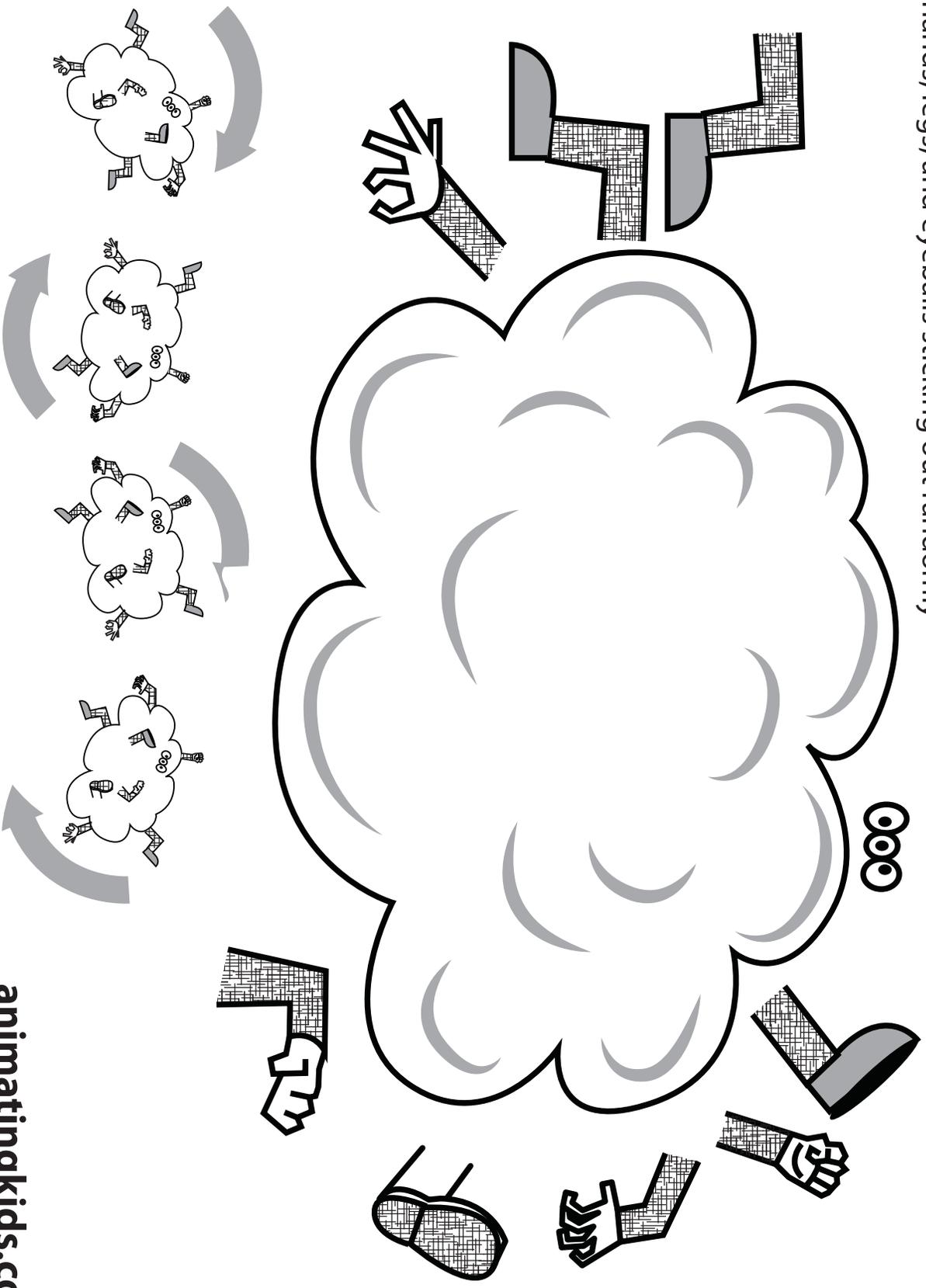
The large spinning frames of the clouds are the main motion. The arms, legs, and eyes are the overlapping action. This exercise taxes the ability of the animator to keep a big action going in an organized fashion, while smaller overlapping actions are random and chaotic. This involves the most animated bits yet. But it is easier than it looks because most of the bits are randomly placed.



# Steps

1 picture at a time, spin cloud and rearrange hands, legs, and eyeballs sticking out randomly

# Fighting Cloud



# Recipe 10: Falling Leaf



## What You Will Learn

You will learn to employ the *Speeding up* and *Slowing down* patterns to create a natural downward drifting transition from one direction to another with a light object. You will learn timing and spacing formulas to create natural transitions in speed and trajectory.

## Why Is This Important?

Creating the illusion of weight and mass can be difficult. A bouncing ball has mass, so it's speeding up and slowing down spacing is forceful and direct. A leaf uses speeding up and slowing down, but the direction of the spacing and the timing at the transition points suggests a light weight. Here the animator learns how to back off and let a soft slow animation reveal the heft of the object.



# Special Effect: Leaf Falling

## Steps

Move tip of leaf to along path at each notch until it zigs and zags to the ground.

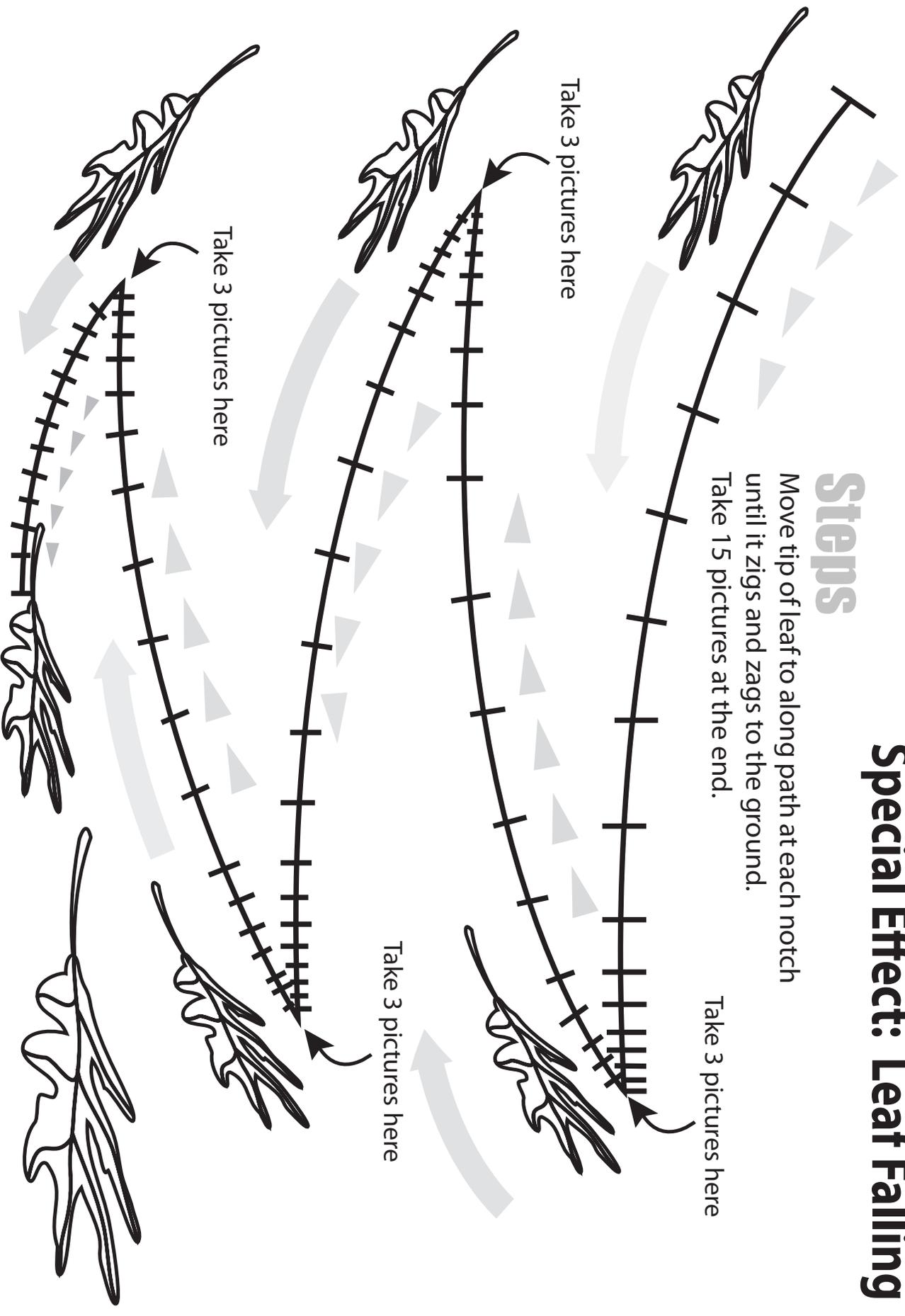
Take 15 pictures at the end.

Take 3 pictures here

Take 3 pictures here

Take 3 pictures here

Take 3 pictures here



# Recipe 11: Rocket Blast off



## What You Will Learn

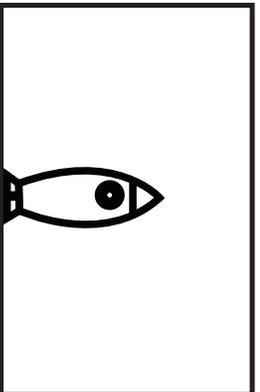
You will learn to create a liftoff animation for a rocket using *Toggle* for the flames and the *Speeding-up* formula for the smoke and the rocket.

## Why Is This Important?

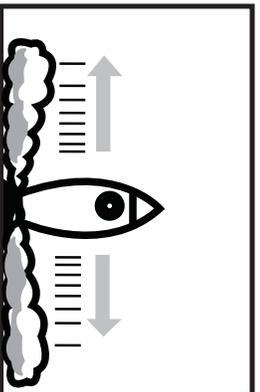
The sequence of this animation is important. The smoke is the *Wind-up* for the rocket launch. It happens first, then the rocket moves in the *Speeding-up* pattern. The flames *Toggle* on the bottom of the rocket. Three important animated bits in the right sequence help this recipe soar. Remember the sound!



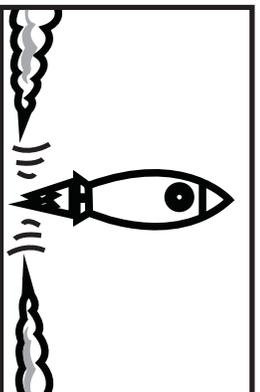
# Rocket Blast Off



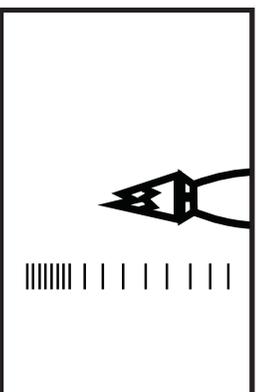
15 pictures



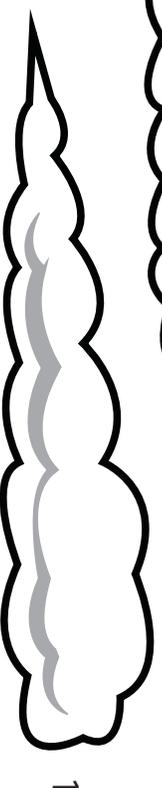
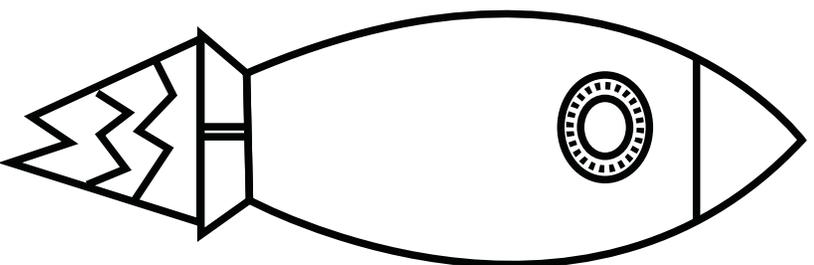
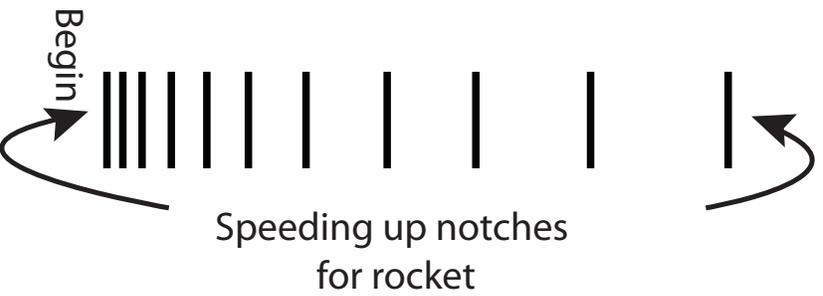
Overlap clouds on rocket. Then animate 6-7 pictures away from the center.



Rocket lifts off, move Rocket up, flip flames every other picture, and move clouds out for 2-3 pictures until gone.



Rocket rises. Swap flames every other picture as rocket rises. Lift off rocket by notches the speed up



# Recipe 12: Water Splash



## What You Will Learn

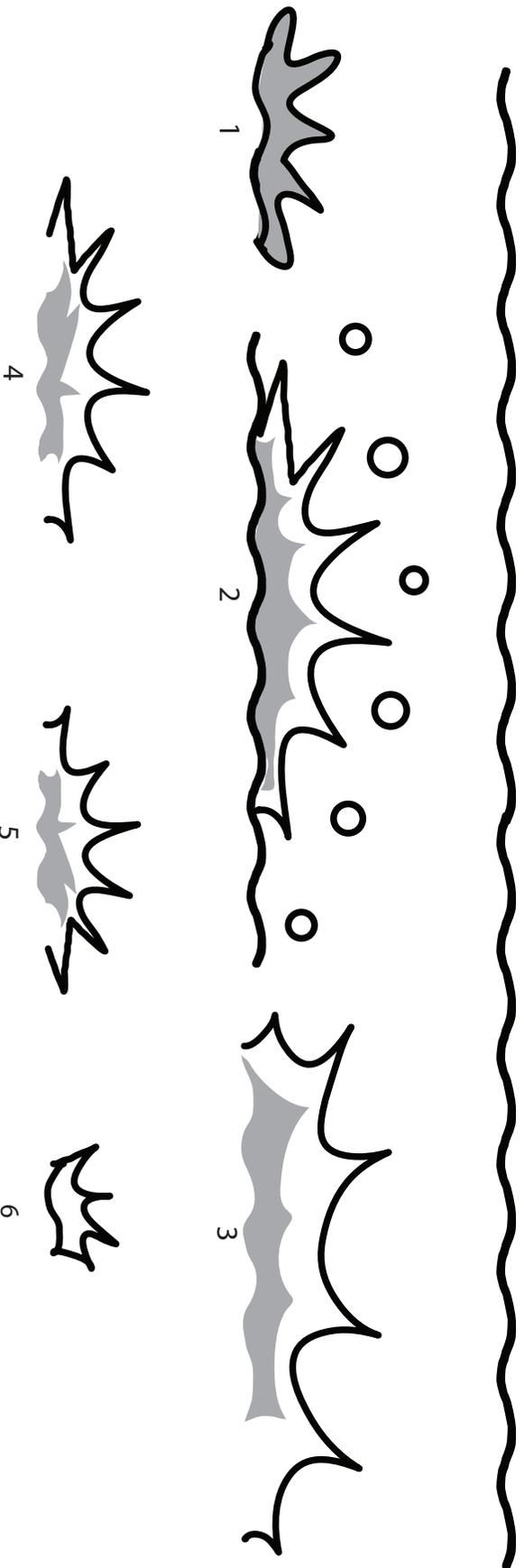
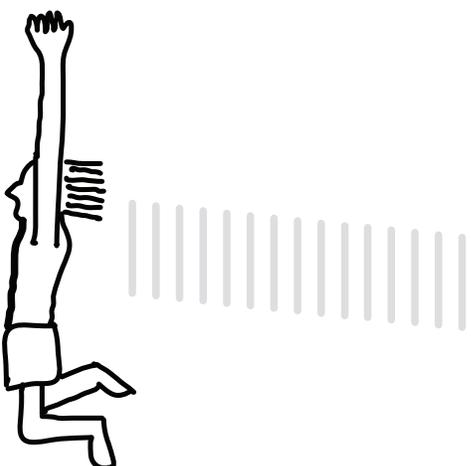
You will learn the timing and spacing pattern for a water splash resulting from a belly flop. Like the *Poof* recipe, this is an exercise in growing an effect and then shrinking it. In this case, we are also animating the action of the droplets flying away in a fan pattern using the *Speeding-up* spacing.

## Why Is This Important?

Impacts and their consequences are always interesting to animate. In this example, the slap of the body on the water has to be followed by a splash. This is a fast version, with the droplets disappearing in mid air. The droplets could also be falling back to the surface of the water. No two splashes are alike. Try this recipe and then invent your own splash patterns.



# Water Splash



## Steps

15 pictures of surface of water. Then show man falling for 10-15 pictures. Insert splash #1 on top of guy. Then 1 picture of splash #2 with little splashy circles fanning out. Take 1 picture of #3, #4, #5 and #6 splashes and as you do, move these little splashy drops outward out away from the splash area until off page. Take 15 pictures of nothing but the surface of the water to finish.

# Recipe 13:

## Camera Shake



### What You Will Learn

You will learn how to create the illusion of having the camera, or audiences point of view, *Shake* in response to the momentum of a heavy weight impacting the ground.

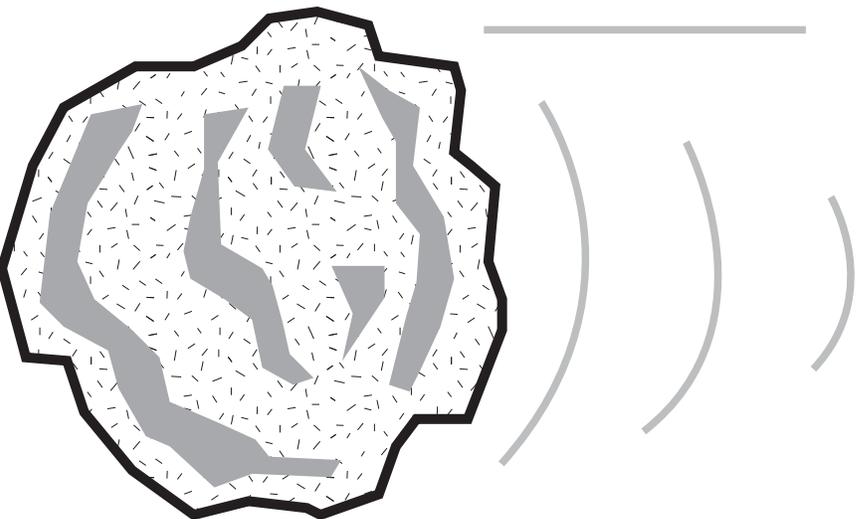
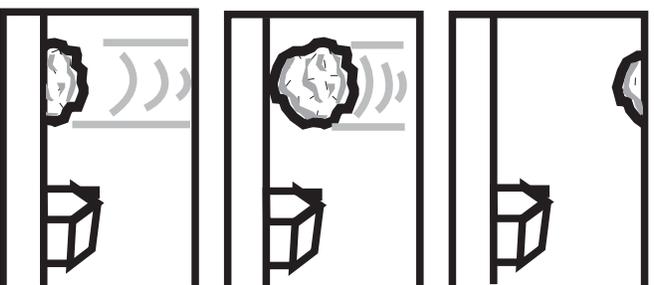
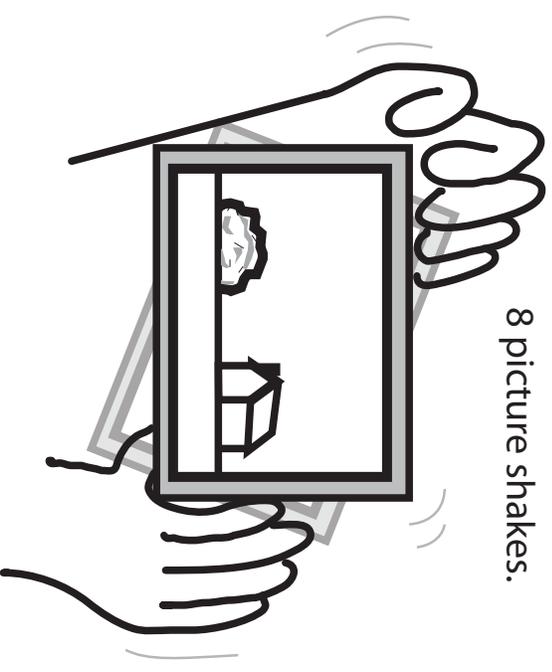
### Why Is This Important?

A large meteor striking the ground would certainly make the earth shake. This will add impact to the experience for an audience. A loud noise and an earthquake-like shaking of the camera sells the fact that this was indeed a heavy object, even if it was actually made of paper.



# Camera Shake

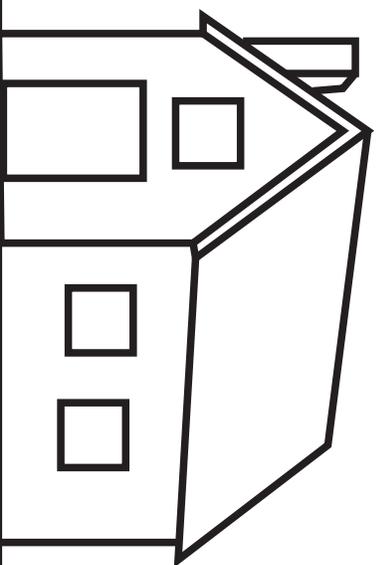
8 picture shakes.



# Steps

Drop the meteor with 1 inch spacing. At impact twist the camera back and forth taking 1 picture for each twist move.

At the end, take 15 pictures of nothing happening.



# Recipe 14: Zooming



## What You Will Learn

You will learn how to *Zoom* in to a detail in your scene. Using the onion-skin mode, or the transparency mode, you will track the detail until it fills the screen. You will learn to *Zoom* your camera in by moving closer one picture at a time. You will learn to trick the eye by swapping out the *Long-shot* version with the a big close-up or medium version at the end of the *Zoom*.

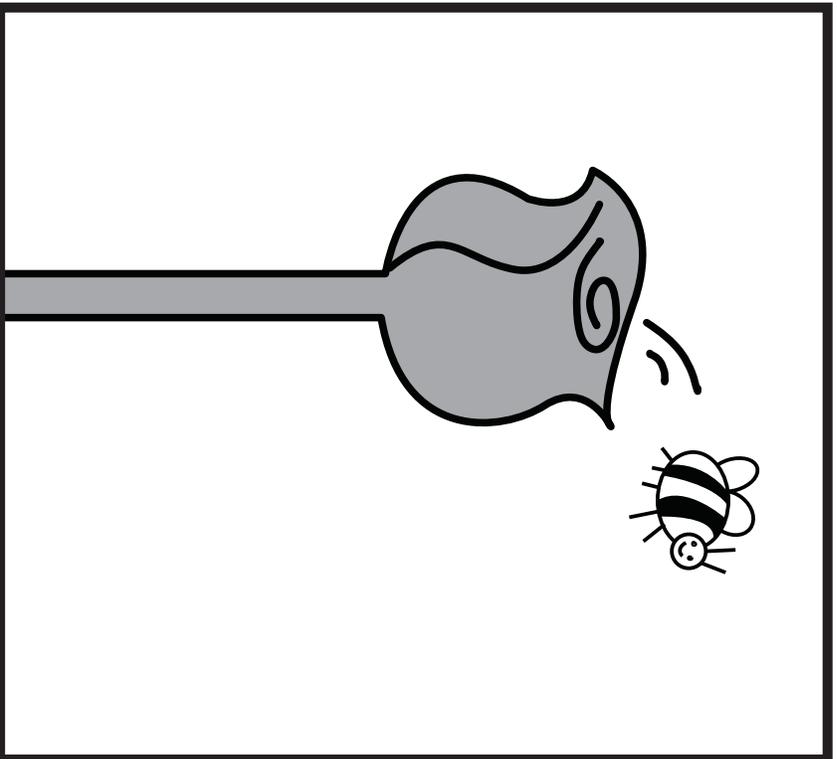
## Why Is This Important?

When a camera *Zooms* in the real world, it has a special lens. Not so with a tablet or fixed camera. This hack overcomes this limitation. This is important because the flexibility to move from a long shot to a close-up with a zoom adds impact and vitality to the scene. *Zoom* out with the same technique in reverse.



# Fun with Zooming (Part 1)

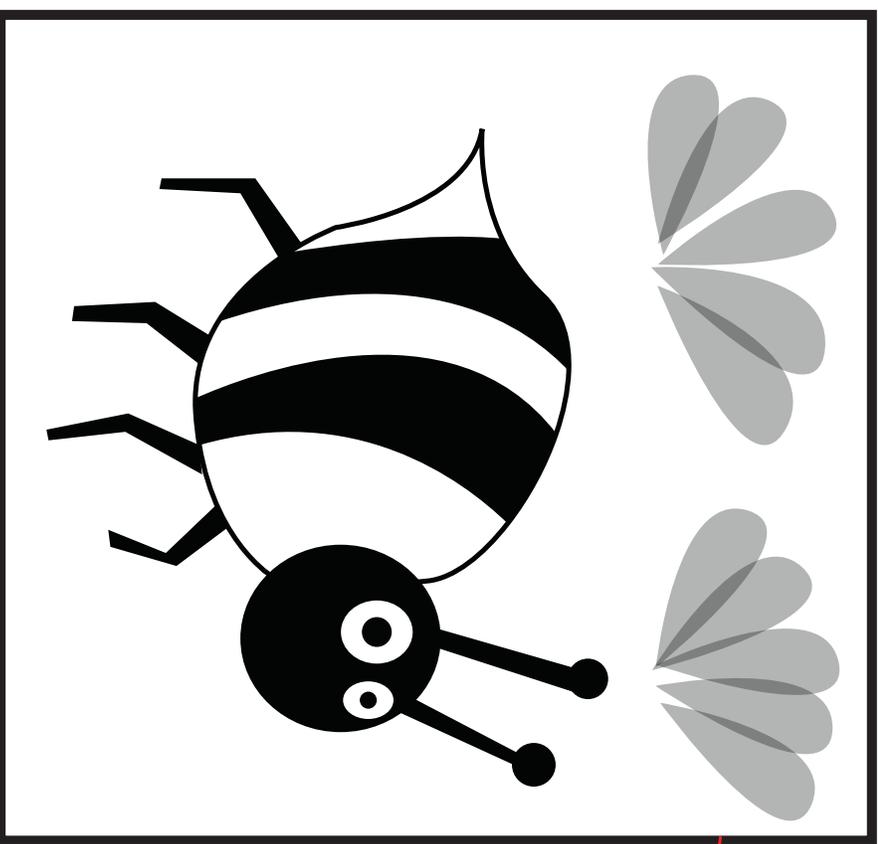
#1



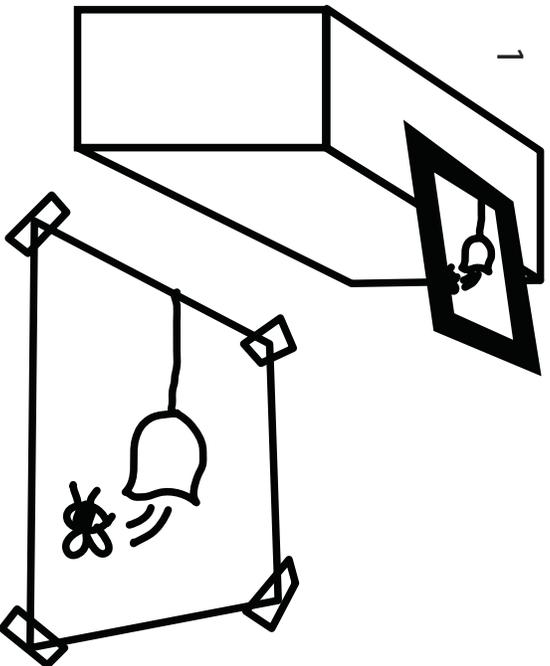
## Steps

Take 15 pictures of nothing but the flower.  
Use the small bee to buzz out of flower for 10-15 picts.  
Then zoom closer and closer for the 5 zoom pictures.  
Make sure "onion-skinning" mode is on.  
Get close enough to the small bee with the camera so it looks about as big as the large bee would be in a medium shot.  
Swap in the large bee and animate the wings for a few cycles. Loop the cycles to desired length.

#2

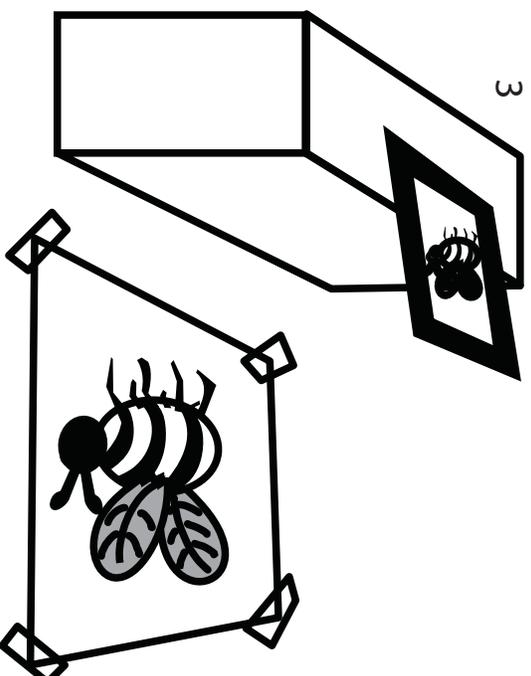
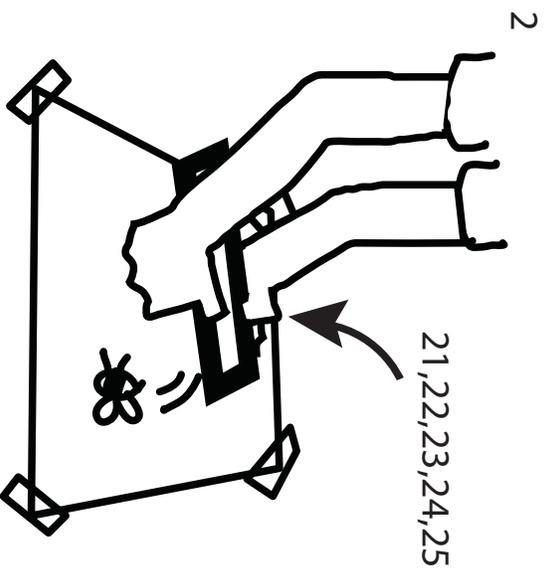


# Fun with Zooming (Part 2)



## Step 1

Beginning position with device mounted.

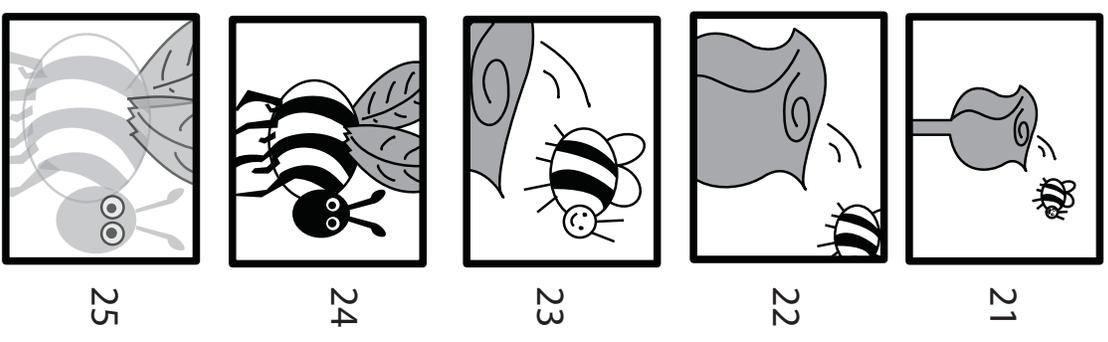


## Step 2

Remove device from mount and take 1 picture as you move device closer to character. Zoom 1 through Zoom 5 take you so close to character. It is okay if character gets blurry.

Put Scene 2 down and remount device as in position 1.

## Step 3



# Recipe 15: Cracks and Shatters



## What You Will Learn

You will learn how to animate a crack appear in any object. As the cracks progress, they will cause a shatter effect. You will learn to take pictures while drawing cracks a little bit at a time.

This will produce an animated effect of a crack evolving into a shatter.

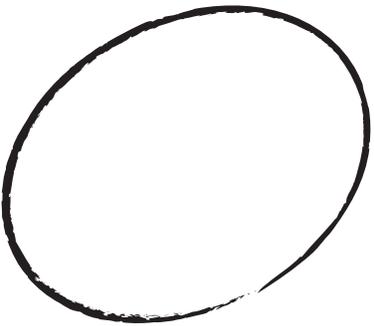
## Why Is This Important?

This technique can be used for many things: rivers can animate on blank maps, a signature can write itself, an egg cracks and shatters, etc.

This recipe is good for a lot of impacts and slapstick animated bits: all manner of fragile things shatter, windows break, teeth crack, and earthquakes shake.

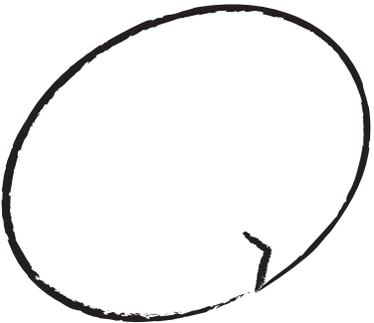


# Cracks & Shatters (Egg)



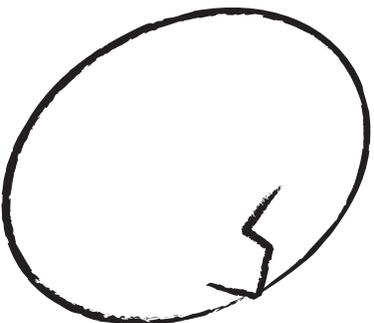
## Step 1

Take 15 pictures.



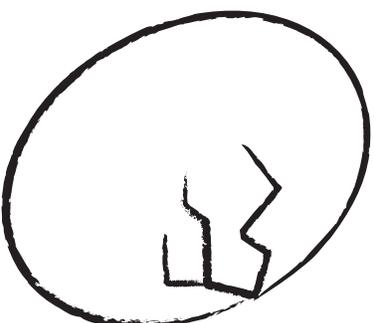
## Step 2

Draw or dent (clay) crack line and take 1 picture.



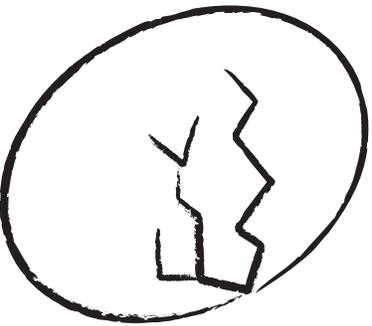
## Step 3

Add a few lines or dents and take 1 picture.



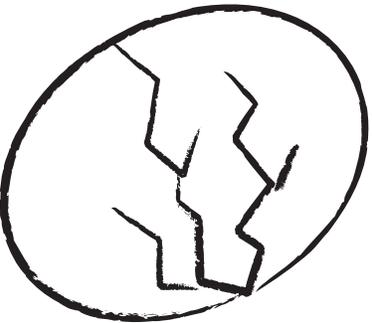
## Step 4

Keep adding more cracks and take 1 picture each time a line is added.



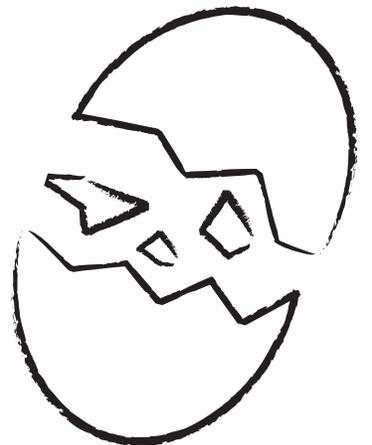
## Step 5

Add more, take more pictures.



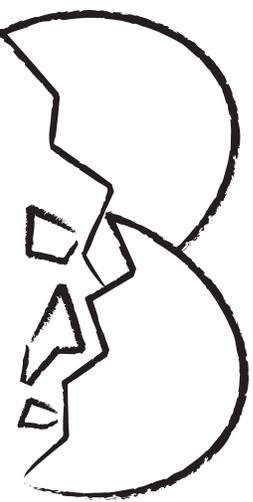
## Step 6

When crack line reaches the other side, take 15 pictures.



## Step 7

Cut halves apart and make sure little pieces shatter away too! Take 5-6 pictures as they fall.



## Step 8

Show cracked parts still for at least 15 pictures.

# Recipe 16: Lightning



## What You Will Learn

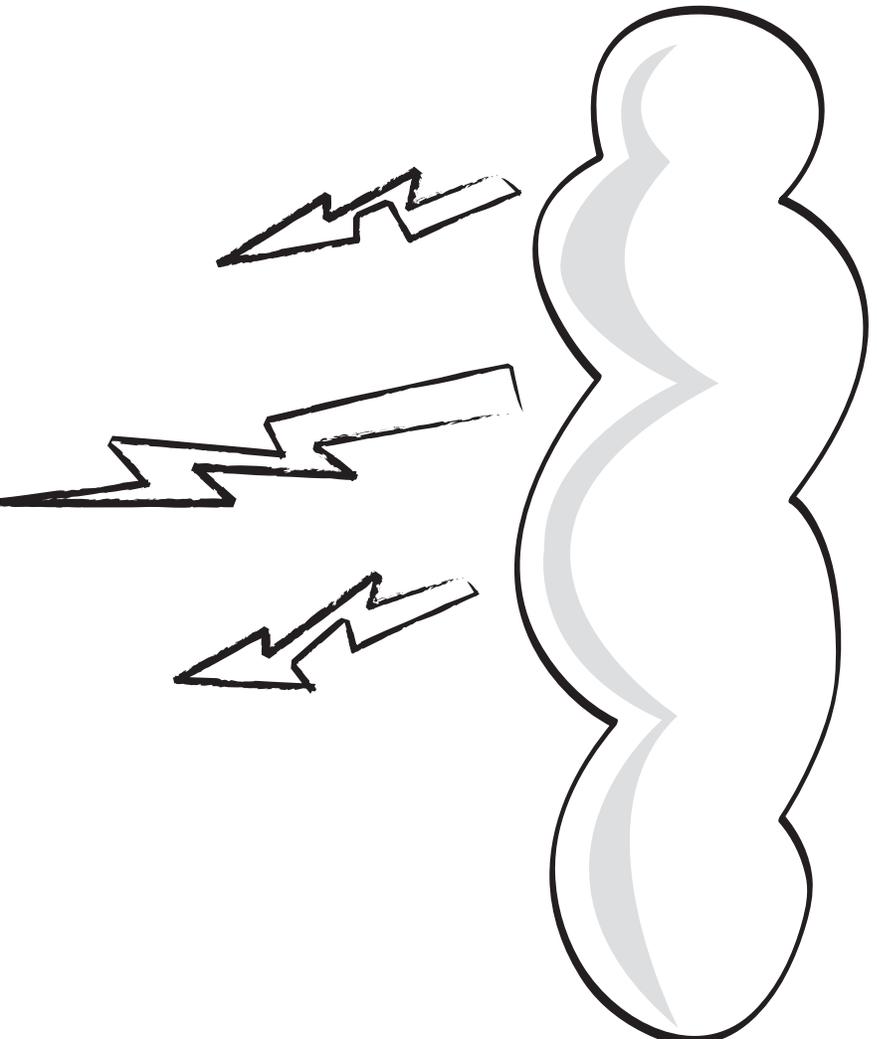
You will learn to animate a "flash" of lightning. one way to create the timing for lightning. You will find that 2 pictures of something in a scene is just enough to make it visible when working at 15fps.

## Why Is This Important?

This special effect is a great experiment in how few pictures are needed to impress the human eye with an image. One picture of a lightning flash is too fast (only 1/15th of a second) and four pictures are too many. Experiment with the time lightning bolts are on the screen. People have different opinions on what is ideal. Here we've given you a starting point with the timing, so you can decide for yourself.



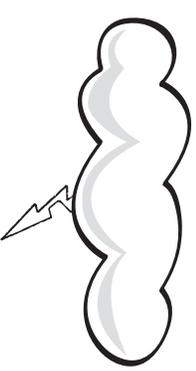
# Lightning



10 pictures



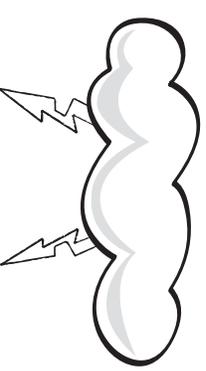
2 pictures



15 pictures



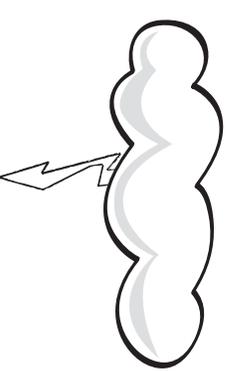
2 pictures



5 pictures



2 pictures



## Steps

Lightning is as much about the pauses between the lightning strikes as it is about seeing the lightning. So follow a pause pattern like this and you will have success. Sound is really important too!

# Recipe 17:

## Flag Wave



### What You Will Learn

You will learn how to make a flag look as if it is flapping in the wind. You will loop a cycle of flag shapes, and repeat later in editing to save time.

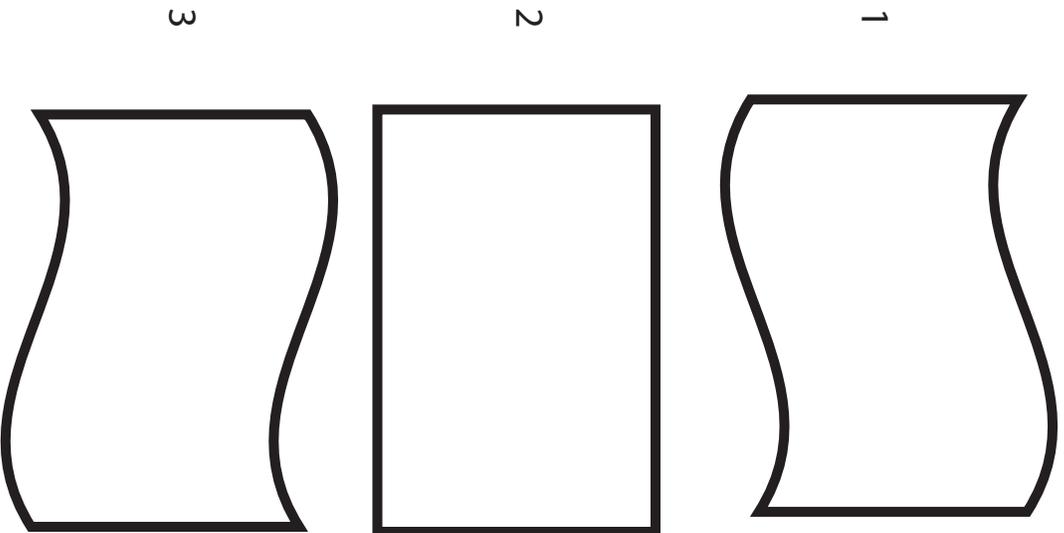
### Why Is This Important?

Creating the fluid nature of cloth can be challenging in animation. In this case, thinking of the flag in various poses will be helpful (you could use more poses than we demonstrate here!).

The extreme opposite poses of the flag are called "extremes" by professional animators. We create a flapping effect by using extremes which have a middle, straight pose in-between.



# Special Effect: Flag Waving



## Steps

- Place Flag #1 on flag pole, take 1 picture.
- Swap in Flag #2, take 1 picture.
- Swap in #3, take 1 picture.
- Swap in #2, take 1 picture.
- Loop sequence.

# Recipe 18: Candle Flicker



## What You Will Learn

You will learn to use the *Toggle*, *Slow-motion*, *Loops and cycles* recipes to create the illusion of a candle flame flickering and going out.

## Why Is This Important?

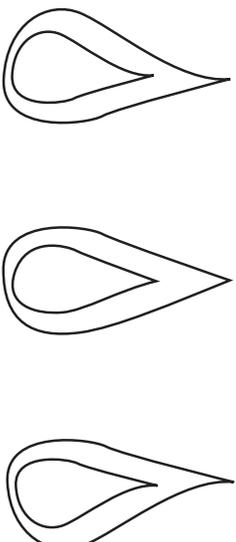
This special effect is subtle and quiet. This exercise is a lot more difficult than it appears. Three frames of a toggle is less energetic than two (remember the fire in the toggle recipe? Raging!). Mixing a random order of the three flames gives this flame a dancing quality. *Loop* the *Cycle* as long as you prefer. When the smoke drifts upwards, extreme caution is required to make the smoke drift up smoothly with *SloMo* micro-spacing.



# Candle Flicker

## Step 1

Put the three flames on the wick one at a time and take a picture. It doesn't matter which order, as long as you change the flame for each picture you take. Take a total of 30 pictures.



## Step 2

Create the illusion of the flame going out. Take the long grey smoke and hide it under the candle. Move it up, one move per picture, for about 10-15 pictures until it is off the top of the screen.



# Recipe 19: Tornado



## What You Will Learn

You will learn to *Toggle* three frames of a tornado along a path. Randomizing the order of each picture will be key to your success.

## Why Is This Important?

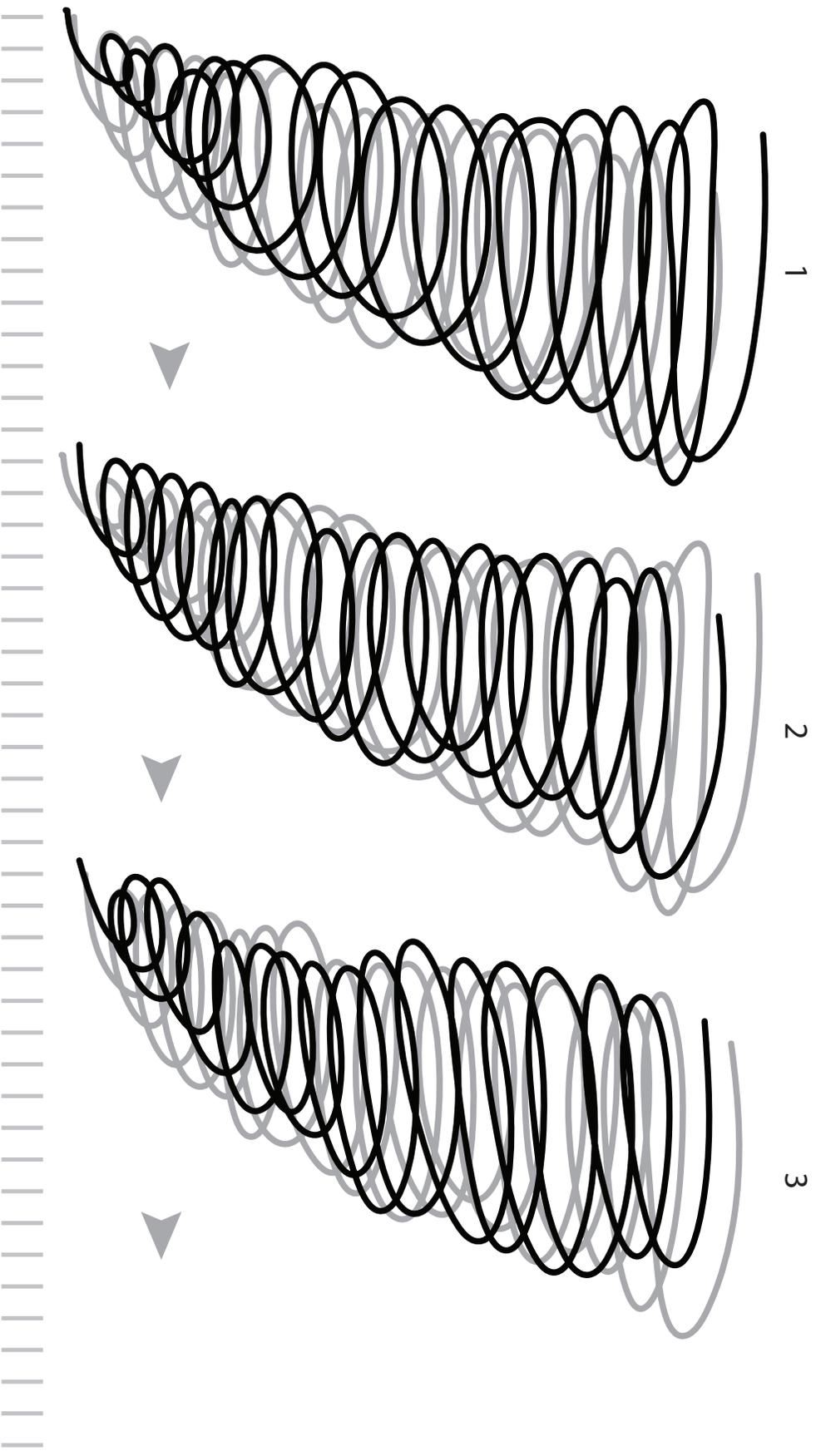
Though we've toggled on a path before, this is a great example of using three different drawings of the same object moving incrementally across the screen. Each tornado drawing is slightly different than the other. This imperfection helps generate a chaotic motion which gives the tornado quivering dynamics. Experiment with the spacing along the bottom. Try a slow moving tornado by using smaller spaces or a faster one using larger spaces.



# Special Effects: Twister

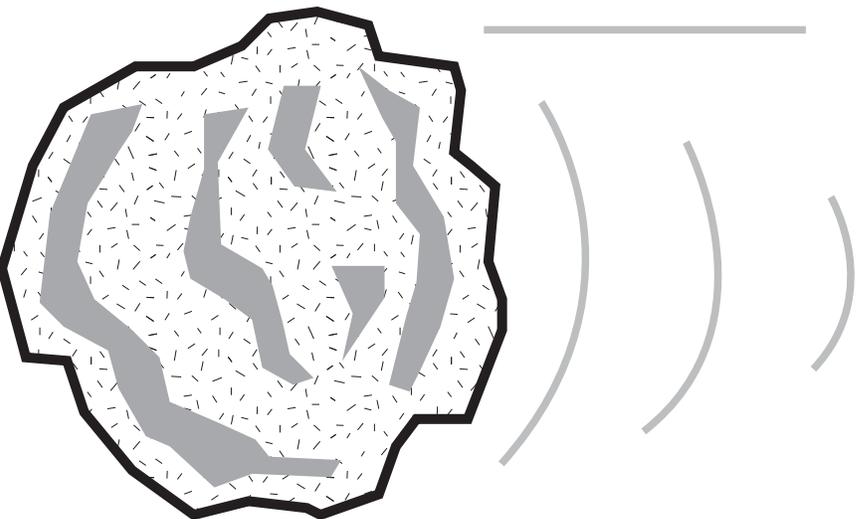
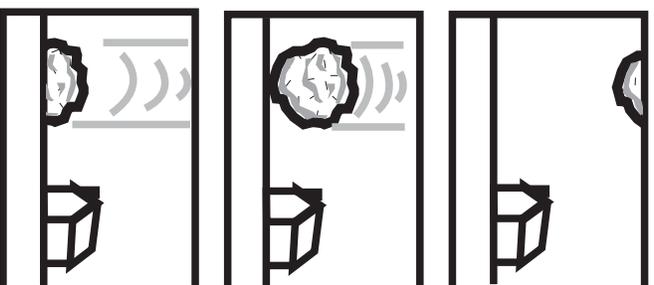
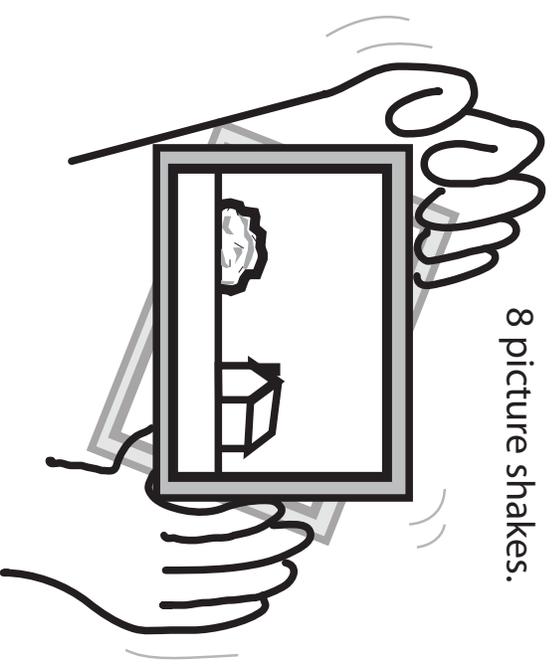
## Steps

Take 1 picture of tornado #1 at far left notch. Swap in tornado #2 at second notch in from the left and take 1 picture. Swap tornados 1, 2, and 3 randomly along notches until tornado is off screen. Take 15 pictures of nothing happening.



# Camera Shake

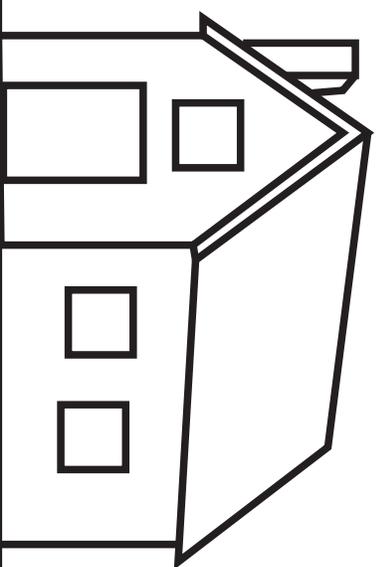
8 picture shakes.



# Steps

Drop the meteor with 1 inch spacing. At impact twist the camera back and forth taking 1 picture for each twist move.

At the end, take 15 pictures of nothing happening.





# Recipe 20: Ocean Waves

## What You Will Learn

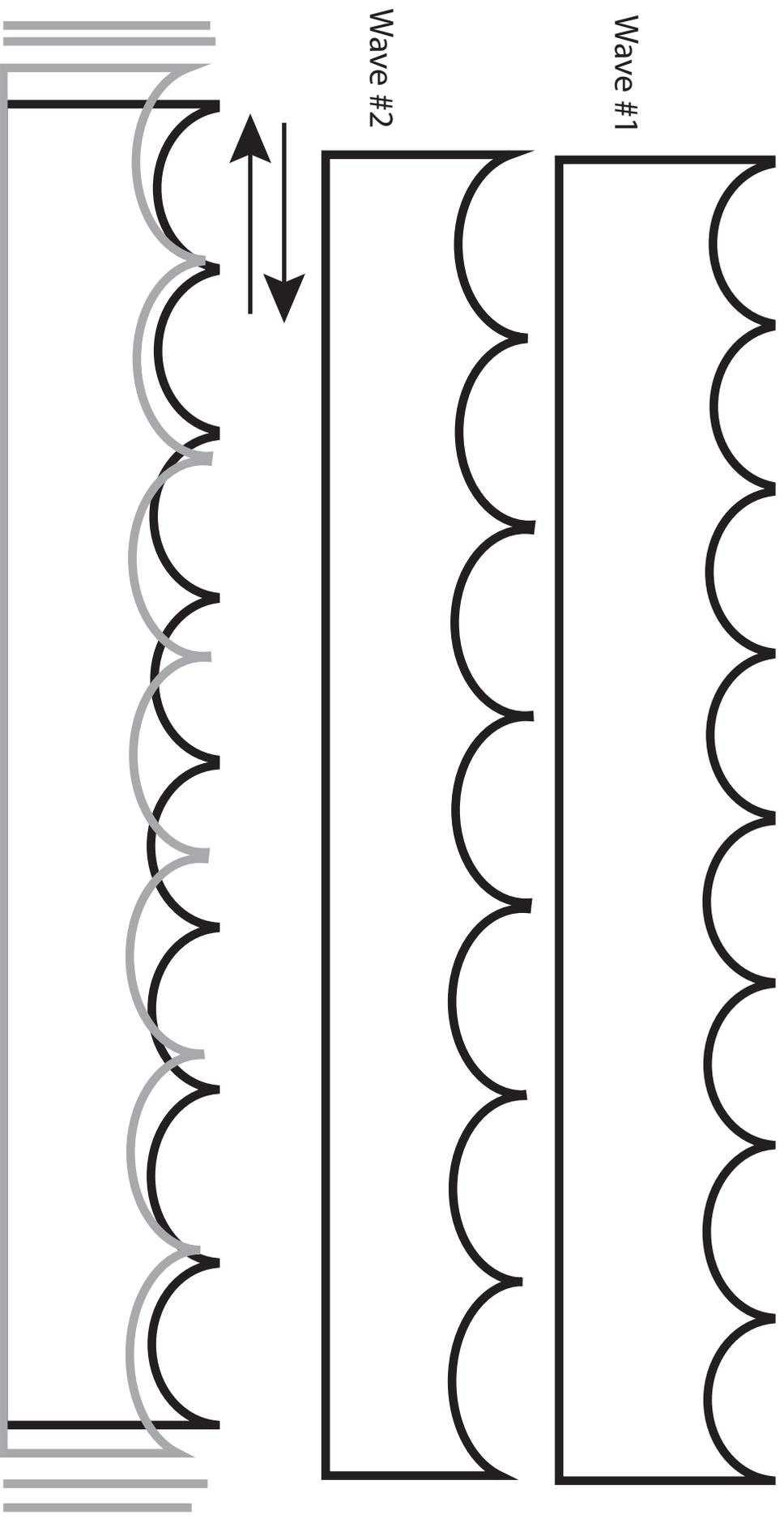
You will learn how to create the illusion of the surface of water. Using two simple cut-outs, the action of waves can be simulated for scenes on the ocean. A simple way to create ambient action!

## Why Is This Important?

Why keep the surface of water still? When we add a basic action like waves rolling, an animation of a ship or boat or island can be enhanced with a little surface action. Sounds will be essential to helping your audience think this is water.



# Ocean Waves



## Steps

Move waves back and forth for each picture. Animate 15 picts. Loop and Cycle to desired time. Randomize the spacing for best effect.



# Recipe 21: Chimney Smoke

## What You Will Learn

You will learn how to create the illusion of lazy drifting smoke out of a chimney. You will find that just one piece of paper can be used to make a wonderful wavy waft of smoke.

## Why Is This Important?

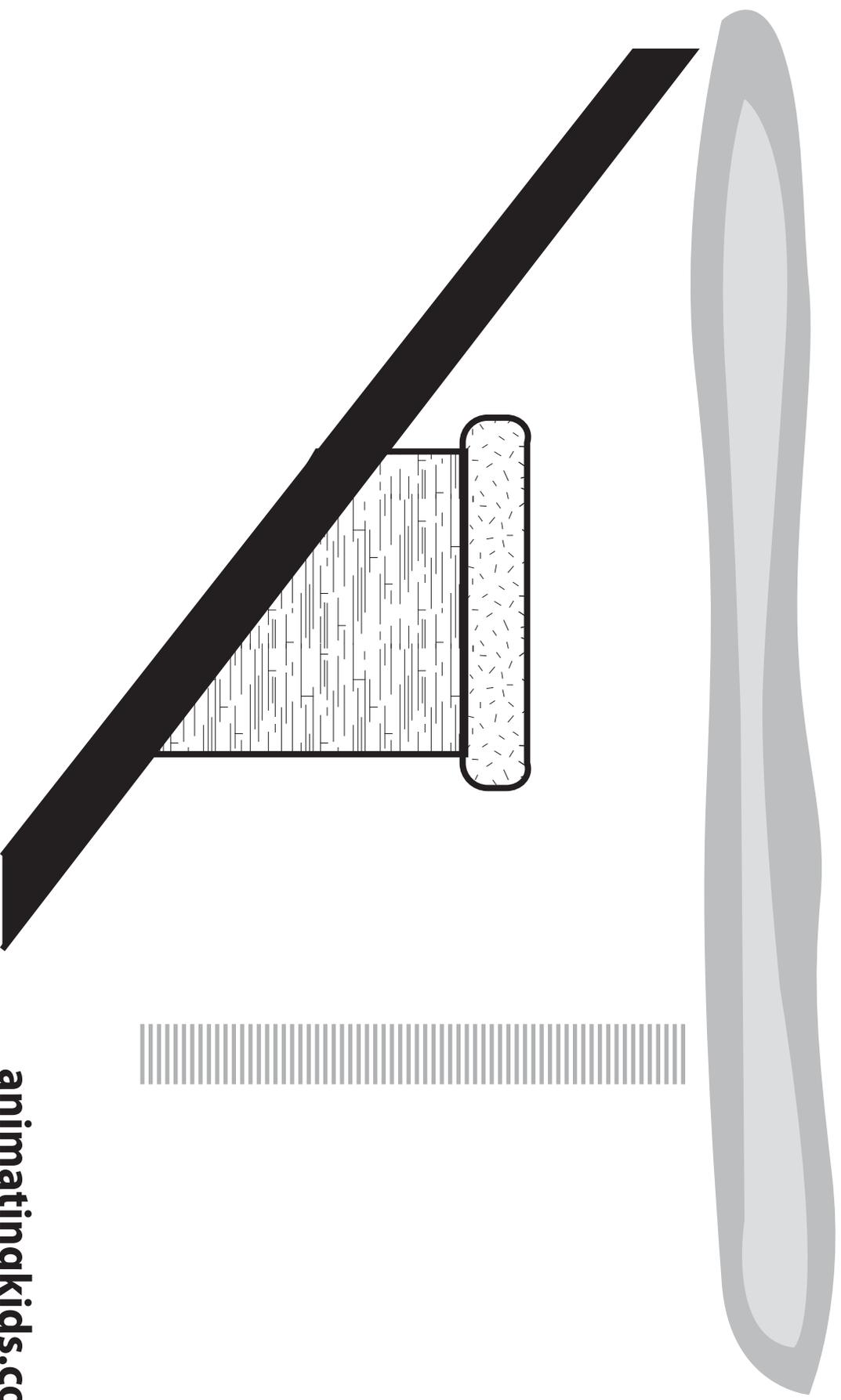
This special effect is a great application of SloMo. Taking the time and patience to move the smoke tiny tiny increments is essential. Wise use of spacing with a steady hand will determine the success of this illusion.



# Special Effect: Chimney Smoke

## Steps

Slow motion smoke is our goal. Hide the smoke behind the chimney. One picture at a time, move the smoke about the distance of the notches below. Continue and loop the frames. Remember, slow motion takes way more pictures than you think!





# Recipe 22: Snow Splashes

## What You Will Learn

You will learn how to treat the after-effects of impact from 3 different angles of trajectory.

## Why This Is Important

In this example, Newton's law comes into play. Every action has an equal and opposite reaction, depending on trajectory into impact. Though your audience will hardly notice, the way you kick up dust, water, or in this case snow, in relation to other objects shows the physics is right. This will make your special effect supportive of the main action and as a result will seem more believable.

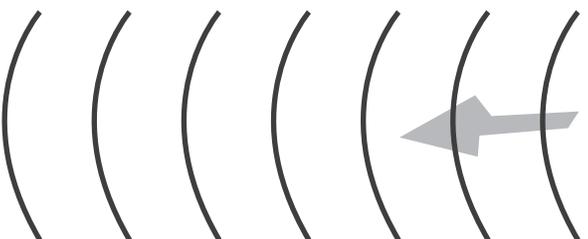
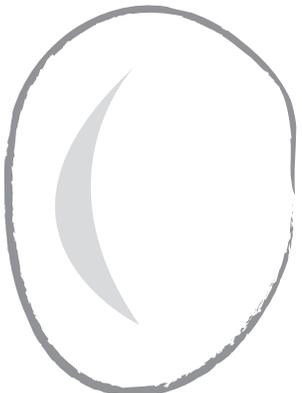


# Special Effects: Snow Splash 2

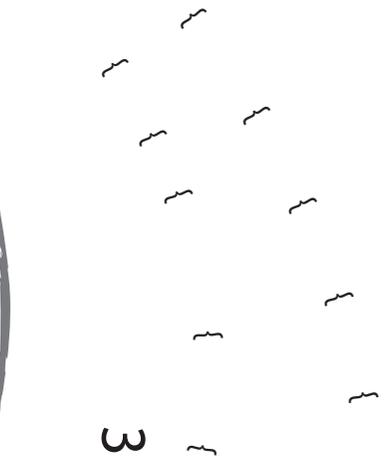
## Steps

Take one picture per space with the big snowball. When it hits the ground spray small bits 1, 2, 3, and 4 out from the sides.

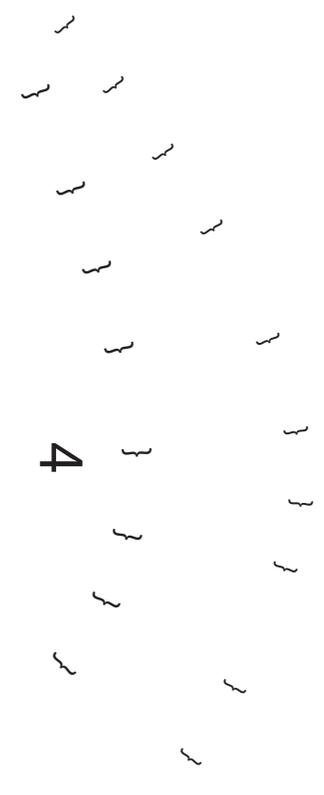
**Snowball**  
(use clay)



1  
3



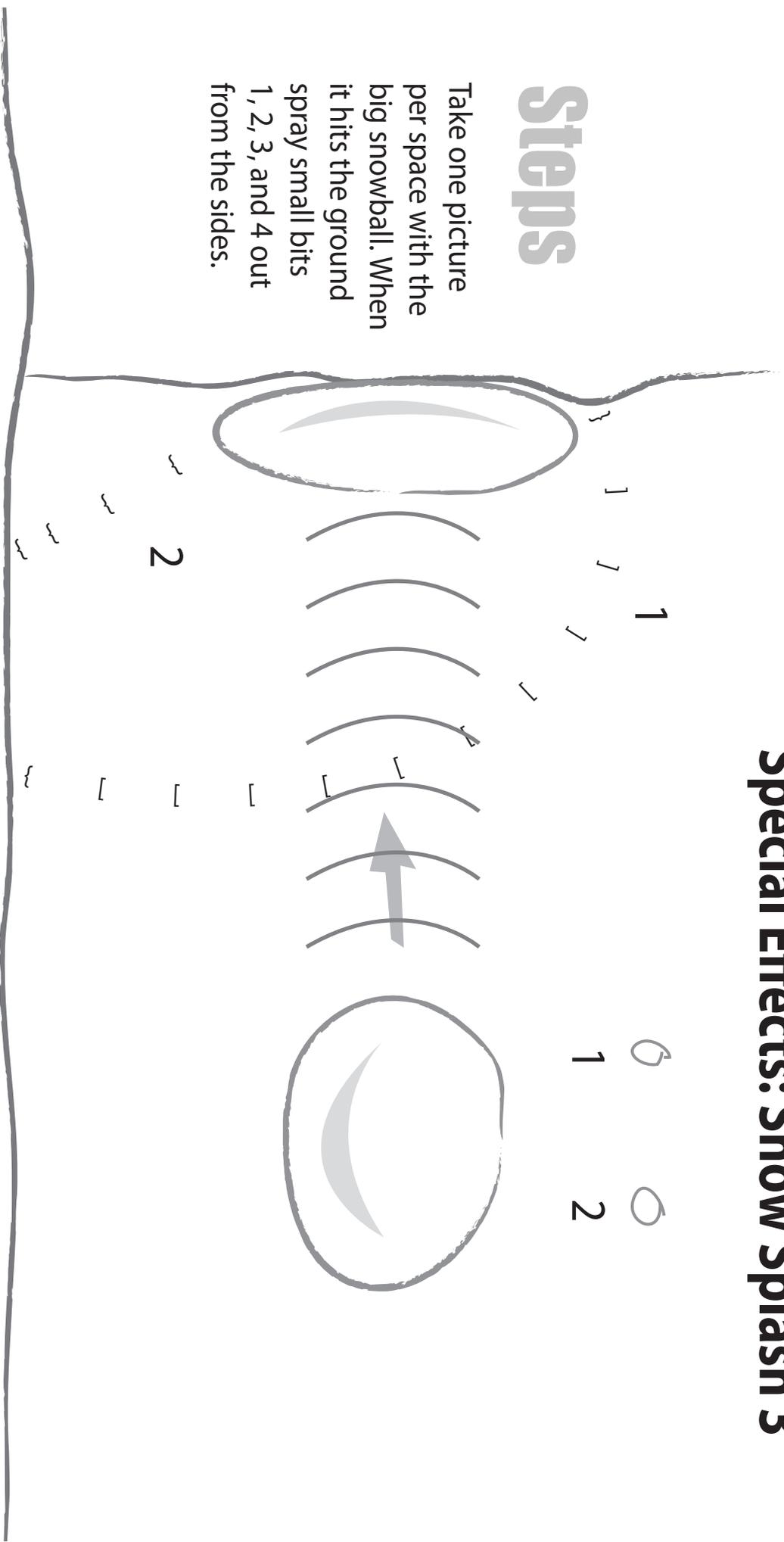
2



# Special Effects: Snow Splash 3

## Steps

Take one picture per space with the big snowball. When it hits the ground spray small bits 1, 2, 3, and 4 out from the sides.



# Special Effects: Snow Splash



Snowball

(use clay)



1



2



3



4

## Step 2

After Snowball hits ground,

Start 1, 2, 3, 4 on their paths all at the same time



## Step 1

Take 15 pictures  
Then start the snowball on the big arc from left to right, 1 picture per space





# Recipe 23: Comet Tail

## What You Will Learn

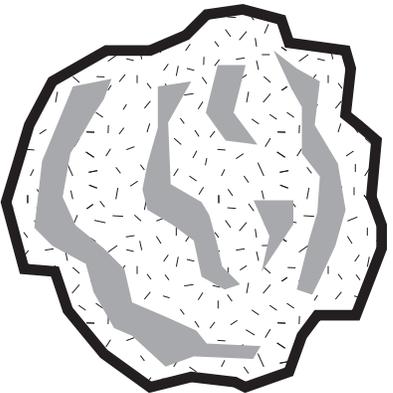
Using the Toggle recipe, you will create the illusion of a comet's tail shooting out into space as if the comet is traveling very very fast.

## Why This Is Important

An animator is always on the lookout for discovering ways to use Toggle as a short-cut. This example is a great demonstration of only needing a few pictures to create an effect that can be copied and pasted to fit any length of time. The more ways Toggle can be used, the more time we'll have to spend on other more consuming animation tasks.

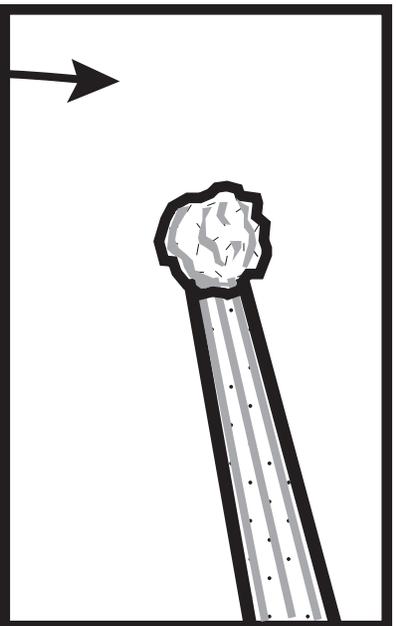


# Special Effects: Meteor/Comet



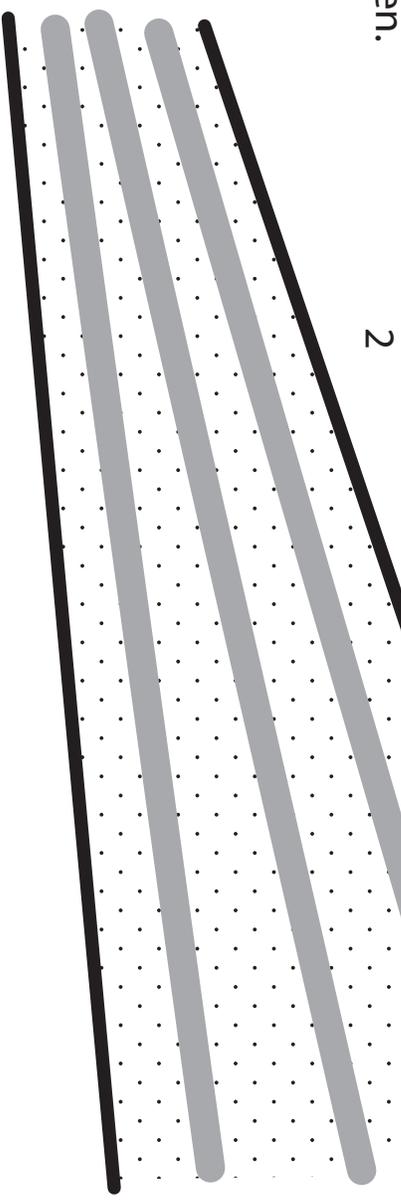
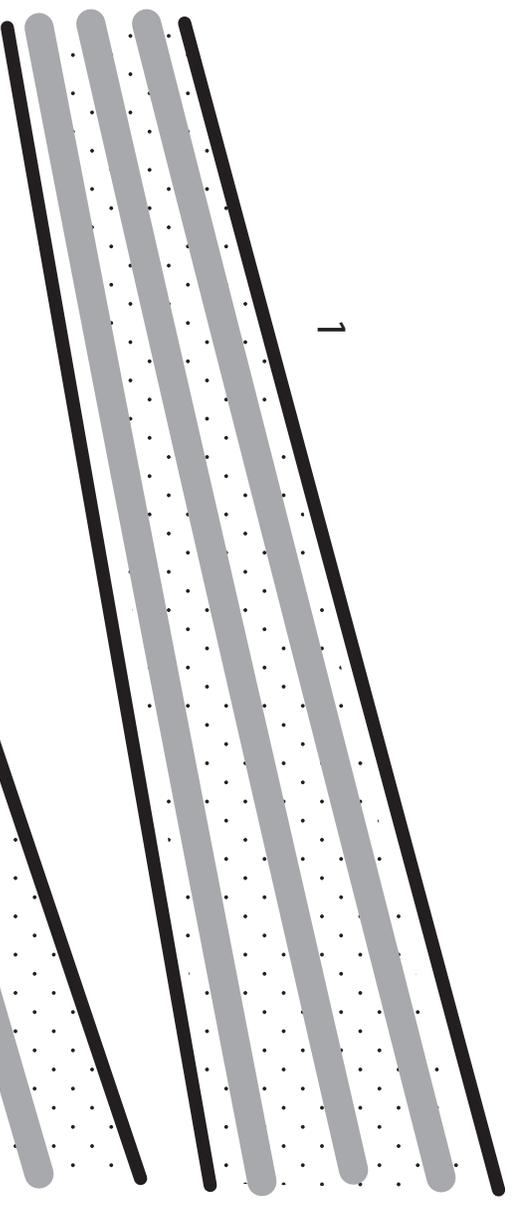
## Steps

Tape comet on left side of the screen.



Place comet tail #1 under comet. Take picture.  
Place comet tail #2 under comet. Take picture.

Black background repeat for 15 pictures and loop.





# Recipe 24: Water Faucet

## What You Will Learn

Using the *Toggle* animation concept, you will create the illusion of water gushing from a faucet.

## Why This Is Important

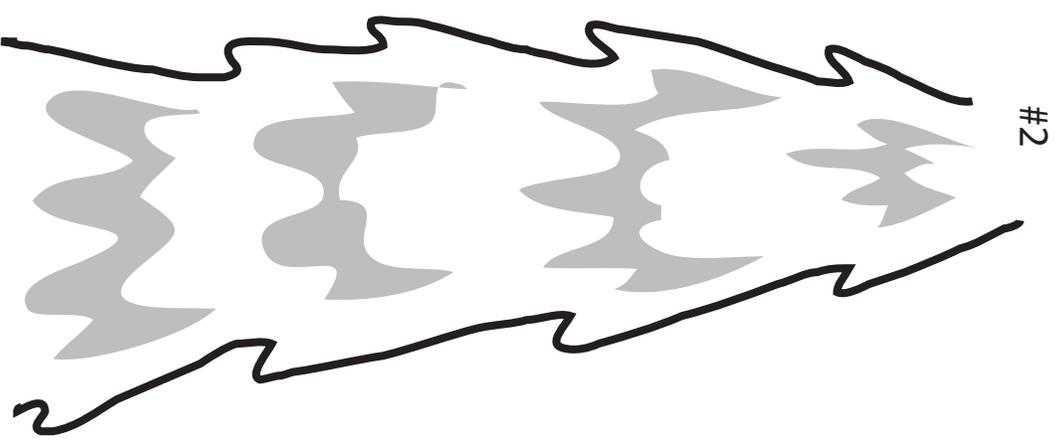
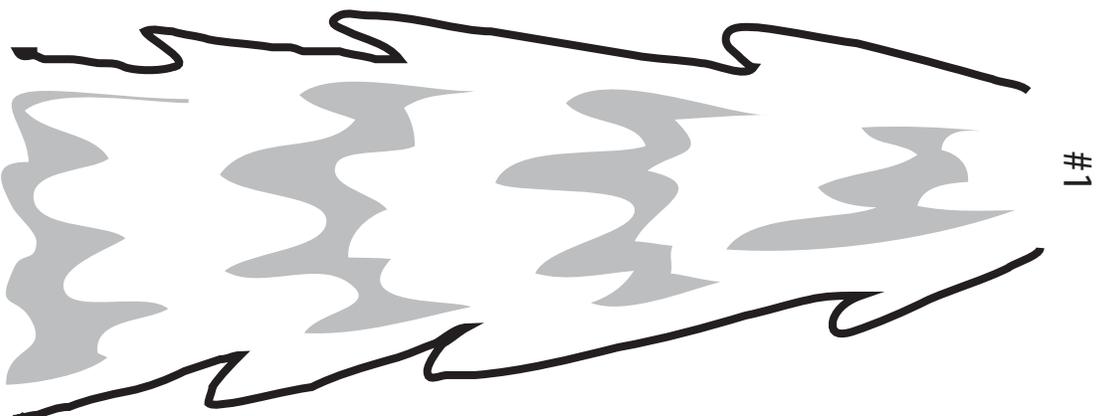
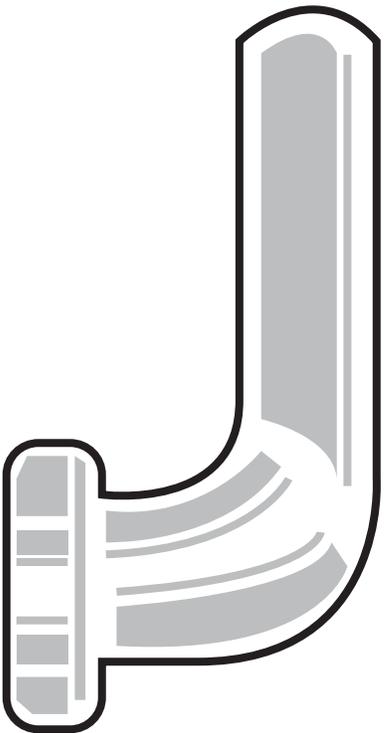
This simple application of *Toggle* will open up other applications where water or other liquid is gushing; waterfalls, hoses, fountains, fire-hydrants, etc.



# Water: Hose or Faucet

## Steps

Swap water #1 with water #2 every other picture. Loop as needed.





# Recipe 25: Tsunami

## What You Will Learn

Using the *Toggle* and *Spacing is Speed* animation recipes, you will create the illusion that a wave with a frothy crest glides along the surface of the water.

## Why This Is Important

Here the animator is tasked with keeping track of four props, and using *Toggle* and *Spacing is Speed* at the same time. Juggling multiple tasks at once is a very important skill. This requires organization, attention to detail, and creative positioning to accomplish. Experiment with different spacings. A *SloMo* wave spacing will give your audience a better look at the froth.



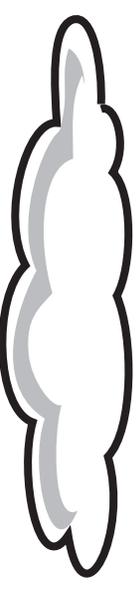
# Waves: Tsunami

## Steps

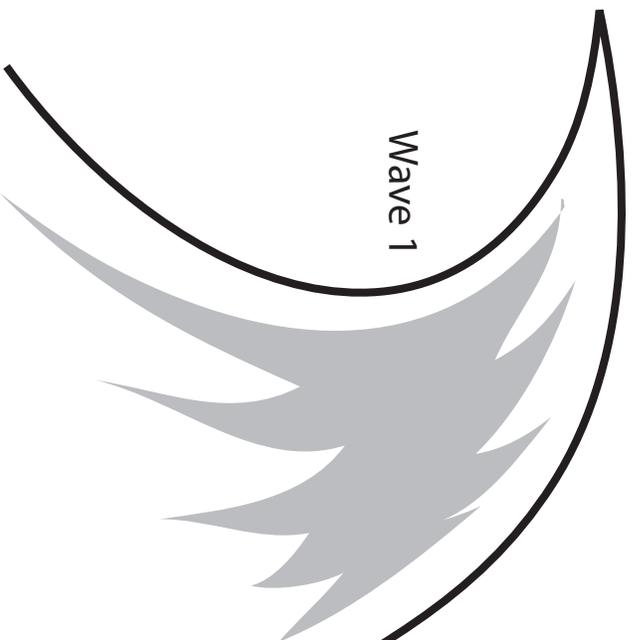
Move waves from right to left, spacing out along the notches below, swapping froths & waves every other picture.



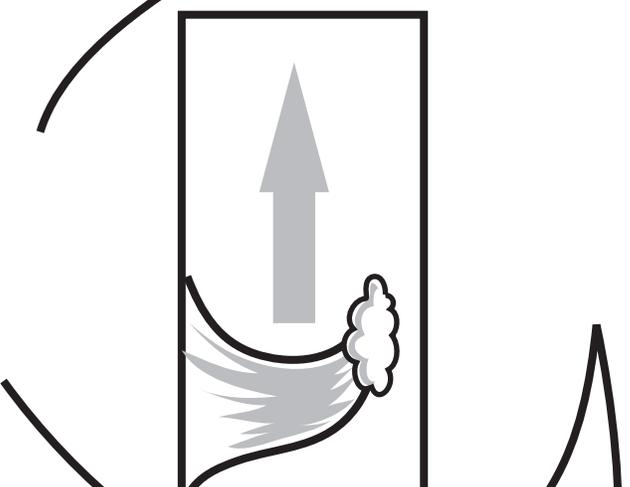
Froth 1



Froth 2



Wave 1



Wave 2



# White Hat Recipes



## Introduction

### What You Will Learn

In the White Hat level you will learn a simplified version of the basic animation skills all animators have employed for over 100 years. We've added our own twist for the tablet app era. There are about a dozen classic core animation principles you will experience by following these recipes. You will learn new animation vocabulary, and understand the basics of animation by doing each exercise.

### Why Is This Important?

These exercises will provide the beginning animator with a set of skills and vocabulary which can be applied to animate anything. This is why *Animating Kids!* isolates each foundational concept into simple steps. All other hat levels in *Animation Kids!* will draw upon this core foundation.



# Recipe 1: Mobile Device Set-Up



## What You Will Learn

Setting up with a mobile device is easy, especially if you are resourceful! This video shows 8 different ways to get a mobile device in position to start animating. From super cheap to super expensive, we show you inventive ways to set up for animation. Our favorite set-up? The fastest and cheapest is a stack of books or a cardboard box. Lock down your device to something and get animating!

## Why Is This Important?

Animators use the term “lock-down” to refer to keeping things still. Mobile devices are difficult to lock down because they rarely come with tripod mounts. Figure out a way to lock things down to ensure shake-free animation.



# Recipe 2: Frame Rates



## What You Will Learn

*Animating Kids!* recipes are based on a playback frame rate of 15 Frames-Per-Second (15fps). You will learn the difference between different frame rates, and why we choose to work at 15fps.

You will also learn why we need to take pictures of nothing happening. You will discover the importance of pacing and timing in your movie.

## Why Is This Important?

Every second of your movie must contain 15 pictures or frames. This poses a problem most new animators underestimate. The pictures you take between the animated bits are as important as the animated bits. Like music, the spaces between the notes are as important as the notes. Animations have pauses between the action. These pauses also need to play out at 15fps.





# Recipe 3:

## Sound Design (SFX)

### What You Will Learn

You will learn how to add sound to your animation. You will synchronize sound to your animated bits. You will discover that sound is as important as your animation. You will experiment with sound to amplify the impact of any scene. You will learn to shorten the phrase "sound effects" with the acronym SFX. Most stop motion apps have a sound feature. You will learn to look for the sound button.

### Why Is This Important?

The most powerful sound design app in the world is your mouth! As we complete each lesson, add SFX where it seems appropriate. It might be a "boing" or a "thump" or an engine revving. Even the smallest sounds make a big impact. Sound design can take as long as animation sometimes.

Don't go too crazy with adding sounds, but have fun spicing things up with short hits of sonic joy.





# Recipe 4: Spacing is Speed

## What You Will Learn

You will learn how to animate with fast, medium, and slow-motion speeds. You will discover the spacing determines speed. Learning how to create the illusion of objects moving at different rates of speed is one of the most basic animation skills.

## Why Is This Important?

The most common error a beginning animator makes is getting the spacing wrong. Getting the spacing right affects every animation you will ever do. The frame rate never changes, so a stop-motion animator needs to know how far to move their props between pictures. Move something a big space between pictures, it animates fast on playback. Move something a tiny bit between pictures, it moves in slow motion. Simple as that.

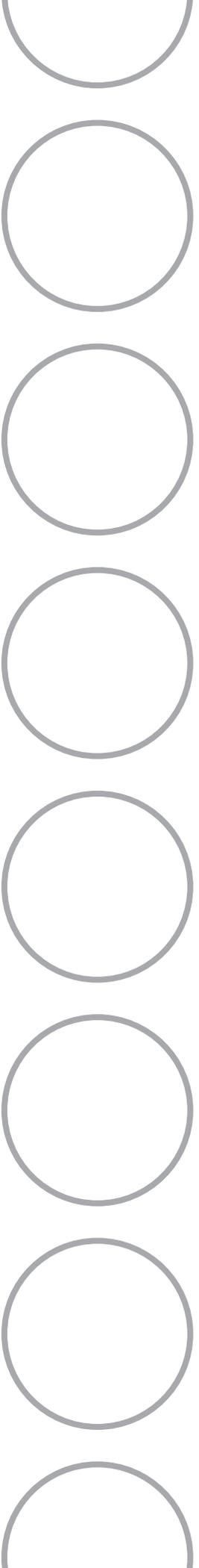


# Steps

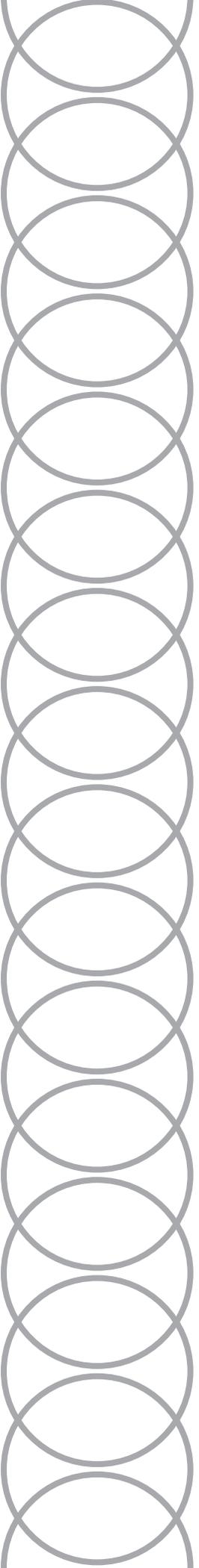
## Spacing is Speed

Start at left, take 15 pictures at first circle, then take one picture per circle moving to the right.

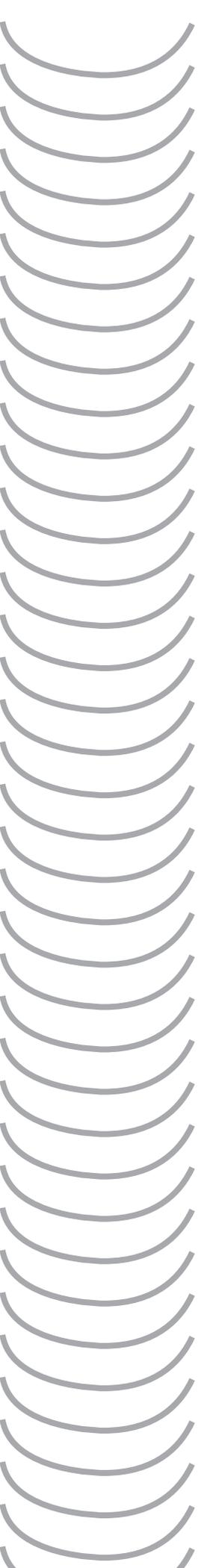
**Fast**



**Medium**



**Slow**





# Recipe 5: Speeding Up Slowing Down

## What You Will Learn

You will learn how to create a speeding up motion by gradually increasing the spacing from frame to frame. You will also create the illusion of how to make something look like it is slowing down to a stop, gradually.

## Why Is This Important?

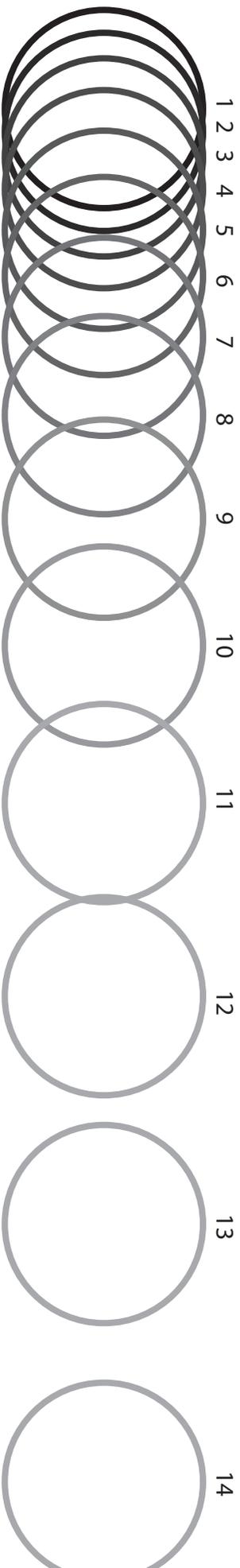
The transition from fast to slow, or from slow to fast is everywhere in animation. Cars, superheroes, fish, body parts, rockets and almost anything else that speeds up or slows down are examples of why this recipe is important. This is a very basic core concept and skill animators must master.



# Speeding Up Slowing Down

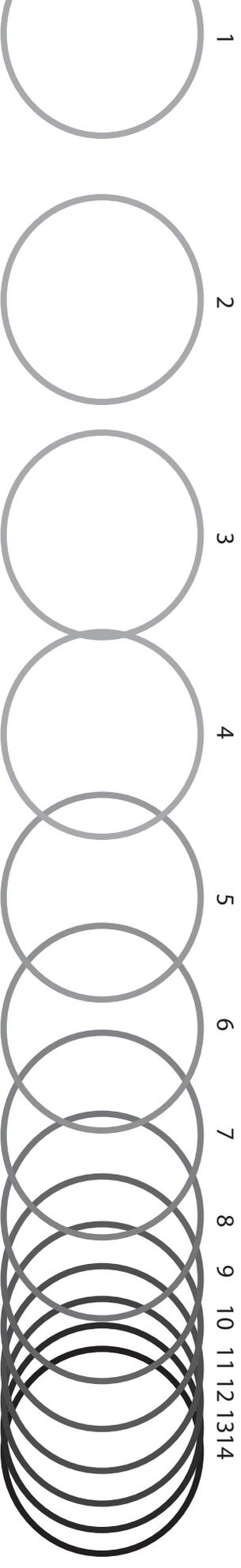
## Step 1

Take 15 Pictures at the first circle position.



## Step 2

1 picture per circle until off page. Then take 15 more pictures after it is gone.



## Step 3

Start from off the page. Then take 1 picture per circle moving from left to right.

## Step 4

At the last circle, take 15 pictures

# Recipe 6: Bouncing Ball



## What You Will Learn

You will learn to use *Speeding Up* and *Slowing Down* along a curve. You will notice how to use an impact to create a change in direction and speed.

## Why Is This Important?

The bouncing ball teaches the skill of crafting the illusion of impact, changing direction, and momentum change.

The bouncing ball is a classic in animation in basic animation exercises. Mastering the bouncing ball shows the new animator is grasping the concept of spacing things out to change rates of speed.

This formula is used when animating things like a frog, a ball, a pogo stick, a kangaroo, or a grasshopper.

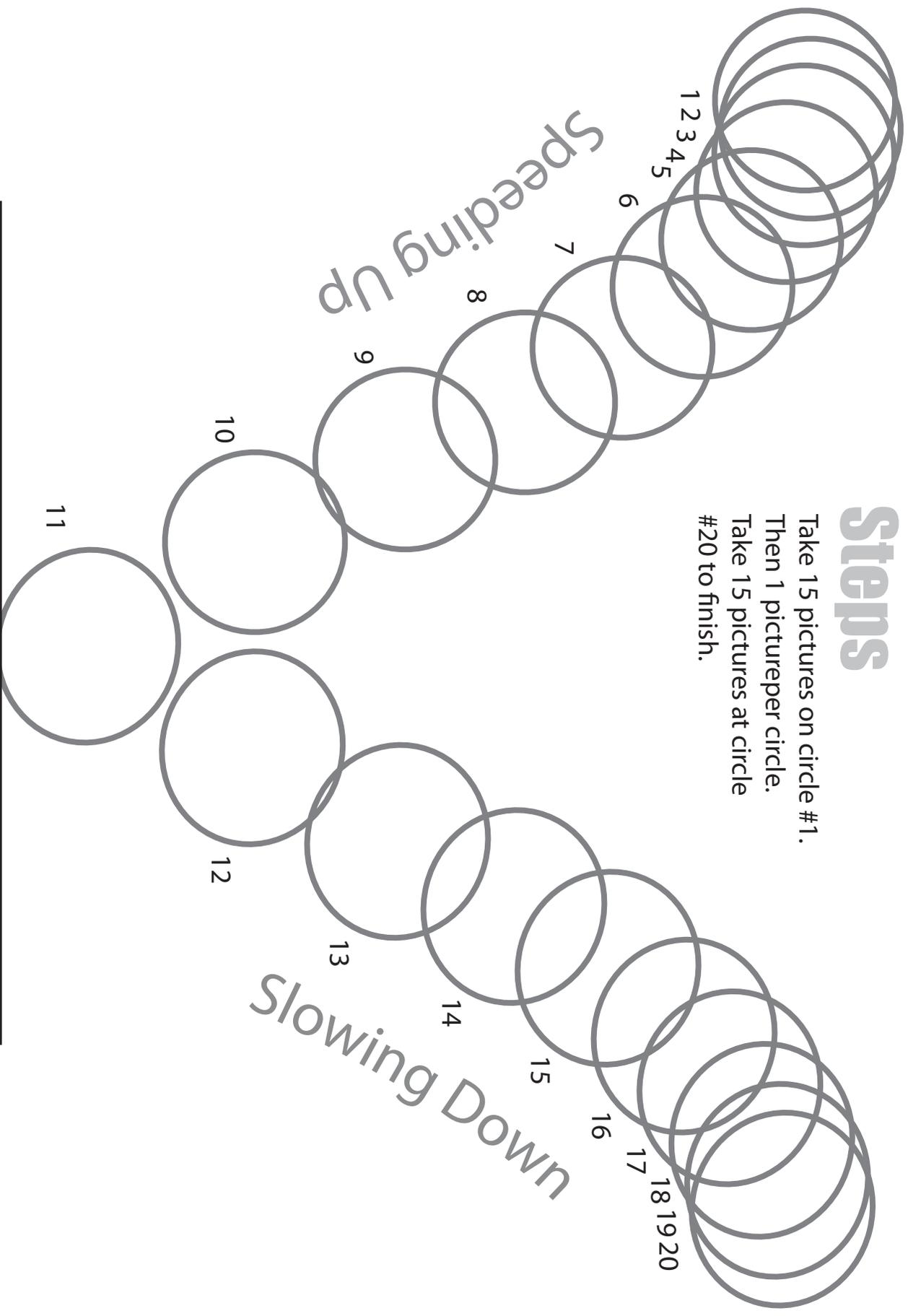


# Bouncing Ball

Start

## Steps

Take 15 pictures on circle #1.  
Then 1 picture per circle.  
Take 15 pictures at circle  
#20 to finish.



# Recipe 7: Squash



## What You Will Learn

You will learn that *Squash* is a basic animation term. For an animator it has a very specific meaning. You will discover that *Squash* refers to that part of any animated item which flattens horizontally due to mass, gravity or momentum.

## Why Is This Important?

An animator must have the idea of *Squash* as both vocabulary and a skill in animation. People squash as they walk when their feet hit the ground. Balls squash when they bounce. Frogs squash on the ground between bounces. A high-jumper squashes before the big jump. *Squash* is everywhere.



# Squash

## Steps for Squash

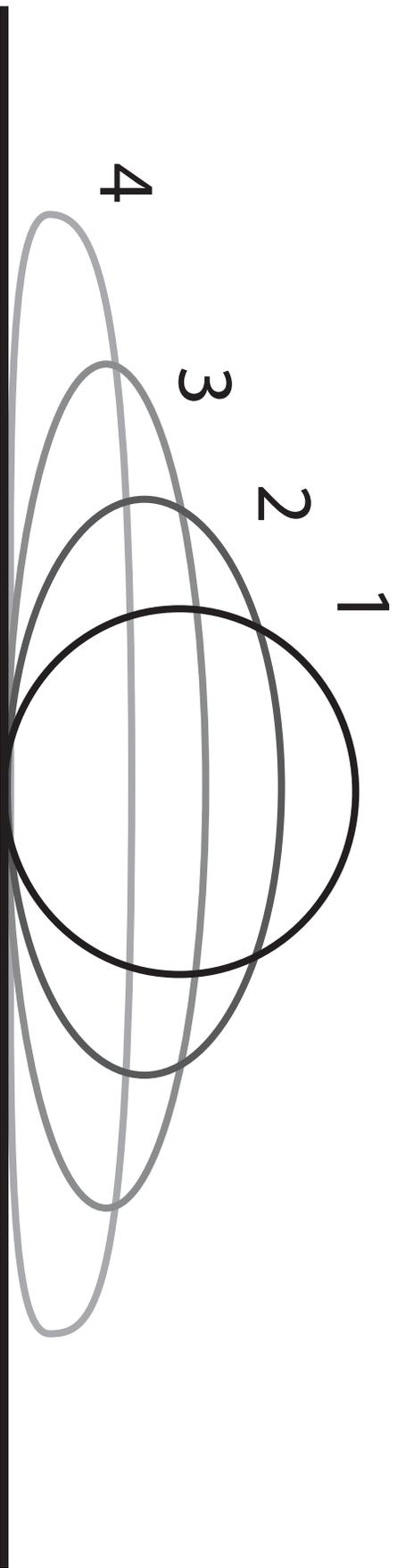
Take 15 Pictures of #1 shape. Then squash the shape into #2 position. Take 1 picture.

Squash to #3 shape. Take 1 picture.

Then take five pictures of a squash at #4 shape.

Then reverse the sequence from #3 and #2 again taking 1 picture of each squash.

Play the animation as a loop.



# Recipe 8: Stretch



## What You Will Learn

Like *Squash*, you will learn *Stretch* is a basic vocabulary word in animation. *Stretch* means to make a long, vertical version of your character. *Stretch* is a basic animation vocabulary word, skill and concept.

## Why Is This Important?

Newton said, “every action must have an equal and opposite reaction”. *Stretch* can be thought of as the opposite of *Squash*. *Stretch* is often used to show how a character recoils from a *Squash* by forming the opposite shape.

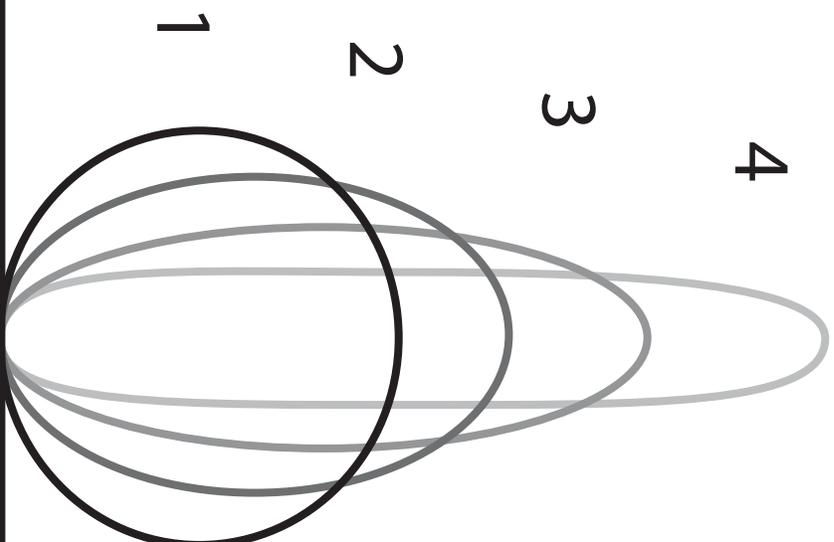
Understanding this basic concept will be one of the main reasons your characters and animations will seem real to your audience. We are applying a cartoon version of real world physics to the mass of an object.



# Stretch

## Steps for Stretch

Take 15 pictures at shape #1.  
Then one picture at #2 stretched shape.  
Then 1 picture at #3 stretched shape.  
Take 5 pictures at #4 stretched shape.  
Reverse direction with 1 picture for #3 and #2 shapes.  
Repeat a few times and press play.





# Recipe 9:

## Bouncing Ball

### With Squash and Stretch

#### What You Will Learn

You will learn that moving the ball along a curve with *Speeding-up* and *Slowing-down* spacing, while at the same time squashing and stretching, requires concentration. You are learning how to apply more than one concept to an animation. Adding *Squash* and *Stretch* to the *Bouncing Ball* recipe blends three basic concepts into one animation.

#### Why Is This Important?

This will prepare the animator for future challenges where three or more animated things need to be happening at the same time. For the bowling ball, there will be no *Squash* or *Stretch*. For the water balloon, there will be many opportunities to *Squash* and *Stretch*.



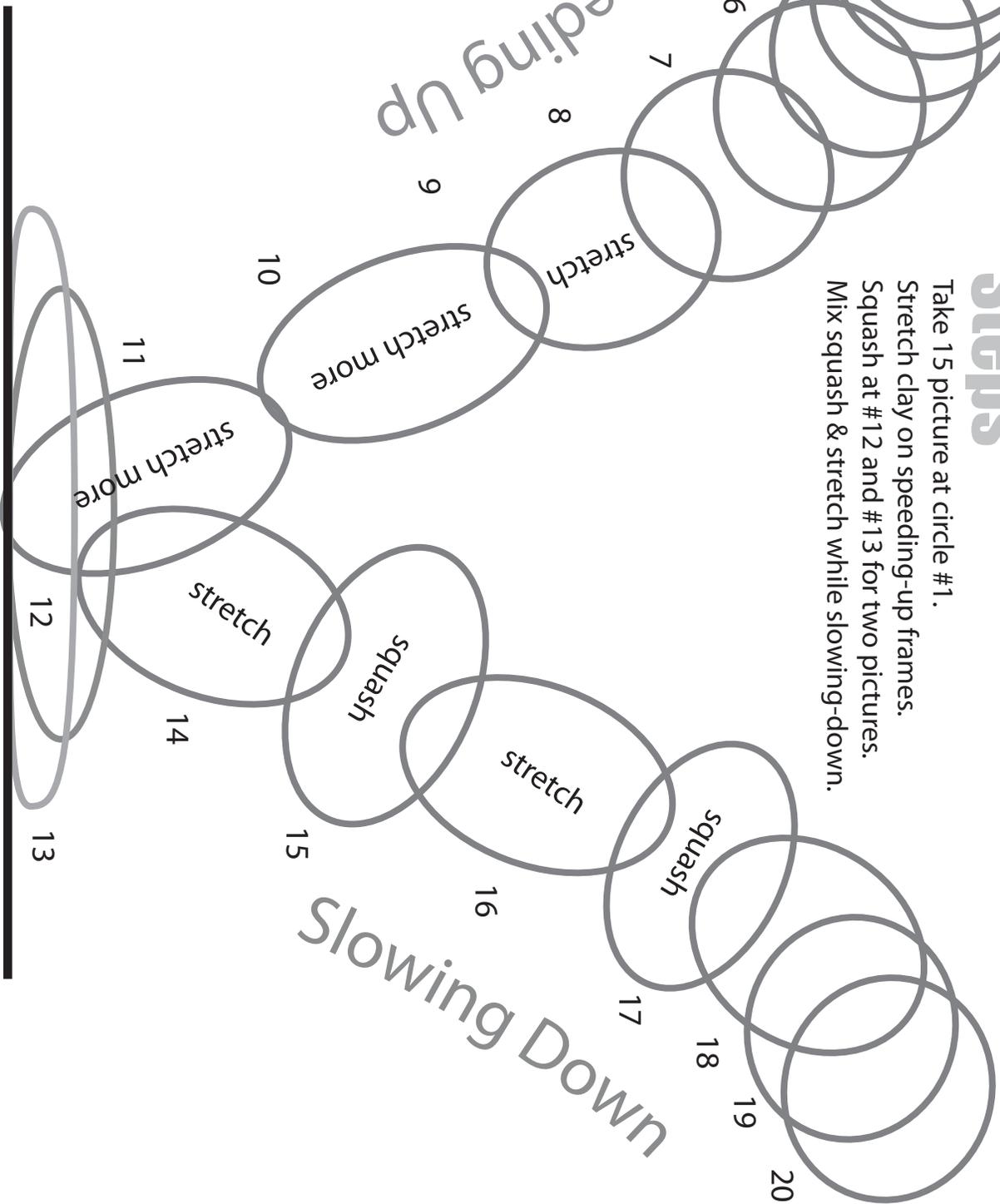
Start



# Steps

Take 15 picture at circle #1.  
Stretch clay on speeding-up frames.  
Squash at #12 and #13 for two pictures.  
Mix squash & stretch while slowing-down.

Speeding Up



Slowing Down

Squash 12 and 13

# Bowling Ball - No Squash or Stretch

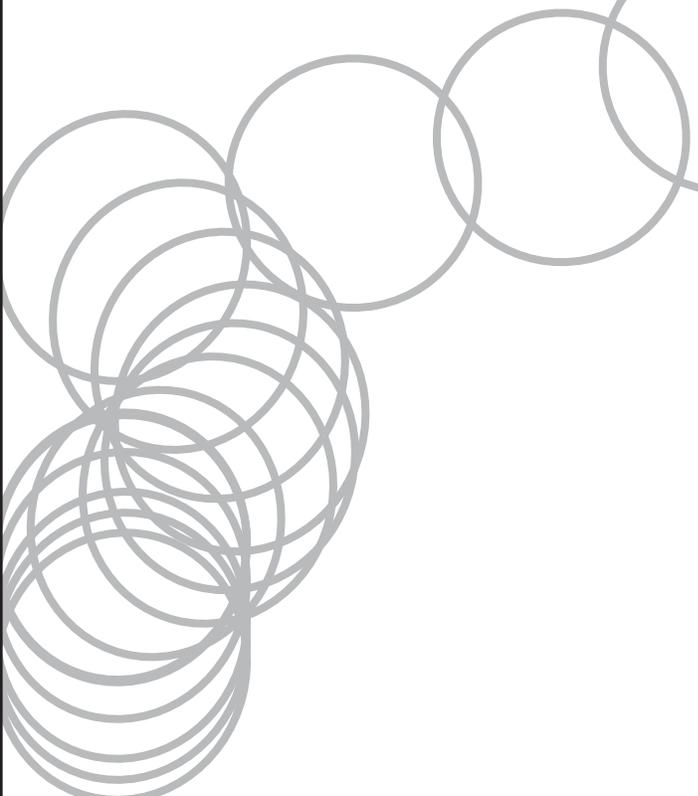
Start



## Steps

Take 15 pictures a circle 1,  
then 1 picture per circle  
until finished.

Take 15 pictures at final circle.



Final

# Water Balloon - All Squash & Stretch

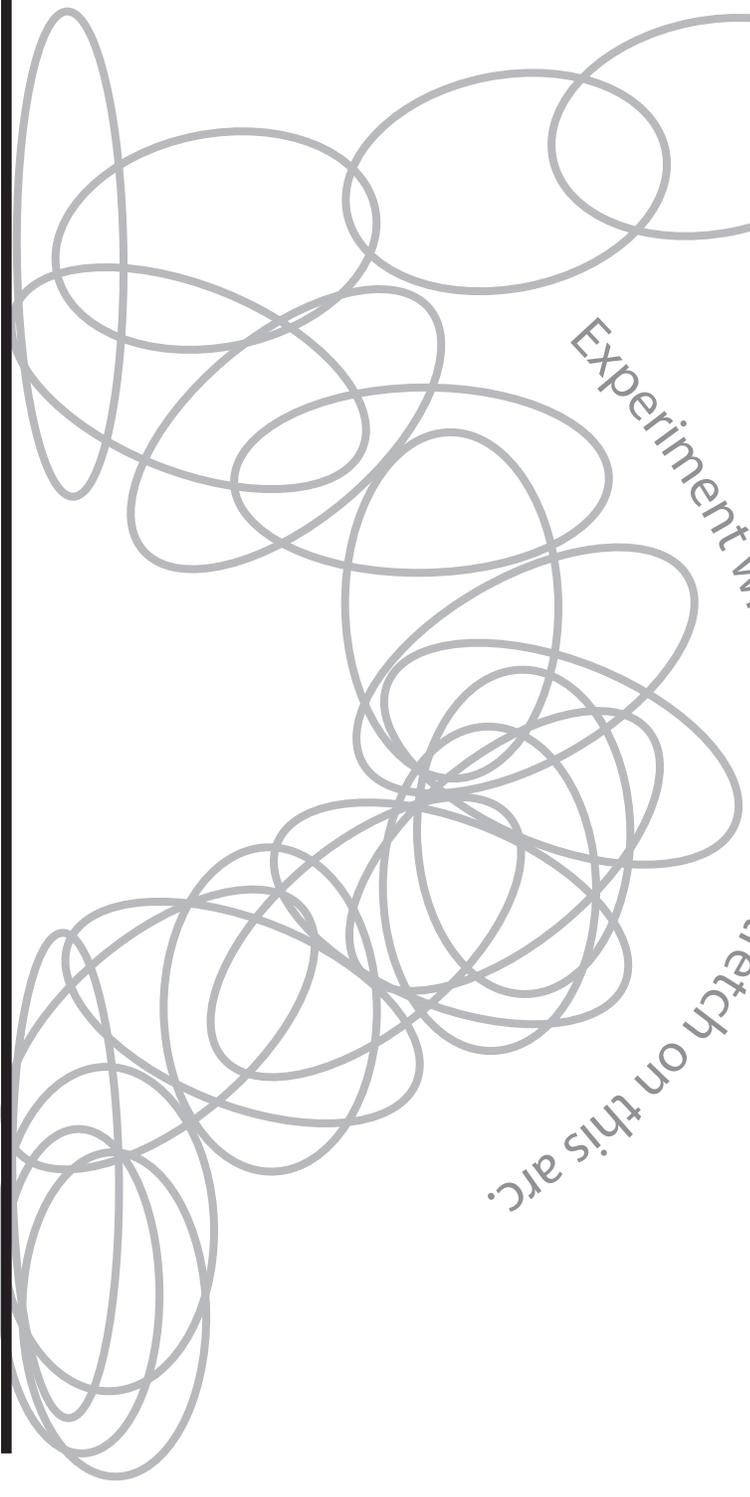
Start



## Steps

- Take 15 pictures at circle 1.
- Then 1 picture per circle until finished. Experiment with squashing and stretching every other picture and see what happens.
- Take 15 pictures at final circle.

*Experiment with Squash & Stretch on this arc.*





# Recipe 10:

## Jump with a Wind-Up (with Squash and Stretch)

### What You Will Learn

You will learn that a *Wind-up* happens before many animated actions. You will create a sense of getting ready to do the action about to happen. A *Wind-up* creates a sense of anticipation. You will use *Wind-up* to engage your audiences attention before something happens.

You will learn that adding a *Wind-up* is a very subtle and important skill.

### Why Is This Important?

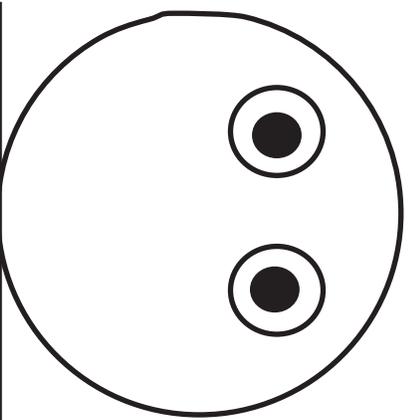
Winding up before any action is a great way to take your animation skills to the next level. Professionally this is called *anticipation*. But we simplify the idea to *Wind-Up*. *Wind-Up*, and the next lesson, *Follow-Through*, are the beginning and ending motions of an action. A super hero *Winds-up* to fly by crouching down. A baseball player *Winds-up* before throwing. A sneezer's head *Winds-up* before the sneeze. In this recipe, our little clay guy *Winds-up* before jumping with a *Squash*. Almost all motion has *Wind-up* or *Follow-through*, and sometimes both!



# Jump with Wind up

## Step 1

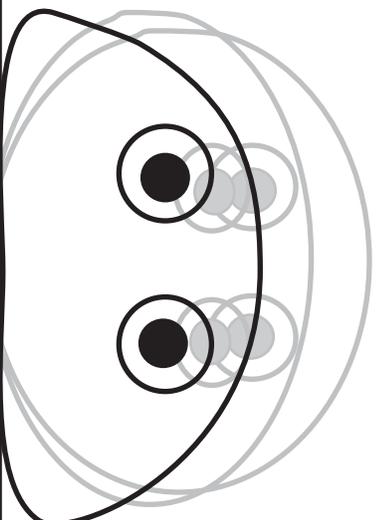
Take 15 pictures.



## Step 2

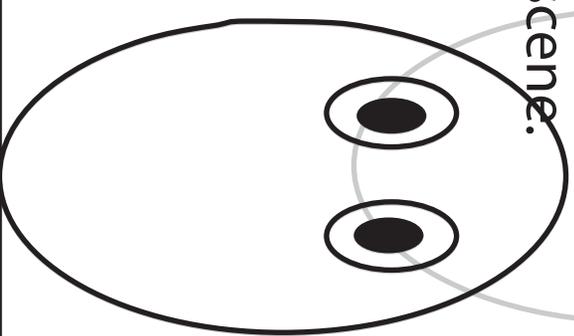
Squash down for 2-3 pictures.

Then take 3 pictures of a pause at before jump.



## Step 3

Stretch and jump up for 3-4 pictures until out of the scene.





# Recipe 11:

## Follow-Through

(with Squash and Stretch)

### What You Will Learn

You will learn that *Follow-through* shows what happens after a basic motion. You will learn to watch for opportunities to show a *Follow-through* at the end of an animated bit. You will learn how to use *Squash* and *Stretch* as a *Follow-through*.

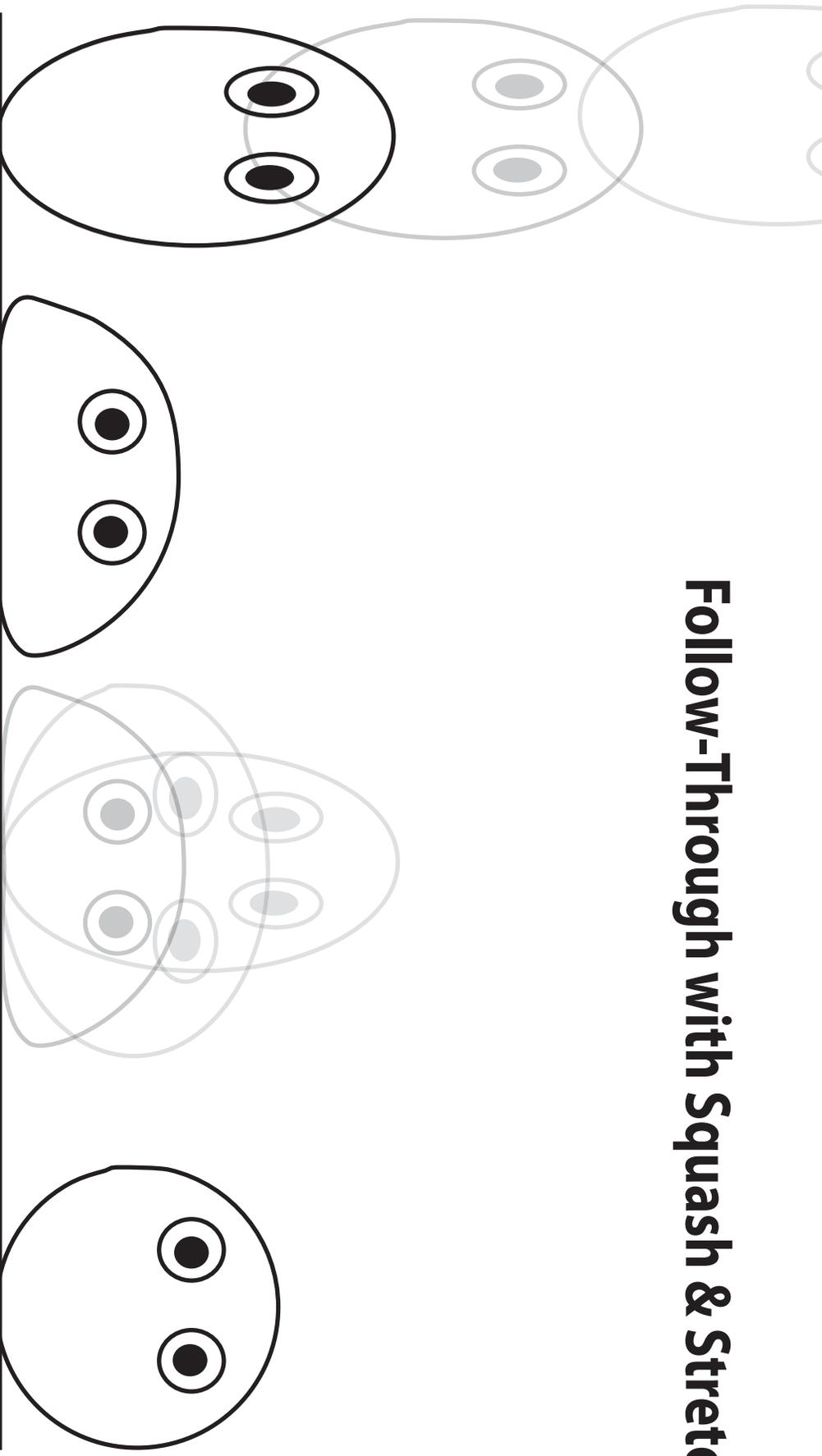
### Why Is This Important?

A *Follow-through* helps your audience see that the main action is finished. In this example, our little clay guy falls into the scene, hits the ground, and *Follows-through* with *Squash* and *Stretch* when it stands up after the impact.

Think of how you follow-through in other actions. How do you *Follow-through* after a sneeze or a snore? How about after throwing a ball? *Follow-through* is everywhere.



# Follow-Through with Squash & Stretch



## Step 1

Drop in a stretch pose  
2-3 pictures.

## Step 2

Squash for 1 Picture.

## Step 3

Follow through  
with Squash & Stretch  
for 5-6 pictures.

## Step 4

Finish with  
15 pictures  
of nothing.



# Recipe 12: Jumping

(Wind-Up & Follow-Through with Squash & Stretch )

## What You Will Learn

You will use *Squash* and *Stretch* as a *Wind-up* and a *Follow-through* in this exercise. You will learn to create a simple jump animation by combining all four animation concepts.

As you layer these animation concepts together, you will create the illusion of getting ready to jump, jumping, and finishing a jump by returning to the beginning pose.

## Why Is This Important?

Winding-up before any action, and following-through after the action is rarely noticed by the audience.

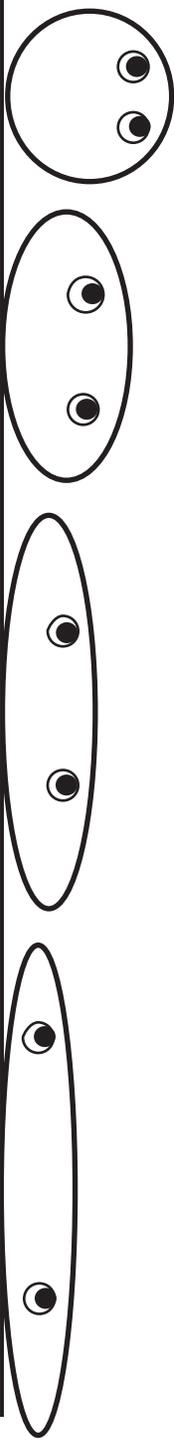
*Wind-up* and *Follow-through* need to be understood to the point that an animator almost unconsciously adds them to any animated bit.

Knowing and using *Wind-up* and *Follow-through* will put you on the road to animation mastery.



# Jump with Wind-up + Follow-Through + Squash + Stretch

**Wind Up:**



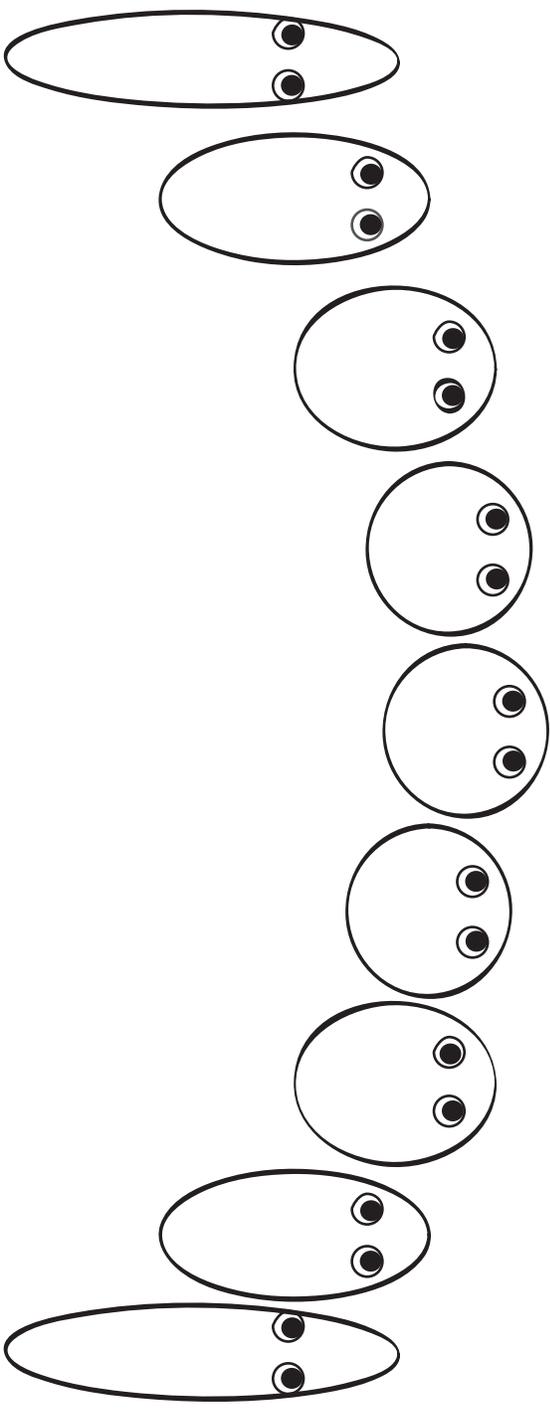
15 Pict.

1 Pict.

1 Pict.

5 picts.

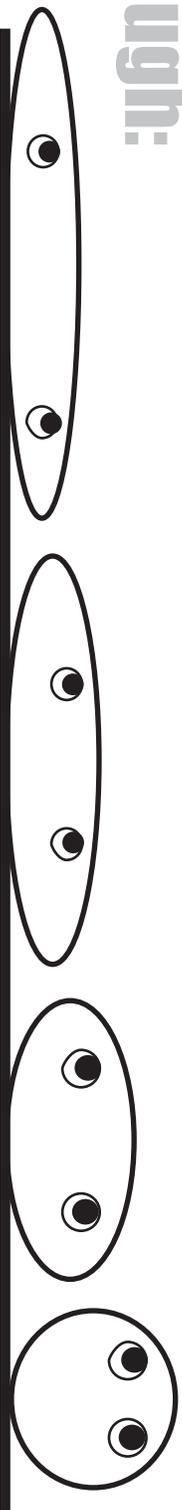
**Jump:  
Stretch**



1 Pict.

**Follow Through:**

**Reverse**



**Squash**

1 Pict.

1 Pict.

1 Pict.

15 Picts.



# Recipe 13: Throw

(with Wind-Up & Follow-Through )

## What You Will Learn

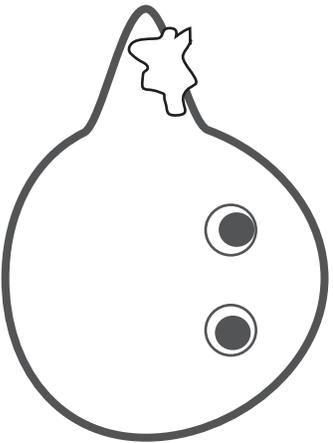
You will learn how to apply *Wind-up* and *Follow-through* to a simple throwing animation. You will discover the timing and posing to make a convincing throwing motion. You will show a character get ready to throw with a *Wind-up*. You will finish the animation with a *Follow-through*. You will start to notice opportunities for *Wind-up* and *Follow-through* in almost all animation bits .

## Why Is This Important?

The audience enjoys anticipating action as a way of predicting what comes next. The tension of watching *Wind-up* before an action clues the audience in on the intentions of a character. We make them wait just a split second in anticipation of what is coming next. The *Follow-through* gives our audience a sense of relief, release, or after-ness, which cues them that the action is over.

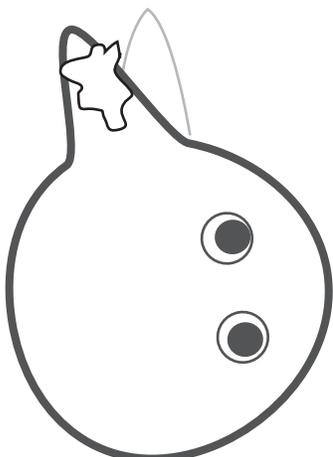


# Throw: Wind-Up & Follow-Through



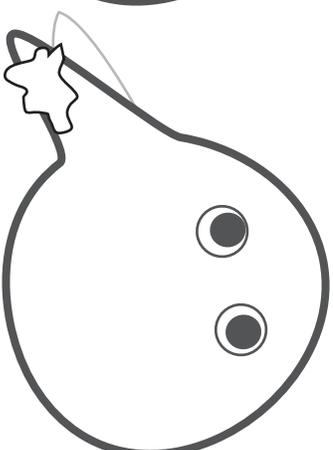
## Step 1

This pose for 15 pictures



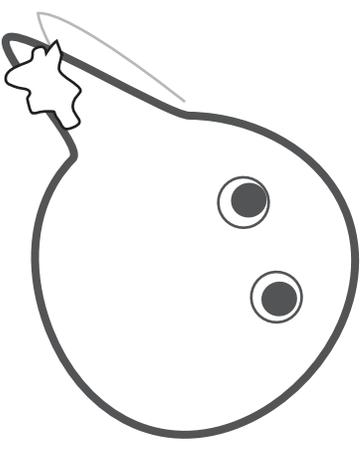
## Step 2

Drop arm and tip body to the left for 1 picture.



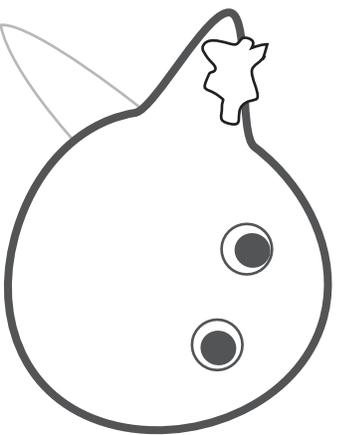
## Step 3

Drop arm more and tip body to the left more. Take 1 picture.



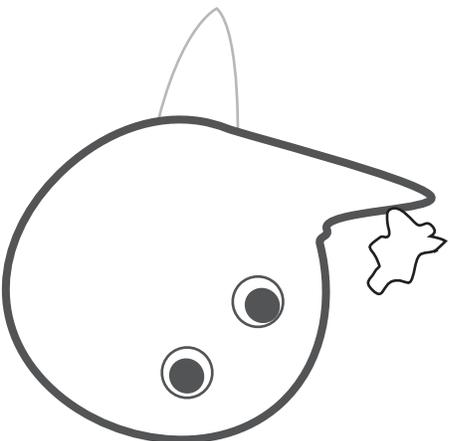
## Step 4

Drop arm more and tip body to the left more, then take 10 pictures.



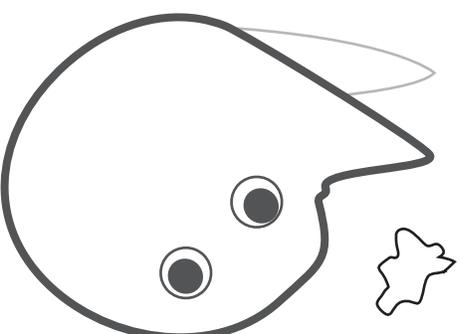
## Step 5

Tip to the right and raise arm for 1 picture.



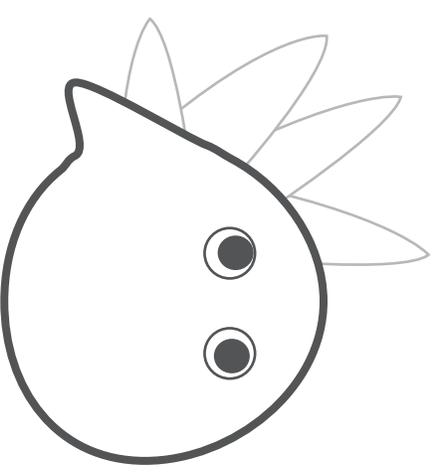
## Step 6

Tip more and bend arm over head. Let paper leave hand. Take 1 picture.



## Step 7

Tip a little more to the right. Hold this pose and animate the paper flying off the screen for 5 pictures



## Step 8

Tip back to step 1 with 3 pictures. Return arm to side. Take 15 pictures.



# Recipe 14: Sneeze

(with Wind-Up & Follow-Through)

## What You Will Learn

You will learn the timing and spacing for a sneeze animation. You will use *Wind-up*, *Speeding-up*, *Follow-through* and *Slowing-down* spacing in this animation. You will be able to keep track of three or four things at the same time.

You will observe that sneezing is an animated bit where *Wind-up* and *Follow-through* are less obvious than throwing something, yet we use the same basic formula.

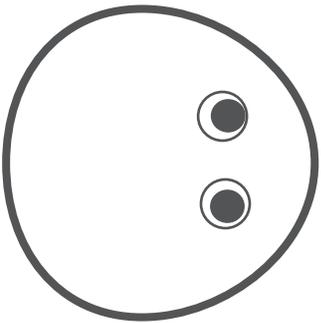
## Why Is This Important?

If you can animate a sneeze, you are beginning to put animation rules together. To experiment with possible variations of sneezing styles, hold the *Wind-up* a few frames longer by taking some extra pictures before the sneeze. Add more pictures to the *Follow-through* of the sneeze to make it last longer. Tweak timing to animate fun variations.

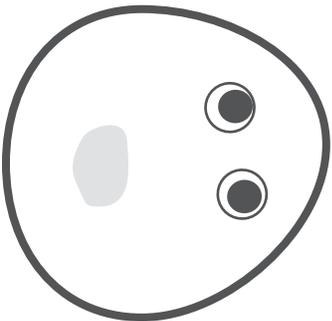


# Steps

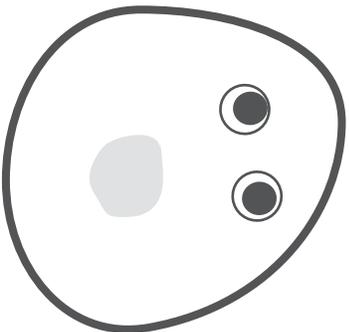
## Sneeze: Wind Up & Follow Through with Spacing



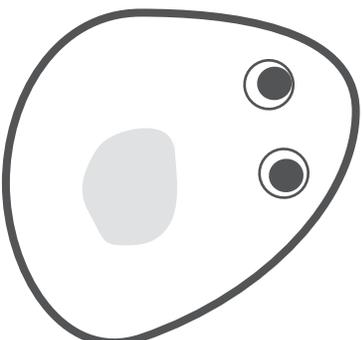
Take 15 pictures of regular face.



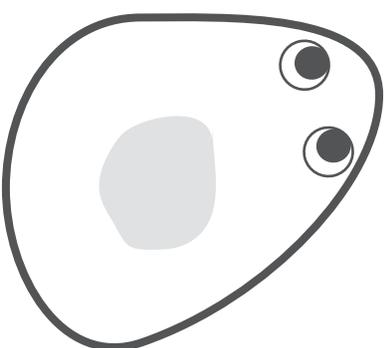
1 picture of regular face with small dent for mouth



1 picture of face leaning to the left and mouth open.



1 picture of face leaning and stretch more, with bigger dent for mouth



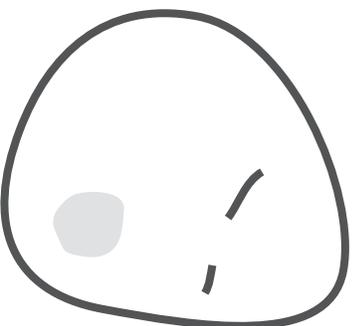
10 pictures of face in this pose for a hold before sneeze.



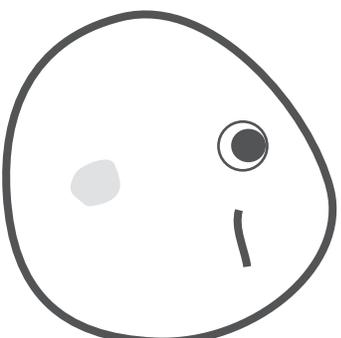
2 pictures of face bending and tipping to the right with small mouth and closed eyes.



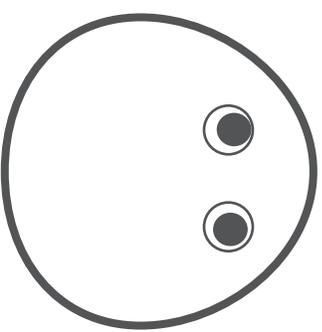
10 pictures of face bent like this.



1 picture of face tilting back to the right slightly.



1 picture of face with one eye open and titling close to the beginning pose.



Take 15 pictures of regular face.



# Recipe 15: Shake

## What You Will Learn

You will learn that the concept of *Shake*. You will find that adding *Shake* to your movie in the right moments increases your audience's attention. A *Shake* is a high energy move which adds impact to your animation.

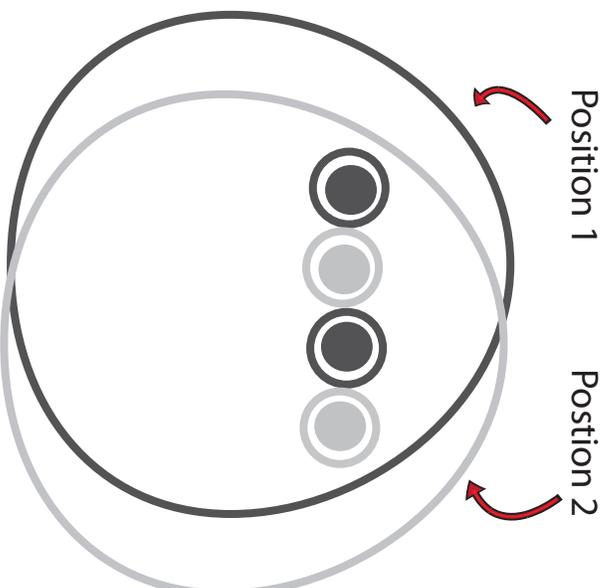
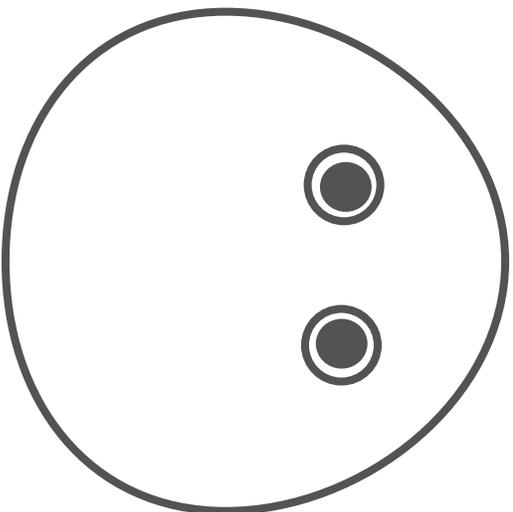
## Why Is This Important?

*Shake* is a very simple concept, but adding *Shake* whenever you see the opportunity means you are starting to think like an animator. Little vibrations during a snore, or a shiver, or a scream draw the audience in and keeps their attention.

You want to have an impact on the emotions of your audience. It's time to *Shake* things up!



# Shake



## Step 1

Take 15 Pictures

## Step 2

Take 1 picture at position 1,  
then move to position 2  
for 1 picture.  
Repeat 30 times.



# Recipe 16:

## Quiver

### What You Will Learn

You will learn that a *Quiver* is much like a *Shake*, but one end of the object stays in one place while the other moves back and forth until it stops.

The ability to *Quiver* is an animation basic.

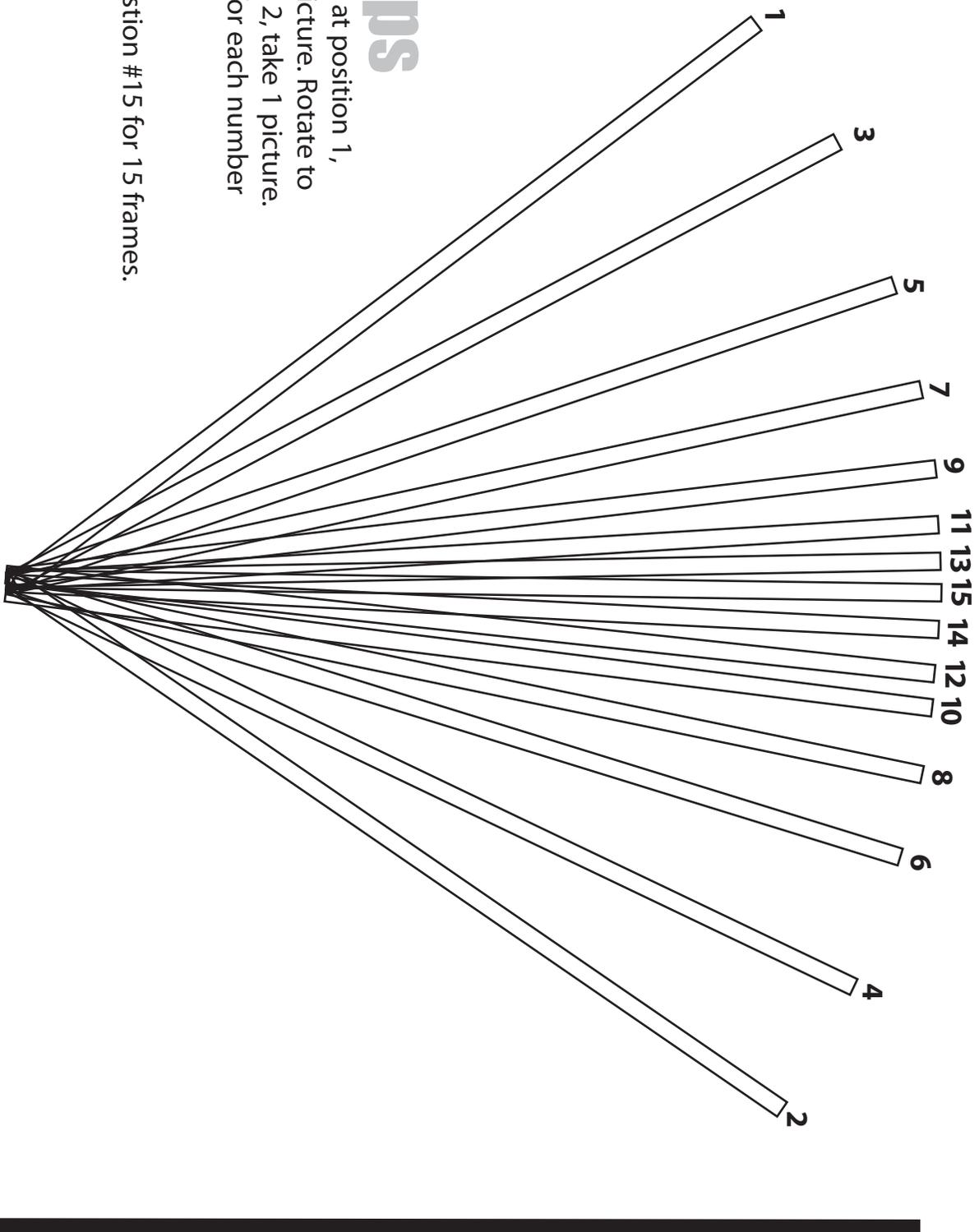
You will learn adding *Quiver* is a way to use *Follow-through*.

### Why Is This Important?

Your audience is visually intelligent. They know where things quiver in the real world. If your character jumps off a diving board, and the diving board makes no quiver, your animation is less visually believable. You will also use *Quiver* when a hammer rings a bell, when a ball hits a head, when someone steps on a rake, when an arrow hits a target, etc.



# Quiver



## Steps

Tilt stick at position 1, take 1 picture. Rotate to position 2, take 1 picture. Repeat for each number until 15.

Hold position #15 for 15 frames.



# Recipe 17: Toggle

## What You Will Learn

You will learn that a *Toggle* is accomplished by alternating very similar versions of a prop, every other picture until the illusion of frenetic motion is created. *Toggle* is the word animators use to describe the switching out of one prop and replacing it with a similar prop to create a loop of flickering animation.

## Why Is This Important?

Toggling is used to save time in animation. For instance animation of a waterfall, flames from a jet engine, a fire, or a meteor's tail can be brought to life by simply having two slightly different versions alternate and looped into a repeating sequence. For example, if a scene has a waterfall in the setting create two different waterfall drawings, and toggle them a few times. Copy and paste the toggled loop, and Voila, a living dynamic waterfall comes to life.



# Toggle

# Toggle

Toggleing means flipping from one image to another.

Alternating pictures can make it look like a flame is burning.

Take one picture of each "flame" pose, and repeat alternating for about 15 pictures.

Loop for flame effect.





# Recipe 18: Loops & Cycles

## What You Will Learn

You will learn that *Loops* and *Cycles* are repetitions of animated actions which lend themselves to repeatability.

They are sometimes used interchangeably.

Animators use *Loops* and *Cycles* often. In fact, in the White Hat recipes, "looping" and "cycling" have been used often. The *Bouncing Ball* is a *Cycle* that *Loops*. Or to put it another way, it was a *Loop* that we cycled. They can be used interchangeably.

## Why Is This Important?

*Loops* and *Cycles* save time in animation. Examples include: tires spinning, birds flapping, balls bouncing in place, flags waving, etc.

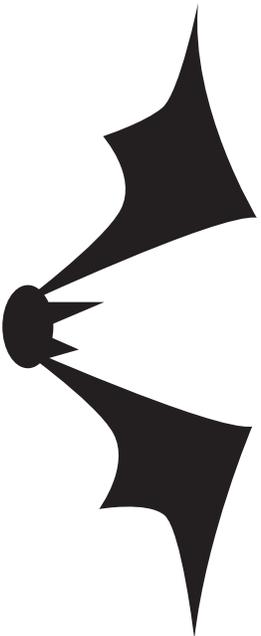
Used in a sentence, an animator might be heard to say, "I'm going to create a loop of this car tire spinning, and cycle it for two seconds". Or "I'm going to create a cycle of this car tire spinning, and loop it for two seconds."



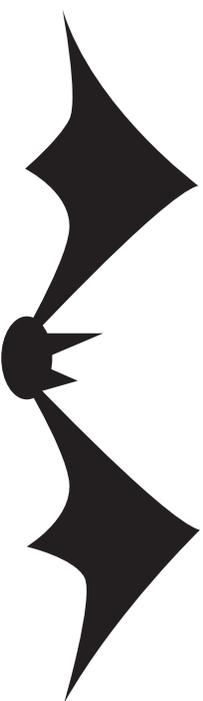
# Cycles

## Loops and Cycles

A cycle is usually 3 or more pictures of a repeating action. In this recipe, one flap of a bat's wing is a cycle. Take one picture of each bat in order of 1, 2, 3, 4, 3, 2, This is one cycle of a wing flap. Loop this cycle of a wing flapping and the bat can fly for as long as you loop the cycle.



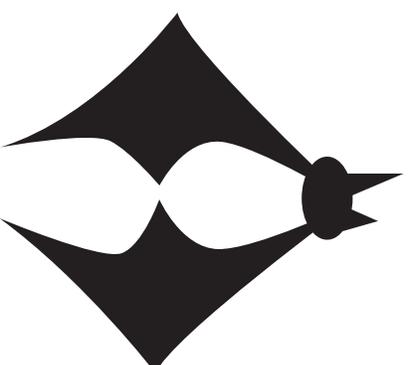
1



2



3



4



# Recipe 19:

## Loops & Cycles on a Path

### What You Will Learn

You will learn to add the *Spacing is Speed* recipe to animating a looping or cycling character along a path. You will advance the bat, from *Recipe 18*, along a path while keeping track of the appropriate steps in it's *Cycle*.

### Why Is This Important?

Tires spinning, balls bouncing, and wings flapping do not always stay in one place. Learning to overlap a *Cycle* or a *Loop* as it moves along a path using *Spacing is Speed* requires overlaying two basic principles simultaneously.

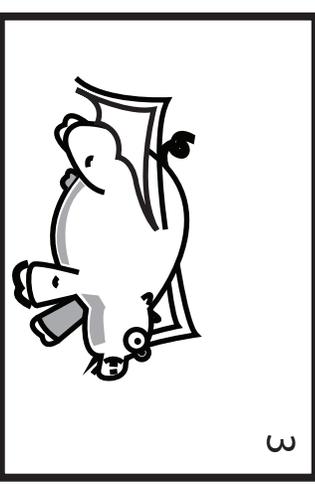
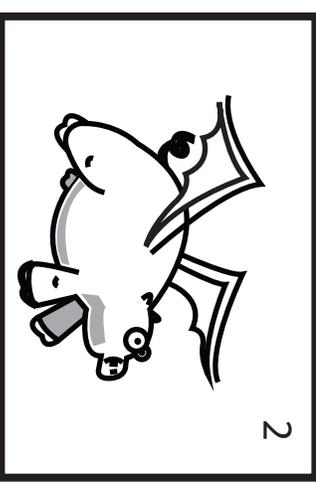
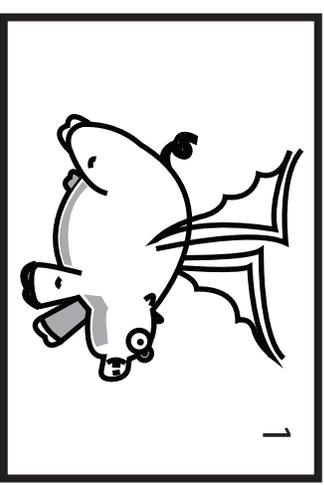
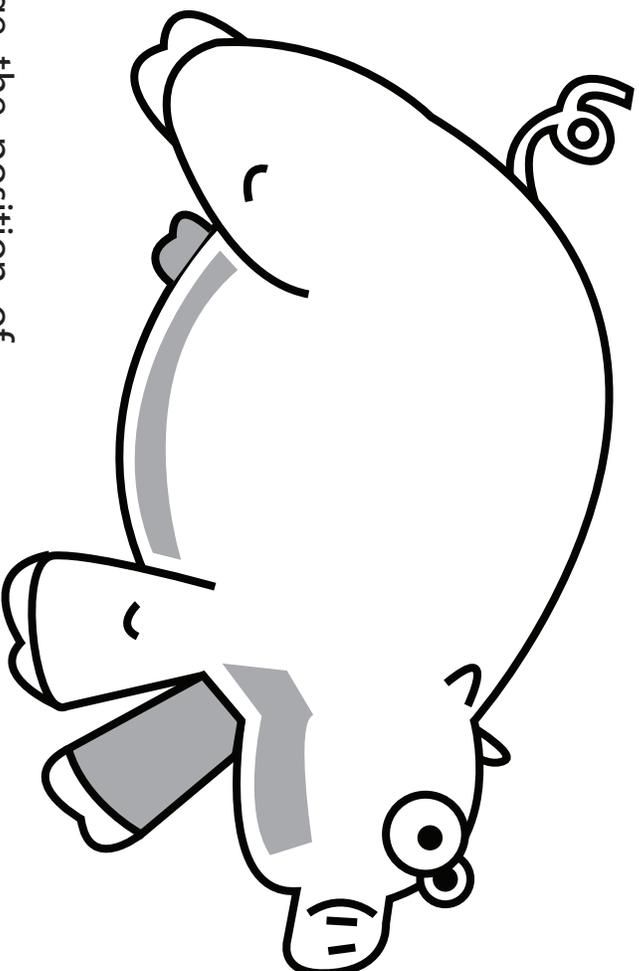
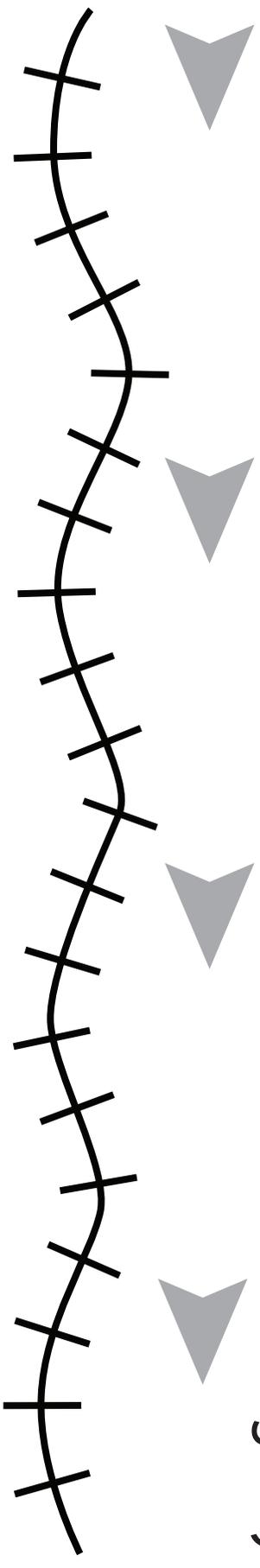
Two basic actions are retained in short term memory: which frame of a *Cycle* or *Loop* is next, and how fast do far do we space the prop before we begin the next cycle?

Notice how much more time it takes to *Loop* a character along a path, as opposed to letting it *Cycle* in one place.





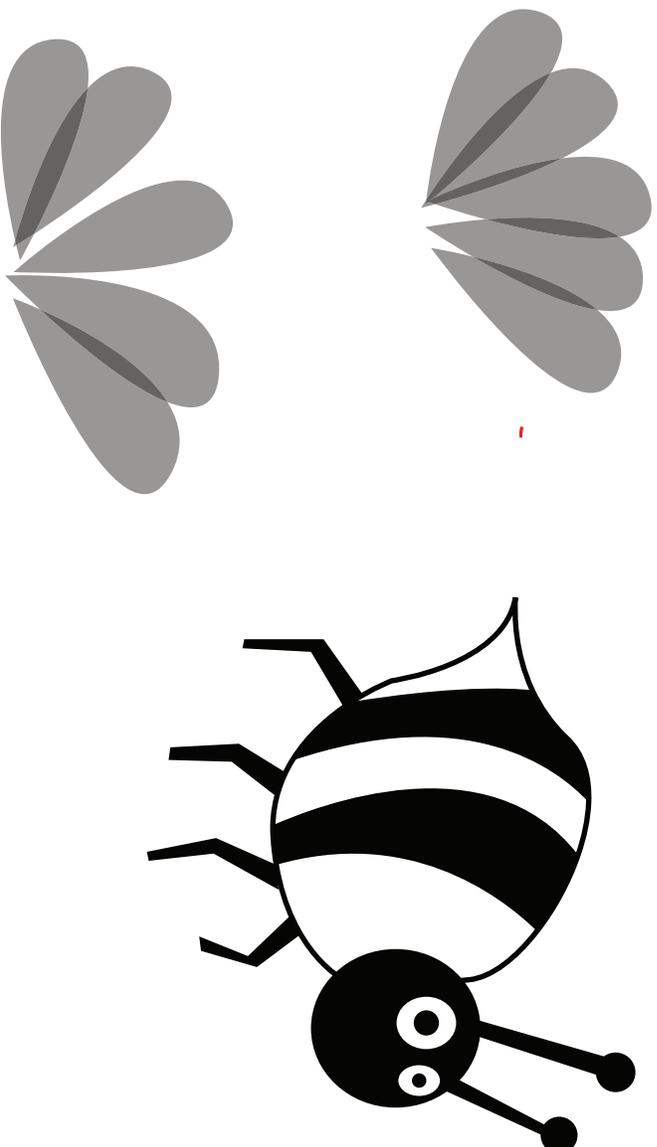
# Pigs Fly



## Steps

Each notch change the position of the wings from #1, 2, 3, 2, 1...etc. Loop until pig is off screen.

# Flying: Bee Buzz

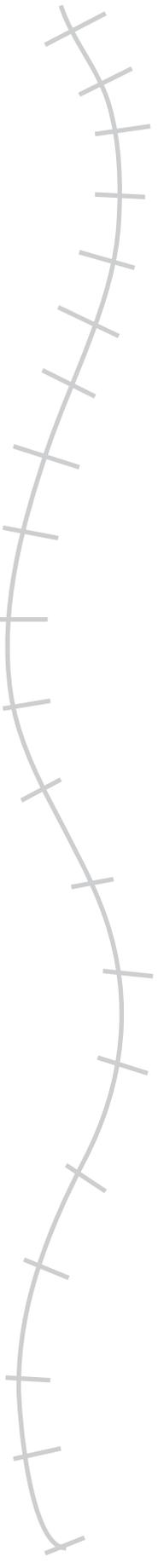


## Steps

Animate bee from notch to notch along the curved line, 1 picture per notch.

Swap out each “wing” every other notch, and move bee from notch to notch as you go.

Repeat until off screen.





# Recipe 20: In-between Blur

## What You Will Learn

You will learn how to create the illusion of speeds which are too fast for 15fps to capture. You will animate one long stretched-out version of your character, it is possible to trick the eye into believing it can move from point A to point B in 1/15th of a second. It is amazing what the eyes will accept as motion. *In-between blurs* are one of our favorite animation tricks. This is for a high-speed illusion.

## Why Is This Important?

*In-between blurs* help us add a “snap” of speed to our movies. You might need a superhero to fly fast, a race car to speed off, or a snowball to fly fast. Use the *In-between blur*. *Speeding-up* and *Slowing-down* patterns use too many pictures for this kind of an animated effect. The audience cannot tell a long piece of clay with multiple eyes was in for 1/15th of a second, they just see a powerfully fast effect! Of course a sound helps the illusion. Add a “whoosh” SFX!



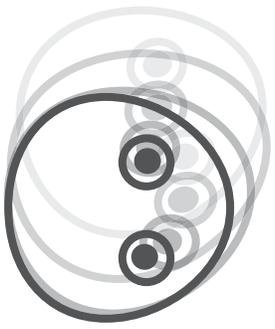
# Inbetween blur with Wind-Up & Follow-Through

## Step 1

15 Pictures of still face.

Then Wind-up with 3 tilting pictures to left.

Hold for 3 pictures before step 2.



## Step 2

1 Picture here with long Inbetween.



## Step 3

Follow through with 3 pictures tilting to the right. Hold for 3 pictures before step 4.



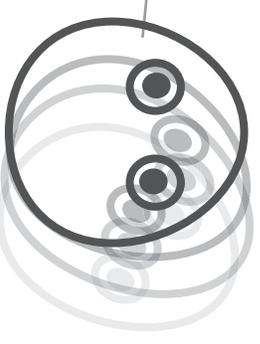
## Step 4

1 Picture Here With Long Inbetween



## Step 7

Follow through with 4 pictures, tilting to the right, then going to regular face.



## Step 5

Tilt to the left 3 pictures, then hold for 3 pictures before step 6.



## Step 6

1 Picture here with long Inbetween.





# Recipe 21:

## Walking/Running

### What You Will Learn

You will create the illusion of walking and running without using legs or feet. Walking and running use a zig-zag pattern. You will learn to advance your character up and forward, then down and forward to create the illusion of taking steps. You will change the spacing to change the speed. You will add the sound effect of footsteps, and discover your audience's brains will link up the zig-zag pattern with the footstep sounds.

### Why Is This Important?

In traditional animation, making a character walk is one of the most difficult animation tasks.

The head is bobbing forward and backward, the body moves up and down. The hands are swinging opposite from the legs. The joints in the legs and arms are bending and straightening. And all of these moving parts are moving forward together!

We simplify the process by using a zig-zag pattern.







# Recipe 22:

## Swing

### What You Will Learn

You will learn to employ the Speeding Up/Slowing Down timing and spacing to a Swing formula.

### Why Is This Important?

*Swing* is a basic pattern in animation. Chances to animate a swing pattern include: arms during a walk, legs during a walk, swing-sets, pendulums, Tarzan-like vine swinging, eyeballs moving back and forth watching a ping-pong match.

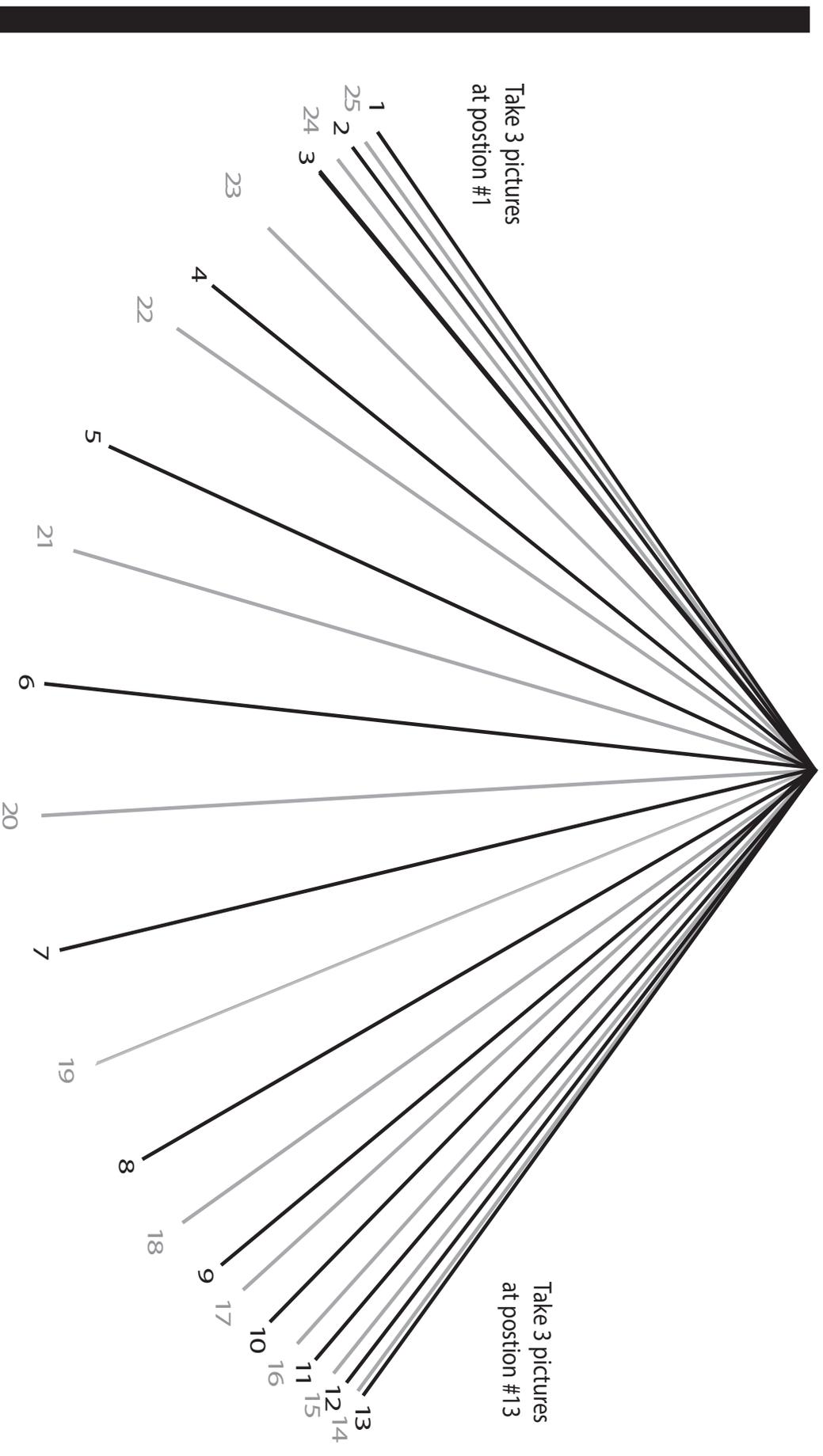
Compare a similar pattern like *Quiver* with *Swing*. They have similar spacing set-ups, but they use different math and timing to generate a completely different animation.



# The Swing Pattern

## Swing

A swinging motion is required in many animations: arms swinging, swing sets, pendulums, Yo-yos, etc. This motion uses the speeding up and slowing down pattern. One end of the swing stays in the same place while the other end does the moving. There is a pause at the top of each end of the swing. Take three pictures to create this pause. Animate one loop, and repeat.





# Recipe 23:

## Swing with Overlapping Action

### What You Will Learn

You will add an *Overlapping Action* to the basic Swing recipe. You will learn that overlapping actions add a sense of realistic physics to an animation. *Overlapping Action* is a common animation vocabulary word for the "lag" or "floppy parts" of a main action.

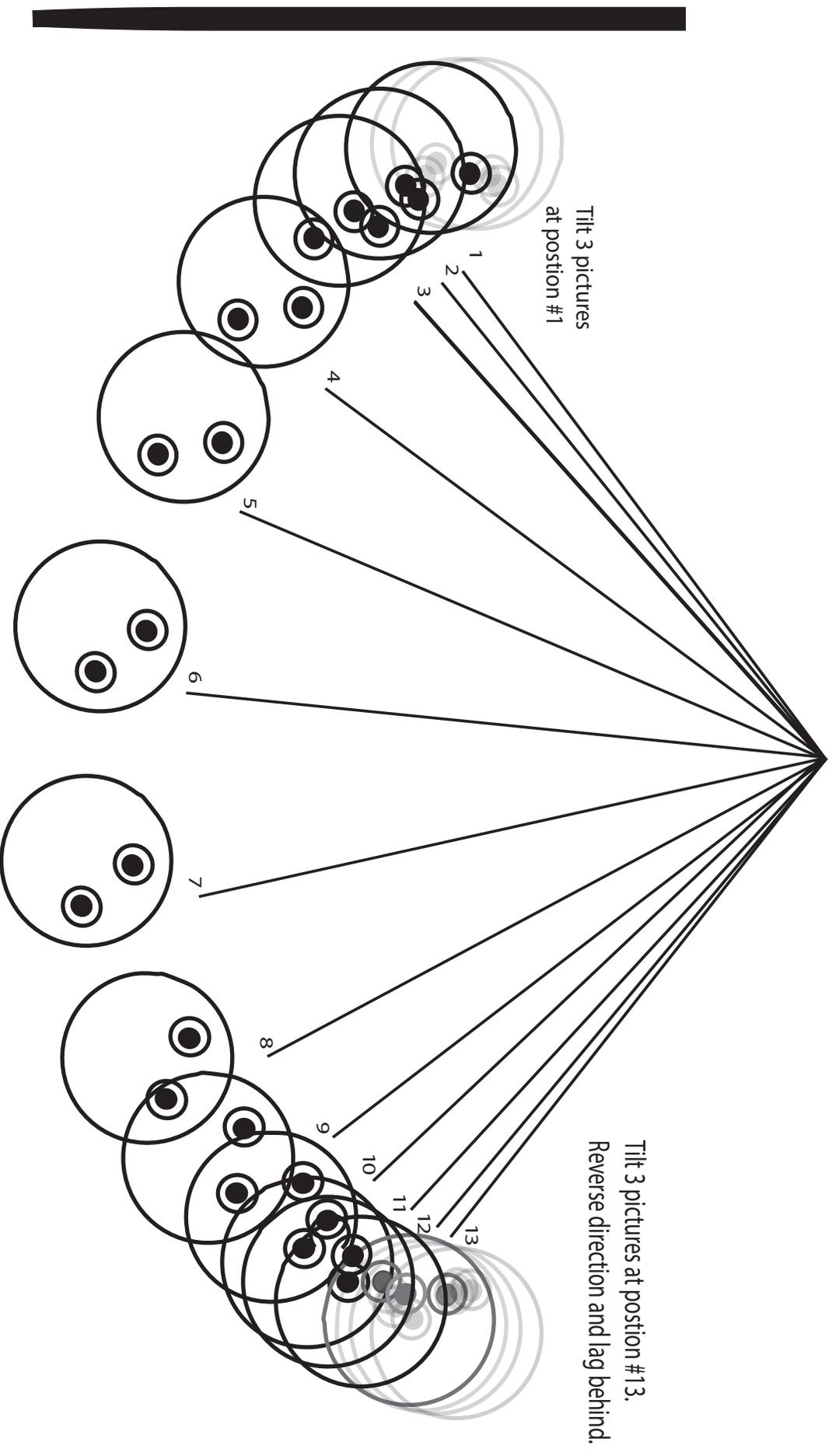
### Why Is This Important?

*Swing with Overlapping Action* uses the hinge action where the clay guy holds onto the rope or point of contact, to amplify the physics or weight of the momentum. Other examples include when an arm swings and the hand lags behind bending at the hinge of the wrist. On a trampoline, long hair lags behind the main jumping motion with an *Overlapping Action* from where the hair contacts the head. When an animator looks for opportunities for *Overlapping Action* independently, this is evidence of an intermediate or advanced level mind set.



# Swing with Overlapping Action

Overlapping action is a small motion that happens because of a bigger action. A monkey swings on the end of a vine. The monkey's body lags behind the swinging motion of the vine. It has it's own motion that overlaps the big swing motion. Try a clay guy for the swinging in this recipe.





# Recipe 23b:

## Swing with Overlapping Action

### What You Will Learn

You will add an Overlapping Action with a two pose character to the basic Swing recipe. You will learn how to take Overlapping Action to a more advanced level than just the Clay Glob. You create the "lag" or "floppy parts" of the main action by alternating poses to match the momentum of the swing.

### Why Is This Important?

Swing with Overlapping Action in exercise 23b is a variation on the way we amplify the physics or weight of a weight on the end of swing momentum. When an animator looks for ways to pose characters for Overlapping Action, this is evidence of an intermediate or advanced level mind set.







# Recipe 24: Blinking is Thinking

## What You Will Learn

You will discover the power of blinking in animation. When your character blinks, your audience will become more engaged with its emotions. You will learn how to create the illusion of eye movements and blinking in a way that will make your characters seem more natural and life-like.

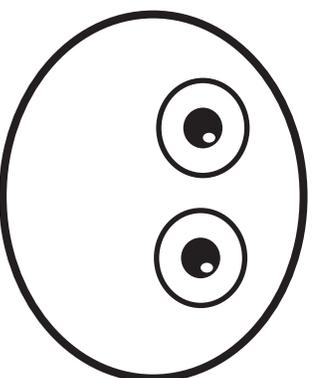
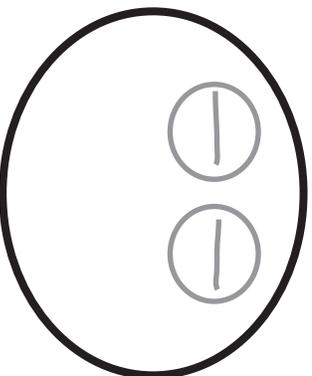
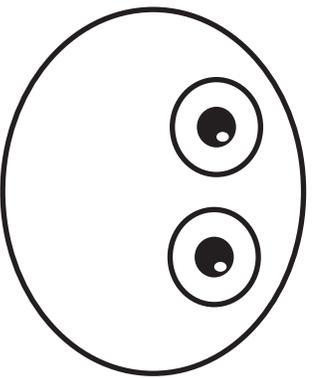
You will explore and discover the optimum timing for blinks. This will be accomplished by experimenting with the math.

## Why Is This Important?

In animation we look for ways to create the illusion of life. When you master the art of blinking, along with facial expressions and talking formulas, your characters will look like they are thinking. Your audience will think right along with them. Looking at a character blinking creates a connection between your audience and your character. For some mysterious reason, blinking means thinking.



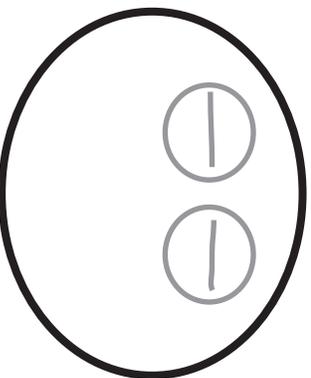
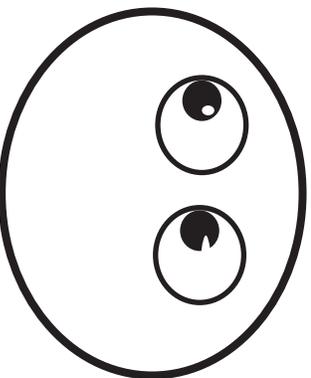
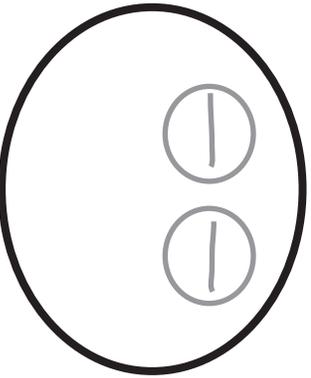
# Blinking Is Thinking



**Step 1** Take 15 Pictures

**Step 2** Take 3 Pictures

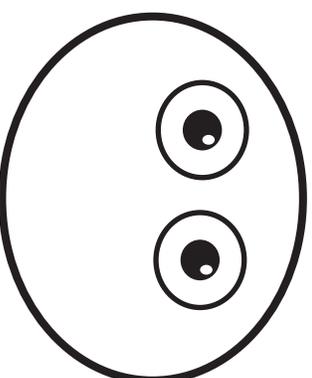
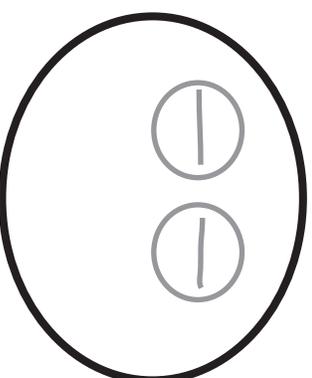
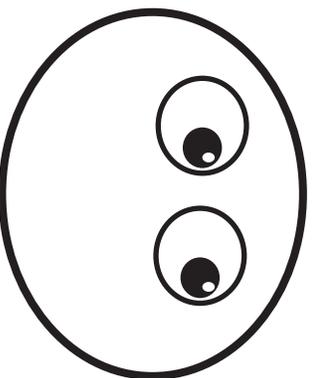
**Step 3** Take 15 Pictures



**Step 4** Take 3 Pictures

**Step 5** Take 15 Pictures

**Step 6** Take 3 Pictures



**Step 7** Take 15 Pictures

**Step 8** Take 3 Pictures

**Step 9** Take 15 Pictures



# Recipe 25:

## Talking - Lip Synching

(Voice Overs = V.O.)

### What You Will Learn

You will learn how to create the impression your character is speaking. By using different mouth positions in a random order, you will create a “speaking loop” which will help you synchronize your voice to the animated lip movements. You can create a short mouth animation which will be copied and pasted to match anything your character might say. This is called synchronization.

### Why Is This Important?

Voicing your character may be the most important part of animated storytelling. In feature film animations, the voices are finished **BEFORE** the animation process starts. The animators match the lips of the characters to the pre-recorded voices. This takes years of work. We do V.O. last! Trust us, it will appear that the character is mouthing your words exactly. A *super-secret* recipe indeed!



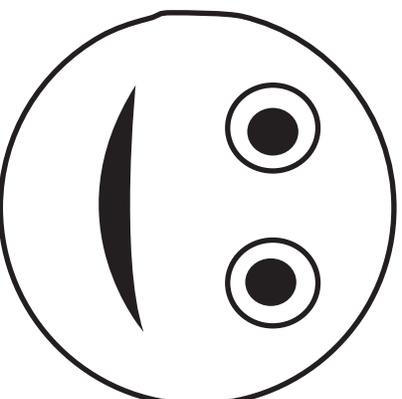
# Talking - Lip Synching

## Step 1

Begin by setting mouth #1 on the face.

Take 15 pictures.

We need 15 pictures of nothing happening before the speaking begins.

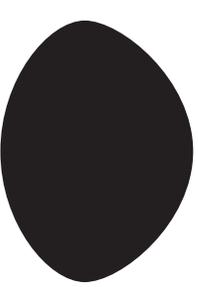
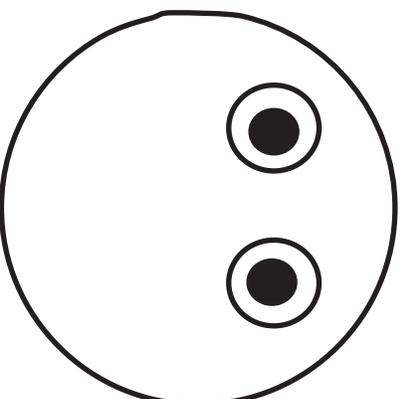


## Step 2

Continue to take 1 picture at a time, laying different mouth shapes on the face

for each picture. Have fun turning the shapes upside d wn to get more variety.

Take 30 separate pictures of random mouth shapes . We will have a two second loop to use with our voices later.



## Step 3

Finish by laying mouth #1 on the face and taking 15 pictures.



# Recipe 26: Make a Movie

## What You Will Learn

You will learn to complete a short animation using all the recipes in the White Hat area. You will use your new skills in service of a story. You will learn the importance of framing a scene. You will be introduced to shot selection too. *Close-ups* are for emotion, *Medium-shots* are for speaking, and *Long-shots* are for settings and scale.

You will improvise with your voice-overs to tweak the meaning of the story.

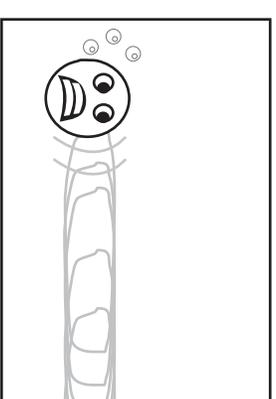
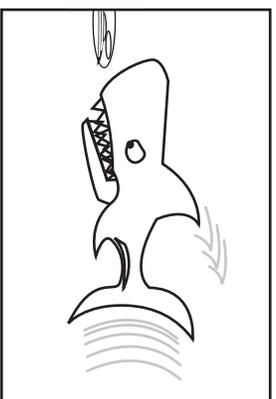
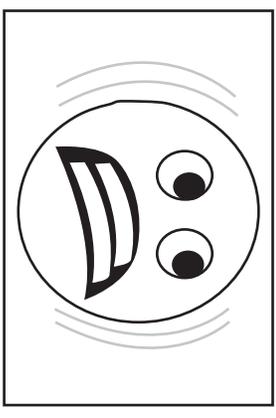
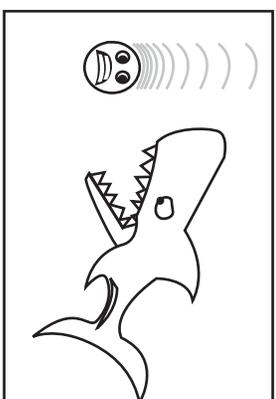
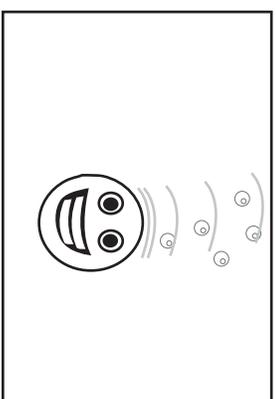
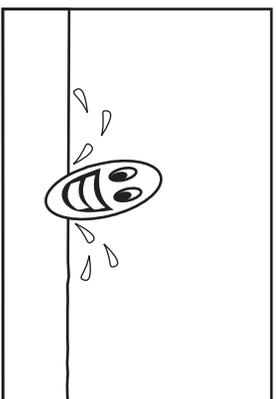
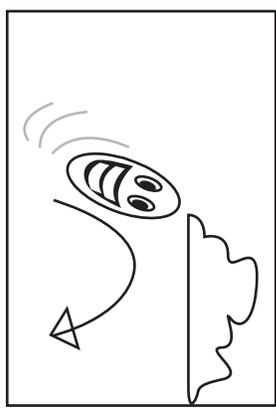
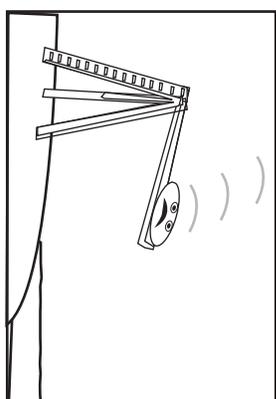
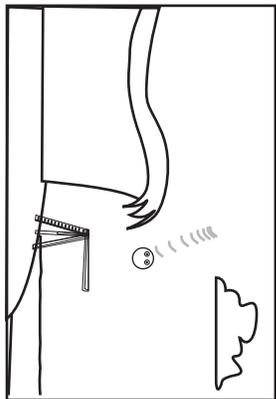
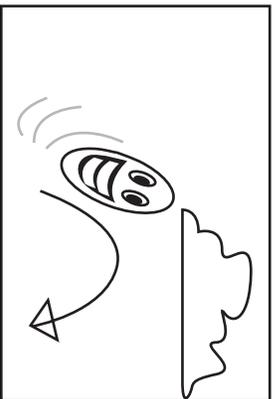
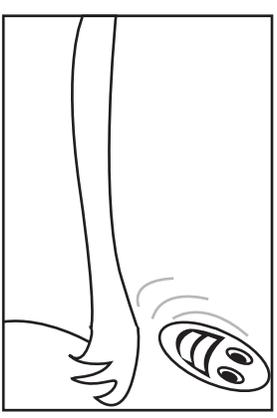
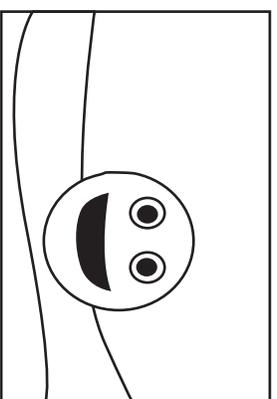
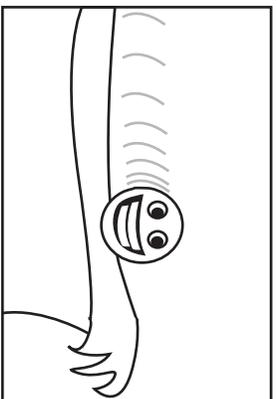
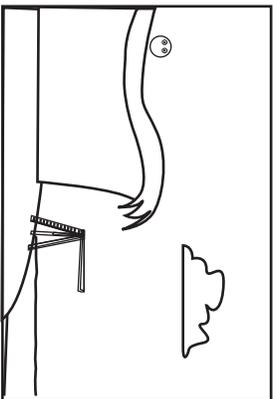
## Why Is This Important?

So far we have isolated the most important skills in animation. Combining all the basic animation concepts into one movie gives us perspective on how and why we use these new skills. The introduction to scene layouts and shot selection will bring us closer to being able to compose our own original movie later. If you finish this recipe, this makes you an animator!

***Bon Animate!***



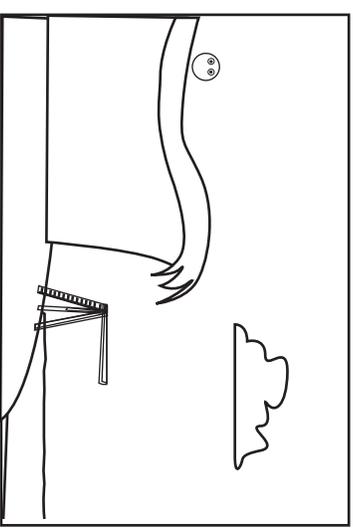
# Summary: Storyboard



# Summary: Camera Positions

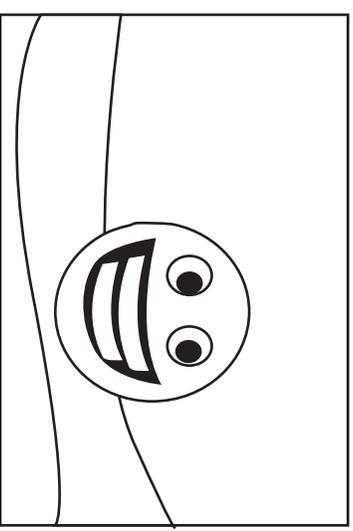
## Long Shot

The camera is a “long” way from the action, so we can see the setting of our movie. It also gives us a chance to see size differences. For instance, the height of the cliff compared to the size of our character.



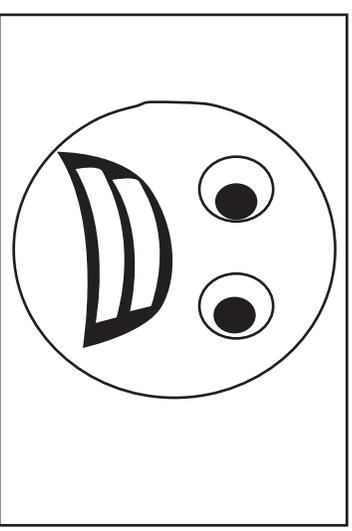
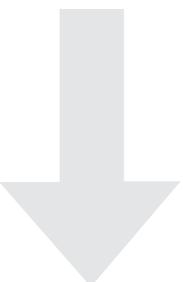
## Medium Shot

Medium Shots are for getting a good look at your character. This is a great type of camera position for speaking scenes too.

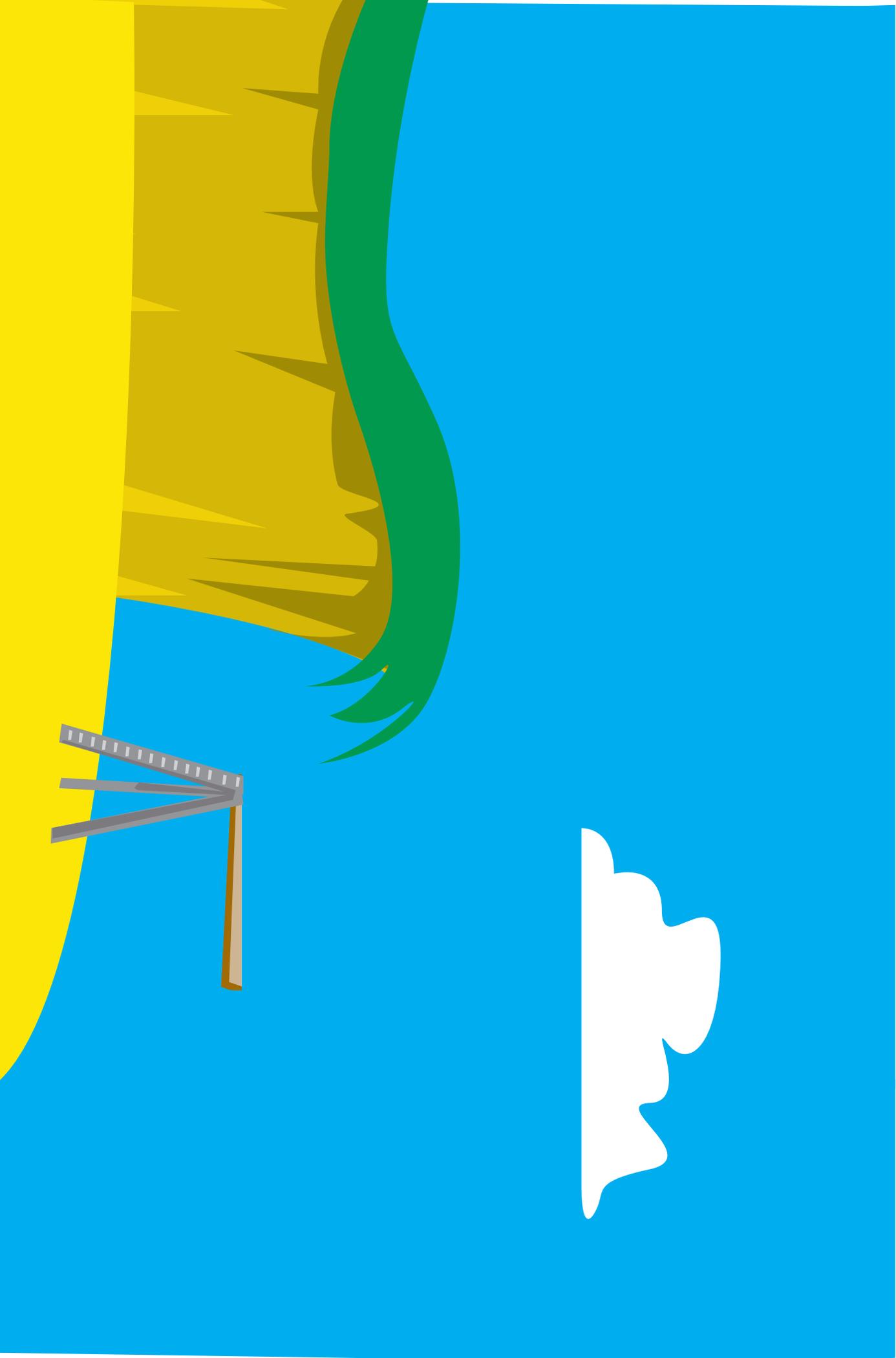


## Close Up

Close up shots are great for emotions. Get the camera up really close to your character's face when worry, fear, happiness, sadness, crying, or any other intense emotion happens in your story.



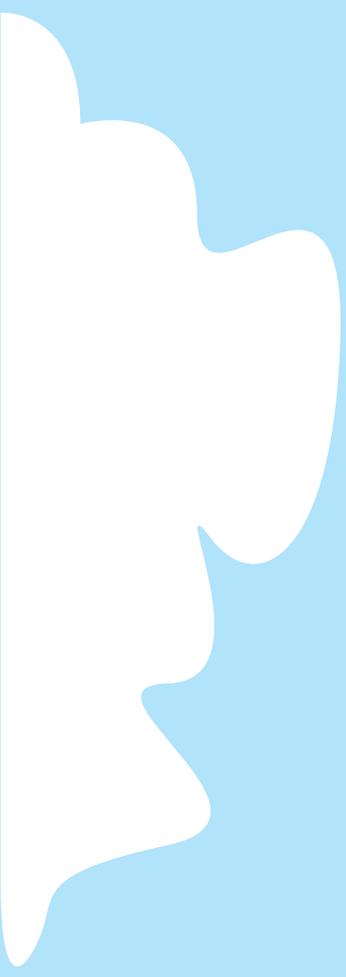
# Scenes 1 & 6



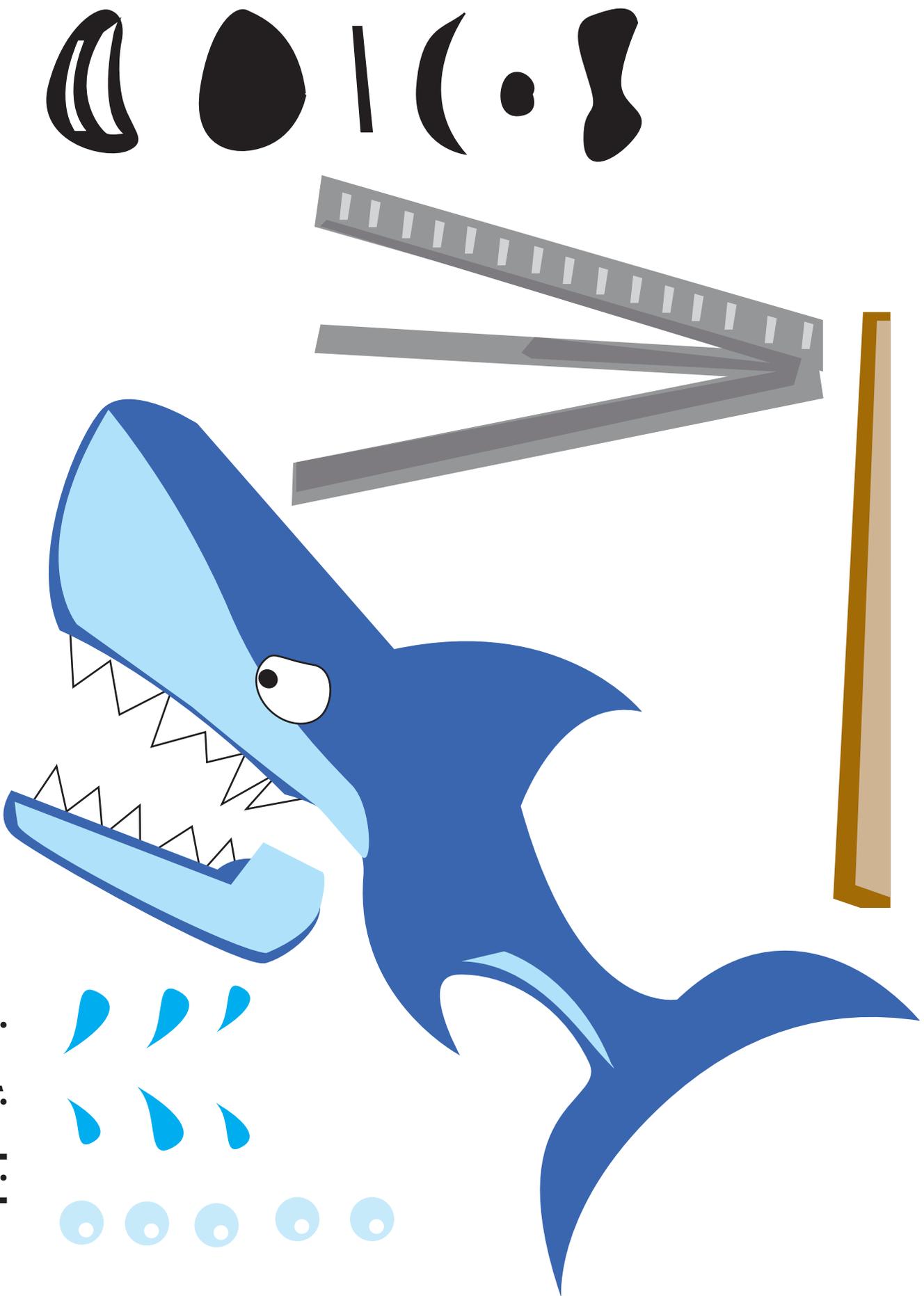
**Medium Shot: Scene 2, 3, 4**



# Medium Shot: Scene 5, 8

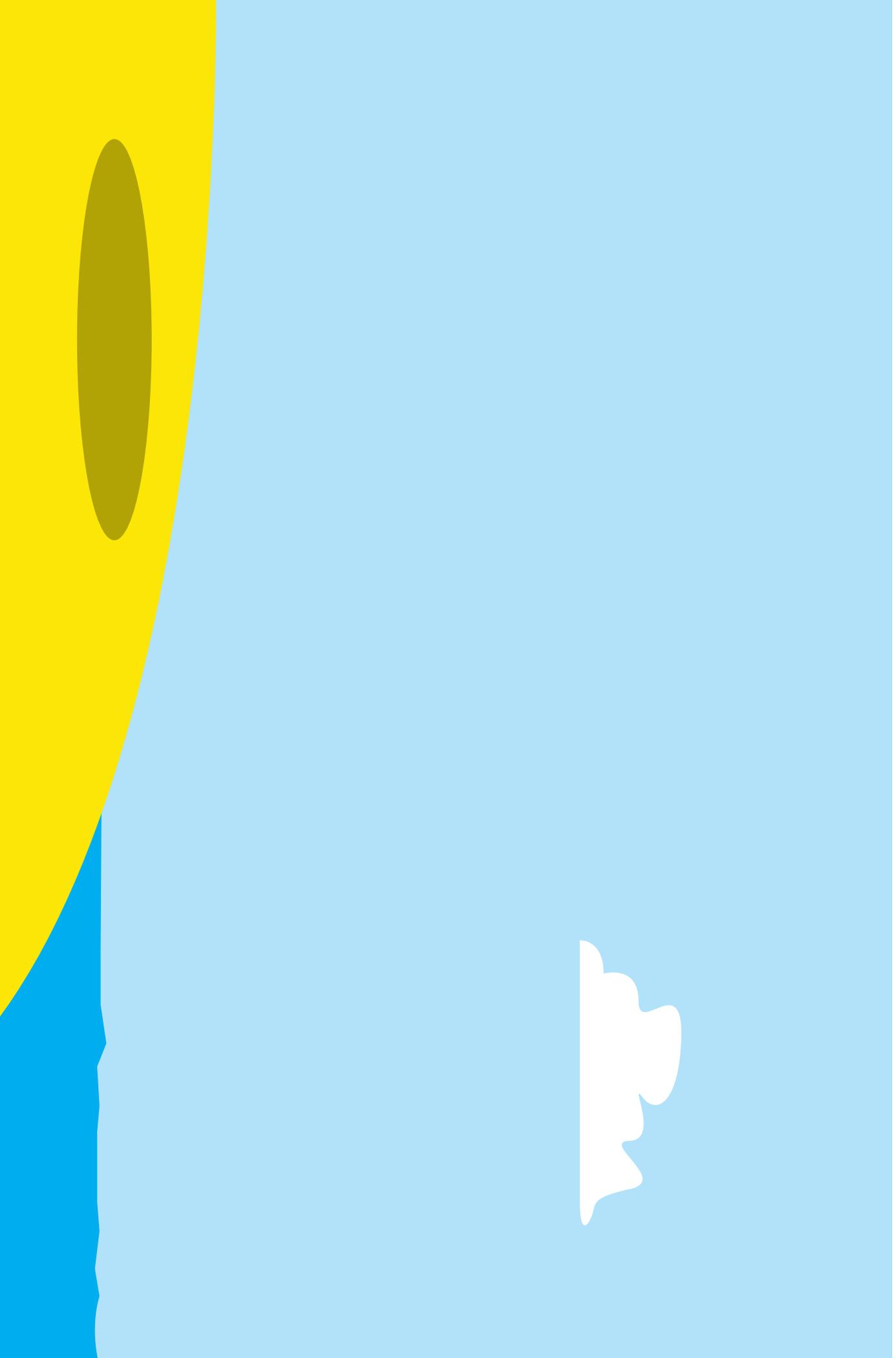


# Cut-outs



# Long Shot: Scene 9

# Long Shot: Scene 7

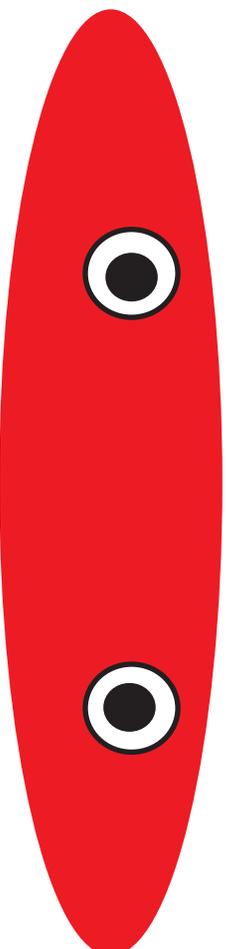
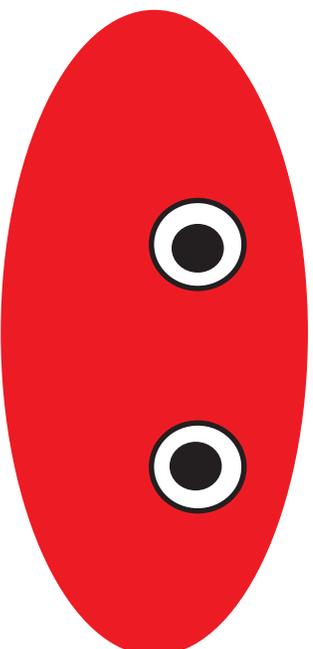
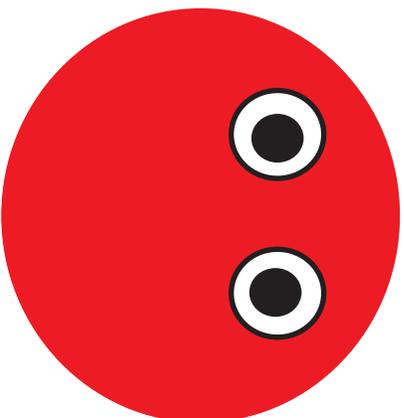
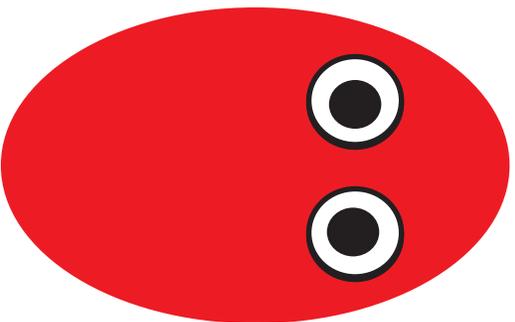
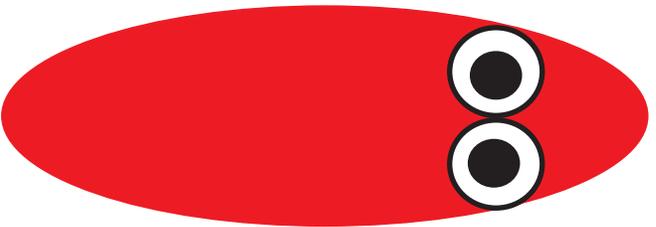


# Red Hat Recipes

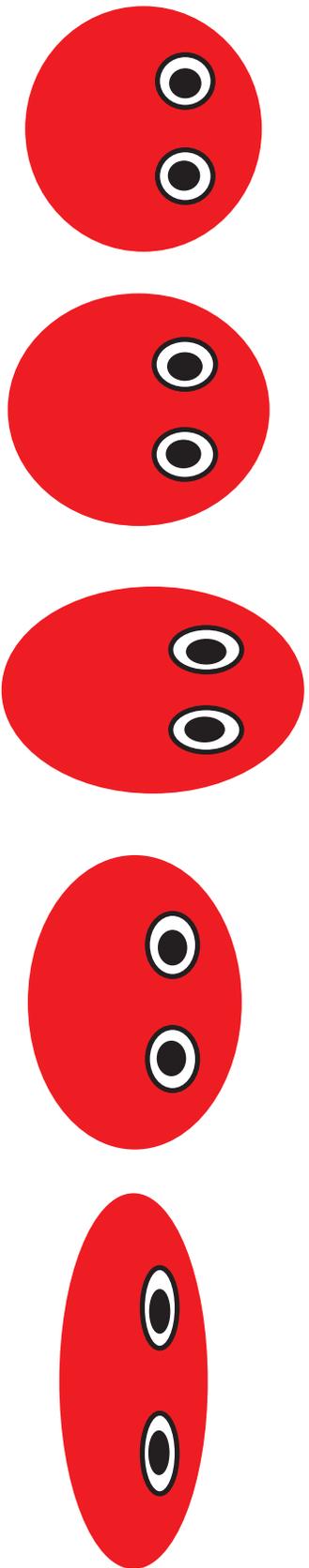
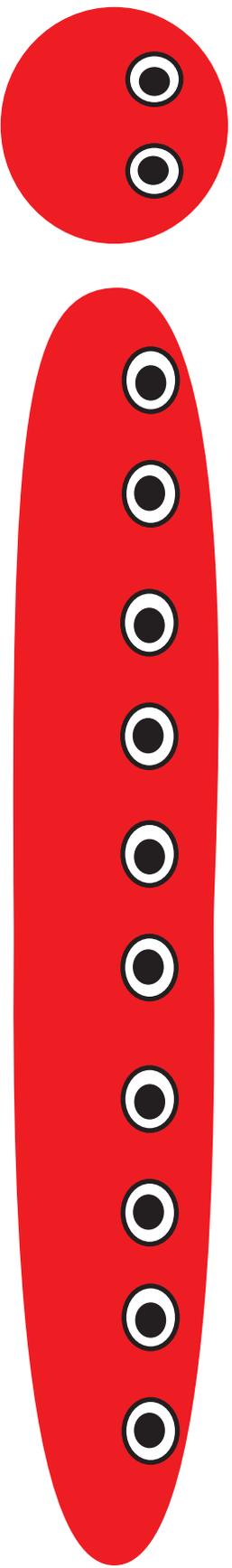
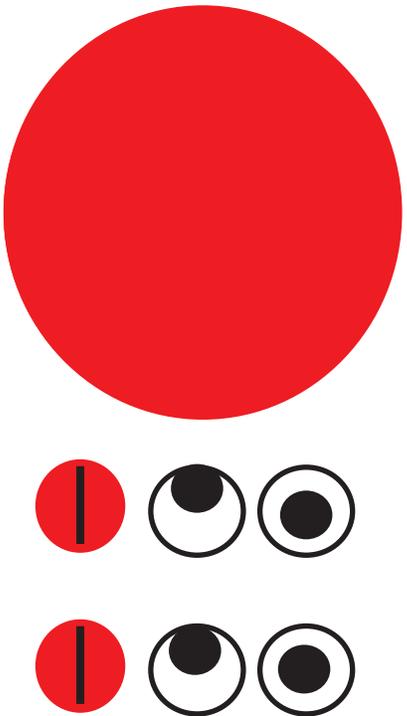


# Scenes 10 - 14

# Squash & Stretch Cut-outs



# Blinking Inbetween Blur Bouncing Ball



# Yellow Hat Recipes



# Yellow Hat Recipes

## Introduction



### What You Will Learn

In the Yellow Hat level you will learn how to combine the basic animation skills from the White Hat area into new variations. These intermediate level exercises will stretch your skills by requiring you to apply more than one principle at a time. You will learn new vocabulary, and basic recipe combinations used for common special effects and traditional animation cliches.

### Why Is This Important?

The cumulative effect of the Yellow Hat level recipes will leave the beginning animator confident in mixing and matching many animation principles simultaneously. Animators will be confident of their ability to tackle any challenge with imagination.



# Recipe 1: Parallax - Motor Boat



## What You Will Learn

By combining the *Spacing is speed*, and *Toggle* animation concepts, you can make this motor boat appear to move fast by creating a *parallax* effect. *Parallax* is the word used to describe the illusion of the foreground moving by really fast while the main thing, in this case the boat, stays still in the middle of the screen.

## Why Is This Important?

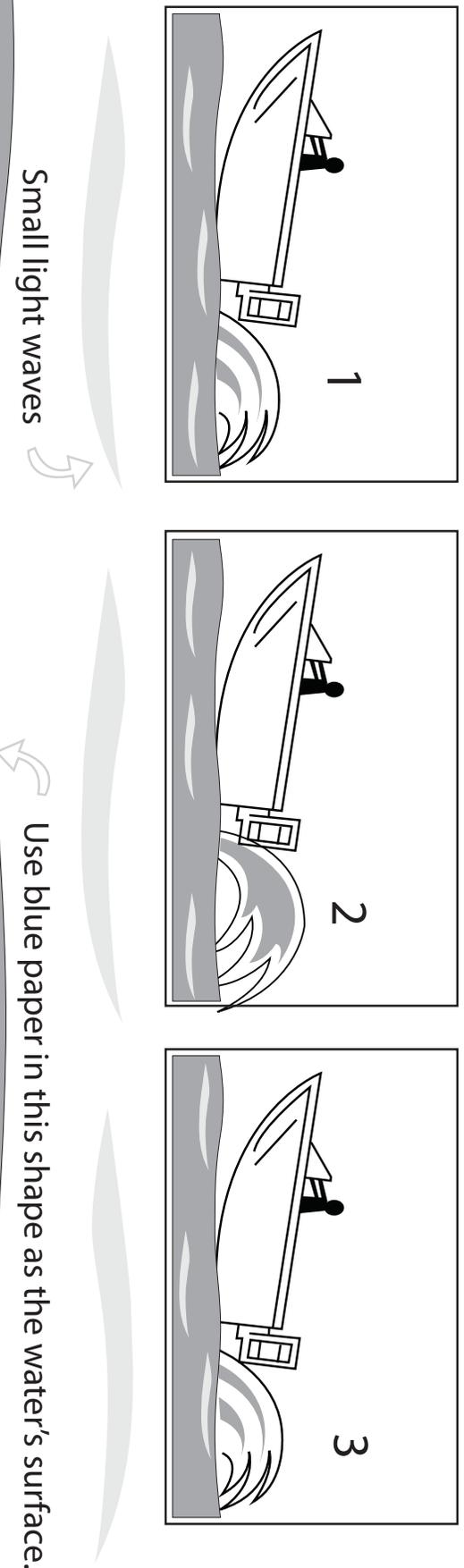
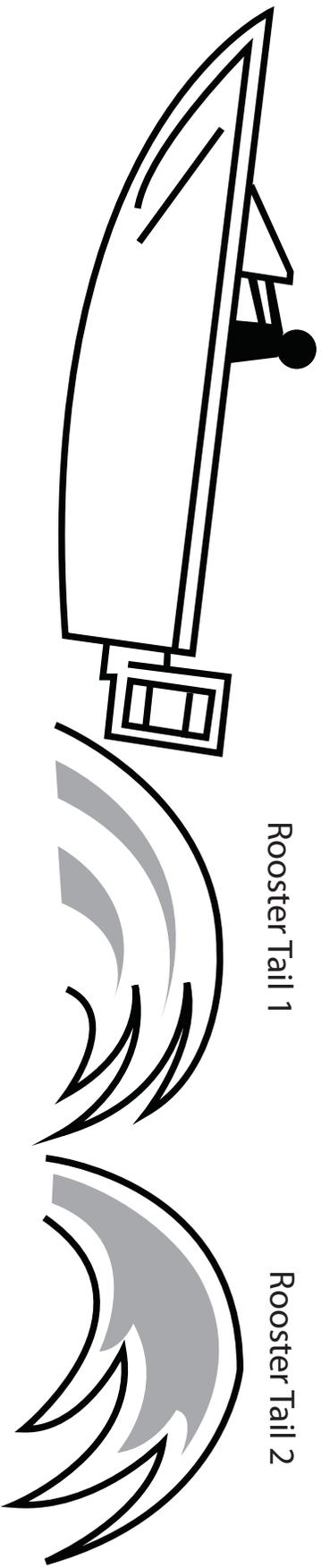
Understanding *parallax* requires the animator to think and plan from a point of view. *Parallax* is a way to focus the audiences attention on the main object or character in scenes with chases or rapidly moving backgrounds and foregrounds. It also requires the three basic animation concepts of *Loops*, *Spacing for speed*, and *Toggle* to be applied simultaneously.



# Steps

## Parallax: Motorboat

Set up waves as in storyboard #1. Take 1 picture. Move small light waves to right and swap in the other rooster tail in frame #2. Move small light waves again, as in storyboard #3. Swap in rooster tail and take 1 picture. Repeat a few more cycles and loop.



# Recipe 2:

## Parallax - Airplane with Clouds



### What You Will Learn

You will learn the spacing required to create the *Parallax* effect with items in the foreground and items in the background of a rapidly moving object. You will learn how to space out clouds surrounding an airplane so that the clouds in the background behave as if they are far away and the clouds in the foreground behave as if they are close up.

### Why Is This Important?

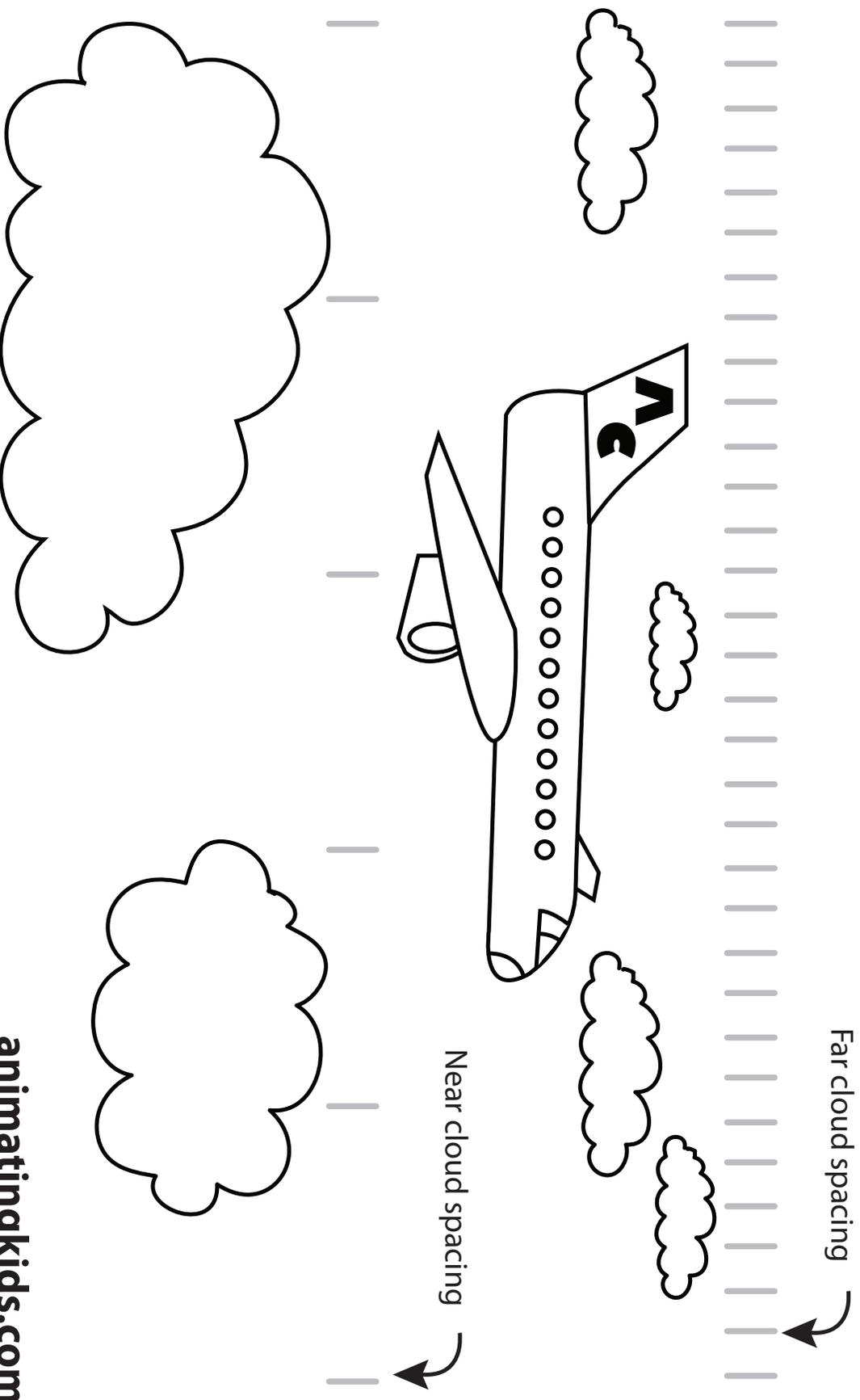
Looping the clouds with fast motion and slow motion spacing demonstrates the animator's ability to account for depth perception in a 2D space. *Parallax* is an illusion of perspective in motion. The beginning animator begins to think about the relation of the animation from the point of view of the camera.



# Parallax: Airplane with Clouds

## Steps

With the plane taped down in the middle of the scene, we are going to move the clouds right to left. Near clouds move fast along bottom notch spacing. Far away clouds move on top, closer notches.



# Recipe 3: Parallax Car



## What You Will Learn

You will learn to organize and keep track of multiple moving parts at the same time. *Parallax* with trees will help us create the illusion the car is moving fast. Additionally, you will *Toggle* two pictures of a road, and spin the tires randomly at the same time. This exercise will test organizational skills, depth perception, spacial skills, and sequential thinking.

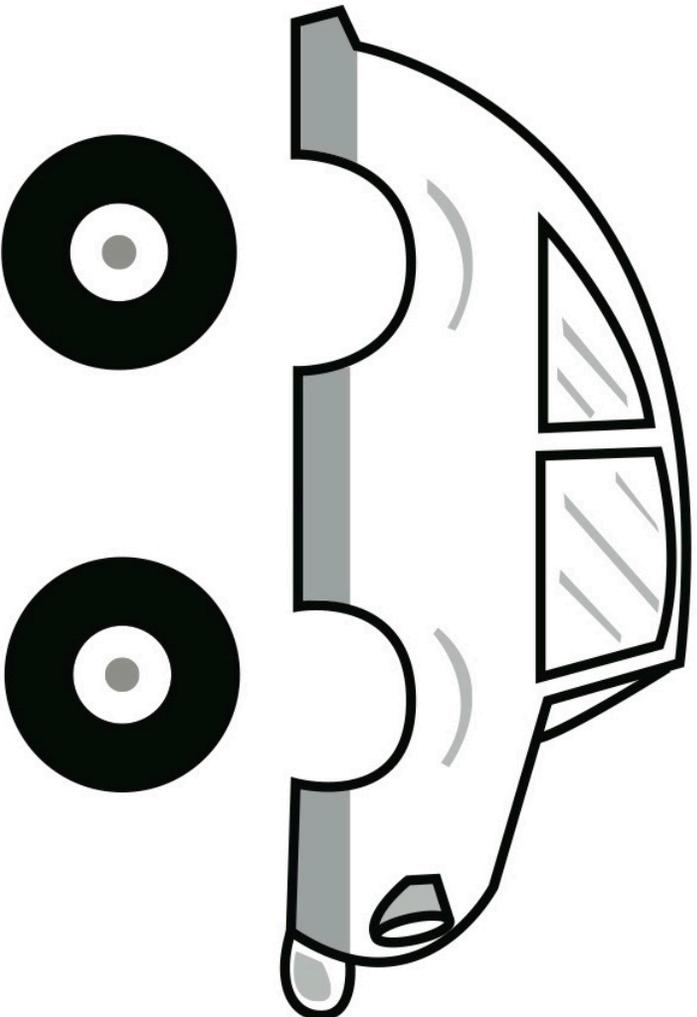
## Why Is This Important?

Keeping track of multiple elements at once is a must for an animator. This exercise uses 9 different cutouts to create parallax. You will be juggling five or six different items for each frame of this animation. Fortunately, this is stop motion animation, so it is impossible to "drop" anything you are juggling.

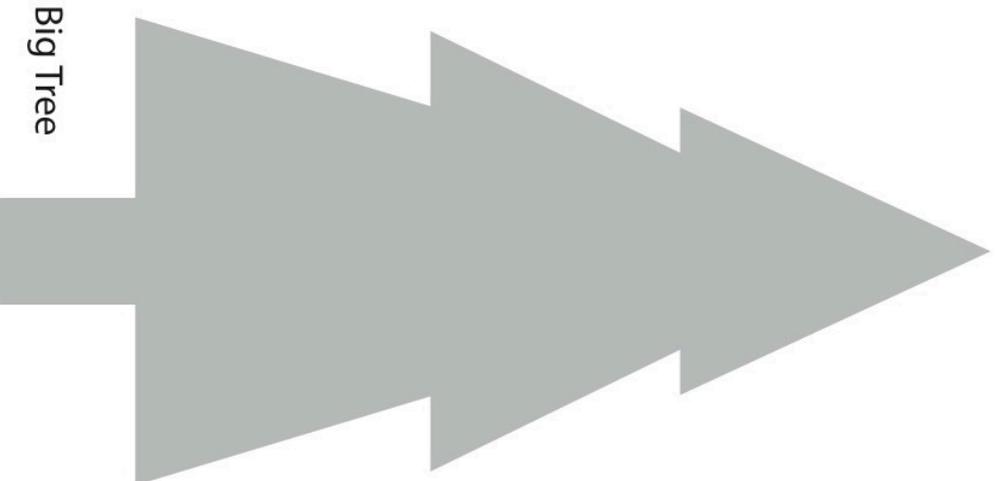


# Parallax: Page 1

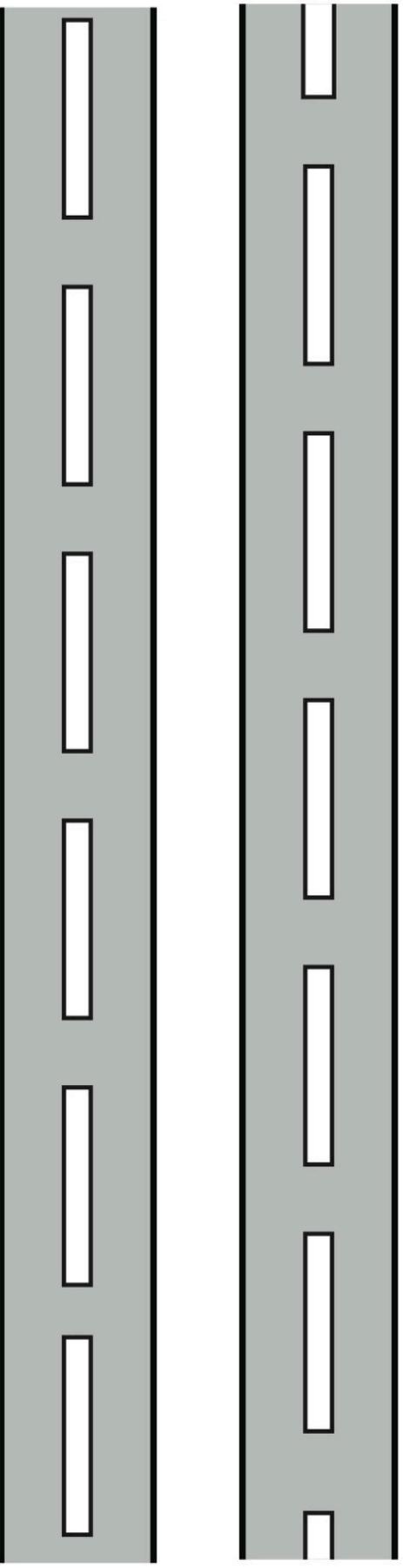
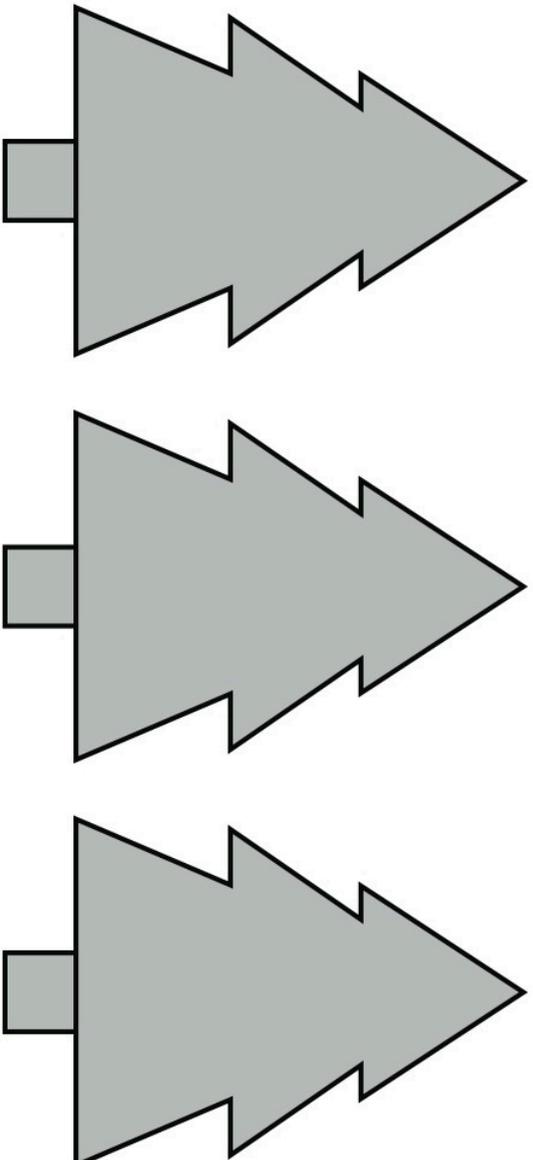
Car



Big Tree



# Parallax: Page 2



# Recipe 4: Moving Away



## What You Will Learn

You will learn how to make an object appear to be moving away from the camera even though it is animated in 2D. In this exercise, the flying saucer is in the foreground in the beginning. You will learn that to move an object to the background requires progressively smaller sizes of the same character timed and spaced in the correct sequence.

## Why Is This Important?

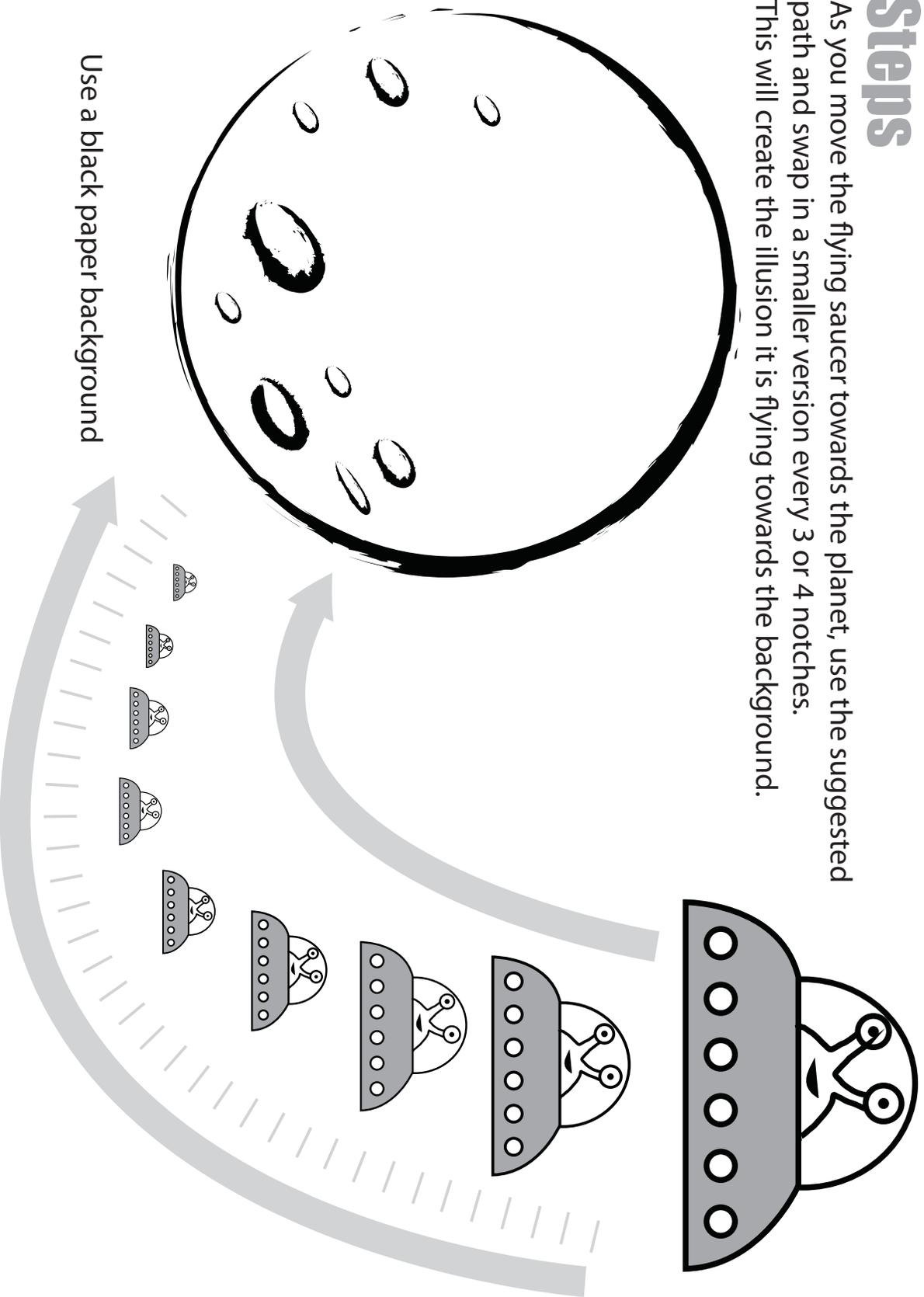
Having the experience of producing a 3rd dimension on a 2D surface is a useful skill. Using multiple sizes of the same character, along with proper timing and spacing, gives an animator the ability to bring another dimension to a table top. This is involved, but it is a great way to create the illusion of depth using cut-paper on a flat surface.



# Flying away = Getting smaller

## Steps

As you move the flying saucer towards the planet, use the suggested path and swap in a smaller version every 3 or 4 notches. This will create the illusion it is flying towards the background.



Use a black paper background

# Recipe 5: Moving Toward



## What You Will Learn

You will learn how to make a mosquito appear to be moving toward the camera even though it is animated in 2D. You will learn that in order to create an action which moves toward the camera, you will need multiple sizes of the same character timed and spaced in the correct sequence.

## Why Is This Important?

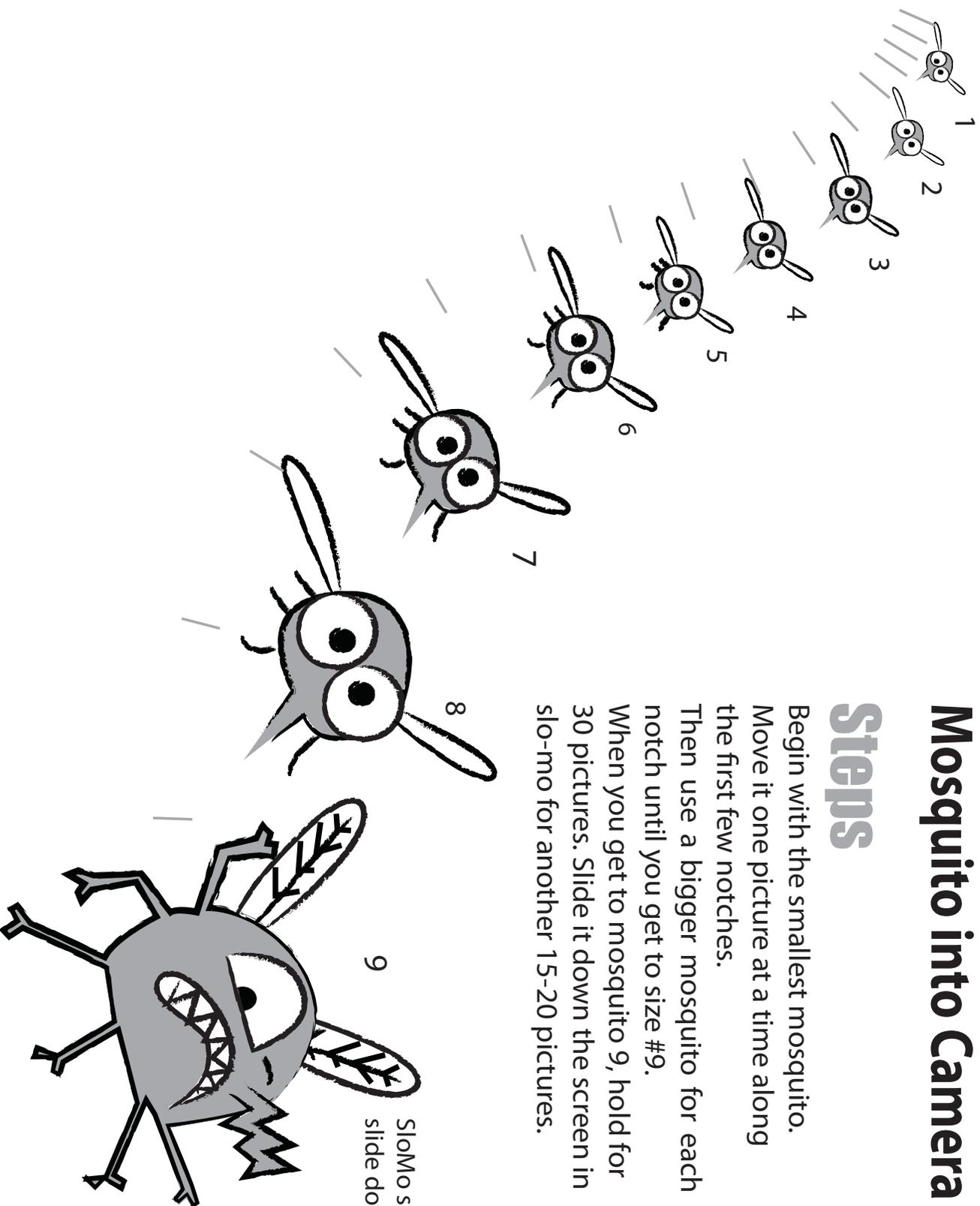
Like the flying saucer recipe, moving toward the viewer uses multiple sizes of the same character, along with proper timing and spacing. Yet another skilled way to create the illusion of depth with cut-paper on a flat surface.



# Mosquito into Camera Lens

## Steps

Begin with the smallest mosquito. Move it one picture at a time along the first few notches. Then use a bigger mosquito for each notch until you get to size #9. When you get to mosquito 9, hold for 30 pictures. Slide it down the screen in slo-mo for another 15-20 pictures.



SlowMo spacing for slide down glass.



# Recipe 6: Small Explosion



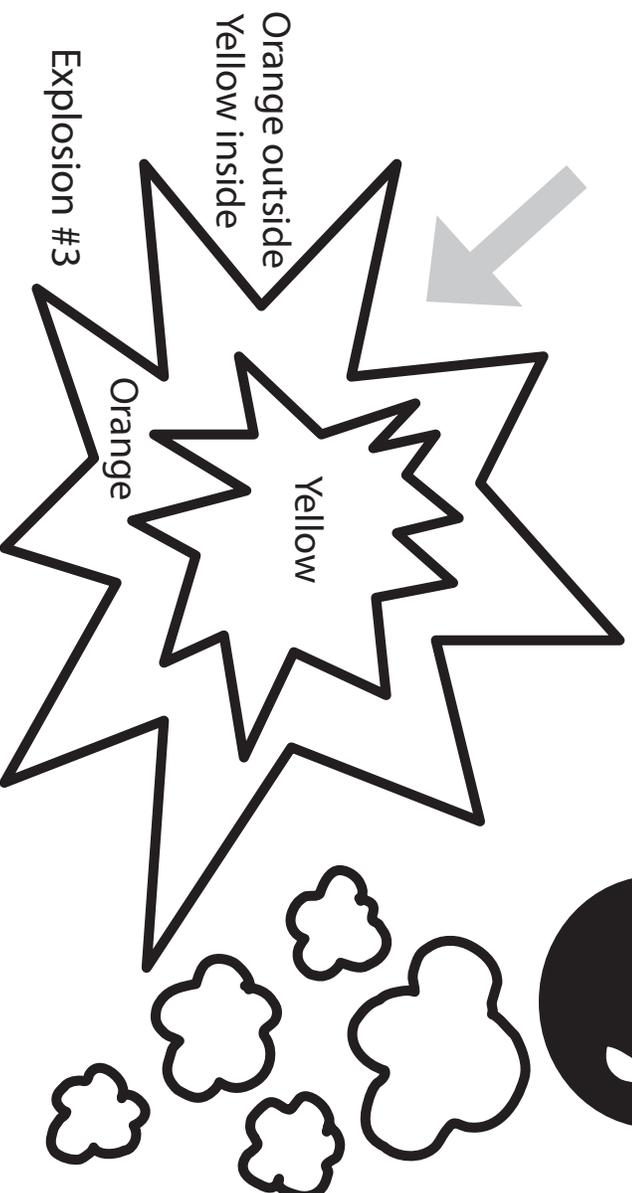
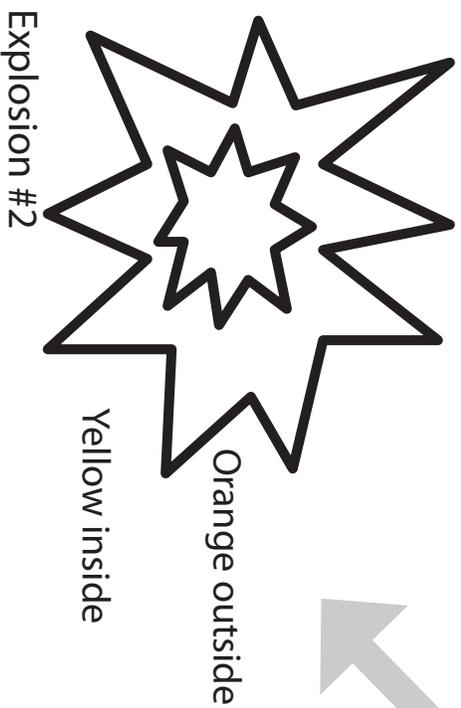
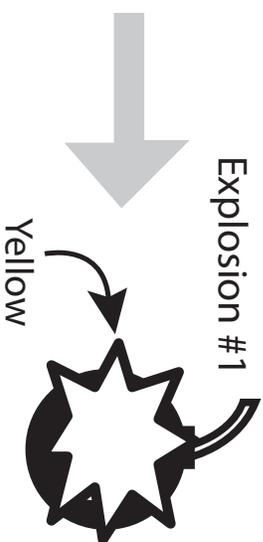
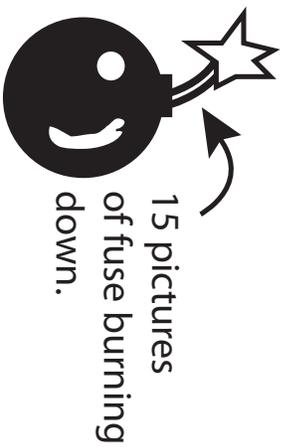
## What You Will Learn

You will learn how to use timing to create impact. A quick action like a small explosion requires careful attention to frames per second. You will learn how to create a speedy action which take place in one spot.

## Why Is This Important?

Sequencing and size ordering play out in a small explosion animation. This recipe requires fast timing. Up to this point, fast animation has been taught in horizontal or vertical directions. In an explosion the action happens in the same place. Swapping out the different sizes creates a crisp pop effect. Of course the sound is very important too, so don't skip that step. Boom!





# Explosion Small

## Step 1

Animate flame going down fuse one picture at a time for 15 pictures.

## Step 2

Overlay explosion # 1 over bomb.

## Step 3

Explosion #2 replaces #1 for 1 picture.

## Step 4

Explosion #3 replaces #2. Spin #3 for 3-5 pictures taking 1 picture after each spin.

## Step 5

Spread all puffy clouds around scene where #3 used to be and take 1 picture.

## Step 6

Subtract 1 cloud after each picture, until all clouds are gone. Take 15 pictures of nothingness.

# Recipe 7: Large Explosion



## What You Will Learn

Again, you will learn how to use timing to create impact. Only this time we are going to fill the space. A giant effect like a large explosion requires careful attention to frames per second. You will learn how to create a speedy action which will go from small to filling the screen in just a few frames.

## Why Is This Important?

Sequencing and size ordering play out in large explosion animations. In a large explosion the difference in the size of the paper is huge and is sometimes hard to get used to. Getting a new animator to make big bold moves is the purpose of this recipe. Remember sound is very important, make a big Boom!



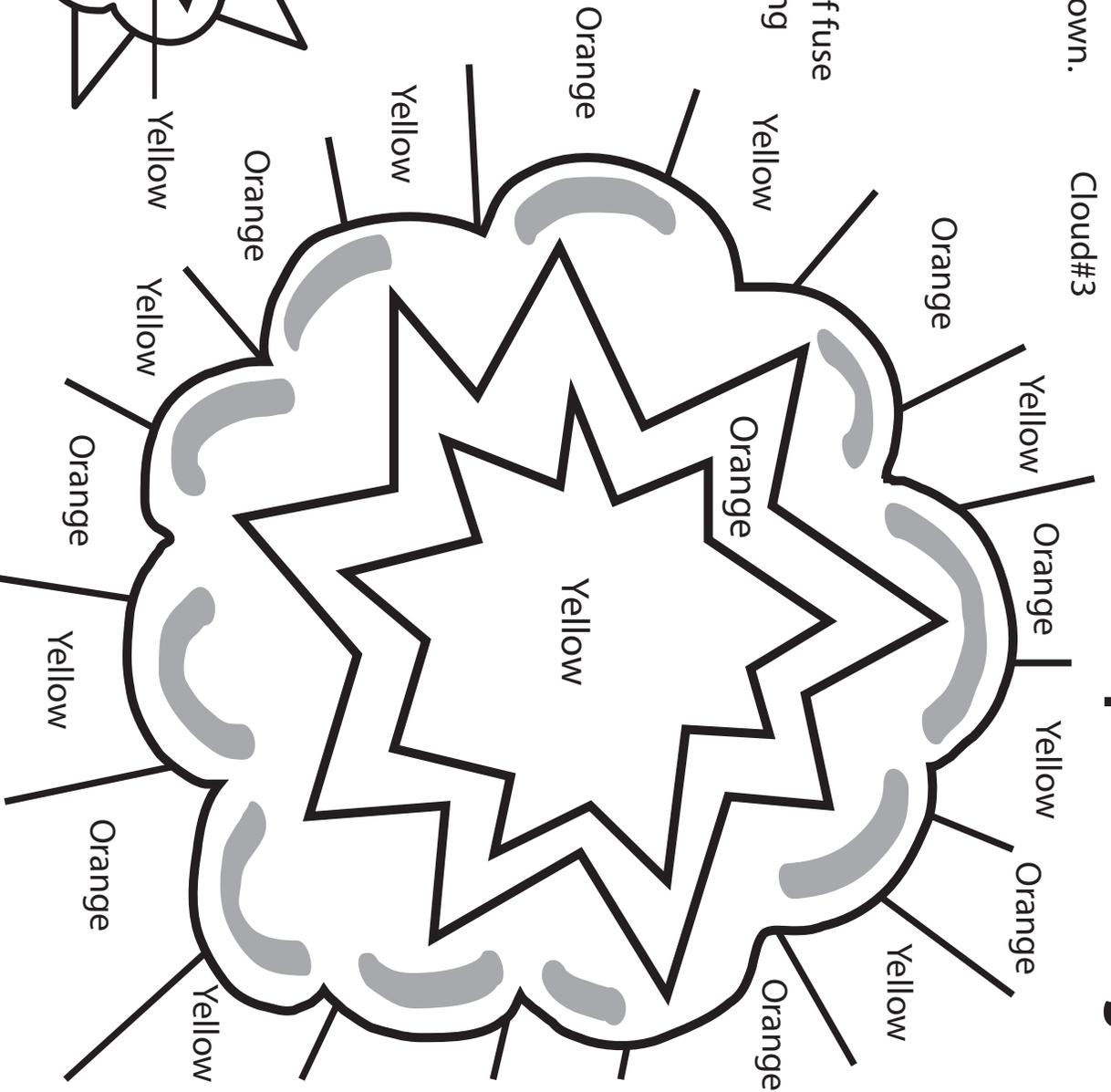
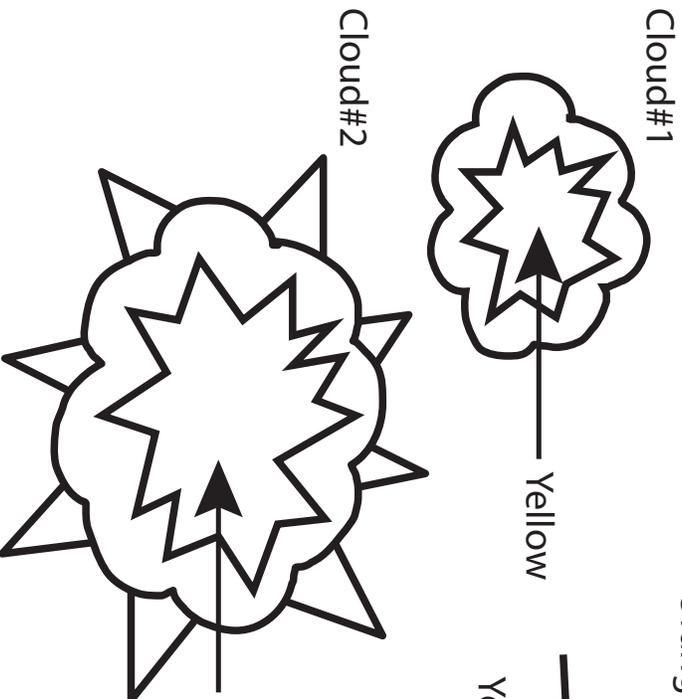
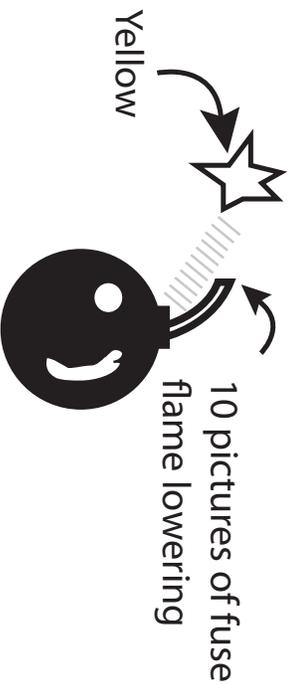
# Steps

Take 15 pictures of fuse burning down.

Cloud #1 for 1 picture.

Cloud #2 for 1 picture.

Cloud #3 Spin for 10-15 pictures.



# Explosion Large

Cloud#3

# Recipe 8:

# Poof



## What You Will Learn

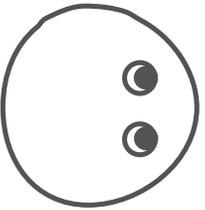
You will learn how to make a poof of clouds to make something disappear or appear. This is a variation on your explosion skills, only softer and more gentle. You will learn how size and timing combine to soften the explosion into a Poof!

## Why Is This Important?

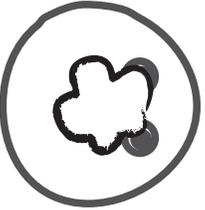
Unlike the earlier recipes for explosions, a poof grows in size and then shrinks. The disappearing effect a poof accomplishes is a great skill an animator will use often. Taking 15 pictures before and after the poof frames is very important. We need to see what is going to disappear before it disappears. Then we nothing after it has disappeared for at least a second, or 15 pictures. Get used to taking 15 pictures of nothing happening. It is a key timing principle.



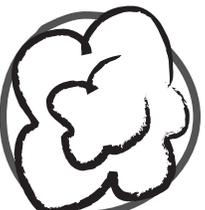
# Special Effects: Poof



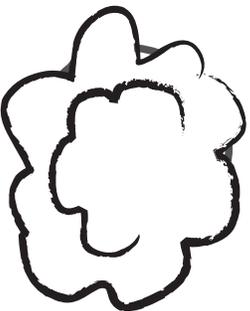
**Step 1**  
15 Pictures



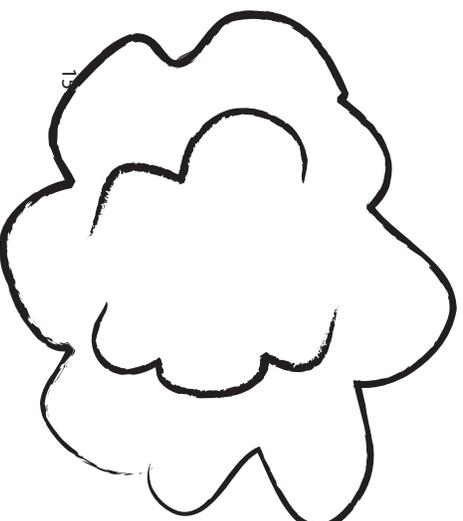
**Step 2**  
1 Picture of  
Cloud 1



**Step 3**  
1 Picture of  
Cloud 2

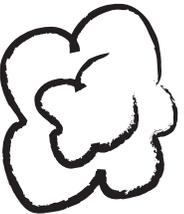


**Step 4**  
1 Picture of  
Cloud 3



**Step 5**

3 Pictures of cloud 4.  
Spin after each picture.



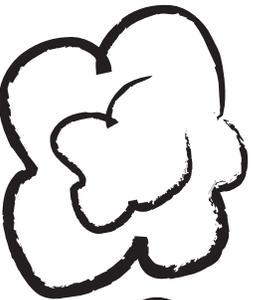
**Step 6**  
1 Picture of  
Cloud 2



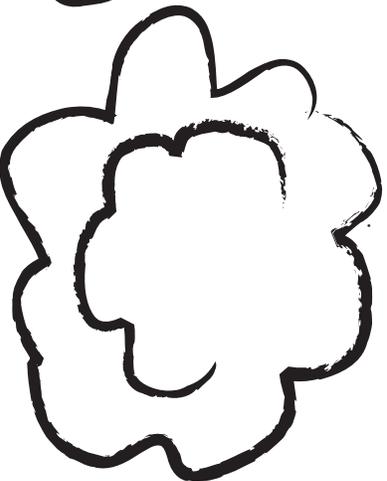
**Step 7**  
1 Picture of  
Cloud 1



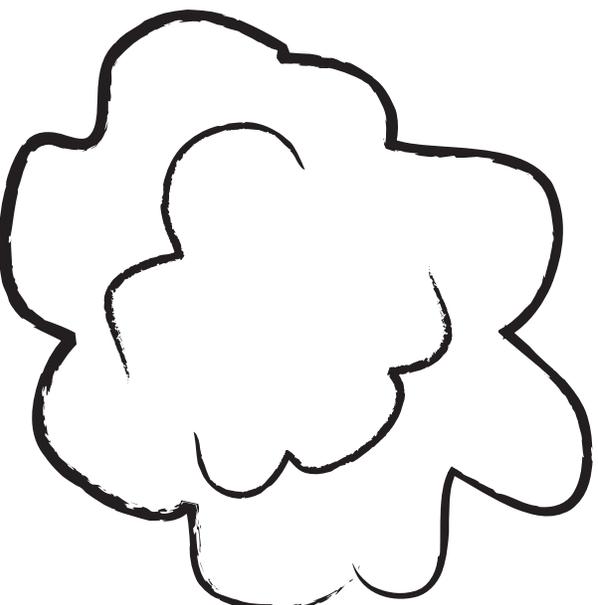
Cloud 1



Cloud 2



Cloud 3



Cloud 4

# Recipe 9: Fighting Cloud



## What You Will Learn

You will learn to cycle a loop of random arms, legs and eyes in a spinning cloud of conflict. The more chaotic the better. Timing and spacing are everything. You will create an effect cartoons have employed for decades.

## Why Is This Important?

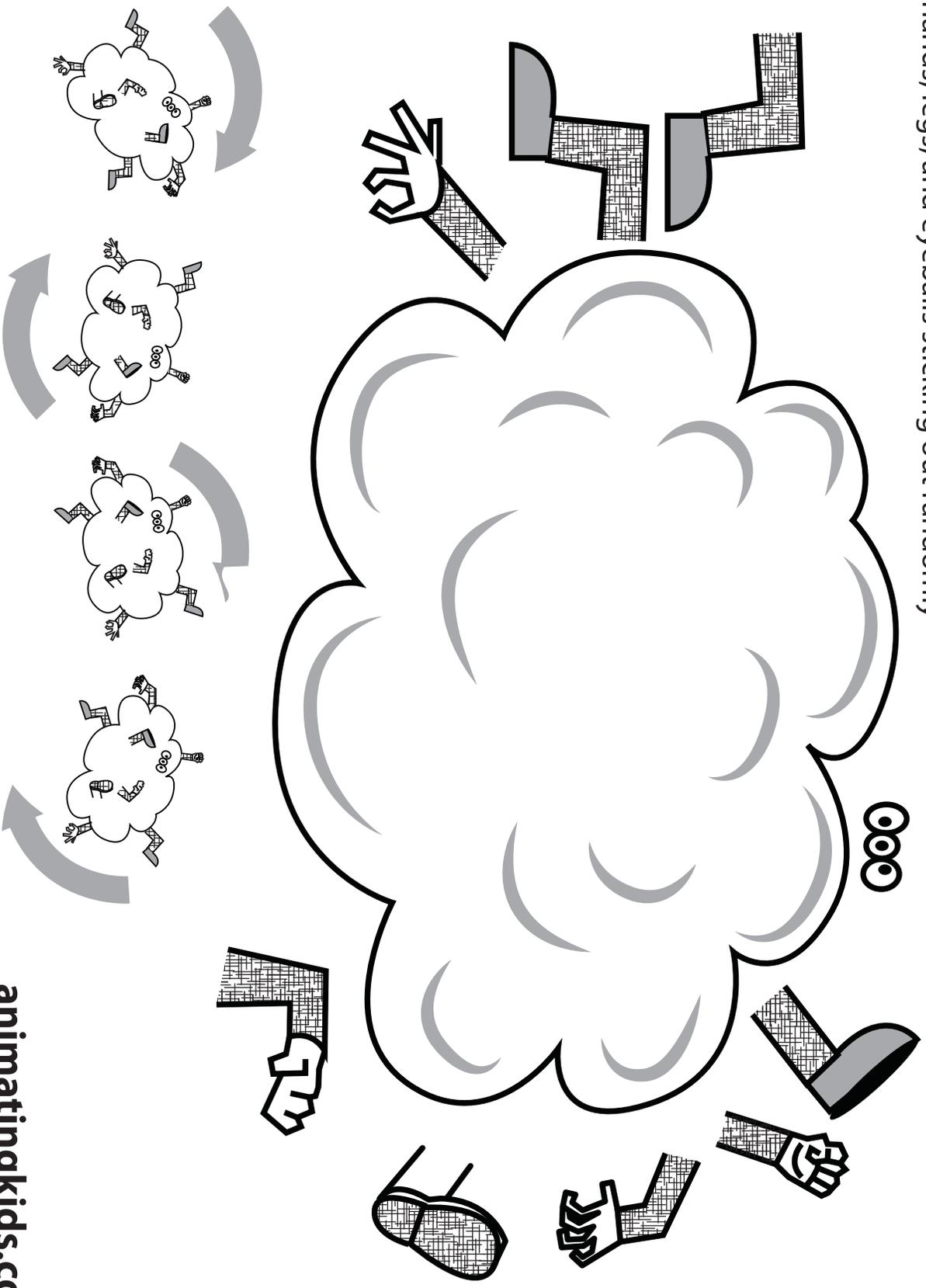
The large spinning frames of the clouds are the main motion. The arms, legs, and eyes are the overlapping action. This exercise taxes the ability of the animator to keep a big action going in an organized fashion, while smaller overlapping actions are random and chaotic. This involves the most animated bits yet. But it is easier than it looks because most of the bits are randomly placed.



# Steps

1 picture at a time, spin cloud and rearrange hands, legs, and eyeballs sticking out randomly

# Fighting Cloud



# Recipe 10: Falling Leaf



## What You Will Learn

You will learn to employ the *Speeding up* and *Slowing down* patterns to create a natural downward drifting transition from one direction to another with a light object. You will learn timing and spacing formulas to create natural transitions in speed and trajectory.

## Why Is This Important?

Creating the illusion of weight and mass can be difficult. A bouncing ball has mass, so it's speeding up and slowing down spacing is forceful and direct. A leaf uses speeding up and slowing down, but the direction of the spacing and the timing at the transition points suggests a light weight. Here the animator learns how to back off and let a soft slow animation reveal the heft of the object.



# Special Effect: Leaf Falling

## Steps

Move tip of leaf to along path at each notch until it zigs and zags to the ground.

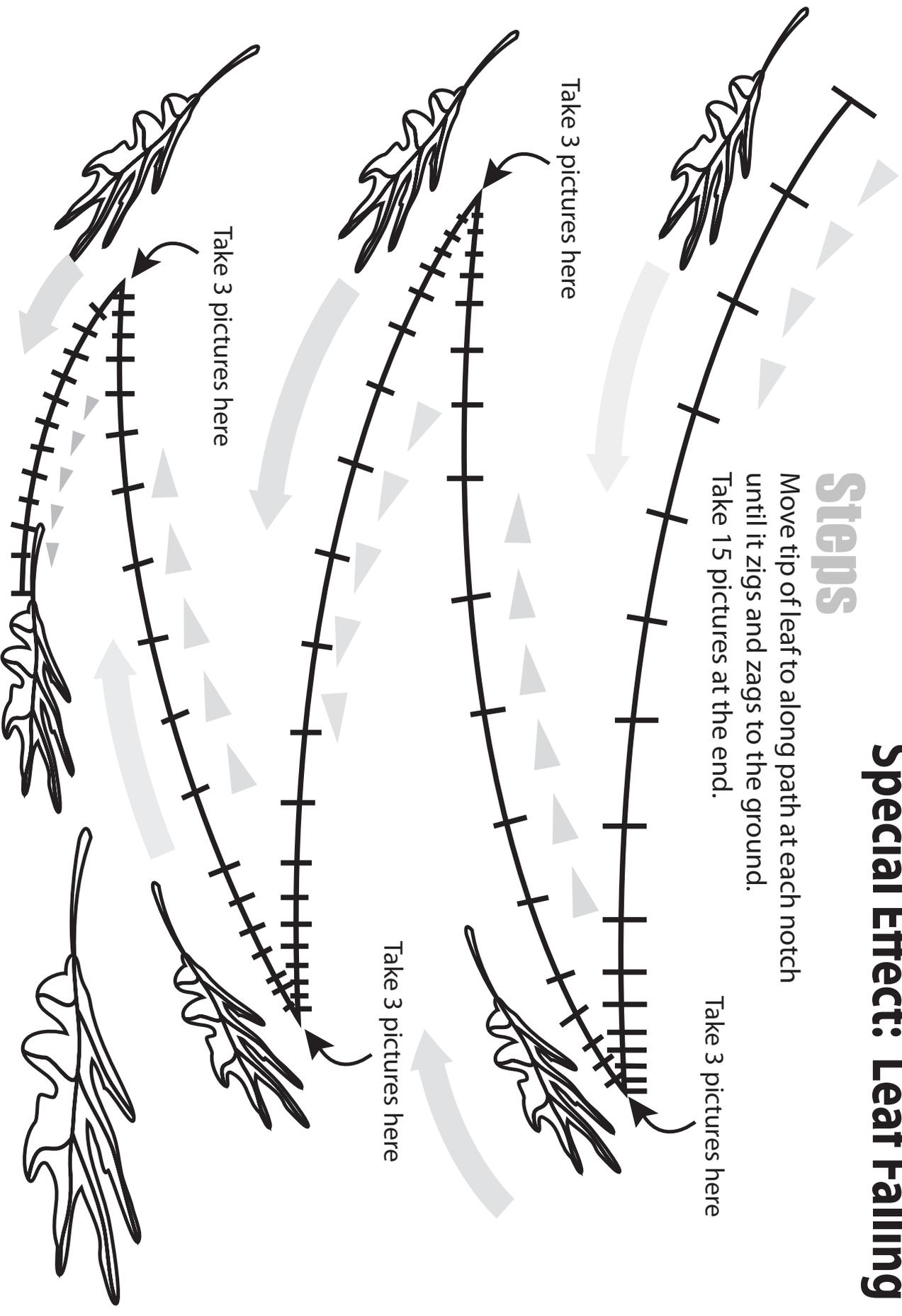
Take 15 pictures at the end.

Take 3 pictures here

Take 3 pictures here

Take 3 pictures here

Take 3 pictures here



# Recipe 11: Rocket Blast off



## What You Will Learn

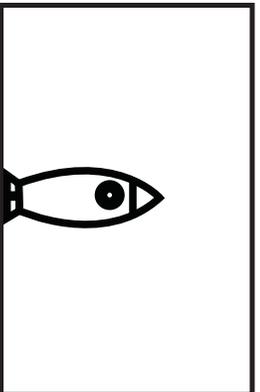
You will learn to create a liftoff animation for a rocket using *Toggle* for the flames and the *Speeding-up* formula for the smoke and the rocket.

## Why Is This Important?

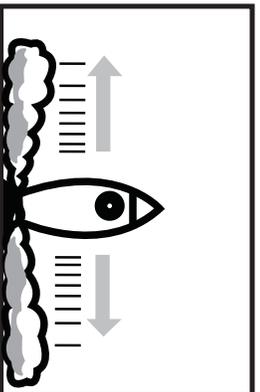
The sequence of this animation is important. The smoke is the *Wind-up* for the rocket launch. It happens first, then the rocket moves in the *Speeding-up* pattern. The flames *Toggle* on the bottom of the rocket. Three important animated bits in the right sequence help this recipe soar. Remember the sound!



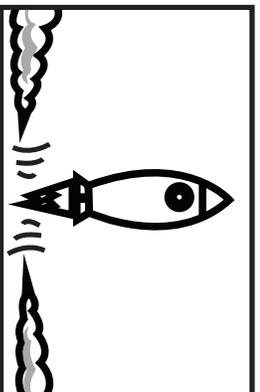
# Rocket Blast Off



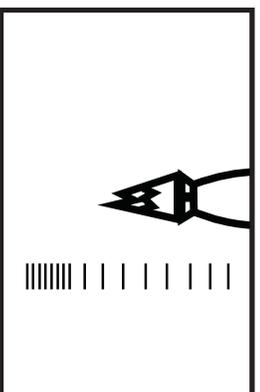
15 pictures



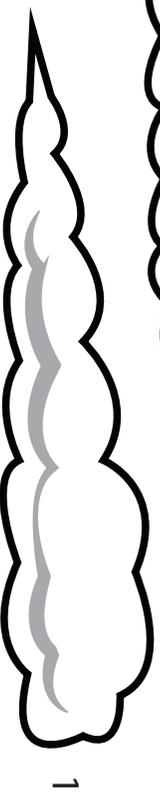
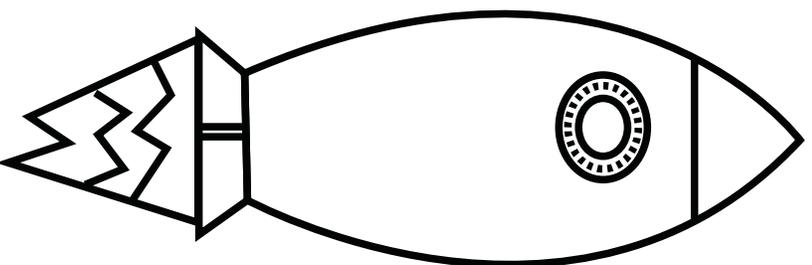
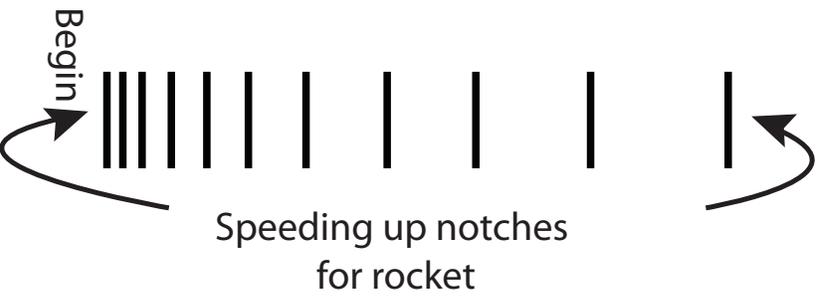
Overlap clouds on rocket. Then animate 6-7 pictures away from the center.



Rocket lifts off, move Rocket up, flip flames every other picture, and move clouds out for 2-3 pictures until gone.



Swap flames every other picture as rocket rises. Lift off rocket by notches the speed up



# Recipe 12: Water Splash



## What You Will Learn

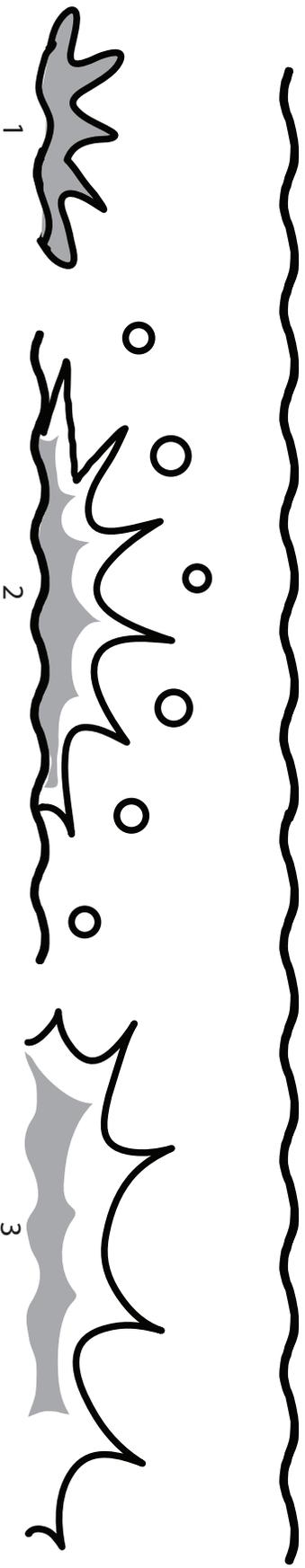
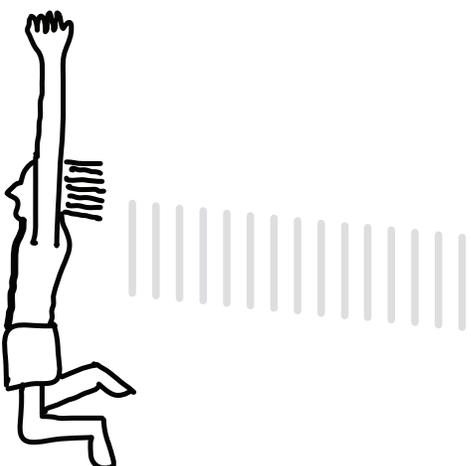
You will learn the timing and spacing pattern for a water splash resulting from a belly flop. Like the *Poof* recipe, this is an exercise in growing an effect and then shrinking it. In this case, we are also animating the action of the droplets flying away in a fan pattern using the *Speeding-up* spacing.

## Why Is This Important?

Impacts and their consequences are always interesting to animate. In this example, the slap of the body on the water has to be followed by a splash. This is a fast version, with the droplets disappearing in mid air. The droplets could also be falling back to the surface of the water. No two splashes are alike. Try this recipe and then invent your own splash patterns.



# Water Splash



## Steps

15 pictures of surface of water. Then show man falling for 10-15 pictures.

Insert splash #1 on top of guy. Then 1 picture of splash #2 with little splashy circles fanning out. Take 1 picture of #3, #4, #5 and #6 splashes and as you do, move these little splashy drops outward out away from the splash area until off page.

Take 15 pictures of nothing but the surface of the water to finish.

# Recipe 13:

## Camera Shake



### What You Will Learn

You will learn how to create the illusion of having the camera, or audiences point of view, *Shake* in response to the momentum of a heavy weight impacting the ground.

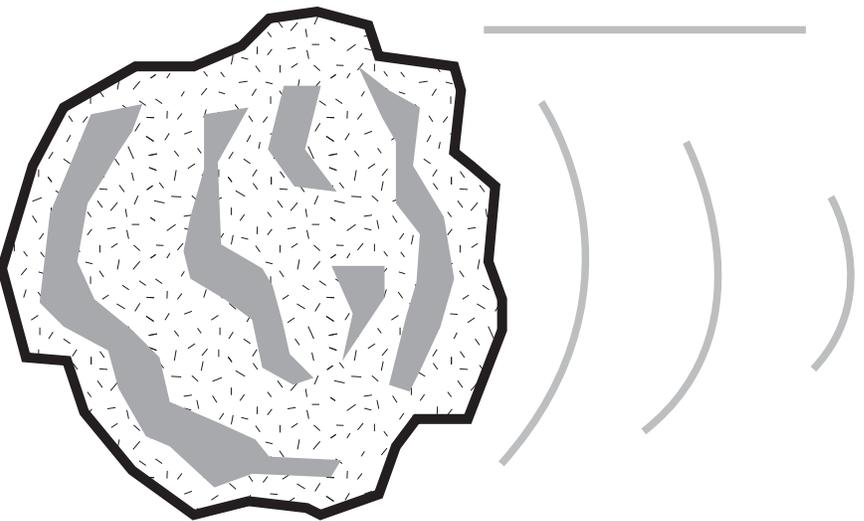
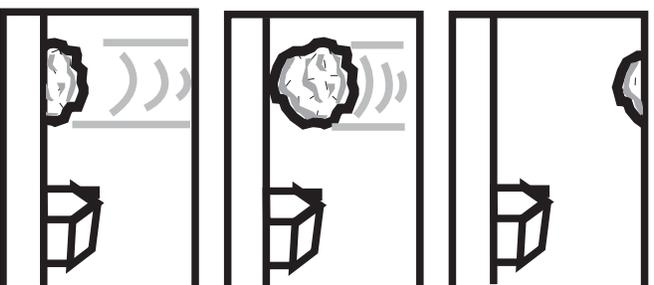
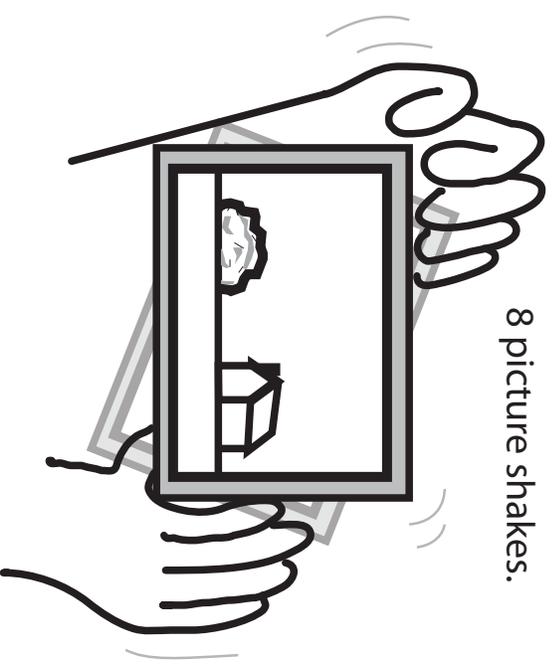
### Why Is This Important?

A large meteor striking the ground would certainly make the earth shake. This will add impact to the experience for an audience. A loud noise and an earthquake-like shaking of the camera sells the fact that this was indeed a heavy object, even if it was actually made of paper.



# Camera Shake

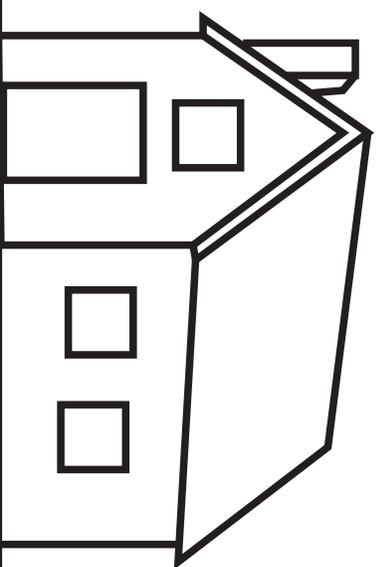
8 picture shakes.



# Steps

Drop the meteor with 1 inch spacing. At impact twist the camera back and forth taking 1 picture for each twist move.

At the end, take 15 pictures of nothing happening.



# Recipe 14: Zooming



## What You Will Learn

You will learn how to *Zoom* in to a detail in your scene. Using the onion-skin mode, or the transparency mode, you will track the detail until it fills the screen. You will learn to *Zoom* your camera in by moving closer one picture at a time. You will learn to trick the eye by swapping out the *Long-shot* version with the a big close-up or medium version at the end of the *Zoom*.

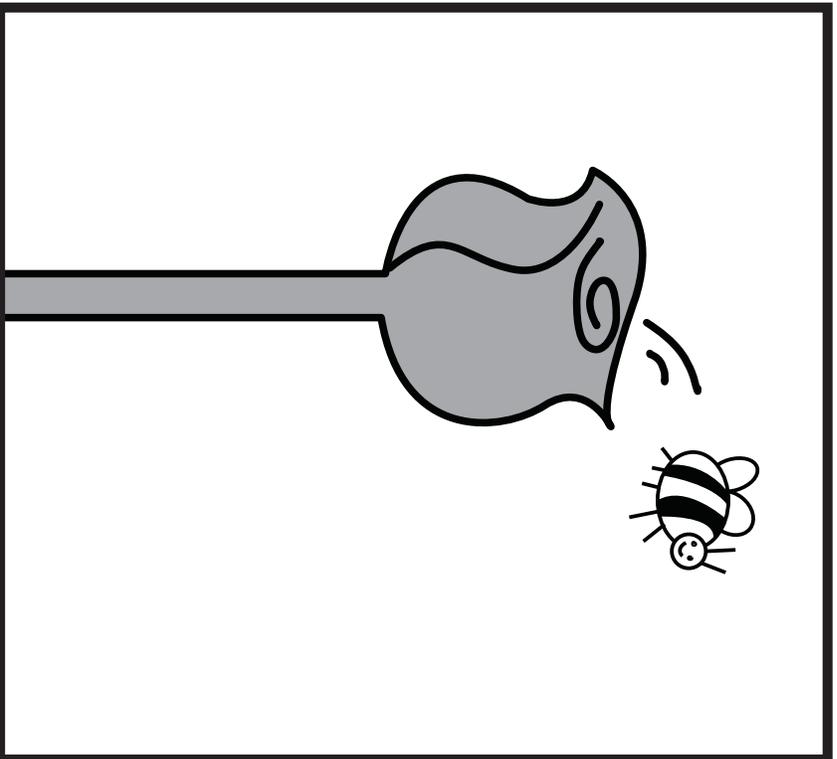
## Why Is This Important?

When a camera *Zooms* in the real world, it has a special lens. Not so with a tablet or fixed camera. This hack overcomes this limitation. This is important because the flexibility to move from a long shot to a close-up with a zoom adds impact and vitality to the scene. *Zoom* out with the same technique in reverse.



# Fun with Zooming (Part 1)

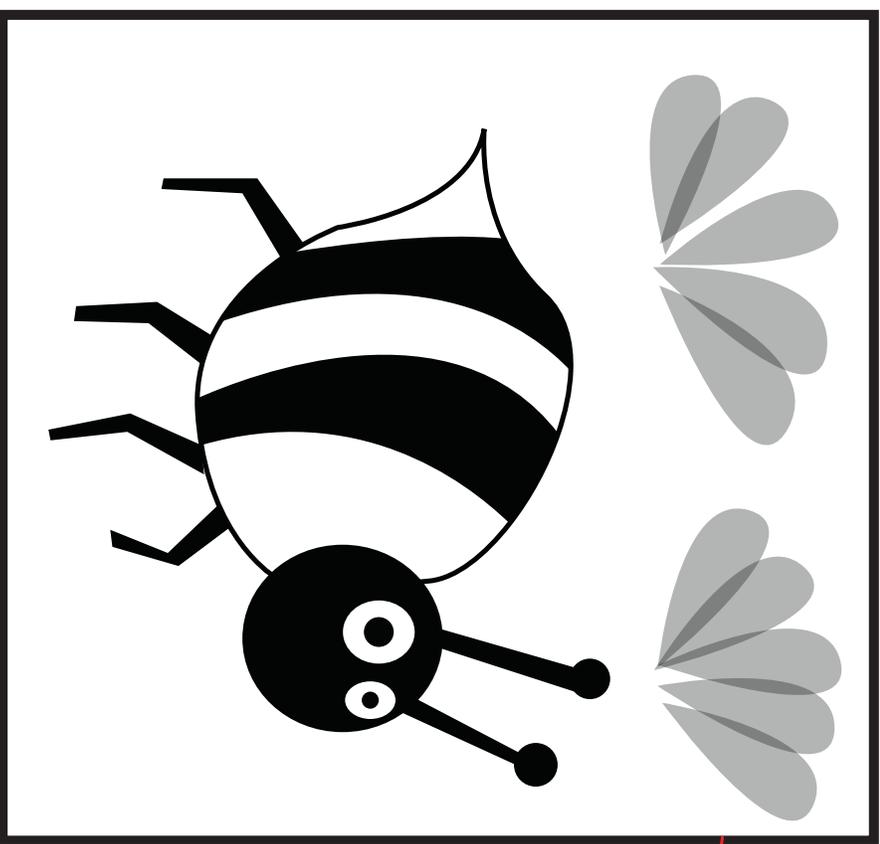
#1



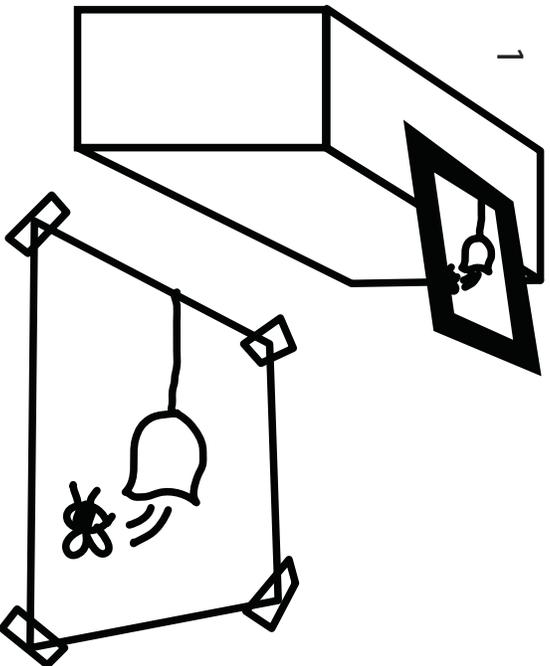
## Steps

Take 15 pictures of nothing but the flower.  
Use the small bee to buzz out of flower for 10-15 picts.  
Then zoom closer and closer for the 5 zoom pictures.  
Make sure "onion-skinning" mode is on.  
Get close enough to the small bee with the camera so it looks about as big as the large bee would be in a medium shot.  
Swap in the large bee and animate the wings for a few cycles. Loop the cycles to desired length.

#2

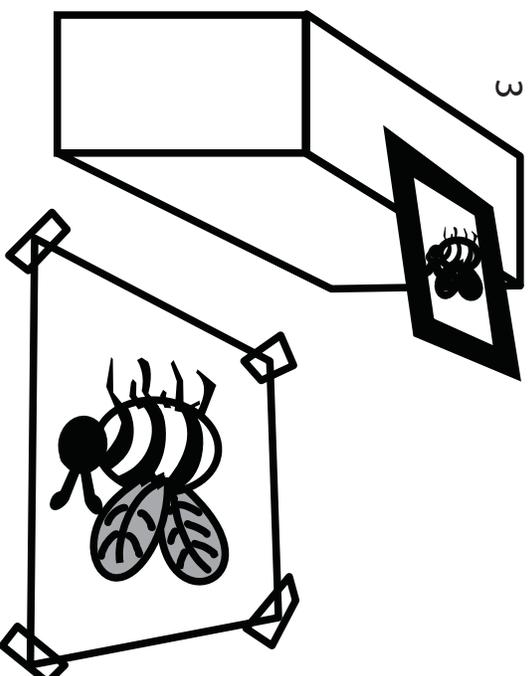
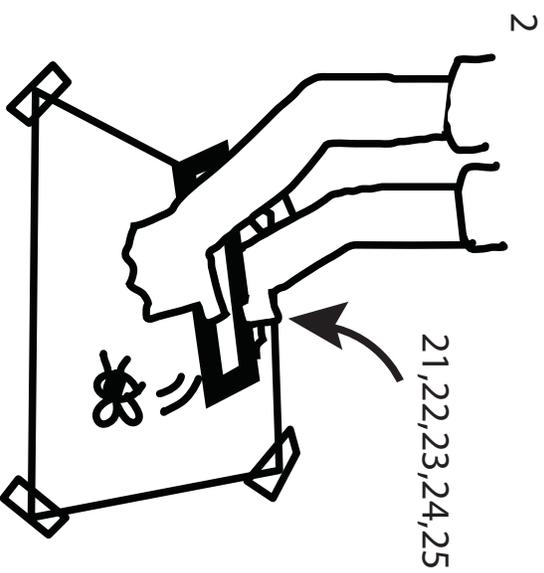


# Fun with Zooming (Part 2)



## Step 1

Beginning position with device mounted.

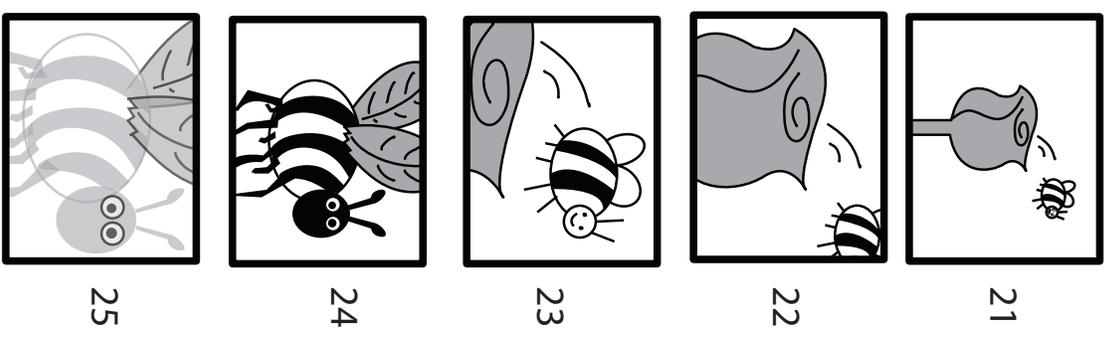


## Step 2

Remove device from mount and take 1 picture as you move device closer to character. Zoom 1 through Zoom 5 take you so close to character. It is okay if character gets blurry.

Put Scene 2 down and remount device as in position 1.

## Step 3



# Recipe 15: Cracks and Shatters



## What You Will Learn

You will learn how to animate a crack appear in any object. As the cracks progress, they will cause a shatter effect. You will learn to take pictures while drawing cracks a little bit at a time.

This will produce an animated effect of a crack evolving into a shatter.

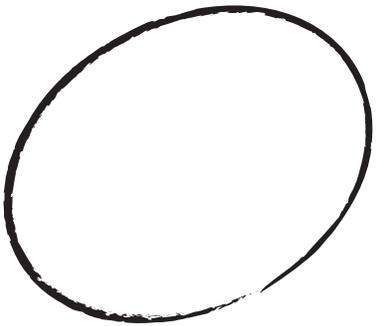
## Why Is This Important?

This technique can be used for many things: rivers can animate on blank maps, a signature can write itself, an egg cracks and shatters, etc.

This recipe is good for a lot of impacts and slapstick animated bits: all manner of fragile things shatter, windows break, teeth crack, and earthquakes shake.

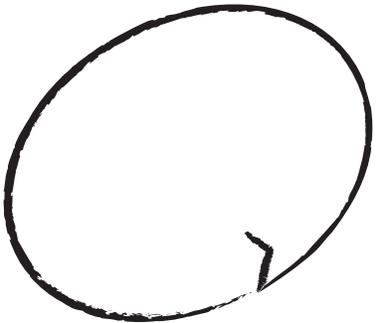


# Cracks & Shatters (Egg)



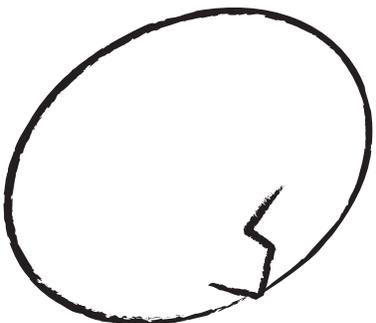
## Step 1

Take 15 pictures.



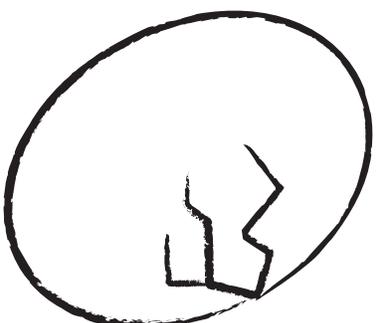
## Step 2

Draw or dent (clay) crack line and take 1 picture.



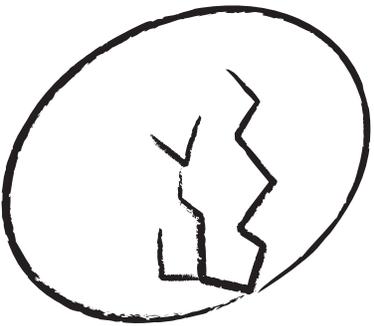
## Step 3

Add a few lines or dents and take 1 picture.



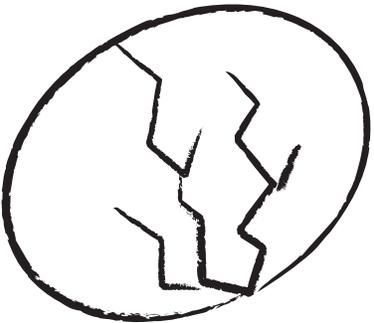
## Step 4

Keep adding more cracks and take 1 picture each time a line is added.



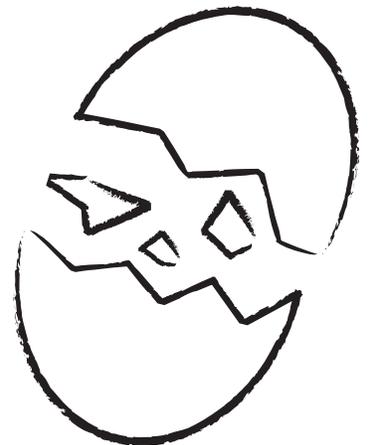
## Step 5

Add more, take more pictures.



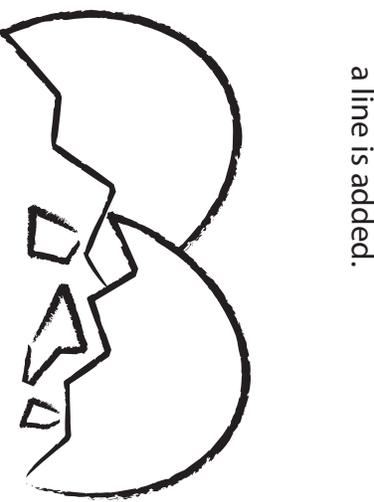
## Step 6

When crack line reaches the other side, take 15 pictures.



## Step 7

Cut halves apart and make sure little pieces shatter away too! Take 5-6 pictures as they fall.



## Step 8

Show cracked parts still for at least 15 pictures.

# Recipe 16: Lightning



## What You Will Learn

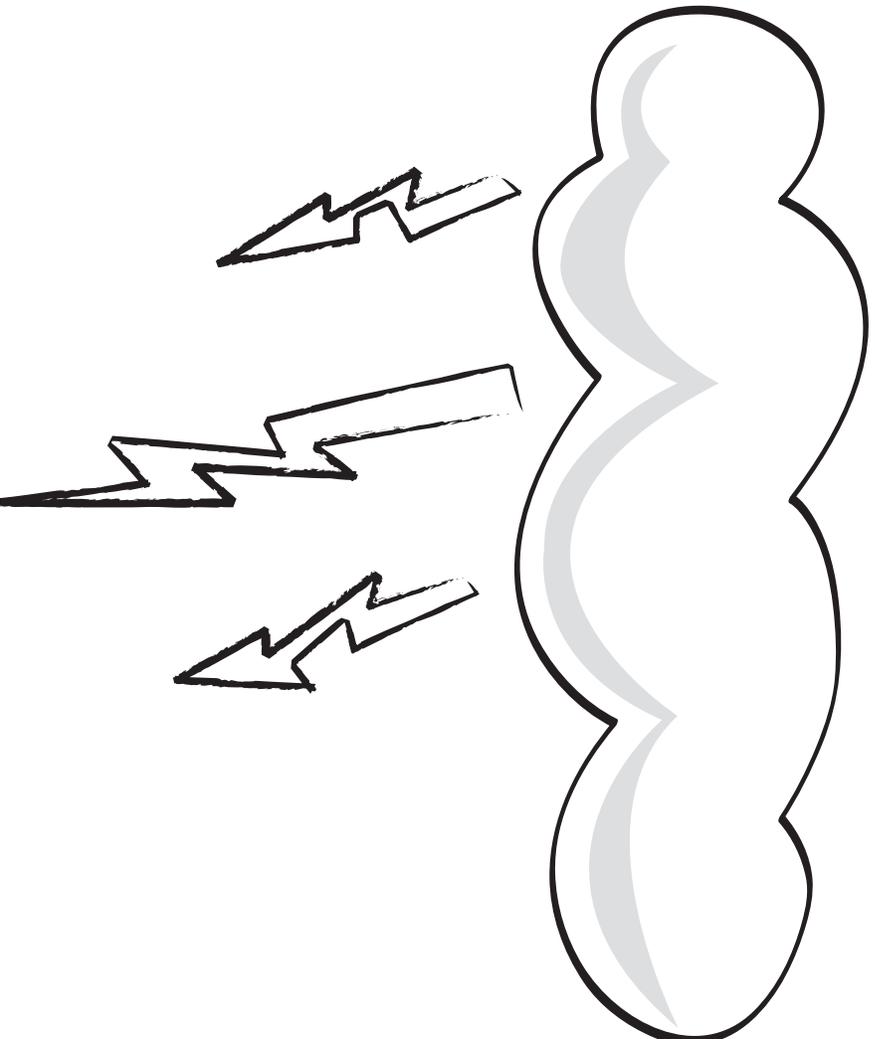
You will learn to animate a "flash" of lightning. one way to create the timing for lightning. You will find that 2 pictures of something in a scene is just enough to make it visible when working at 15fps.

## Why Is This Important?

This special effect is a great experiment in how few pictures are needed to impress the human eye with an image. One picture of a lightning flash is too fast (only 1/15th of a second) and four pictures are too many. Experiment with the time lightning bolts are on the screen. People have different opinions on what is ideal. Here we've given you a starting point with the timing, so you can decide for yourself.



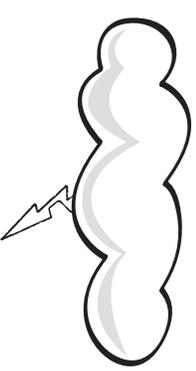
# Lightning



10 pictures



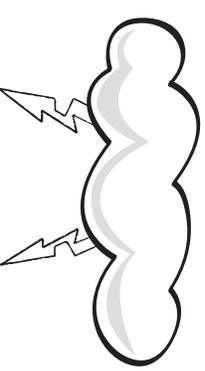
2 pictures



15 pictures



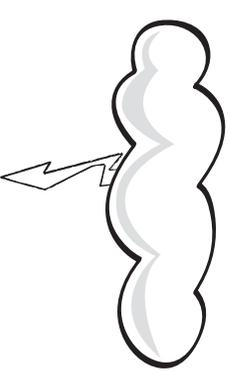
2 pictures



5 pictures



2 pictures



## Steps

Lightning is as much about the pauses between the lightning strikes as it is about seeing the lightning. So follow a pause pattern like this and you will have success. Sound is really important too!

# Recipe 17:

## Flag Wave



### What You Will Learn

You will learn how to make a flag look as if it is flapping in the wind. You will loop a cycle of flag shapes, and repeat later in editing to save time.

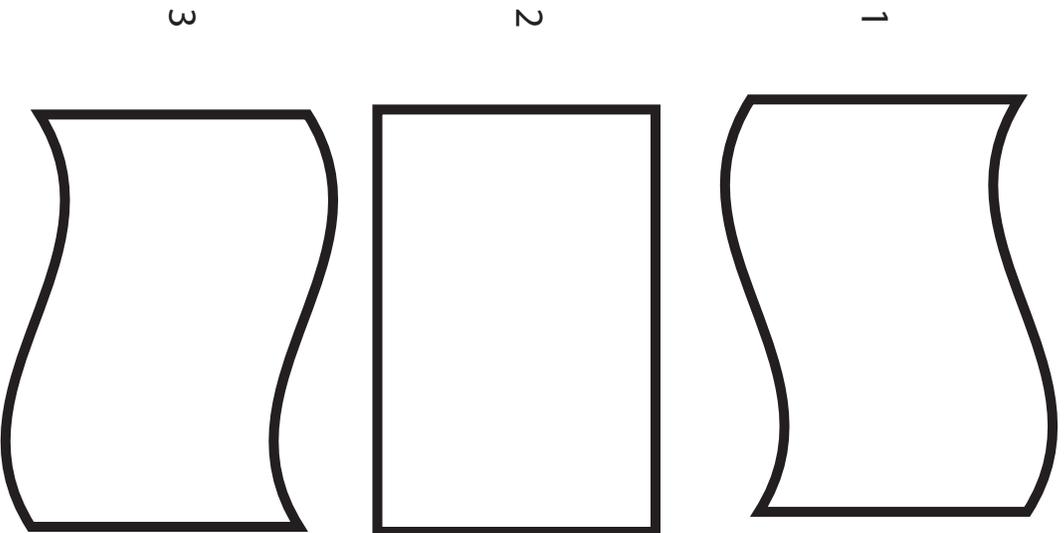
### Why Is This Important?

Creating the fluid nature of cloth can be challenging in animation. In this case, thinking of the flag in various poses will be helpful (you could use more poses than we demonstrate here!).

The extreme opposite poses of the flag are called "extremes" by professional animators. We create a flapping effect by using extremes which have a middle, straight pose in-between.



# Special Effect: Flag Waving



## Steps

- Place Flag #1 on flag pole, take 1 picture.
- Swap in Flag #2, take 1 picture.
- Swap in #3, take 1 picture.
- Swap in #2, take 1 picture.
- Loop sequence.

# Recipe 18: Candle Flicker



## What You Will Learn

You will learn to use the *Toggle*, *Slow-motion*, *Loops and cycles* recipes to create the illusion of a candle flame flickering and going out.

## Why Is This Important?

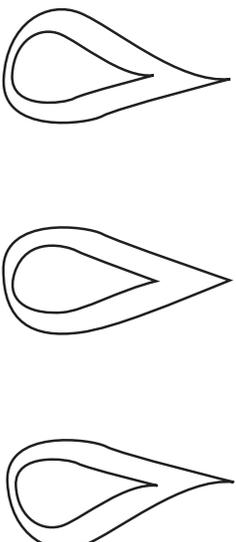
This special effect is subtle and quiet. This exercise is a lot more difficult than it appears. Three frames of a toggle is less energetic than two (remember the fire in the toggle recipe? Raging!). Mixing a random order of the three flames gives this flame a dancing quality. *Loop* the *Cycle* as long as you prefer. When the smoke drifts upwards, extreme caution is required to make the smoke drift up smoothly with *SloMo* micro-spacing.



# Candle Flicker

## Step 1

Put the three flames on the wick one at a time and take a picture. It doesn't matter which order, as long as you change the flame for each picture you take. Take a total of 30 pictures.



## Step 2

Create the illusion of the flame going out. Take the long grey smoke and hide it under the candle. Move it up, one move per picture, for about 10-15 pictures until it is off the top of the screen.



# Recipe 19: Tornado



## What You Will Learn

You will learn to *Toggle* three frames of a tornado along a path. Randomizing the order of each picture will be key to your success.

## Why Is This Important?

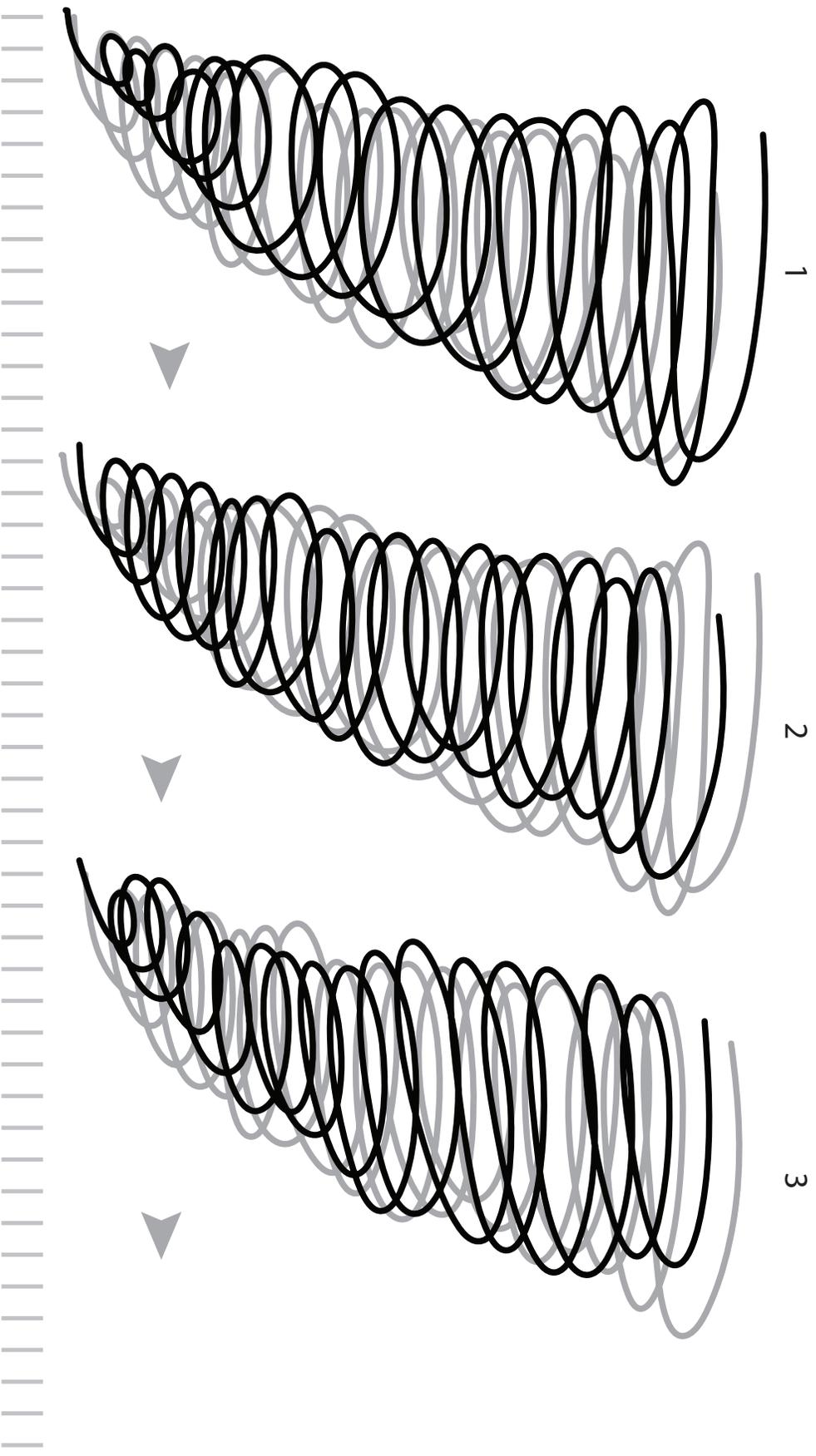
Though we've toggled on a path before, this is a great example of using three different drawings of the same object moving incrementally across the screen. Each tornado drawing is slightly different than the other. This imperfection helps generate a chaotic motion which gives the tornado quivering dynamics. Experiment with the spacing along the bottom. Try a slow moving tornado by using smaller spaces or a faster one using larger spaces.



# Special Effects: Twister

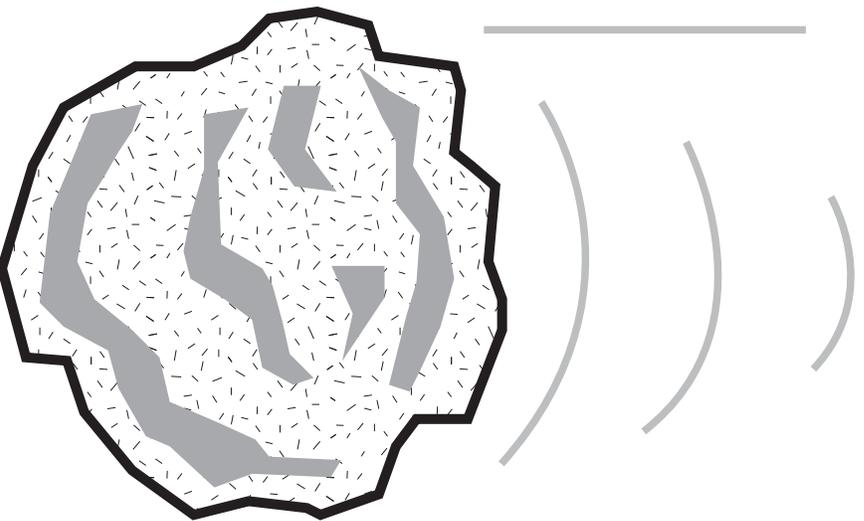
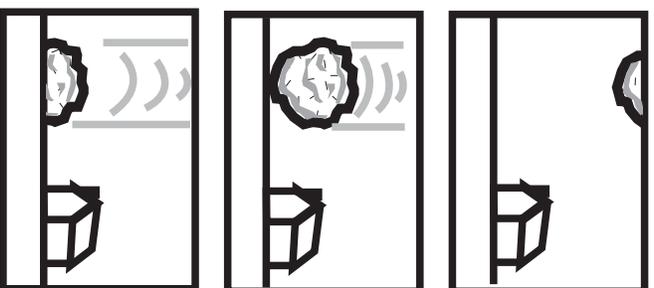
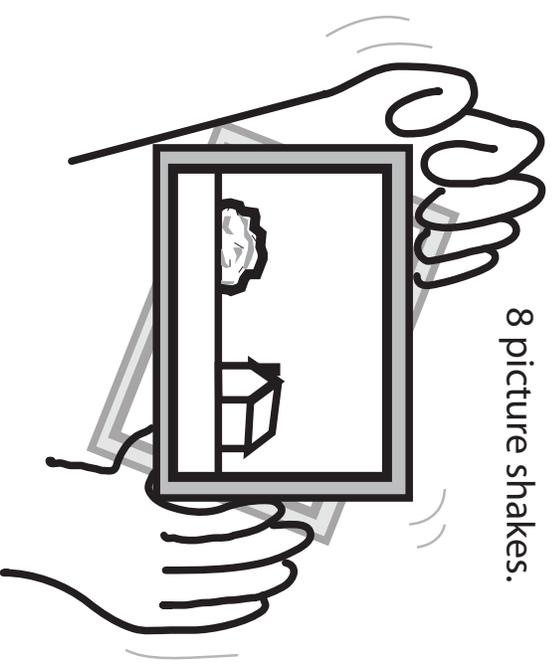
## Steps

Take 1 picture of tornado #1 at far left notch. Swap in tornado #2 at second notch in from the left and take 1 picture. Swap tornados 1, 2, and 3 randomly along notches until tornado is off screen. Take 15 pictures of nothing happening.



# Camera Shake

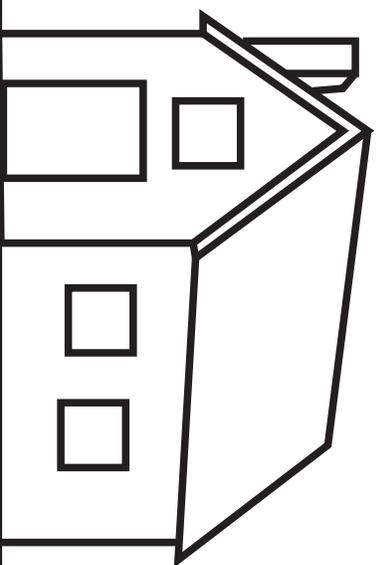
8 picture shakes.



## Steps

Drop the meteor with 1 inch spacing. At impact twist the camera back and forth taking 1 picture for each twist move.

At the end, take 15 pictures of nothing happening.





# Recipe 20: Ocean Waves

## What You Will Learn

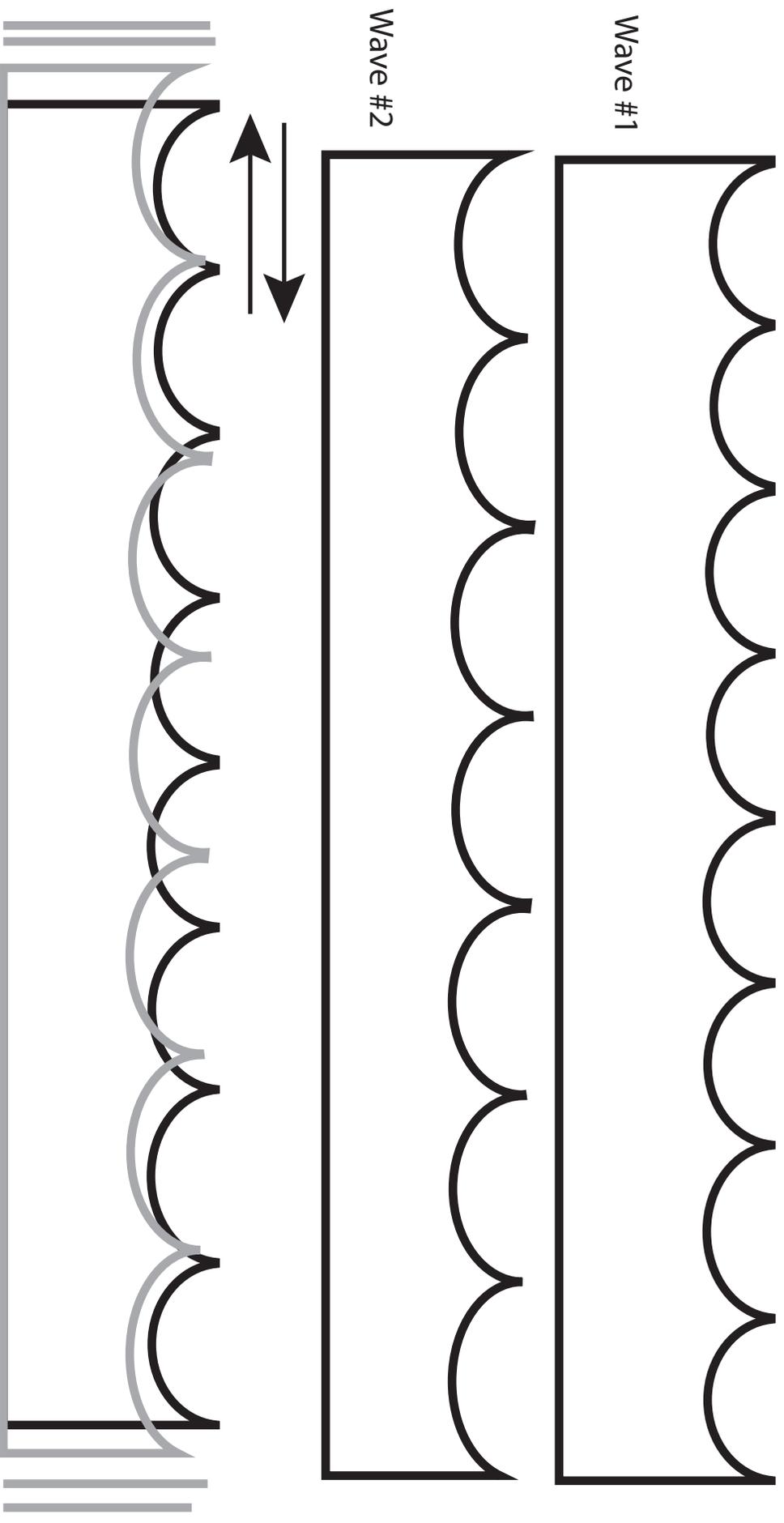
You will learn how to create the illusion of the surface of water. Using two simple cut-outs, the action of waves can be simulated for scenes on the ocean. A simple way to create ambient action!

## Why Is This Important?

Why keep the surface of water still? When we add a basic action like waves rolling, an animation of a ship or boat or island can be enhanced with a little surface action. Sounds will be essential to helping your audience think this is water.



# Ocean Waves



## Steps

Move waves back and forth for each picture. Animate 15 picts. Loop and Cycle to desired time. Randomize the spacing for best effect.



# Recipe 21: Chimney Smoke

## What You Will Learn

You will learn how to create the illusion of lazy drifting smoke out of a chimney. You will find that just one piece of paper can be used to make a wonderful wavy waft of smoke.

## Why Is This Important?

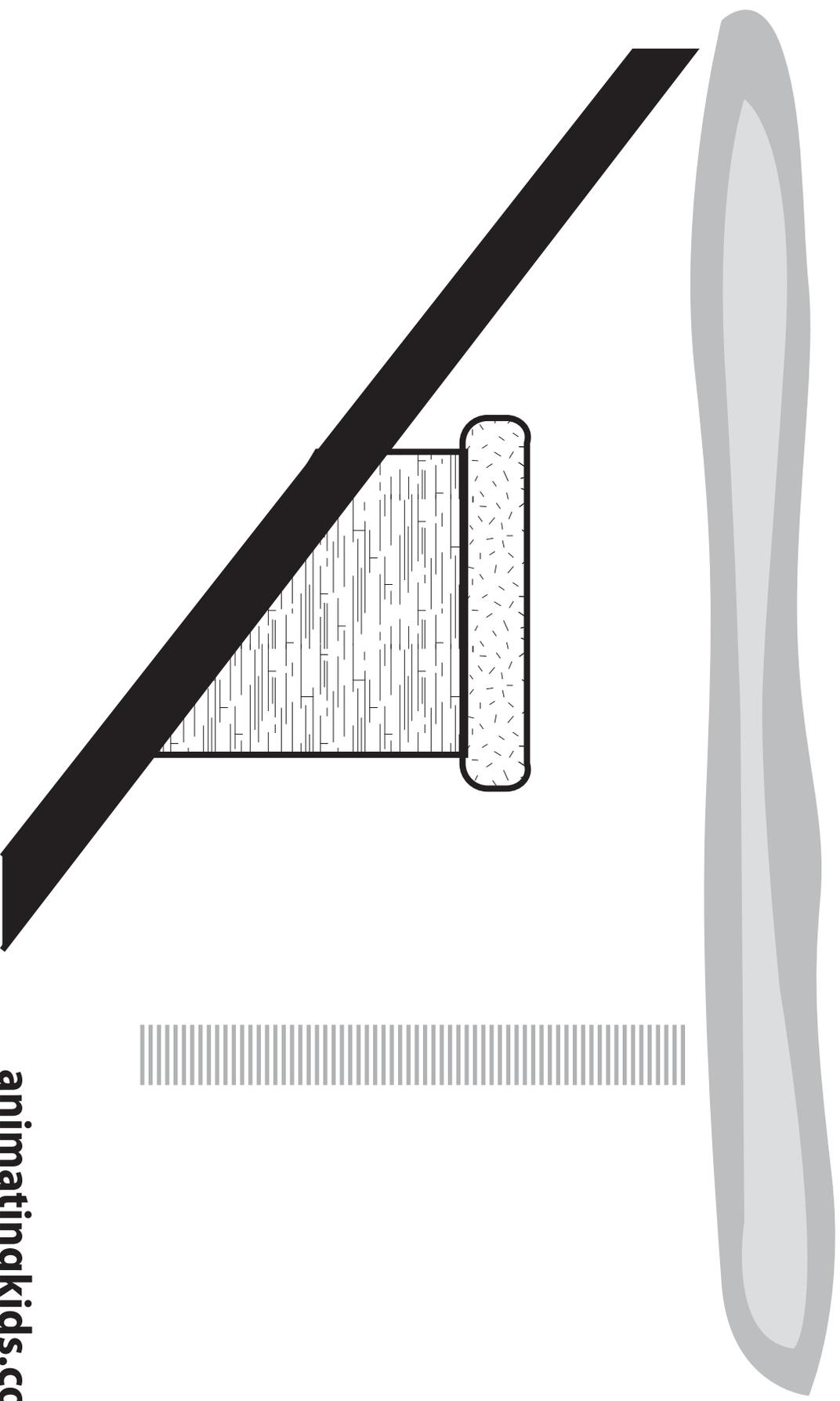
This special effect is a great application of SloMo. Taking the time and patience to move the smoke tiny tiny increments is essential. Wise use of spacing with a steady hand will determine the success of this illusion.



# Special Effect: Chimney Smoke

## Steps

Slow motion smoke is our goal. Hide the smoke behind the chimney. One picture at a time, move the smoke about the distance of the notches below. Continue and loop the frames. Remember, slow motion takes way more pictures than you think!





# Recipe 22: Snow Splashes

## What You Will Learn

You will learn how to treat the after-effects of impact from 3 different angles of trajectory.

## Why This Is Important

In this example, Newton's law comes into play. Every action has an equal and opposite reaction, depending on trajectory into impact. Though your audience will hardly notice, the way you kick up dust, water, or in this case snow, in relation to other objects shows the physics is right. This will make your special effect supportive of the main action and as a result will seem more believable.

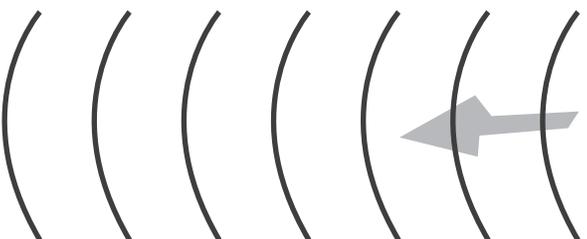
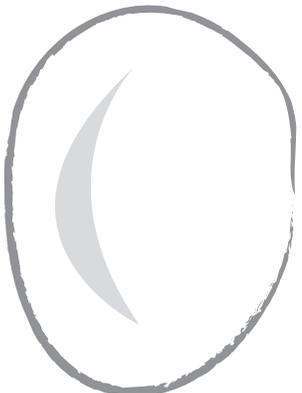


# Special Effects: Snow Splash 2

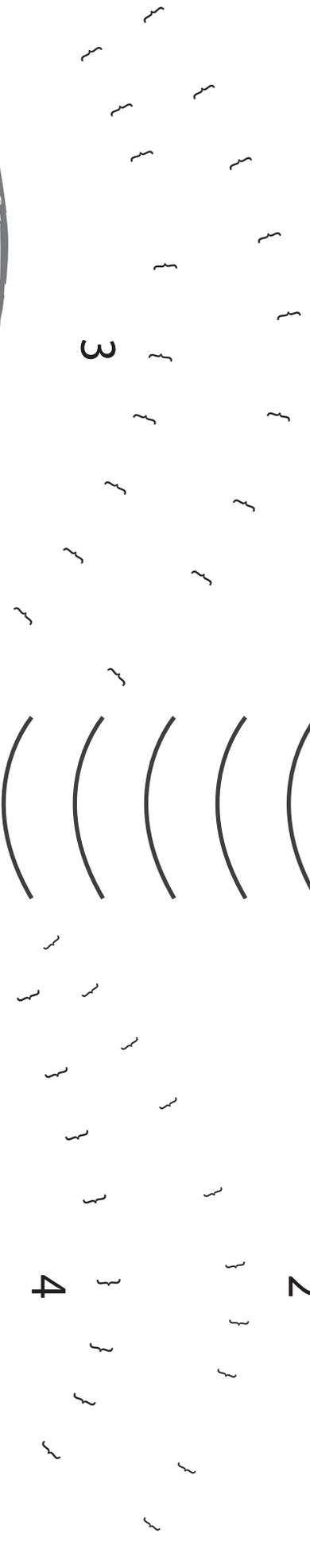
## Steps

Take one picture per space with the big snowball. When it hits the ground spray small bits 1, 2, 3, and 4 out from the sides.

**Snowball**  
(use clay)



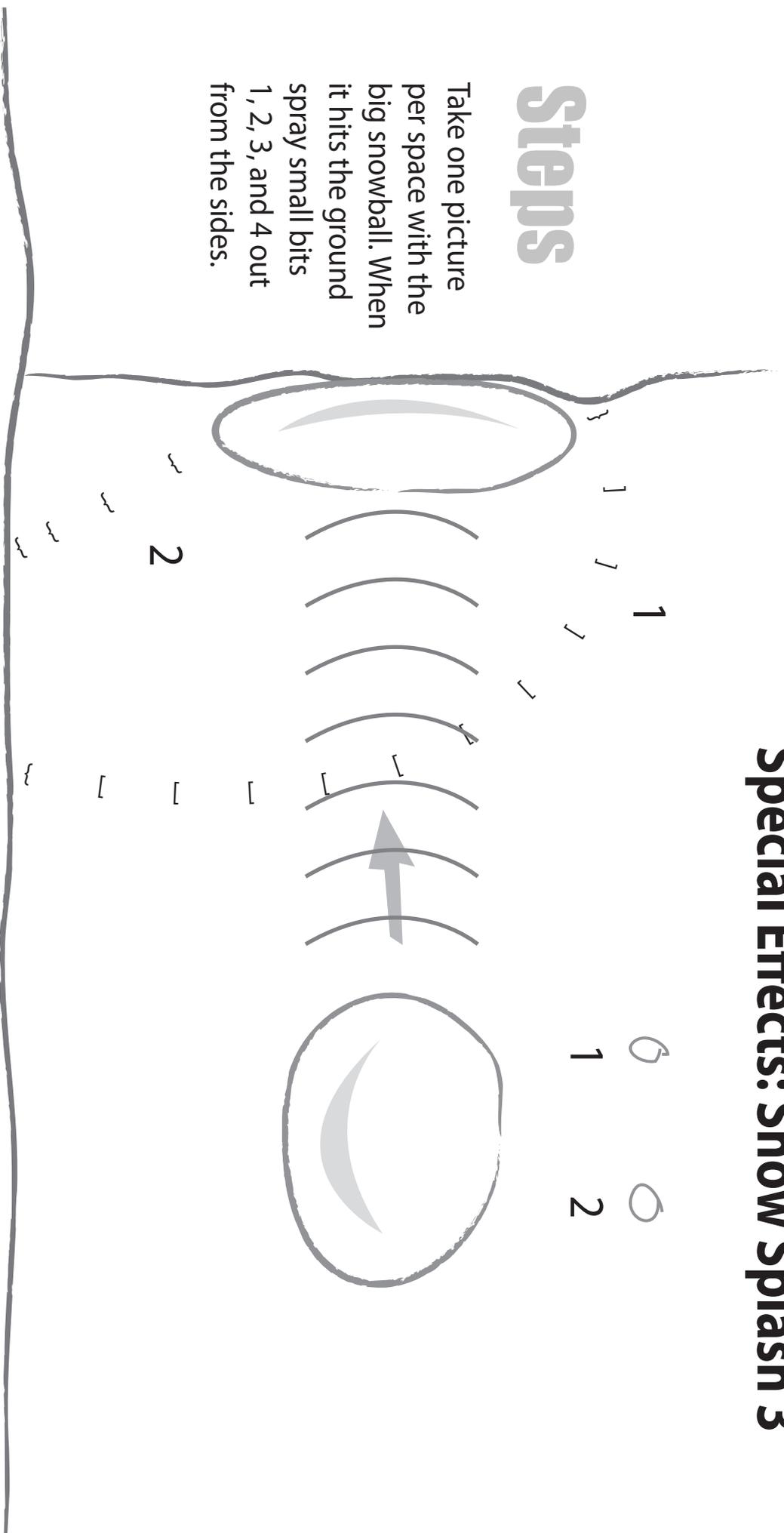
1 3



# Special Effects: Snow Splash 3

## Steps

Take one picture per space with the big snowball. When it hits the ground spray small bits 1, 2, 3, and 4 out from the sides.



# Special Effects: Snow Splash



Snowball

(use clay)



1



2



3



4

## Step 2

After Snowball hits ground,

Start 1, 2, 3, 4 on their paths all at the same time



## Step 1

Take 15 pictures  
Then start the snowball on the big arc from left to right, 1 picture per space





# Recipe 23: Comet Tail

## What You Will Learn

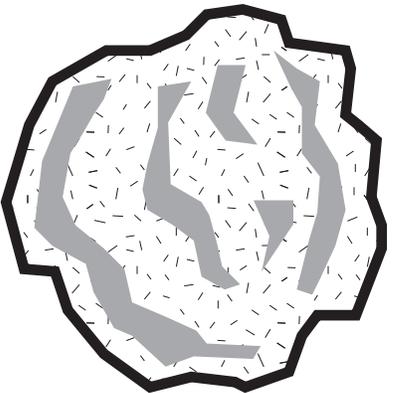
Using the Toggle recipe, you will create the illusion of a comet's tail shooting out into space as if the comet is traveling very very fast.

## Why This Is Important

An animator is always on the lookout for discovering ways to use Toggle as a short-cut. This example is a great demonstration of only needing a few pictures to create an effect that can be copied and pasted to fit any length of time. The more ways Toggle can be used, the more time we'll have to spend on other more consuming animation tasks.

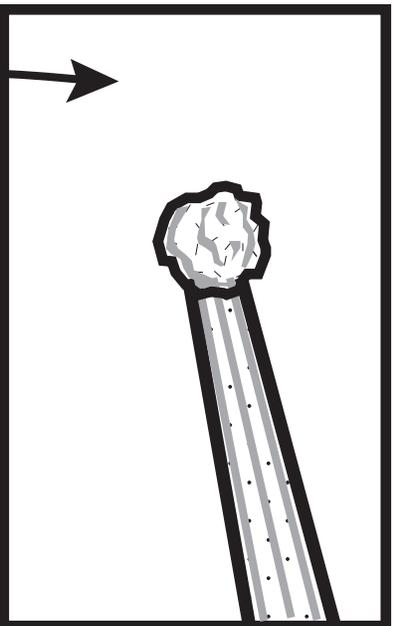


# Special Effects: Meteor/Comet



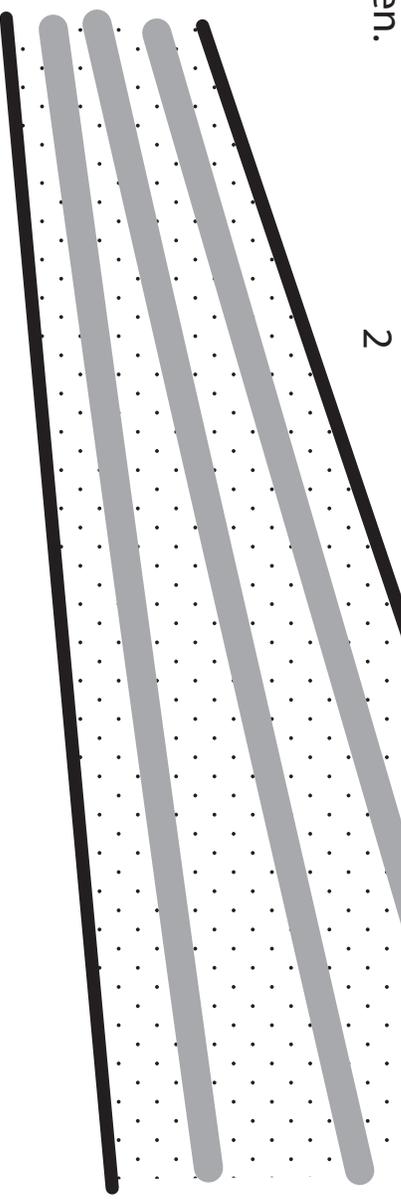
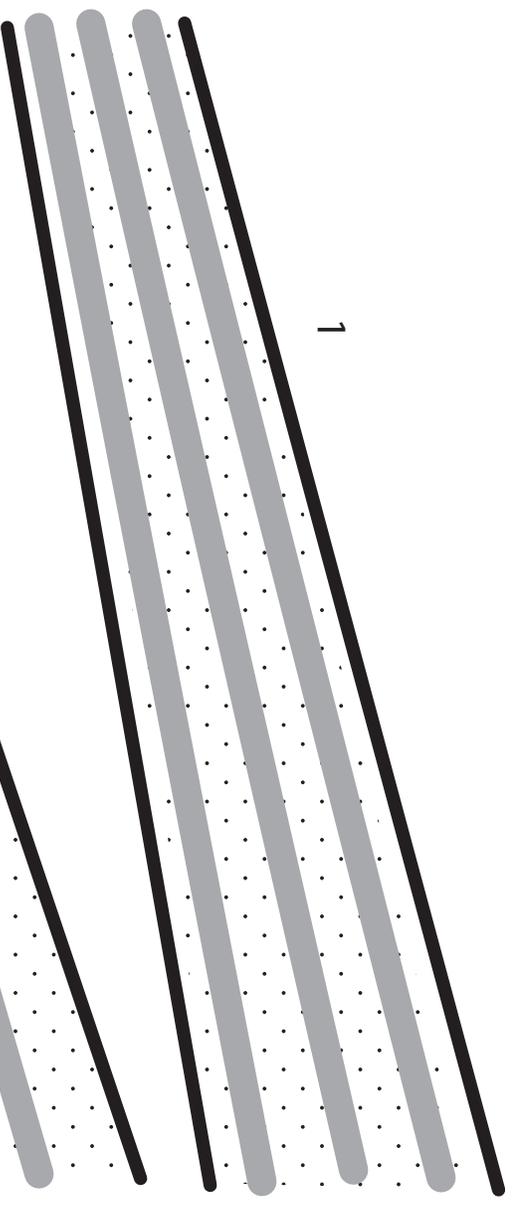
## Steps

Tape comet on left side of the screen.



Place comet tail #1 under comet. Take picture.  
Place comet tail #2 under comet. Take picture.

Black background repeat for 15 pictures and loop.





# Recipe 24: Water Faucet

## What You Will Learn

Using the *Toggle* animation concept, you will create the illusion of water gushing from a faucet.

## Why This Is Important

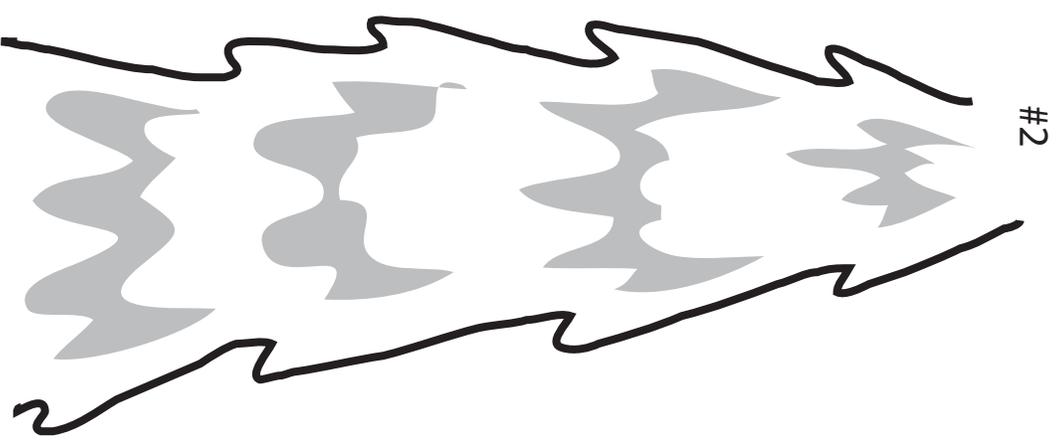
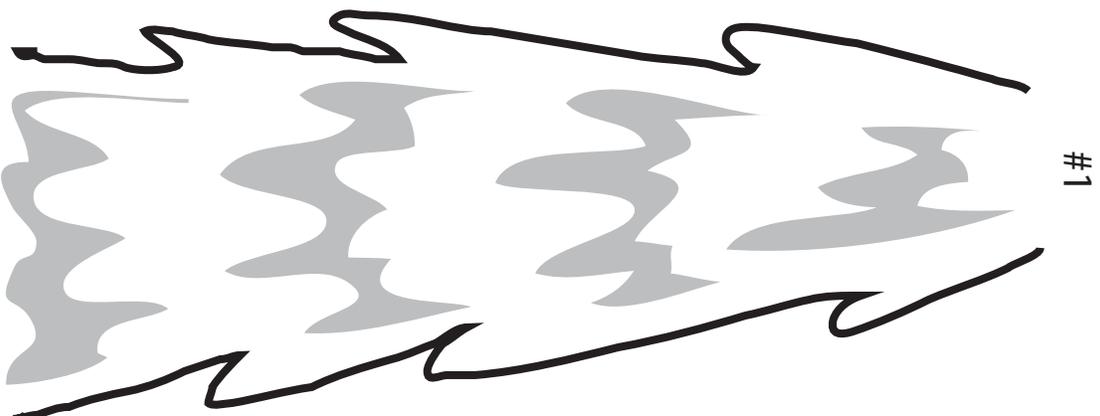
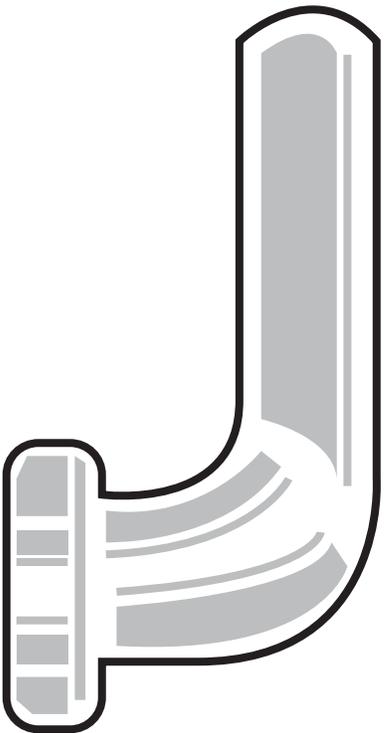
This simple application of *Toggle* will open up other applications where water or other liquid is gushing; waterfalls, hoses, fountains, fire-hydrants, etc.



# Water: Hose or Faucet

## Steps

Swap water #1 with water #2 every other picture. Loop as needed.





# Recipe 25: Tsunami

## What You Will Learn

Using the *Toggle* and *Spacing is Speed* animation recipes, you will create the illusion that a wave with a frothy crest glides along the surface of the water.

## Why This Is Important

Here the animator is tasked with keeping track of four props, and using *Toggle* and *Spacing is Speed* at the same time. Juggling multiple tasks at once is a very important skill. This requires organization, attention to detail, and creative positioning to accomplish. Experiment with different spacings. A *SloMo* wave spacing will give your audience a better look at the froth.



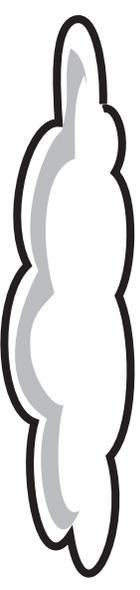
# Waves: Tsunami

## Steps

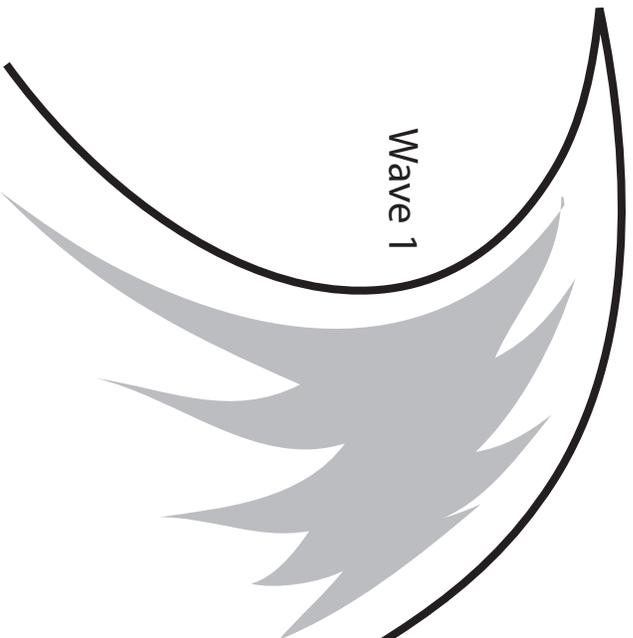
Move waves from right to left, spacing out along the notches below, swapping froths & waves every other picture.



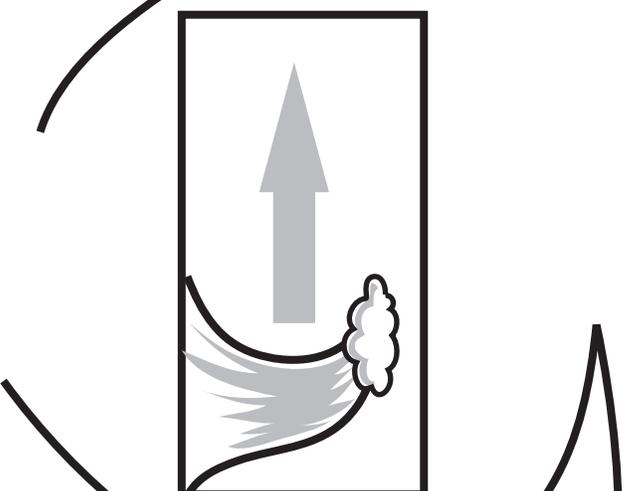
Froth 1



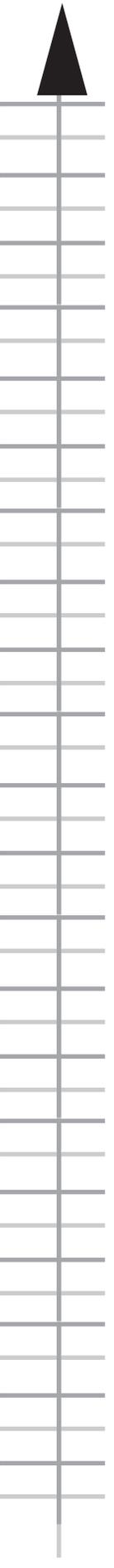
Froth 2



Wave 1



Wave 2



# Red Hat Recipes



# Red Hat Recipes

## Introduction



Red Hat recipes are dedicated to acting. Understanding poses and expressions will bring your character to life.

Think about it. When a character gives a great performance in an animation, the animator is inventing the performance frame-by-frame using the same rules you are learning here at *Animating Kids!*

Character acting is essential in helping your audience care about your movie. Some of the best performances in movie history come from animated characters (yet nobody gives an animator an academy award for best actor).

As animators we have to be an actor AND an animator at the same time.

The Red Hat recipes show how to make your characters "feel" emotions by combining the principles and concepts from earlier recipes.



# Recipe 1: The Brow



## What You Will Learn

A character's *Brow* is one of the most expressive facial features for communicating emotion. You will learn how to create the illusion of 5 or 6 different emotions by posing the *Brow*.

## Why Is This Important?

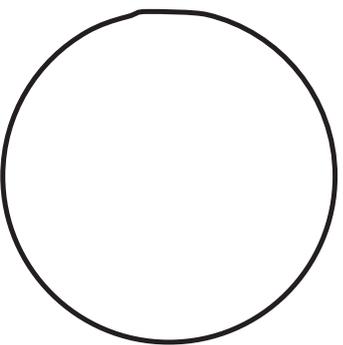
Emotions expressed by a character's face are a powerful communicator. By understanding the minute changes in the *Brow* and how it creates different emotional affects, young animators will begin to experience the infinite possibilities in animating facial expressions. When we understand how to work the *Brow* for emotional effect, the ability to have your character "act" becomes a new skill



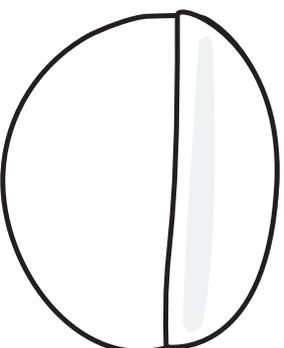
# Steps

# The Brow

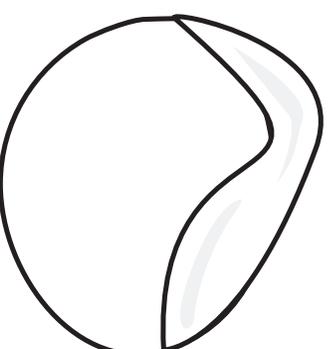
Take 30 pictures of each brow pose. The goal is to show a change in emotion using only the brow. No eyes. No mouth. This is a major part of posing for emotion. Get the brow right and it is hard to go wrong with emotion.



15 pictures

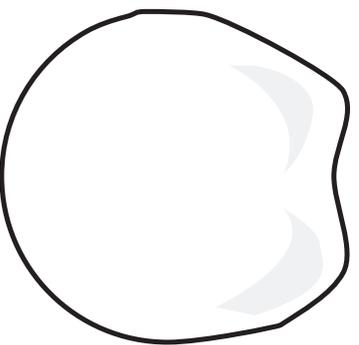


30 pictures



30 pictures

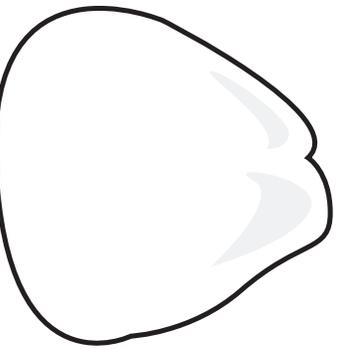
**Surprised/Happy**



15 pictures



30 pictures



30 pictures

# Recipe 2:

## The Brow with Wind-up



### What You Will Learn

Building on Recipe 1, *The Brow*, we will apply a *Wind-up* to each pose of the brow. This will add a "snap" of anticipation to each change of emotion.

### Why Is This Important?

*Wind-up* between facial poses creates drama and impact as a face moves from one emotion to another. The face can be emphasized, "punched up", or enlivened by adding this sense of getting ready or anticipation before snapping into a new pose. This is a very subtle move, but highly effective. This skill has been used in a broader sense in the *Sneeze* and *Throw* recipes in the White Hat recipes, and now by applying *Wind-up* to *The Brow*, we up our acting abilities.

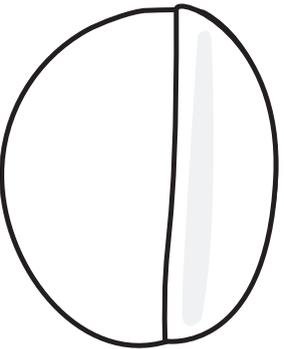


# Steps

# The Brow with *Wind-up*

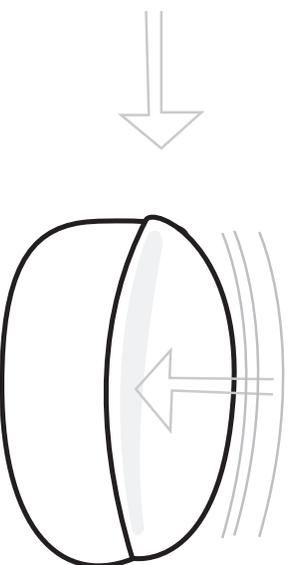
Add some *Wind-up* to the *Brow* poses. This will add some “snap” to the animation. Before now, *Wind-up* has been used for actions like jumping, sneezing, and throwing. Now it helps us get from one emotion to another with impact. A general rule is to *Wind-up* the opposite direction of the final *Brow* pose.

## Bored



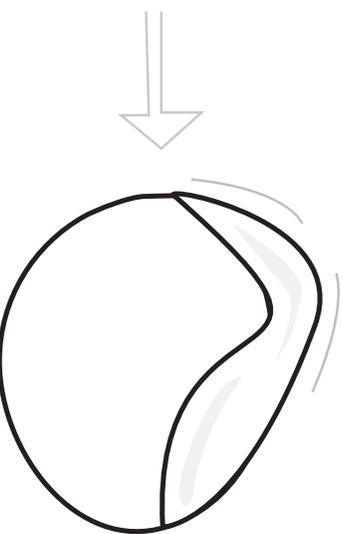
15 pictures

## Wind-up w/Squash



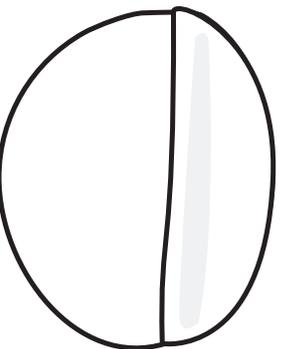
Down for 3-4 pictures

## Curious/Confused



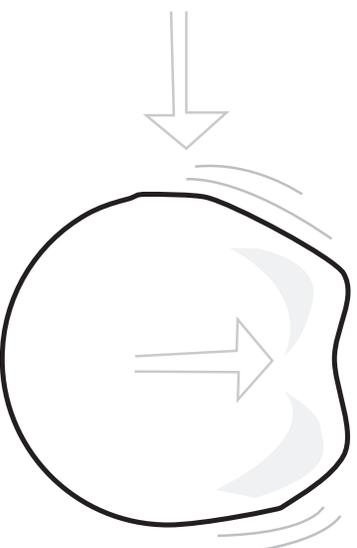
Up in 2, hold for 30 pictures

## Bored



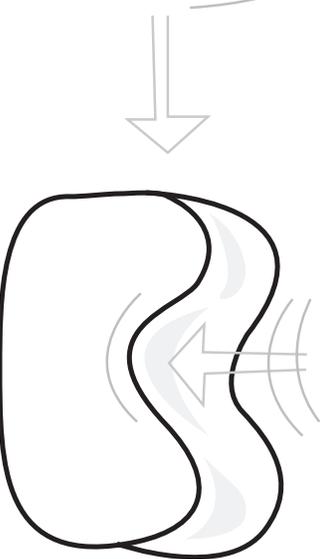
15 pictures

## Wind-up w/Stretch



Brow goes up for 3-4 pictures

## Mad/Frustrated



Down in 2 picts, hold for 30 pictures

# Recipe 3:

## The Brow with Wind-up and Eyes



### What You Will Learn

You will learn to animate eyes in relation to the the brow. You will improvise the placement of eyes as the brow changes expressions. You will also use different sizes of eyes to emphasize the impact of the brow.

### Why Is This Important?

Experimenting with eye placement while animating the brow will bring new discoveries in adding impact to acting with the face. By changing the size and placement of the eyes in relation to the brow, young animators will gain insights into the subtleties available. Use different eye sizes with paper or clay or plastic googlie-eyes and have fun experimenting with the way it impact emotion.

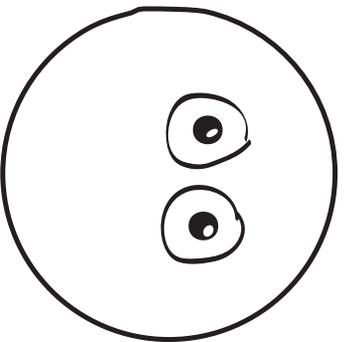


# The Brow with Wind-up & Eyes

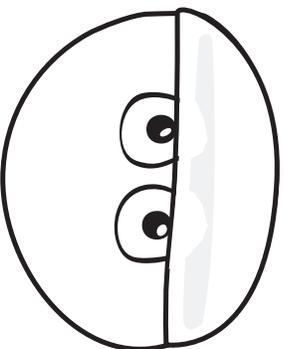
## Steps

Take 30 pictures of each brow pose while experimenting with eye position. Try going through with the small set of eyes first. Then mix and match different eyes sizes to amplify expressions. The brow position is most important, but we can create a lot of variation with the eyes.

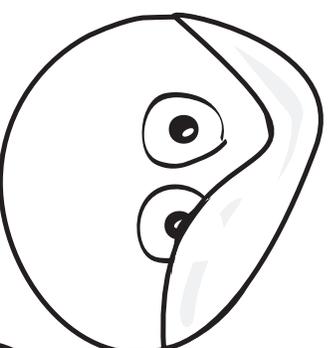
### Bored



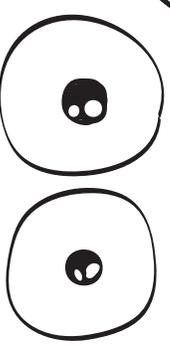
15 pictures



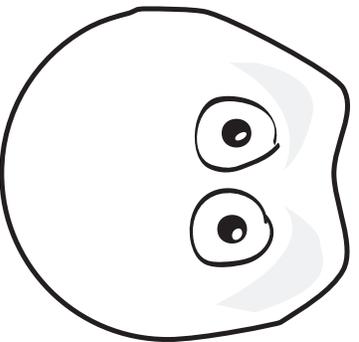
30 pictures



30 pictures



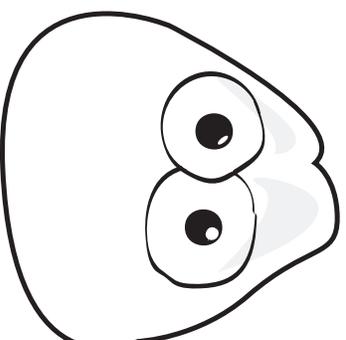
### Surprised/Happy



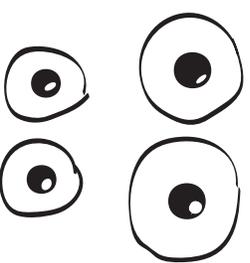
15 pictures



30 pictures



30 pictures



### Mad/Frustrated

### Worried/Sad

### Curious/Confused

# Recipe 4: Crying Calm



## What You Will Learn

You will learn how to loop tears to create the illusion of tears streaming down your character's face. This combines *Loops* with *Slow Motion* spacing. Your character is acting sad so move the tears as slow as you can. This really helps your audience feel their inner pain. Loop the tear cycle a few times, then copy and paste later during editing.

## Why Is This Important?

Storytelling with animation requires basic acting. Conflict and emotions are the core of many stories. Being able to imagine and hypothesize how to animate an emotion is essential for an animator. Looping a cycle of tears requires careful spacing and timing.



# Crying: Calm

## Steps

Put tears under eyes in Position #1.

Take 1 picture move to position #2.

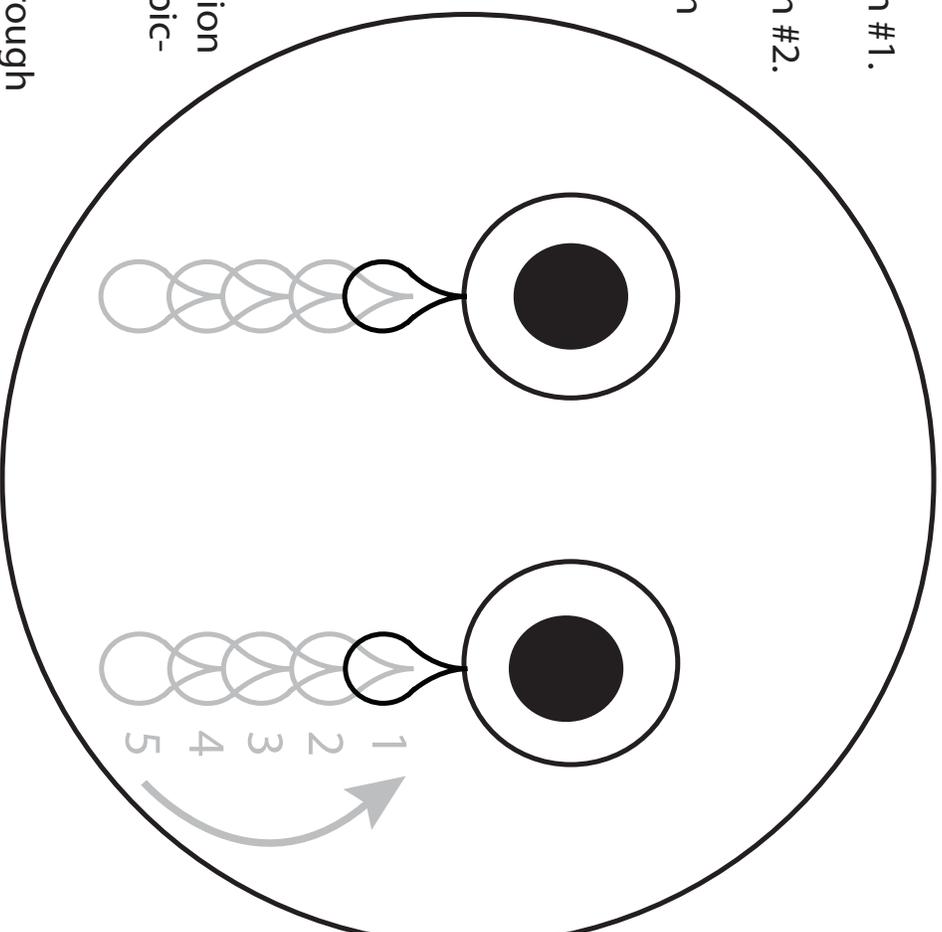
Take 1 picture move to position #3.

Take one picture.

As you move to position #4 with the first tear, insert a second tear under eye at position #1.

You should have a tear at position #1 AND at position #4. Take a picture.

Continue by recycling tears through all positions staggered like this.



# Recipe 5: Crying Hysterically



## What You Will Learn

As with the *Crying Calm* recipe, in the the *Crying Hysterically* recipe you will learn to how to use different spacing to create the illusion tears are flying out of the eyes. You will add *Shake* to the head to intensify the crying. Posing the face in a mouth-open frown will also add to the effect.

## Why Is This Important?

Characters can swing from happy to sad, curious to furious, and a hundred other emotional states. By understanding and combining the spacing and posing involved, an animator can express the entire range of possible emotions.



# Crying: Hysterical



## Steps

Make a frown and closed eyes with your fingernails. Shake head back and forth every other picture. As you do this, start tears at eyes and animate them out & down, as shown, 1 picture for each position. You should have three tears on each side. Loop cycles of tears and repeat.

# Recipe 6: Steam Out Of Ears



## What You Will Learn

You will learn to combine elements from *Getting Mad* with a *Shake* of the head, a *Toggle a Cycle* of steam cut-outs, and a grimacing facial pose to create extreme anger.

## Why Is This Important?

Sometimes we go over-the-top in character animation, exaggerating everything about an emotion. The sequencing, posing and timing are important as usual. Starting with a calm pose we *Wind-up* the eyebrows, drop them into position with fast *Spacing*, pop in the teeth pose, *Shake* the head and randomly *Toggle* the steam until we have *Cycle* of vibration that we can *Loop* later.



# Steam Out of Ears

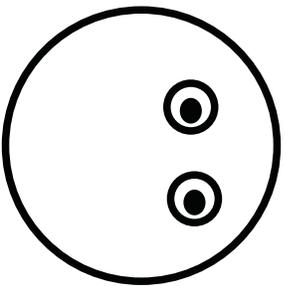
## Steps

*Wind-up* the face into a mad expression.

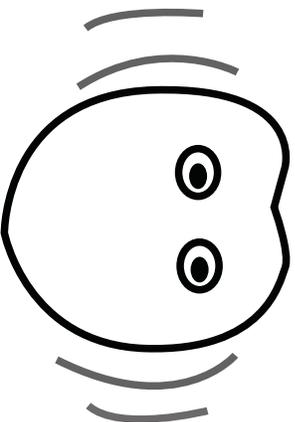
Put teeth on face and *Shake* face every other picture, *Toggle* steam at the sides of head.

*Cycle* the Loop.

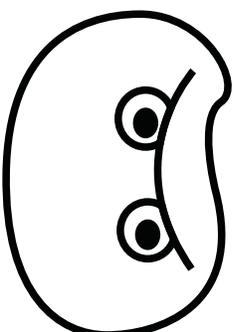
15 pictures



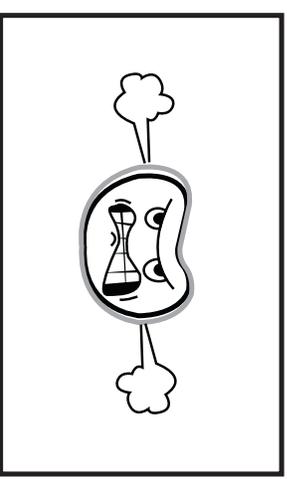
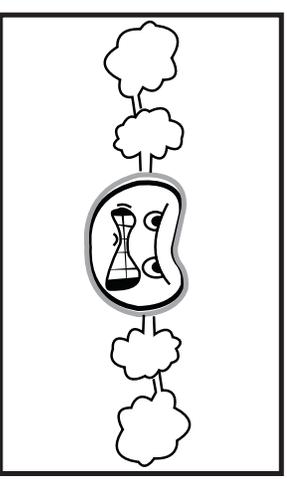
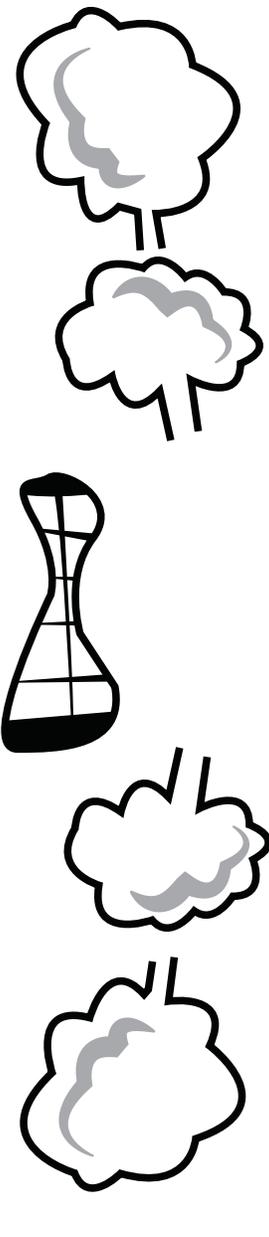
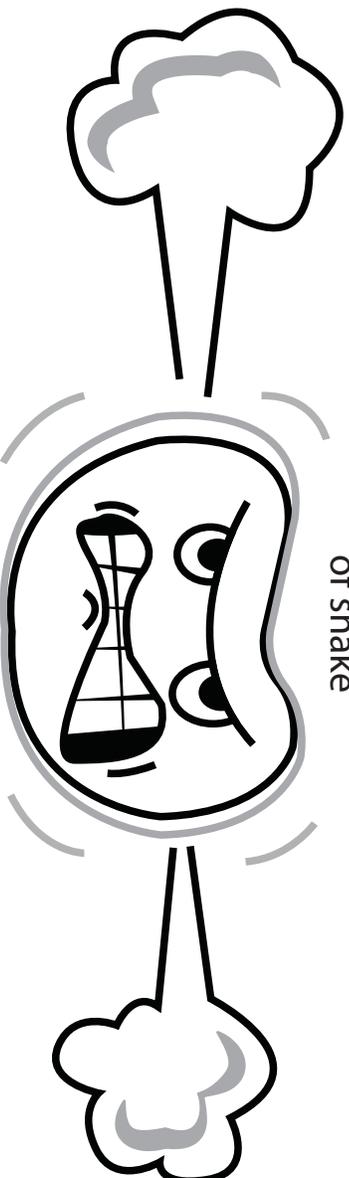
3 pictures to wind up



3 pictures to mad pose



15 pictures or more of shake



# Recipe 7:

## Eye-pop Version 1



### What You Will Learn

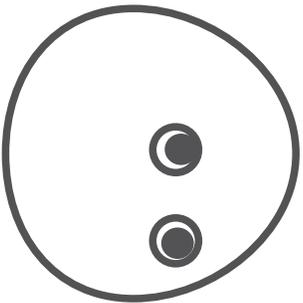
You will learn how to create a simple version of the cartoon classic eye-pop animation. You will learn to exaggerate emotions for comical effect. You will use a combination of *Wind-up*, *Shake*, and *Spacing* to create an impact with this bit of acting.

### Why Is This Important?

This recipe is a simple variation on a classic cartoon cliché. New animators now become part of the legacy of silliness and hyper-exaggeration in cartoons. The Road Runner, Bugs Bunny, Tom and Jerry, Spongebob, and others have all used variations of the eye-pop frequently and to great effect.

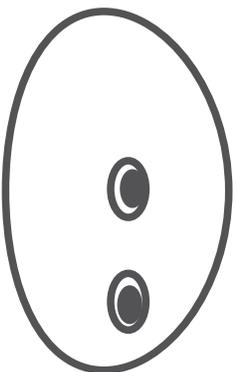


# Eye Popping



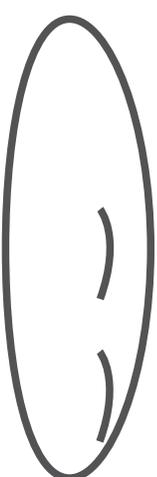
## Step 1

Put eyes on right side of the face.  
Take 15 pictures.



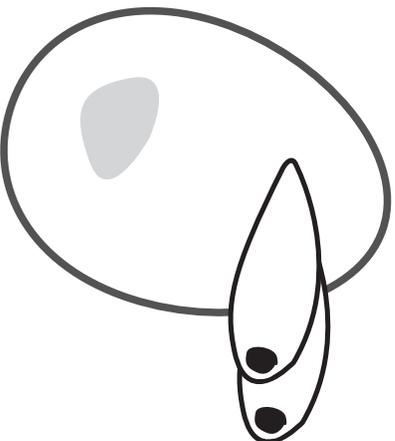
## Step 2

Take 1 picture with the face squashing down.



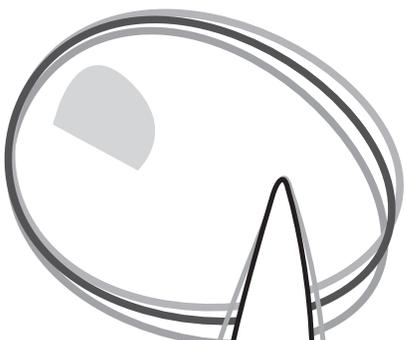
## Step 3

Take 10 pictures with the face really squashed.



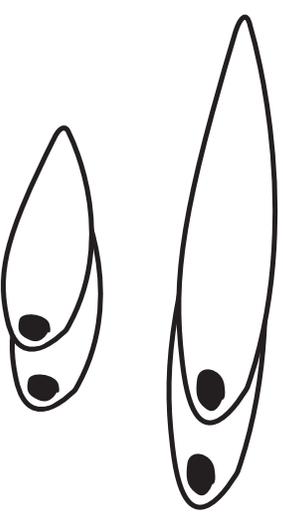
## Step 4

Stretch body up and to the right. Put small popped eyes on face and make a dent for a mouth opening.



## Step 5

One picture at a time, quiver the eyes up and down and the body left and right. Repeat for about 30 pictures.



# Recipe 8:

## Eye-pop Version 2



### What You Will Learn

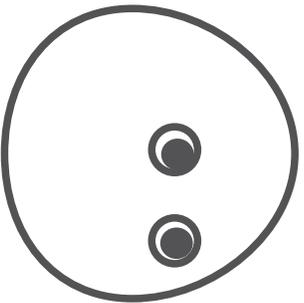
You will learn how to launch eyeballs out of their sockets to create the effect that your character's eyes are floating, shaking and quivering outside the body. You will learn that there are more ways than one to make an eye-pop entertaining.

### Why Is This Important?

Creating a variation on the theme of the eye-pop will expand a new animator's awareness that different ways of doing the same thing are possible. As an aside, Tex Avery was the Warner Brother's animation director who originated this kind of exaggerated cartoon style. Besides Walt Disney, Tex Avery is perhaps the most influential animation director in history.

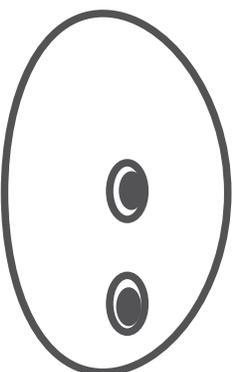


# Eye Popping 2



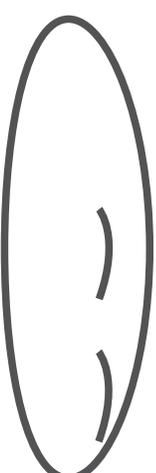
## Step 1

Put eyes on right side of the face.  
Take 15 pictures.



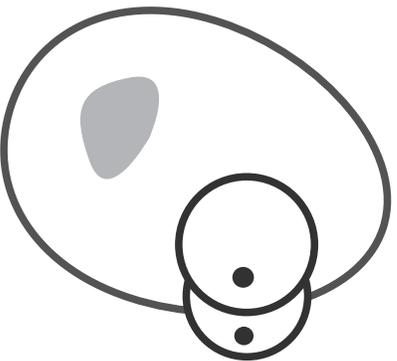
## Step 2

Take 1 picture with the face squashing down.



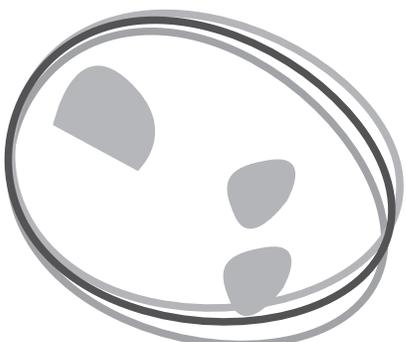
## Step 3

Take 10 pictures with the face really squashed.



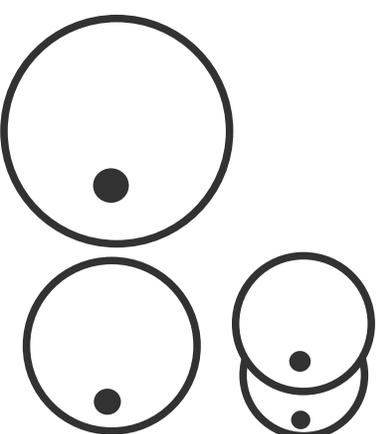
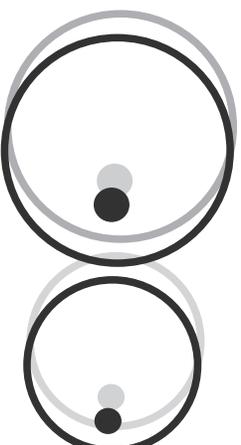
## Step 4

Stretch head up and to the right. Put small popped eyes on face and make a dent for a mouth opening.



## Step 5

Separate the eyes and *Shake* 1 picture at a time for 15 pictures. Dent two eye holes and *Quiver* or *Shake* body at the same time.



# Recipe 9: Eye-pop Version 3



## What You Will Learn

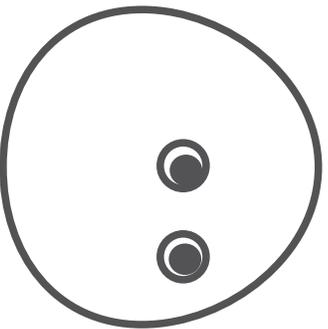
You will learn a different way to make the eye-pop effect. This will create a complex effect with multiple eyes streaming out of the sockets with accordion action.

## Why Is This Important?

For the past three recipes, the difficulty has increased from animating two elements to animating five. The biggest eyes move fast, the next smallest eyes move slower, and the third batch of the smallest eyes move even slower. The accordion effect is achieved by getting the spacing right. Now the new animator has experienced three different ways to create an eye-pop illusion.

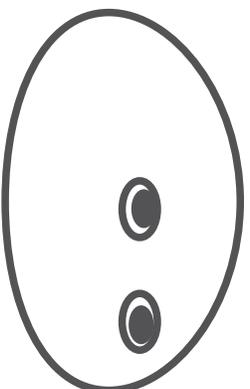


# Eye Popping 3



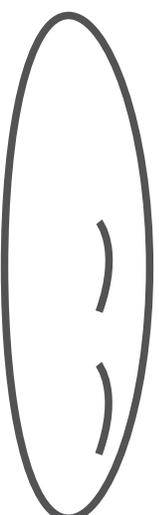
## Step 1

Put eyes on right side of the face.  
Take 15 pictures.



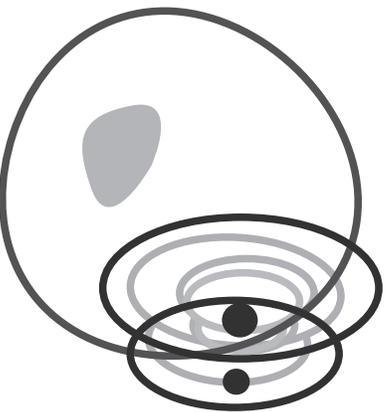
## Step 2

Take 1 picture with the face squashing down.



## Step 3

Take 5 pictures with the face really squashed.



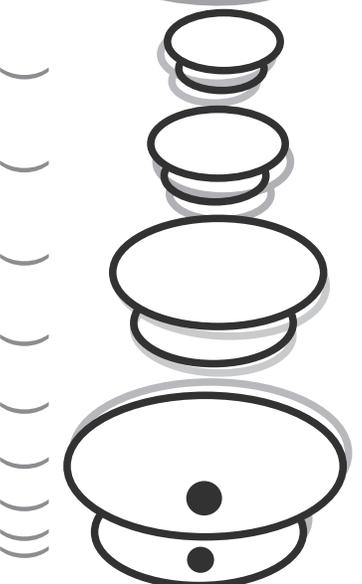
## Step 4

Stack the 4 sets of eyes on top of each other with the largest set on top.  
Open mouth with dent and *Stretch* head upward.



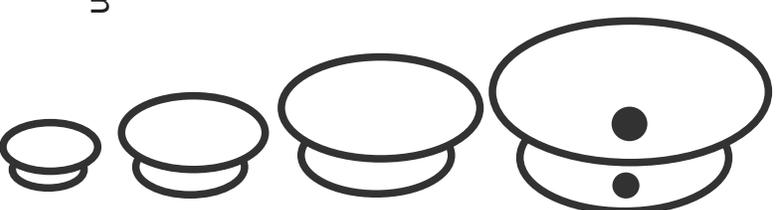
## Step 5

Slide and unstack the pile of eyes to this position 1 picture at a time for about 10 pictures, then *Shake* all for 15 pictures.



## Step 6

Reverse the pattern to slam eyes back into the head



# Recipe 10: Light Bulb Over Head



## What You Will Learn

You will learn how to make a character appear to have an idea by animating a light bulb over head. Beginning with a regular face, the character will *Squash* and *Stretch* into a surprised face first, then a light bulb appears with little shaking sparkles.

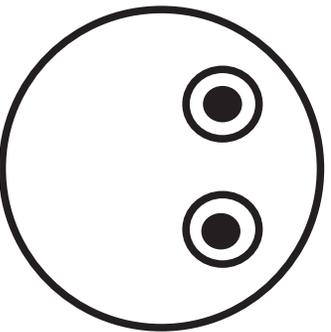
## Why Is This Important?

Similar to the eye-pop and steam out of ears, the light bulb over head is a standard in character animation. We add the difficulty of small rays of light surrounding the light bulb in this recipe. This is a nice accent to a very over-used bit. This is an example of embellishment which makes a cliché animation a little less so.



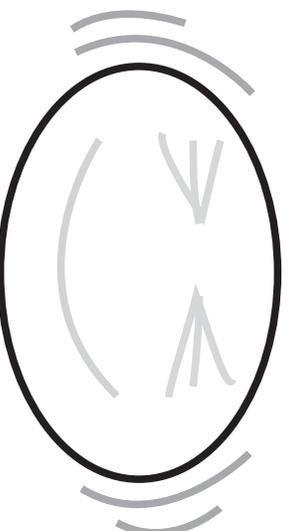
# Light Bulb Over Head

1 2 3



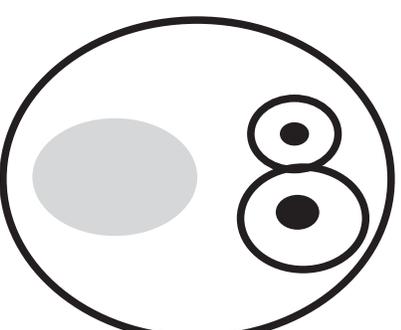
## Step 1

Take 15 pictures of regular face.



## Step 2

Squash face for 3 pictures then hold for 3 pictures.

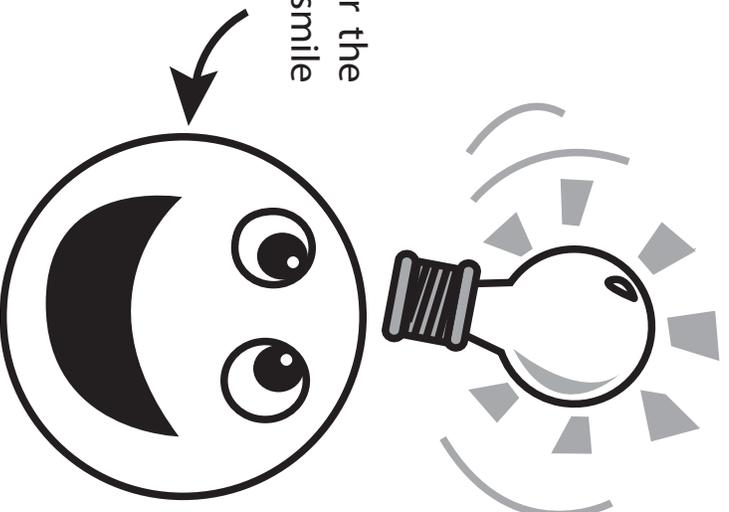


## Step 3

Pop face to surprise pose in 3 pictures.

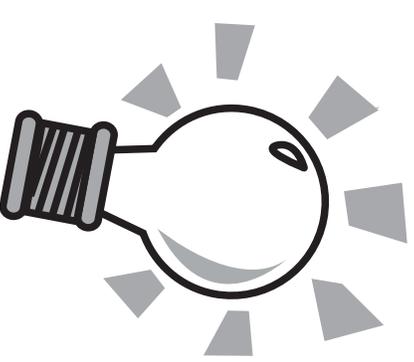
## Step 4

Insert light bulb over the head. Make goofy smile on character's face.



## Step 5

Shake light bulb and light rays for 15-30 pictures. Loop this Cycle.



# Recipe 11:

## Head Turn (Single Take)



### What You Will Learn

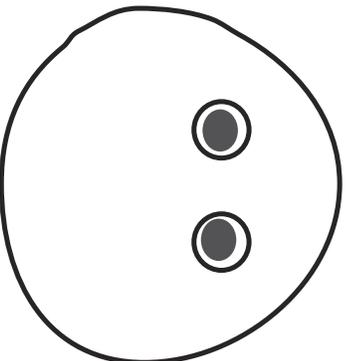
You will learn a very subtle head turn animation, or what is called a "take". You will learn that a "take" is what animators mean when a character turns to look at something off screen. You will discover that a "take" can be accomplished in many ways. This is the most simple form.

### Why Is This Important?

The speed and motion of the eyes moving across the face simulate a head turn. The head actually doesn't turn, but the eyes draw closer together as they travel across the face. This slight bit of perspective convinces the audience that the character is looking to our left. Don't let the simplicity fool you. It is a very elegant little gem. We will build upon it in future recipes.

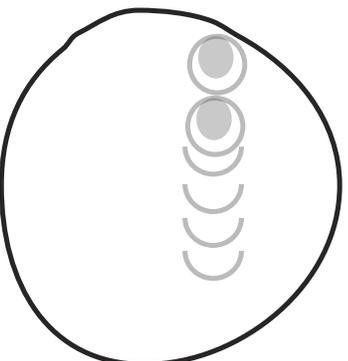


# Head Turn



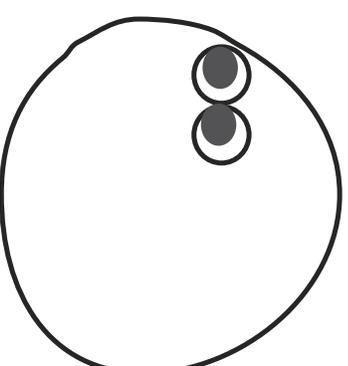
## Step 1

Take 15 pictures



## Step 2

Slide eyes to the left for 4 - 5 pictures.  
Make them closer together as you go.



## Step 3

Hold eyes in this pose for 15 pictures  
(add a blink for extra effect)

# Recipe 12:

## Double-take



### What You Will Learn

You will learn to create a *Double-take* reaction. You will understand the timing issues with a double-take and successfully animate the delayed second take the character acts out.

### Why Is This Important?

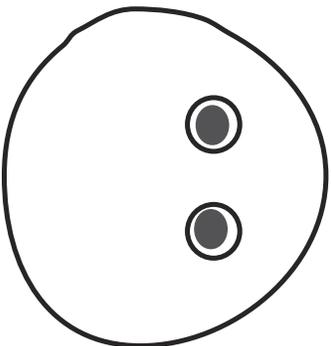
This is a subtle reaction shot with a quick second look. The double take helps the audience understand the character was not paying attention the first time it looked to the side. The delayed second look creates the illusion the character was looking but not seeing whatever is over there.

When a second, faster take happens the effect is a split-second reconsidering on the part of the character. This has the effect of making it seem like the character actually re-thinks a previous thought!

**Very subtle and effective.**

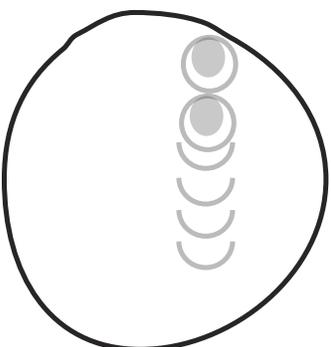


# Double Take



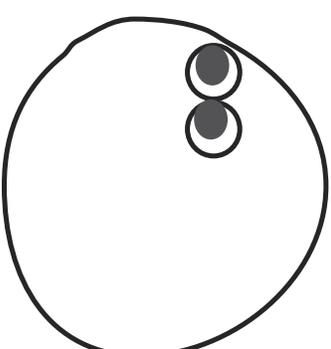
## Step 1

Take 15 pictures



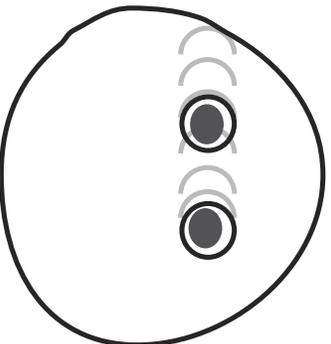
## Step 2

Slide eyes to the left for 4 - 5 pictures.  
Make them closer together as you go.



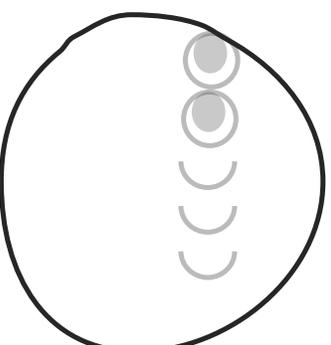
## Step 3

Hold eyes in this pose for 15 pictures



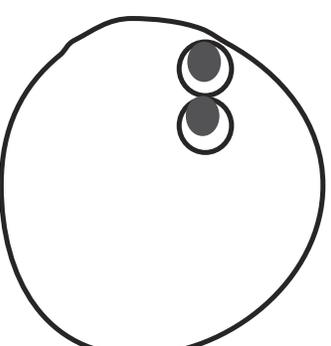
## Step 4

Slide eyes back to center 4-5 pictures and take 15 pictures when they look forward again



## Step 5

Slide them back to the left for 2-3 pictures.



## Step 6

Hold for 15 pictures (blink the eyes 3 pictures for extra follow through)

# Recipe 13: Triple-take



## What You Will Learn

You will learn to create a *Triple-take* reaction. You will understand the timing issues with a *Triple-take* and successfully animate the delayed second and third reaction shots.

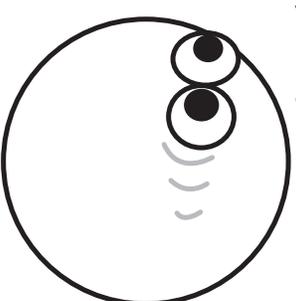
## Why Is This Important?

This is a less subtle multiple-reaction shot with an emphasized second and third look. Again, the character was not paying attention the first time it looked to the side, nor the second. When a third *Take* with bulging eyes occurs, the audience understands the character to finally be seeing the astonishing thing happening to it's side. This has the effect of making it seem like the character has finally come to terms with what it refused to see in the first two takes.

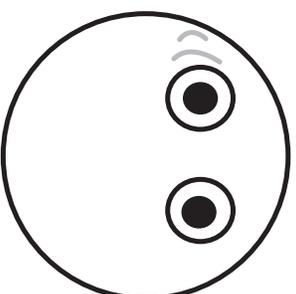


# Triple Take

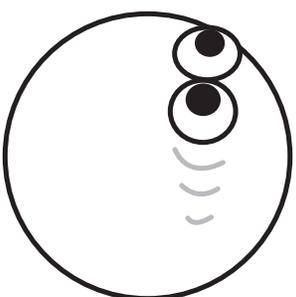
Eyes 3 pictures to side.



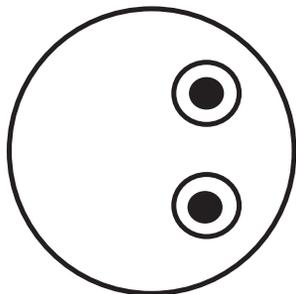
Eyes 3 pictures back to front.



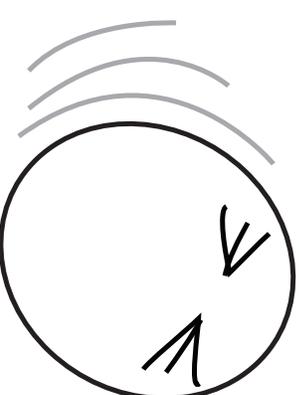
Eyes go 4 pictures to side.



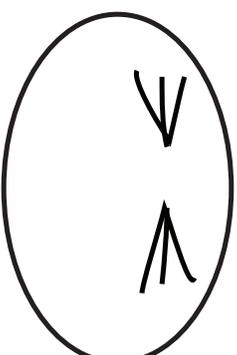
15 pictures



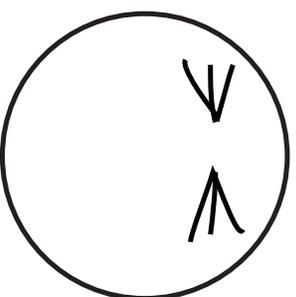
3 pictures tilt body back



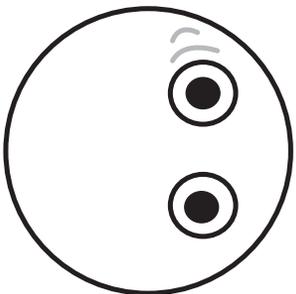
Squash for 3 pictures.



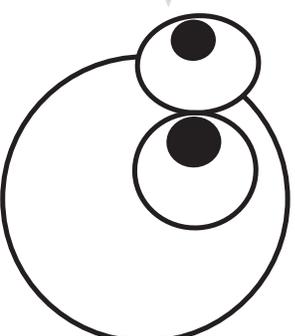
1 picture closed eyes



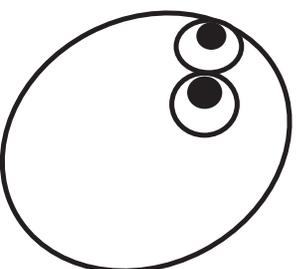
4 pictures to front then 5 picture pause



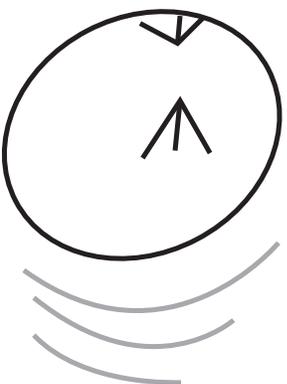
Lay in big eyes, take 15 pictures.



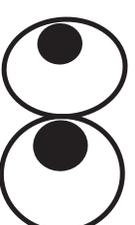
Lay in regular eyes.



For 3 pictures, tilt body forward.



**Steps**  
Follow each pose. The effect is three looks off screen at, rapidly, as if something surprising is being discovered.



# Recipe 14: The SloMo No



## What You Will Learn

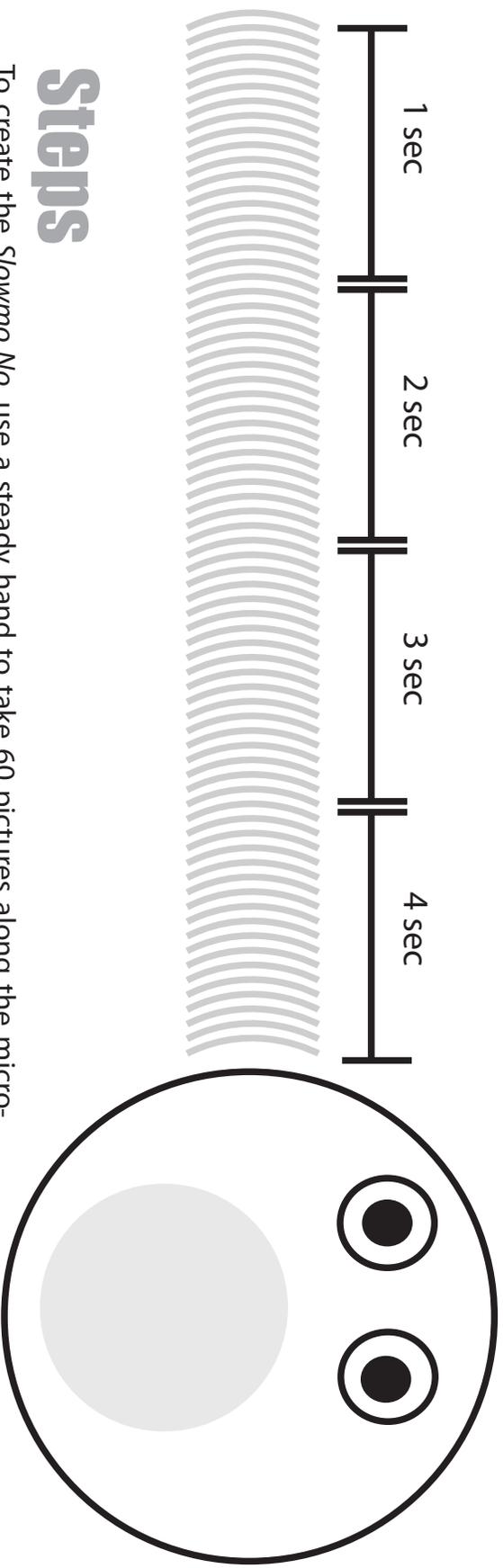
You will learn to animate in super-slow motion (SloMo). You will make a smooth slow motion action of your character saying, "NO!" as if something bad is about to happen and the character is calling for a stop to something bad.

## Why Is This Important?

This is another cliché in the movies. The movie switches into super-SloMo and the character shouts, "NO!" in a deep slow voice. SloMo requires the most careful and involved attention to spacing. The tendency is to move a character and take five or six pictures to slow down the motion. But the result is a choppy, strobe effect. What we want is a closely spaced, frame-by-frame spacing. Beginners rarely get this right without a recipe sheet. To give SloMo a go!



# The Slomo "No"



## Steps

To create the *Slomo No*, use a steady hand to take 60 pictures along the micro-spacing above. Play back at 15fps will reveal a nice ultra-slow motion animation.

Add the sound of your character screaming, "Nooooooooooooooooooooooooooooooooo!"

# Recipe 15: Sloppy Chewing



## What You Will Learn

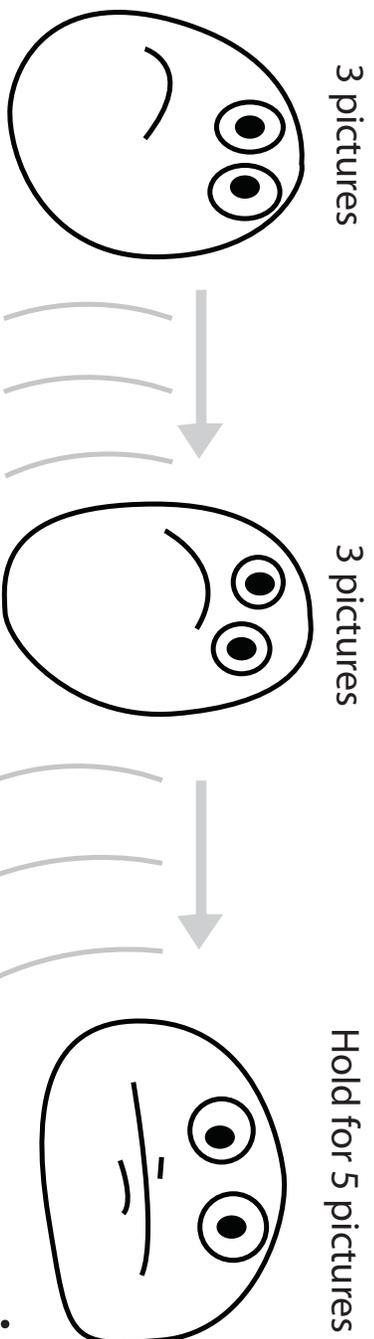
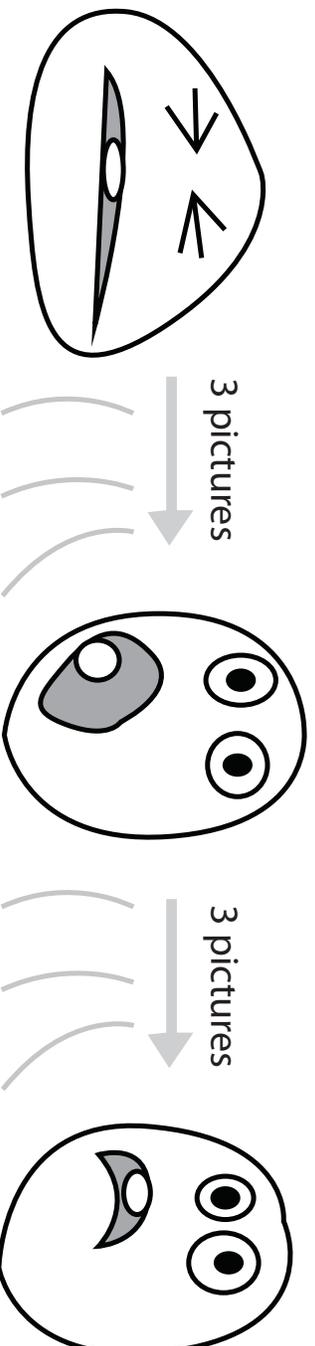
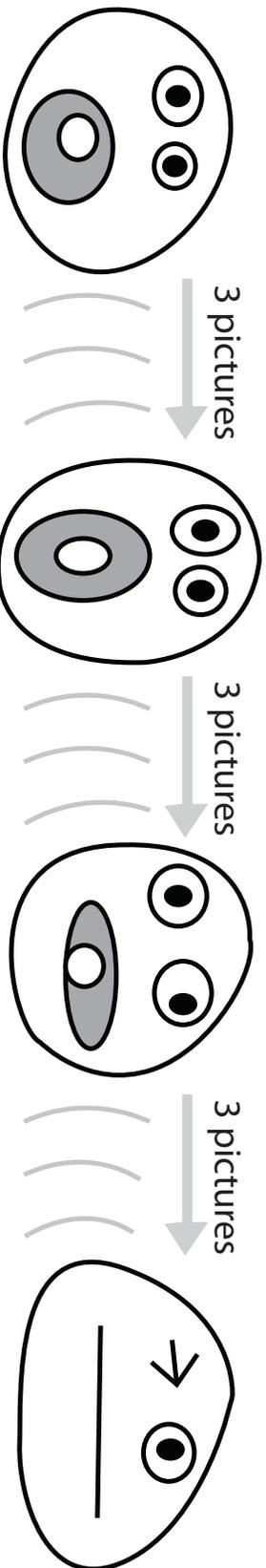
You will animate your character chewing and slobbering while eating. You will learn how to improvise with purpose while still keeping an eye on the frame count.

## Why Is This Important?

This recipe does not have a set timing formula. The animator is free to riff on the suggested poses on the recipe sheet. The purpose of the guidelines in the recipe is to remind the animator to take transition pictures between chews. A new animator will have all sorts of new faces and distortions to throw into the mix. Add SFX for extra hilarity.



# Sloppy Chewing



## Steps

The point is to mosh the face in random chew poses. Let the shape of the head change as you go. This adds to the sloppy effect. Loop when finished.

# Recipe 16:

## Biting



### What You Will Learn

By posing of the Clay Glob's face in the right-facing direction, with the right amount of open timing and close timing, you will learn to animate a bite in profile.

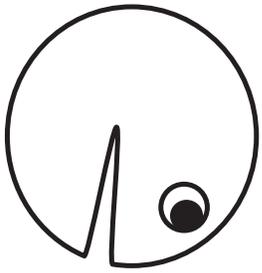
### Why Is This Important?

It's been flying around since the White Hat Looping on a Path recipe. Time to bite down on that bat. By posing the face in profile, we have a chance to use open poses and closing poses. This gives us Wind-Up and Follow-Through opportunities. Squash and Stretch too! So many things are coming together in this recipe.

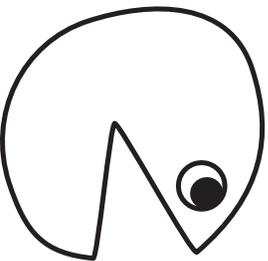


# Biting = Wind-up + Follow Through + Squash + Stretch

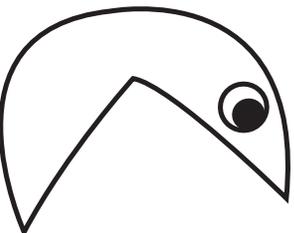
## Steps 1-13



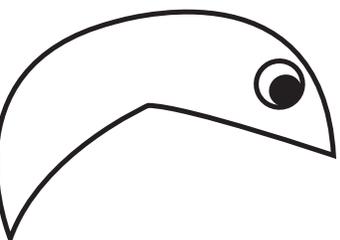
15 Pictures



1 Picture



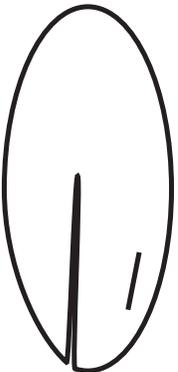
1 Picture



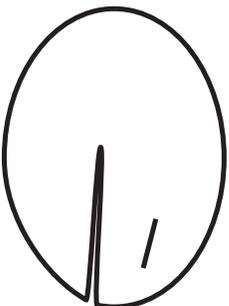
10 Pictures\*



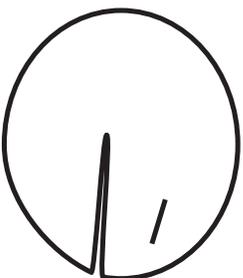
1 picture



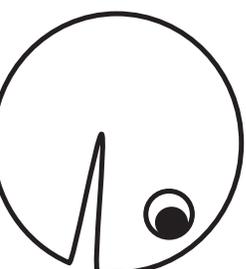
10 Pictures



1 Picture



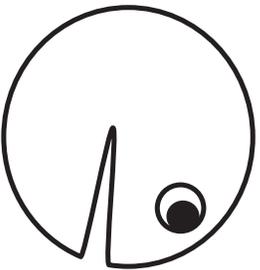
1 Picture



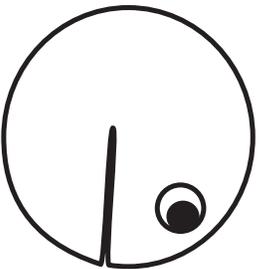
5 Pictures



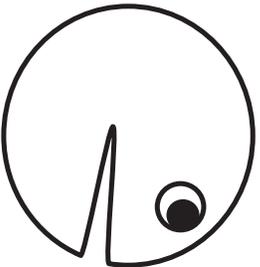
\* Fly bat in mouth during the 10 picture hold. (Step 4)



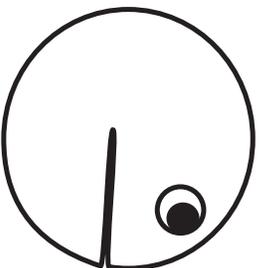
3 Pictures



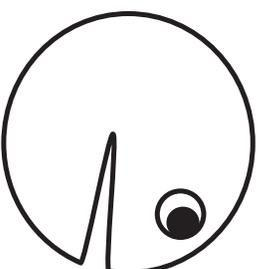
2 Pictures



3 Pictures



3 Pictures



15 Pictures

# Recipe 17: Snoring



## What You Will Learn

You will learn to animate a snoring head using the Quiver, Shake and Wind-up recipes.

## Why Is This Important?

This animation is used extensively in the “Abdominal Snowman” movie in the Black Hat recipes. Different mouth position are not only used for words, ala Lip Synching. They can be used for something as the whistle and inhale poses of a snoring head. Employing the Quiver and Shake recipes adds just the right amount of intensity to these Zzzzzzzs.



# Snoring



## Step 1

Vibrate for 15 pictures,  
tipping face back & forth  
every other picture.



## Step 2

1 picture of smaller  
mouth with head  
tipping forward



## Step 3

Smallest mouth for  
15 pictures



## Step 4

Tip head backward  
with medium mouth  
for 1 picture.



## Step 5

Tip head backward  
a bit more with  
medium mouth



# Recipe 18:

## Close Ups



### What You Will Learn

You will learn how to animate facial features in a Close Up from one emotion to another using at least three different inbetween paths. You will learn that an infinite number of facial expressions are at the disposal of an animator.

### Why Is This Important?

Up until now, the extent of our face acting has been with the Lip-Synching White Hat recipe. Now with 12 or 13 different pieces of face to animate, and a giant Close Up pose, we can really articulate emotions! This recipe taxes the animators ability to let go and experiment with different emotions AND different paths between emotions. Have fun trying out dozens and dozens emotions with these posable facial features.



# Close Ups with Follow Through

## Steps

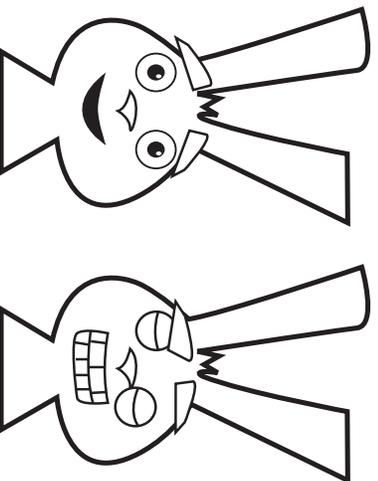
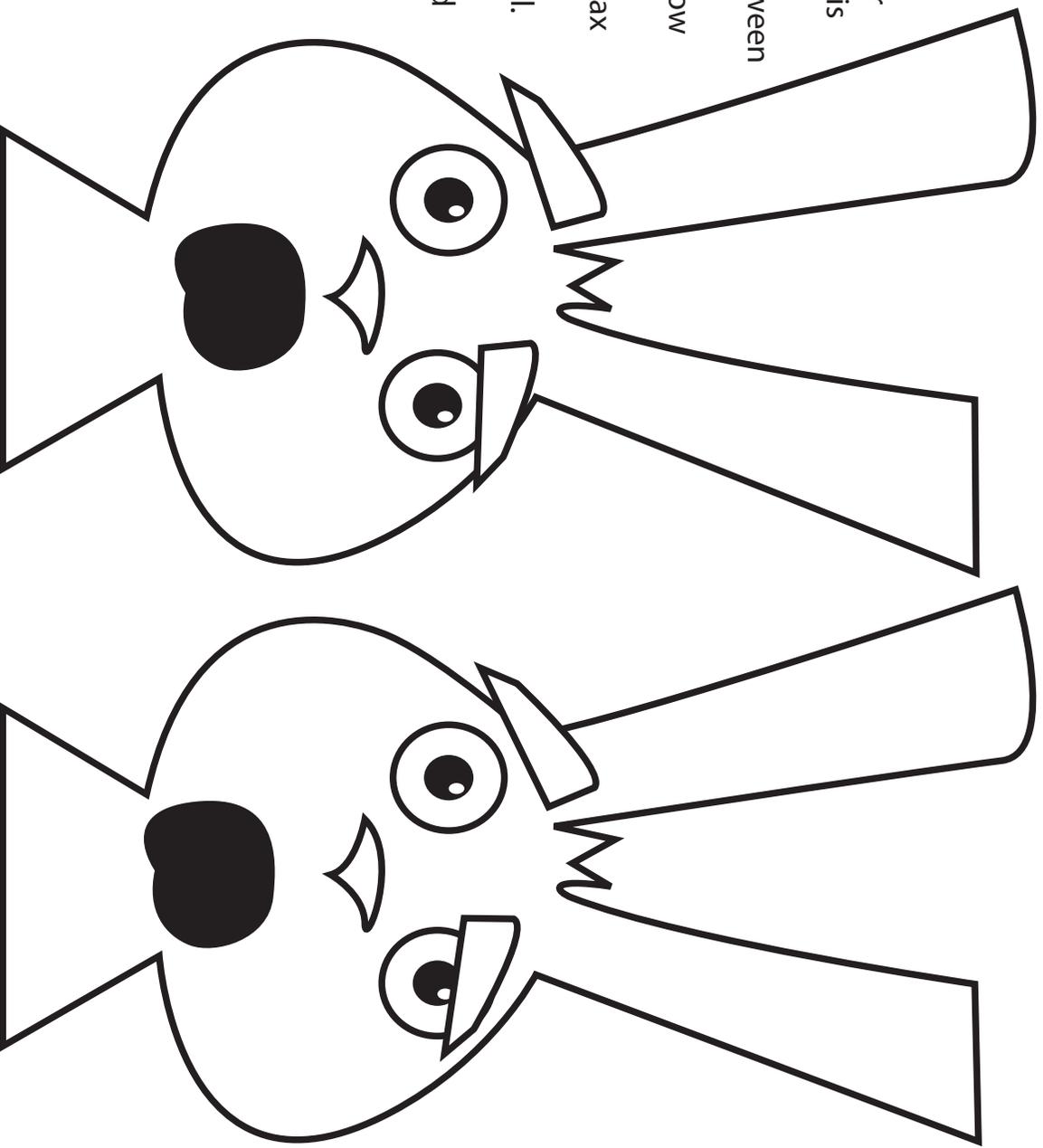
An advanced way to make your emotion poses even more real is to relax into your pose.

Can you tell the difference between the two faces to the right.

The mouth is lower, and the brow has drifted downward.

Try to take 15-30 pictures to relax the pose in slow motion.

It really adds something special. Remember to take 15 pictures after the relax so we get a good look at the final pose.



# Steps

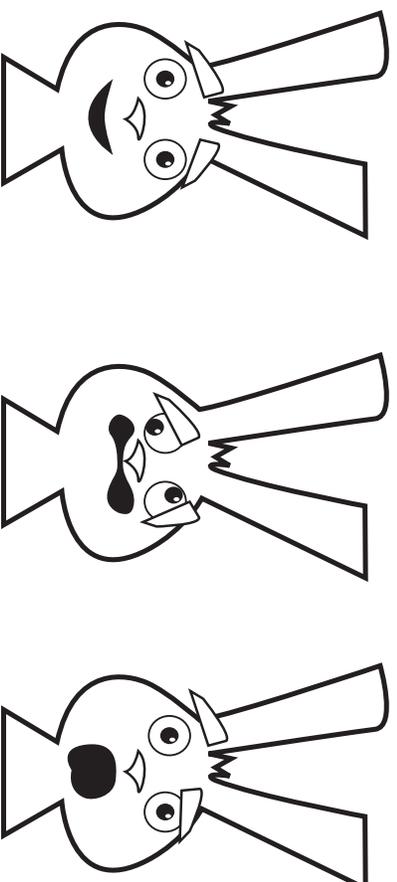
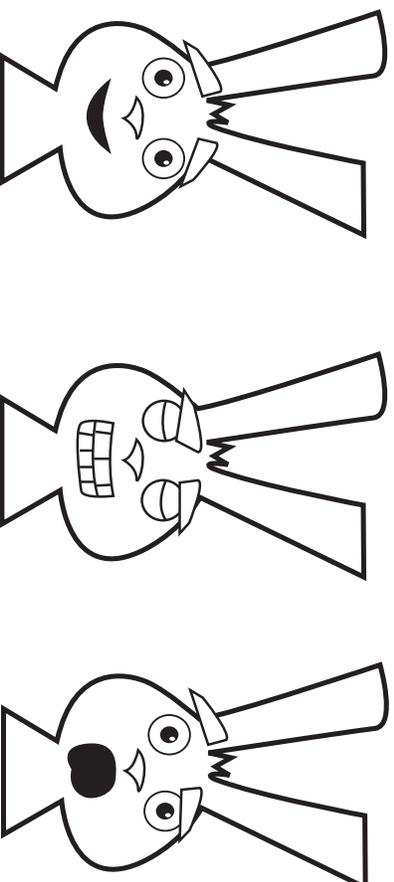
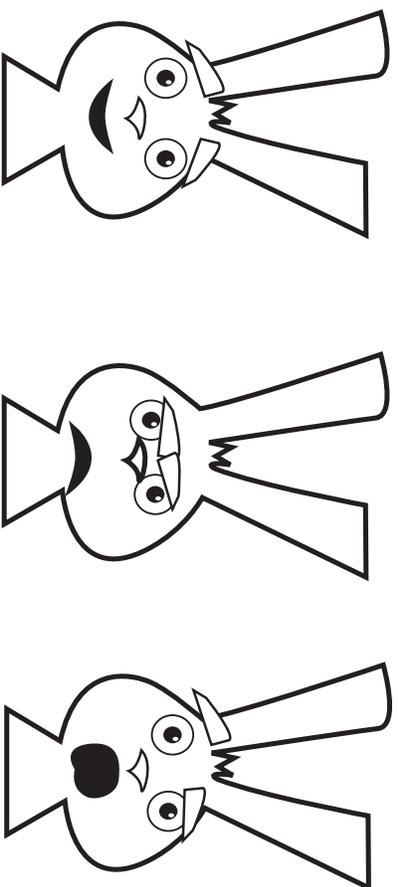
With many face pieces it is possible to make infinite variations of *Wind-up*, *Follow-Through*, *Squash*, *Stretch*, and *Inbetween* poses.

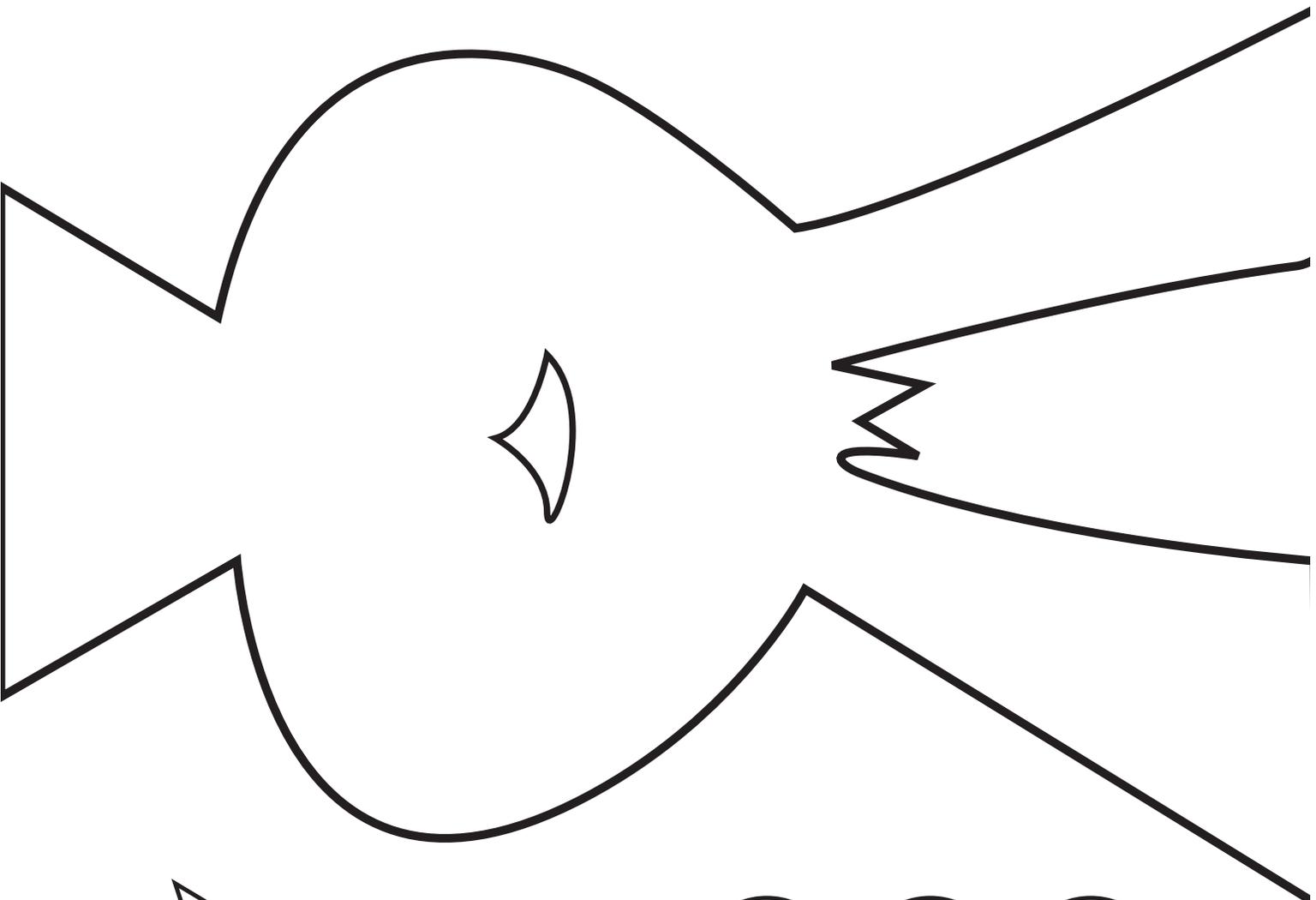
In this exercise, take 15 pictures of the beginning pose. Then *Wind-up* the face for 5-8 pictures. Then snap to the final poses and hold for 30 picts.

Even though the faces at the start and the end are the same, the middle pose is different. Play around with many more than we've show

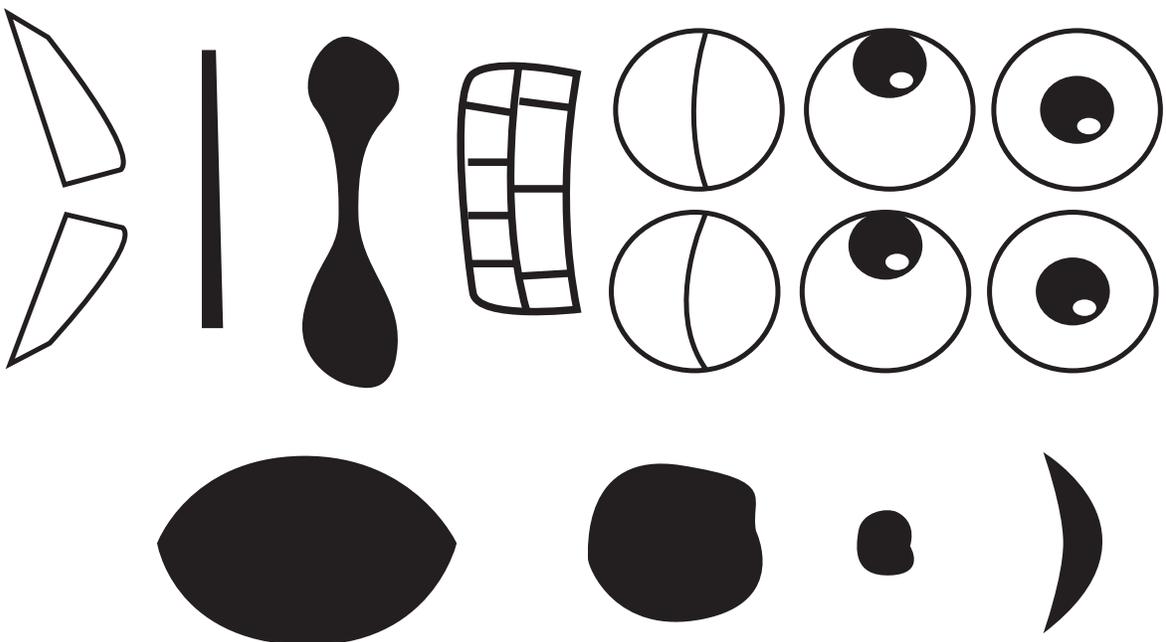
Each will bring it's own flavor of emotional impact to your character's face.

## Close Up Improvisation





# Close Ups Pieces



# Recipe 19: Posing for Emotion



## What You Will Learn

You will learn to appreciate how important acting with the right pose for the right emotion is in animation. You will try a confident walk, a sad walk, a sneaky walk, and a joyous leap.

## Why Is This Important?

Of the many poses during these walking animations, we only include a recipe sheet for the “sneak”. The other body poses use standard animation spacing skills. Emphasize the pose of each emotion and experiment with different emotions not included here. It’s time to emote in motion!



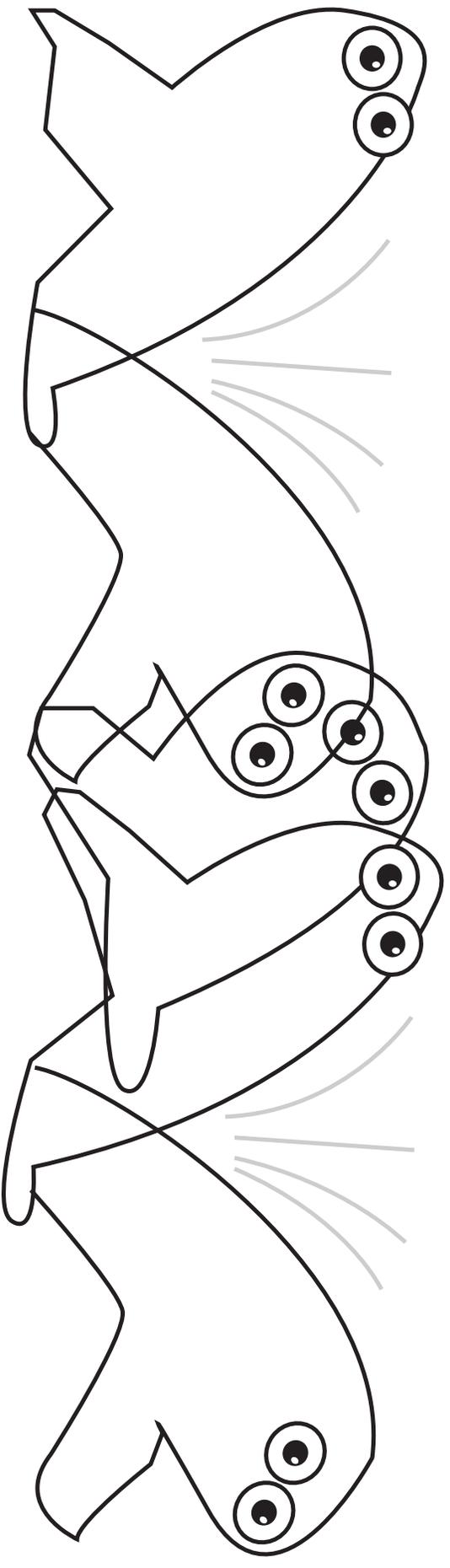
# Steps

We really hesitated to throw this in, but the sneak is so much fun.

This tricky sequence is impossible to map our simply, but you get the idad.

Tip-toeing so as not to make noise poses the body in extreme bendy poses.

Get up and do a sneaky walk without making a sound and you may find yourself posing like this.



# The Sneak

# Recipe 20: Running: Basic



## What You Will Learn

Using one basic wide-stance pose, you will learn how to create the illusion of a character running through a scene.

## Why Is This Important?

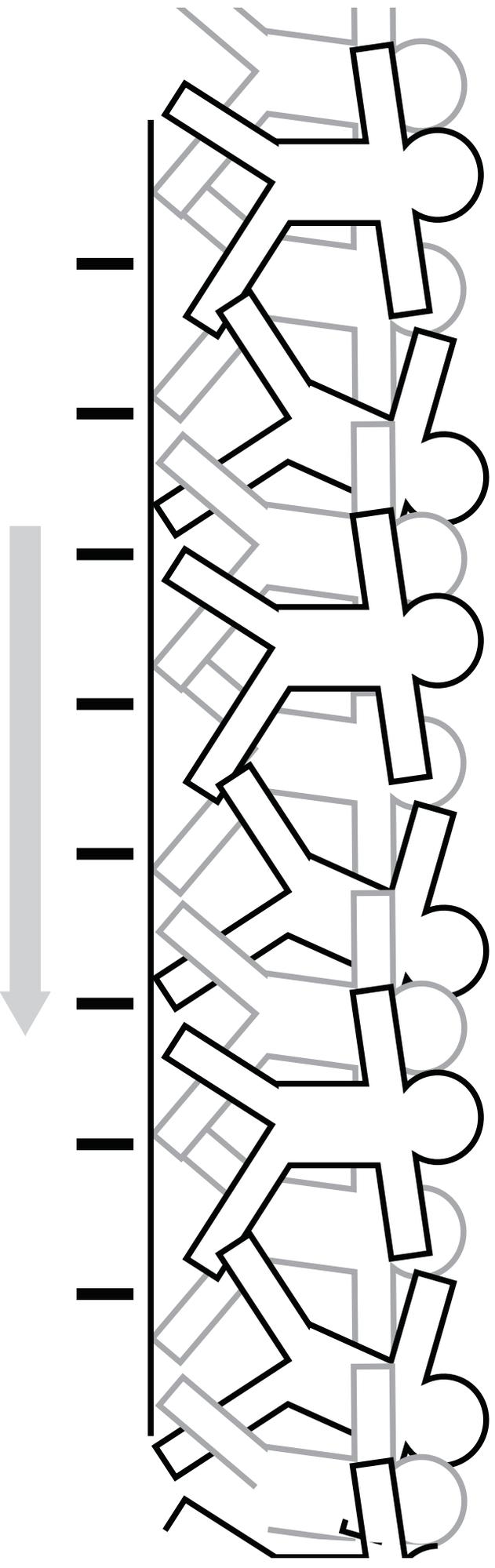
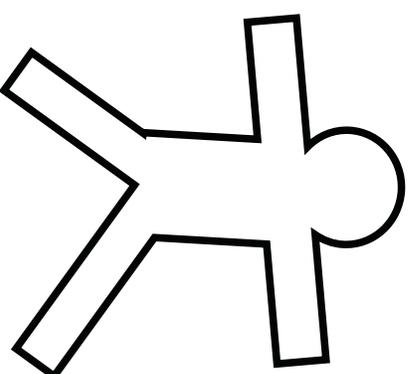
When first learning the run animation recipe in White Hat recipes, we used a zig-zag pattern to make the Clay Glob look like it was running. We extend the same idea to a posed body here. Instead of zigging and zagging, we tip the character back and forth with a waddle as we use the fast spacing for it's forward motion. This move will do for many of your running needs.



# Steps

## Running: Basic

Animate character from left to right, tipping back and forth while moving it forward an inch or so each picture. Continue until off screen.



# Recipe 21:

## Running: Intermediate



### What You Will Learn

Using four poses, you will learn how to create the illusion of a character running through a scene.

### Why Is This Important?

Keeping running and walking simple is our goal. Running and walking are some of the most difficult actions to animate. Think about how many joints are moving when running. About thirteen! By simplifying our running poses to two for the upper body and two for the lower body, we take most of the joints out of the picture, literally, and end up with a pretty convincing run.



# Running



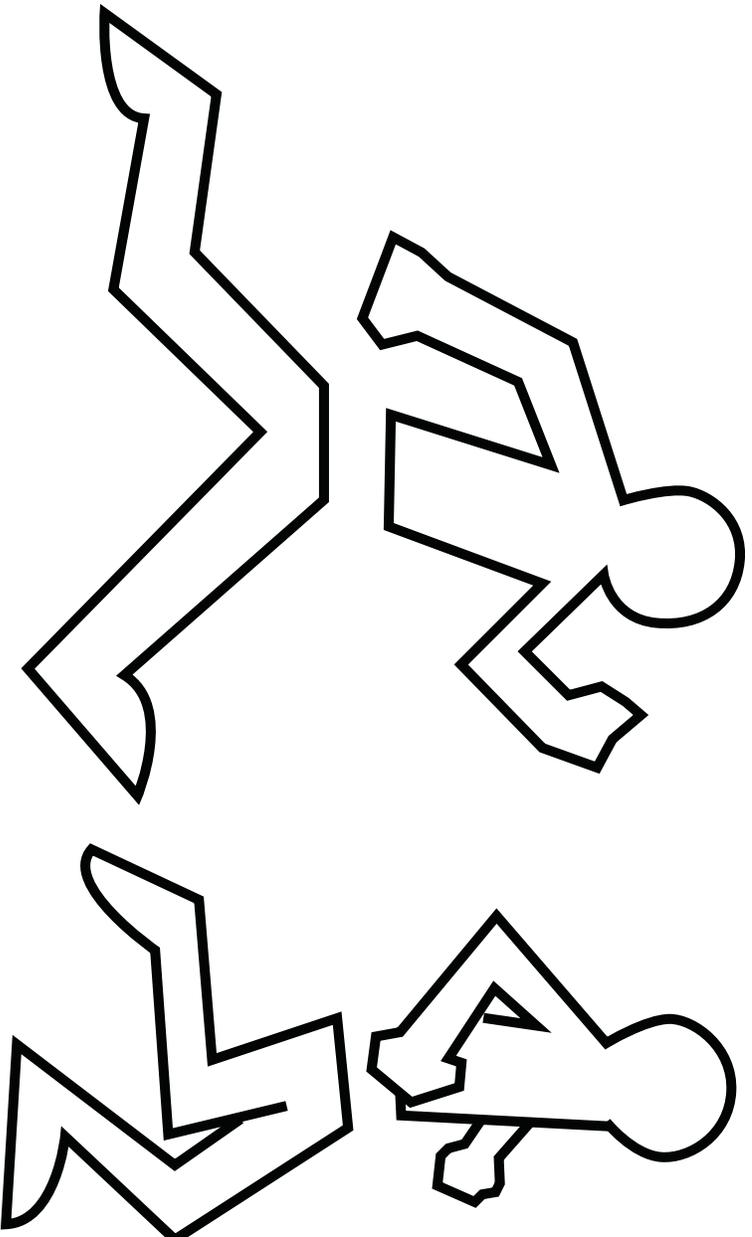
## Steps

Pose 1 is off the ground.

Pose 2 front foot hits the ground.

Pose 3 bent legs and match foot on ground with previous foot on ground.

Pose 4 toe of back foot on ground where bent legs were.



# Recipe 22: Confidence Pose



## What You Will Learn

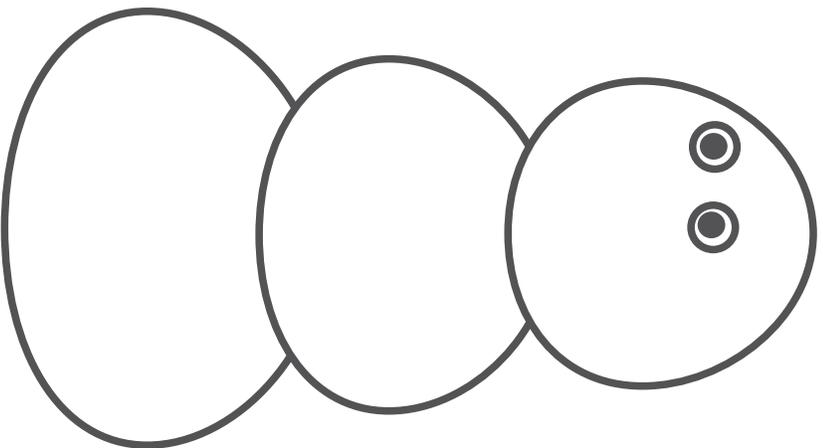
You will learn to convey a sense of confidence to a snowman through posing it's body. *Wind-up and Follow Through* come in handy here.

## Why Is This Important?

When we use medium shots, the body is the main way a character communicates how it feels. This basic transition from a neutral pose to a chest-out confident pose has a nice snap added via *Wind-up and Follow Through*

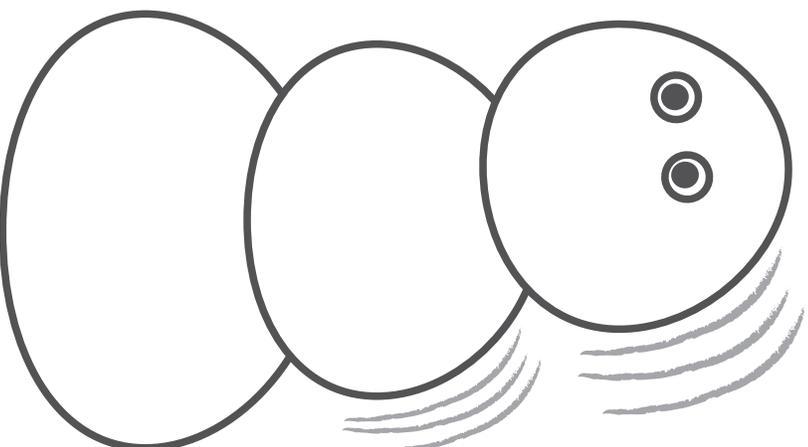


# Confident Pose



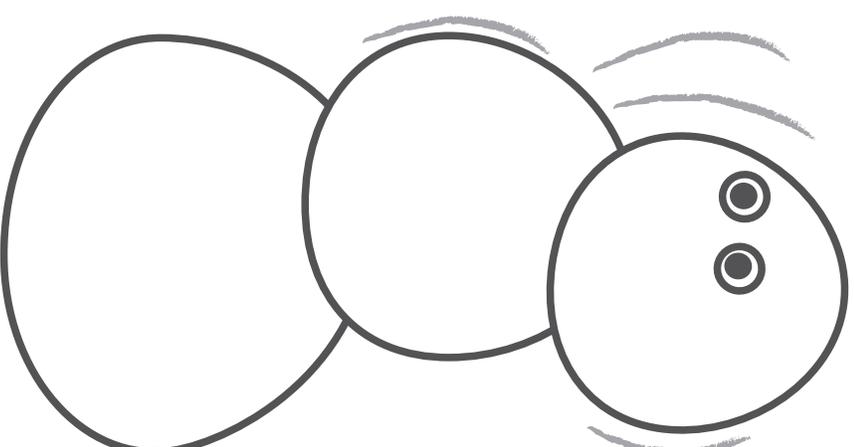
## Step 1

Take 15 Pictures



## Step 2

Tilt the body forward, as a wind-up, for 3-4 pictures. Move head the most.



## Step 3

Move chest up and forward. Head up and backward one picture at a time for 4 - 5 pictures.

# Recipe 23: Throwing Fast



## What You Will Learn

You will learn how to make a snowman through a snowball really fast. You will bring together a *Wind-up & Follow-Through* and *Inbetween blur* skills to accomplish this.

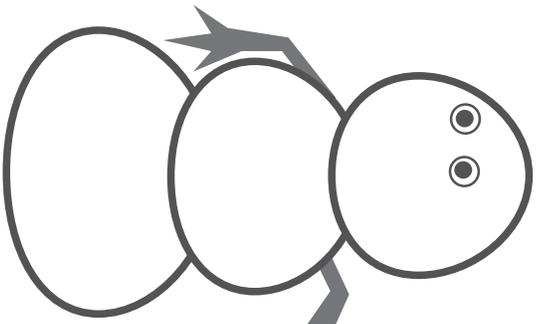
## Why Is This Important?

We've taken this example from the Abdominal Snowman movie in the Black Hat section.

Animators will have to deal with a three tiered character, an arm, and two snowballs. One snowball is round and the other is long - stretched out for the inbetween blur. The timing and spacing will extend the *Toss White Hat* recipe to an whole new level. The poses of the snowman's body are key.

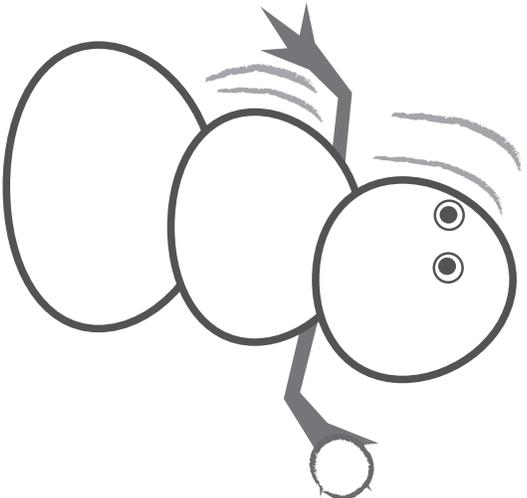


# Throwing fast with wind-up



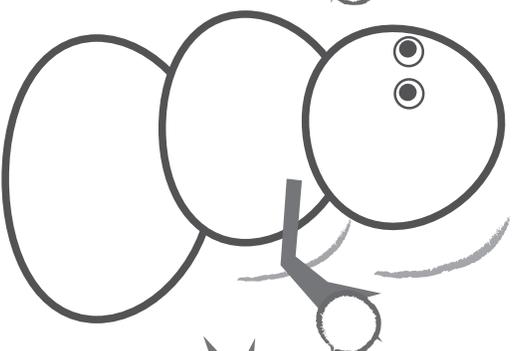
## Step 1

Take 15 Pictures



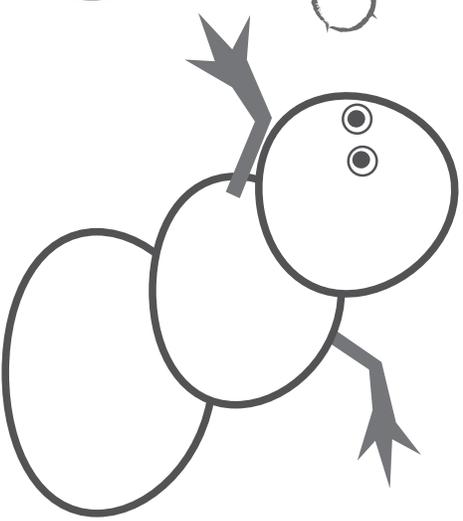
## Step 2

Lean body back and wind up arm in only 3 pictures from start. Then take 10 pictures



## Step 3

Move head and upper body forward and bring front arm forward, take away back arm, the take only 1 picture



## Step 4

Lean body way forward putting throwing arm in front. Bring back other arm pointing up and back. Hold for 15 pictures.

# Recipe 24:

## Frog Hop



### What You Will Learn

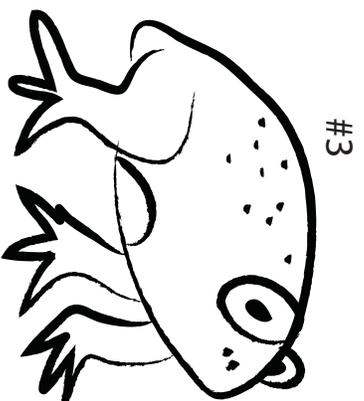
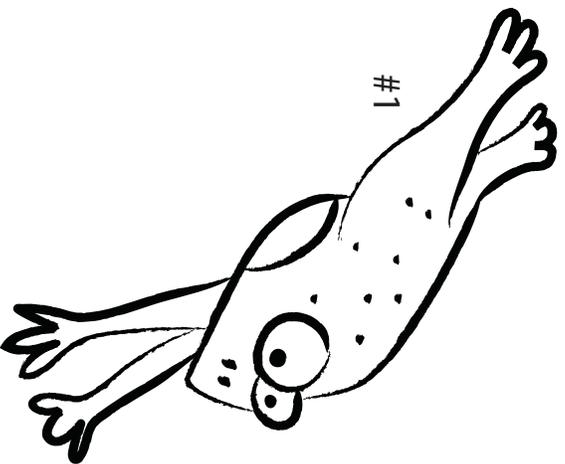
You will learn to pose a frog in the Squash and Stretch positions of a hop. You will use the skills of the Bouncing Ball with Squash and Stretch from the White Hat level. Three frog poses will be used.

### Why Is This Important?

With only three basic poses, the frog can be made to look like it is responding to impact with the ground, and transitioning to a leap forward to a stretching exit. These little inbetween poses make all the difference and give the animator confidence in posing in a convincing sequence.



# Frog Hop



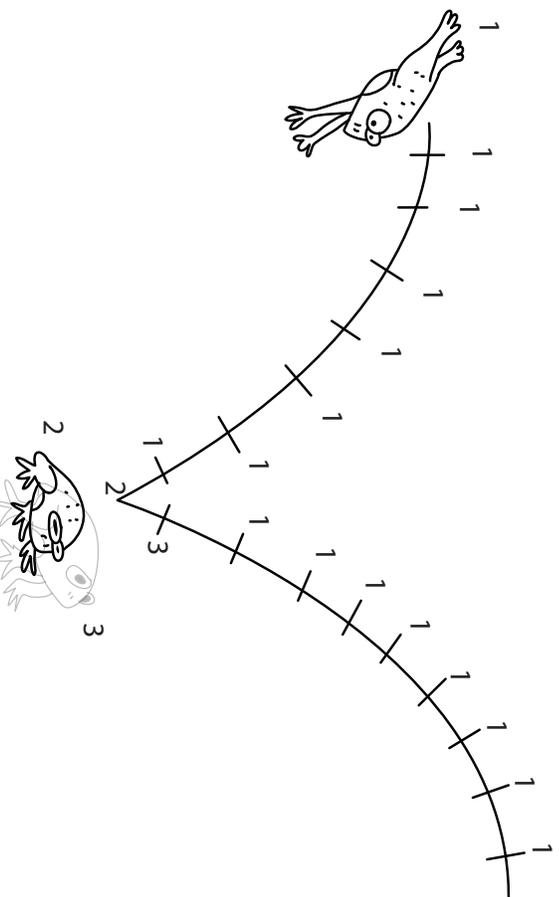
## Step 1

Animate frog 1 downward  
1 picture at a time.



## Step 2

Frog 2 at bottom for 1  
picture.



## Step 3

Frog 3 for 1 picture as frog  
jumps. Frog 1 all the way  
up to top.

# Recipe 25: Frog Tongue Snap



## What You Will Learn

You will learn the timing and posing for a powerful “snap” as a frog eats a fly.

## Why Is This Important?

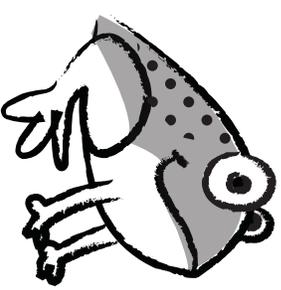
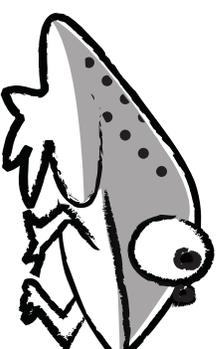
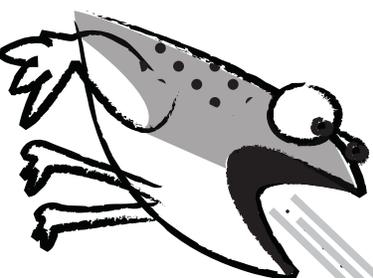
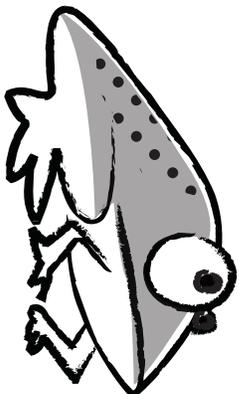
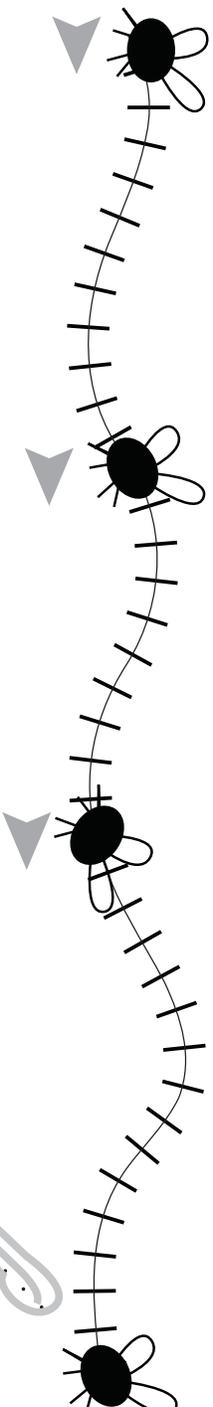
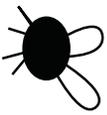
The fly is following a slow path ala Spacing is Speed, tending toward slow. The animation require four poses from the frog. Notice how Wind-up & Follow-Through plays into the animation with the crouch pose used before and after the Stretch pose for the tongue extension. These recipes are coming together nicely in this experiment.



# Steps

Animate the fly from left to right, spaced out about as far apart as the notches below. Follow frog picture sequence below.

# Frog Tongue Snap



Hold for 30 pictures while the fly buzzes along the notches.

Wind up pose for 3 pictures

Slide tongue under frog and push it up in 2 pictures to hit fly, then back down in 2 pictures.

Take tongue out and put follow through pose in for 3 pictures

Hold this pose for 15 pictures.

# Recipe 26: Bee Buzz



## What You Will Learn

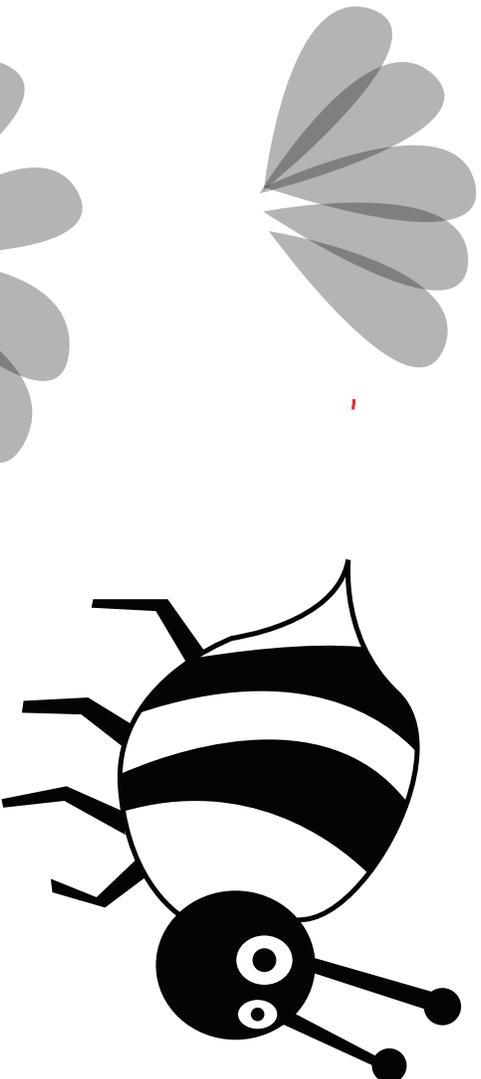
You will learn how to make bee buzz along a path with two different wing poses.

## Why Is This Important?

This simple exercise will require the *Toggle* strategy while posing the wings on the back of the bee. This recipe amplifies the need to keep track of simple wing poses along a path



# Flying: Bee Buzz

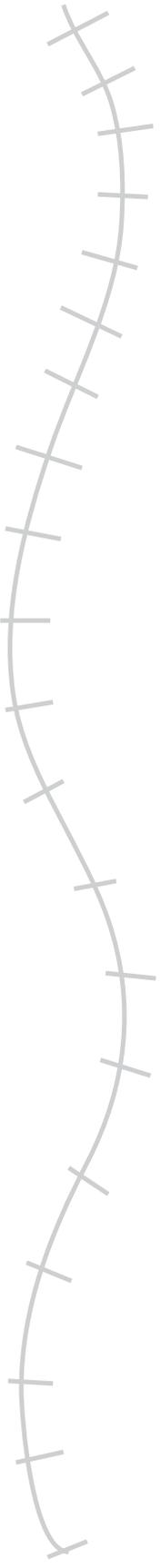


## Steps

Animate bee from notch to notch along the curved line, 1 picture per notch.

Swap out each “wing” every other notch, and move bee from notch to notch as you go.

Repeat until off screen.



# Recipe 27:

## Pig Fly



### What You Will Learn

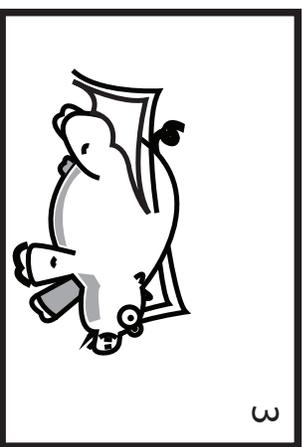
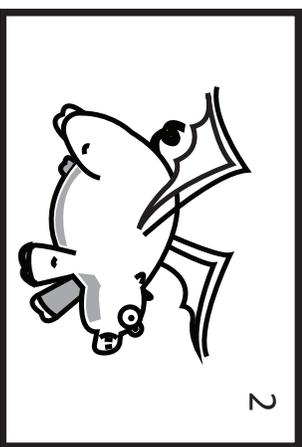
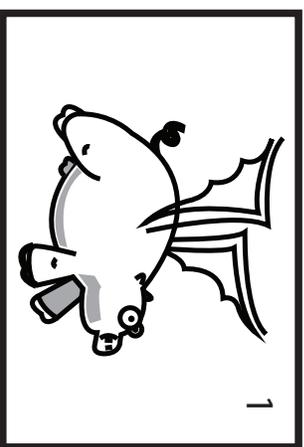
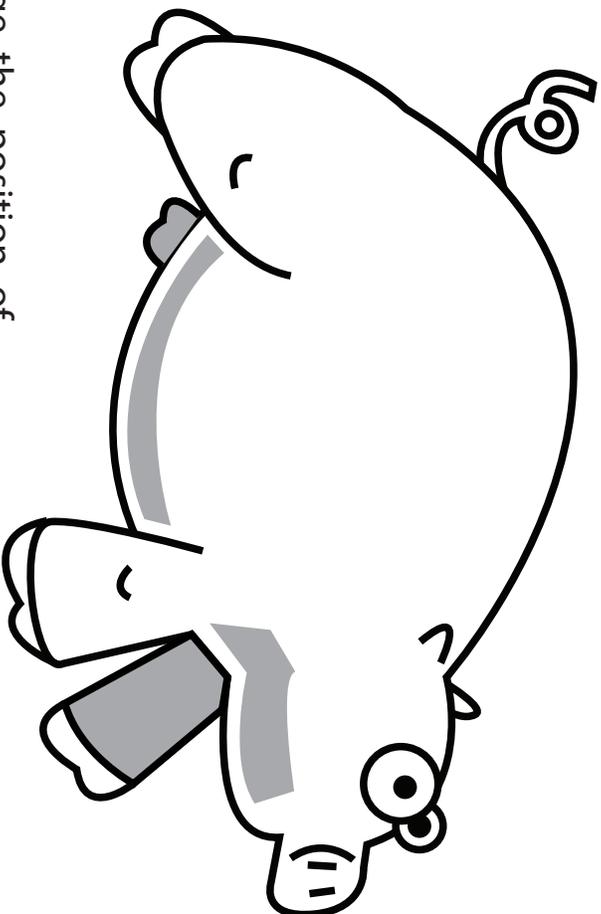
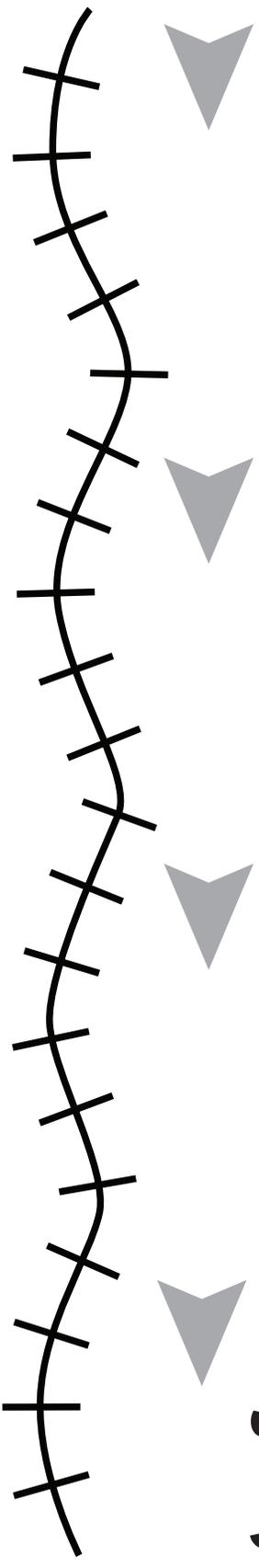
You will learn how to make a pig fly along a path at medium speed, with tiny little wings.

### Why Is This Important?

Freestyle posing of the little wing props in this recipe will amplify the skills of *Overlapping Action*, *Spacing is Speed*, and *Posing*. Each wing is independent of the other, so keeping a mirror pose from flap to flap between the two is a must.



# Pigs Fly



## Steps

Each notch change the position of the wings from #1, 2, 3, 2, 1...etc. Repeat until pig is off screen.

# Blue Hat Recipes



# Blue Hat Recipes

## Introduction



Blue Hat recipes are about the storytelling production process, and workflow. All the steps needed to finish an animated film are demonstrated from beginning to end in the Blue Hat recipes.

You don't have to be a great animator to tell a visual story. Beginner quality animation is okay if the story is clever and entertaining! On the other hand, great animation can NOT make up for a poor story.

Blue Hat recipes reveal our process of inventing stories worth animating. Our methods work because we have minted hundreds of animators using our secret recipes, and they put story first.

We will invent a movie idea, storyboard it, write witty dialogue, gather our ingredients and utensils, size things up, hypothesize timing, rig our characters, layout our scenes, animate, record our voices, add sound effects, edit and upload! We model our system every step of the way. If we can do it, you can too! Let's cook up an animation!





# Recipe 1: Inventing A Story

## What You Will Learn

Brainstorming a list of characters, settings, and problems will help to generate a team-based palette of story ideas. Doing this exercise under time constraints (we suggest 15 minutes) makes it great for small groups. If any character/setting/problem combination on your finished list strikes your fancy at this phase, it may be worthy of a short animation.

## Why Is This Important?

This way of inventing stories is extremely engaging. It diffuses ownership too. If three different people generate the parts of each idea, negative feelings are avoided when most of the ideas on the list are eventually cut out. All we need is a tiny germ of a story idea, with a big juicy problem, to get the team's creative mojo in motion.



# Inventing a Story

A great way to invent a story in group settings. Take turns. Go Fast. Keep it simple. One character. One setting. One Problem. Each idea has to come from a different person.

**Character**

**Setting**

**Problem**



# Recipe 2:

## Stick Figure Storyboards

### What You Will Learn

You will learn to use a *Storyboard* as a decision making tool. A *Storyboard* will help you come up with the solution to your character's problem. You will understand why to use Long shots, Medium shots, and Close-ups. You will discover that this *Storyboard* will be the blueprint for your movie.

### Why Is This Important?

Storyboarding solves two problems. First, it forces us to make choices and conclusions about the character/setting/problem. Every scene choice generates the question, "What happens next?" The answer is what happens in the next scene. Second, we map out the camera positions. *Long shots*, *Medium shots*, and *Close-ups* are used for very specific reasons. These camera positions are a powerful, silent character in your movie.



# Use Pencil!

## Stick Figure Storyboard

Use the most basic stick figure drawings possible, and sketch the answers to following questions:

What does the audience see when the movie begins? Sketch this scene in #1

What happens next? Keep asking this question for every scene. Sketch the answer.

How does it end? Sketch the ending frames. Choose your shots wisely.

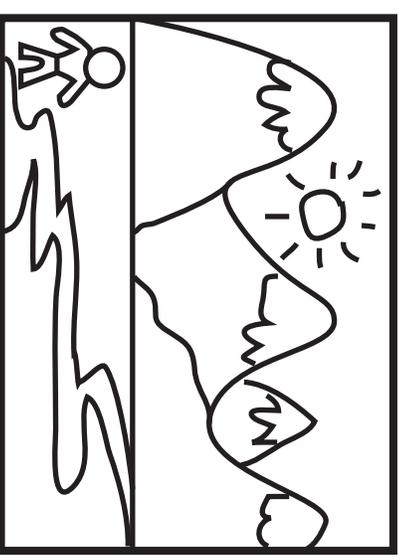
Shot _____				
1	2	3	4	5
Shot _____				
6	7	8	9	10

# Camera Positions: Long Shot

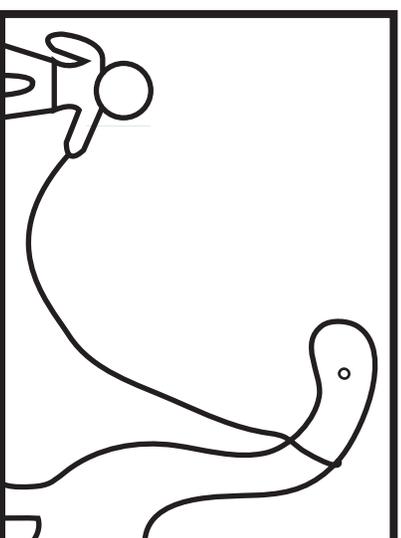
## Why Long Shots?

Take the camera a "long" ways away to get the big picture or context!

## For Settings

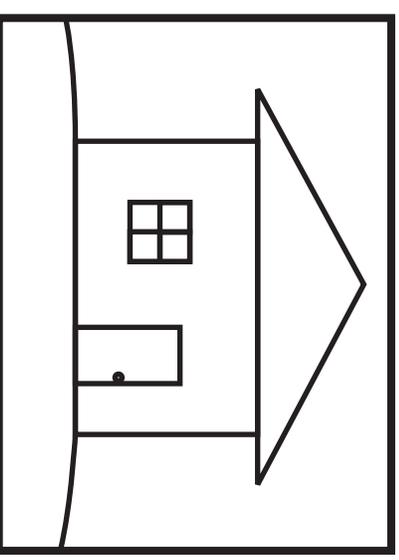


## Size Differences



## Show Where

## Characters Live

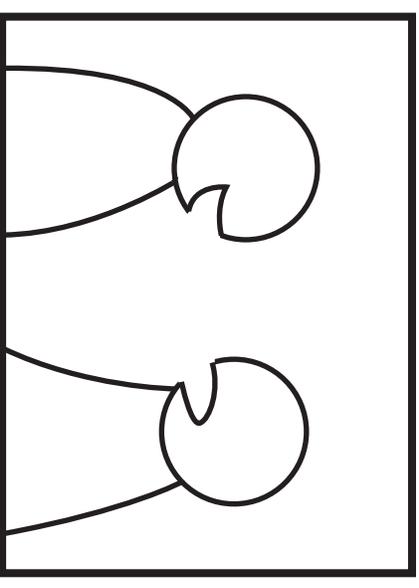


# Camera Positions: Medium Shot

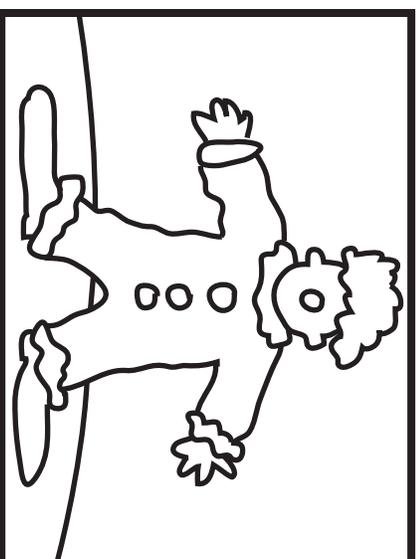
## Why Medium Shots?

Use medium shots to give us a good look at your character(s).

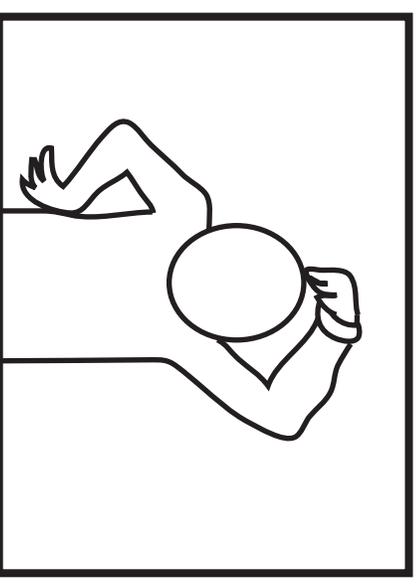
## Characters Speaking



## Sense of Costume



## Body Gestures

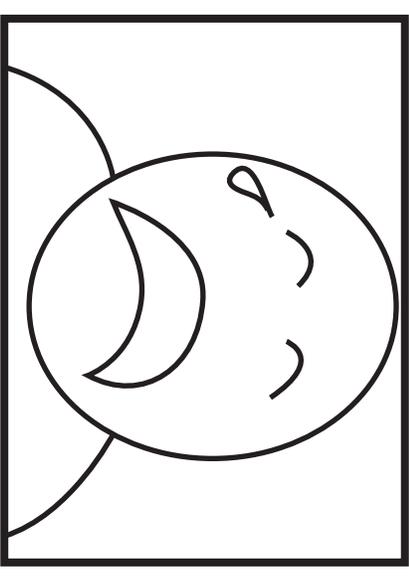


# Camera Positions: Close-up

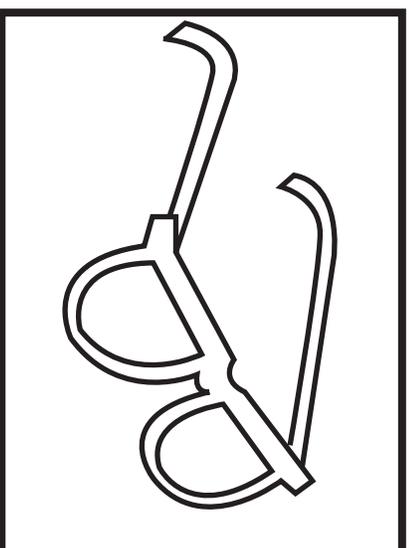
## Why Close-Ups?

Move your audience with emotions, and clue them in with details

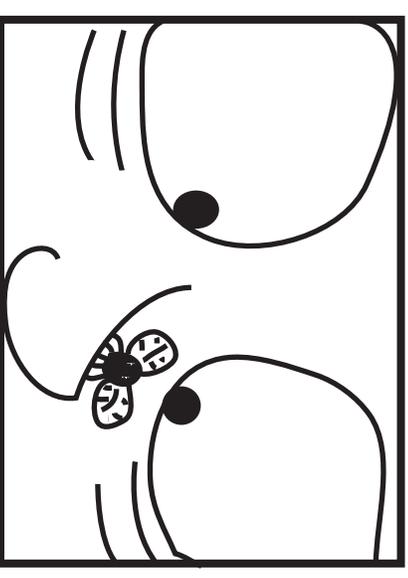
## Any Feelings



## Objects or Details



## Extreme Close-Ups Emotions & Details



# Recipe 3:

## Brainstorming Dialogue



### What You Will Learn

You will learn there are many many ways we can say the same thing. In this brainstorming exercise you will generate a list of phrases, puns, idioms, and word play which may apply to a story like this, in a setting like this, with a character like this.

### Why Is This Important?

The word play your characters use in voice-overs can be the most entertaining part of your movie. We'll take any puns, idioms, or clever word combinations as dialogue options. Write down any zany idea.

A lot of the ideas will be un-usable, but others will be unbelievably clever and inventive.

This list will incubate and hatch even more ideas when we revisit it in later lessons.



# Brainstorming Dialogue

**Fill this space with:**

**Word Play - Idioms - Puns - Rhymes - Acronyms**



# Recipe 4:

## Utensils and Ingredients

### What You Will Learn

You will learn that table-top cut-paper animation is the fastest easiest way to make an original animation. You will learn that markers, pencils, crayons, paper, tape and scissors are all you need to bring creative worlds to life.

We sometimes throw clay into the mix too, but in a very limited, flattened-for-the-table-top, sense.

### Why Is This Important?

We are making an original story from scratch. Using pre-made characters like Legos or toys as our main characters limits original expression. We want to demonstrate how to start from nothing and end up with an unique animated story. Designs with hand-made paper cut-outs and drawing utensils make the final product a truly unique blend of technology and hand-crafted goodness.



# Ingredients & Utensils Checklist

**Utensils**

**Scissors**

**Markers**

**Crayons**

**Colored Pensils**

**Pencils**

**Large Ziplock Bags**

**Ingredients**

**Masking Tape**

**Ream of Construction Paper**

**White Paper**

**Other (Glitter, Clay, Cotton, Eyeballs)**



# Recipe 5:

(S.L.T.) Sizing, Layout, Timing

## What You Will Learn

You will learn how size your characters for *Long*, *Medium* and *Close-up* shots. You will understand why the size of your cut-outs is important.

You will also learn the *Rule of Thirds*, which will guide you in composing elements of a scene according to time-honored Hollywood practices. Finally, you will hypothesize the time signature of each scene. Hypothesizing how many pictures each animated scene may require based on a 15FPS frame rate.

## Why Is This Important?

Sizing, Layout, and Timing (S.L.T.) are the most challenging principles for new animators. We've discovered new animators work too fast, too small and haven't a clue about placement of props.

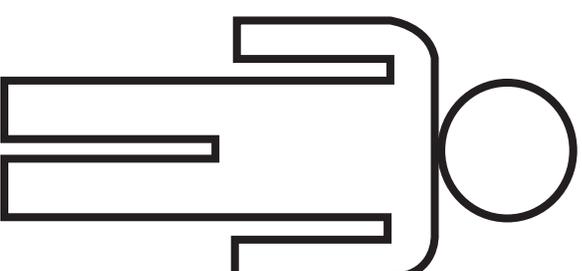
This lesson hopes to clue them in ahead of time.



# Sizing Guide 1

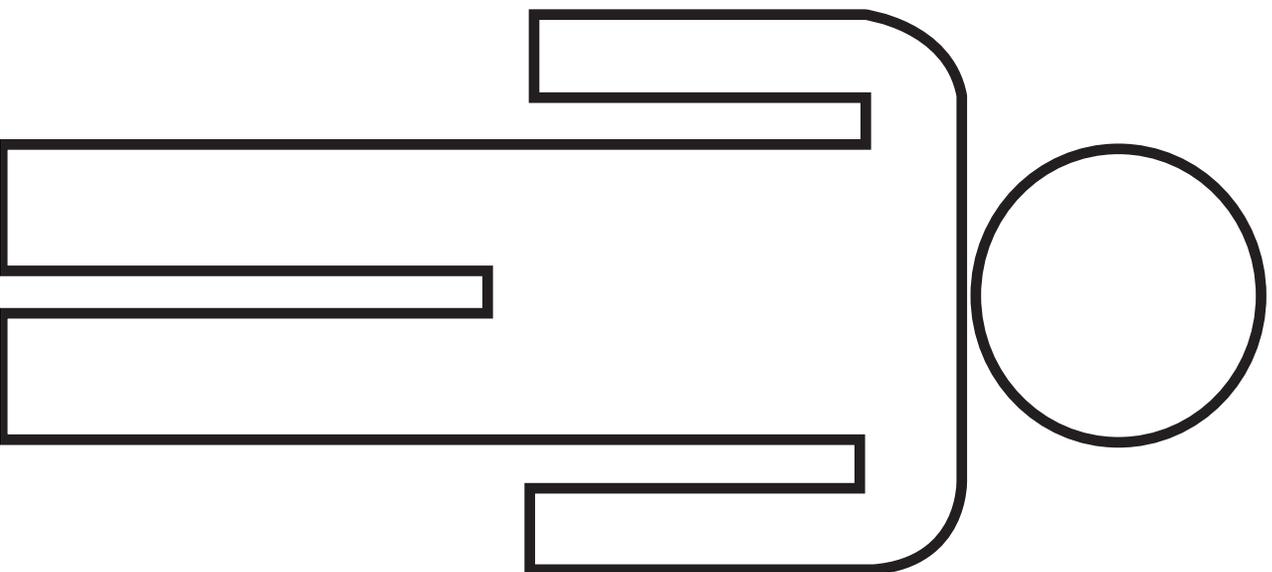
## Long Shots

If you character is in a long shot, make about this size.



## Medium Shots

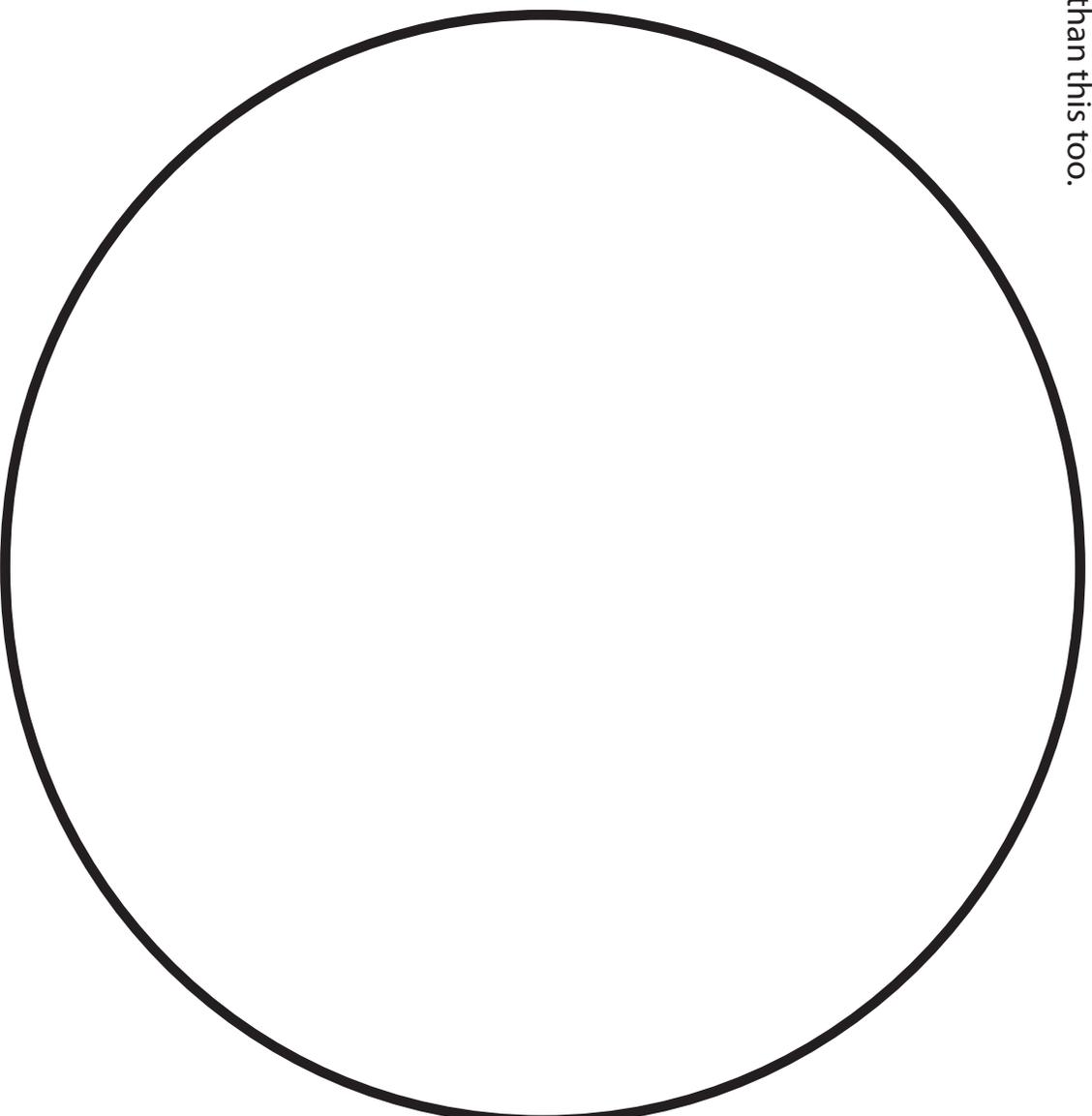
Make your character large enough to fill the screen. Medium shots help us focus on the pose, costuming, and speaking.



# Sizing Guide 2

## Close-Ups

Make your character's face big enough to fill the screen.  
The face can be bigger than this too.



# The Rule of Thirds

The *Rule of Thirds* has been used by filmmakers for over 100 years. It helps us organize our scenes in a visually appealing way.

Divide a screen into thirds using imaginary lines. These are the areas where the eye naturally focuses. If you follow the *Rule of Thirds*, you are starting to think like the greatest filmmakers of all time.







# Recipe 6:

## Shooting The First Scene

### What You Will Learn

You will learn how to lock-down your camera and sets in preparation for your first animated scene.

You will understand how to frame your scenes through a viewfinder. You will learn how to add sound to a scene. You will organize your props in a ziplock bag for safe keeping.

### Why Is This Important?

A mistake 90% of young animators make is not locking down their cameras and sets. We tape the scenes down to the table and tape the props to the background of each scene with small tape loops.

The only items which need to be loose are the animatable bits. Everything else needs to hold still. So we lock all un-animatable items down.

When finished with the silent animation, we add sound. This is the cherry on top of our masterpiece.

