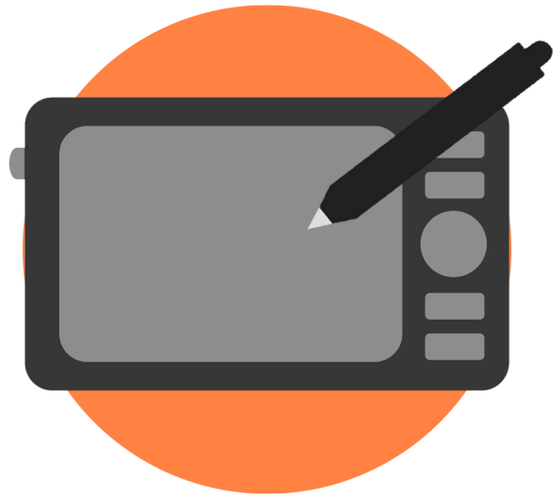
A STEP BY STEP GUIDE TO
BECOMING AN ANIMATOR



ANIMATION FOR BEGINNERS

FREE SAMPLE

BY MORR MEROZ

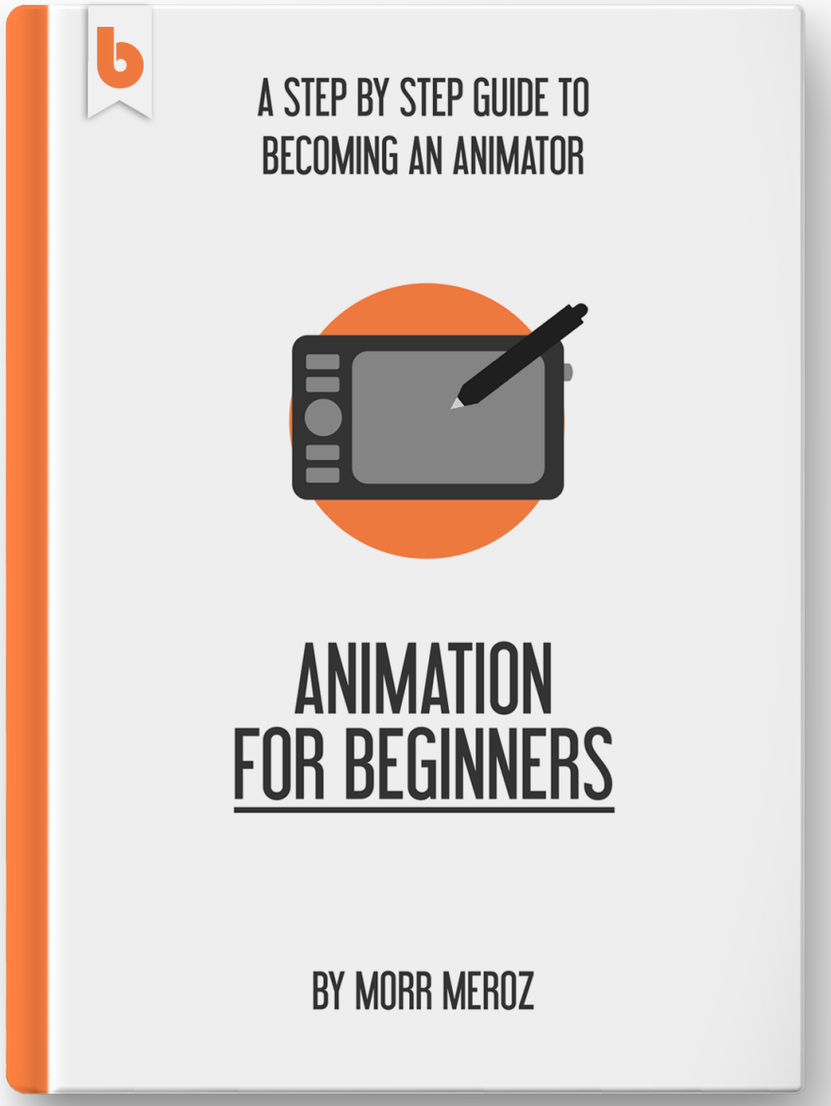
COPYRIGHTS

morr@bloopanimation.com
www.bloopanimation.com

Sample Chapter.

This is a sample chapter from

ANIMATION FOR BEGINNERS



Hey there!

Thanks for checking out this sample chapter from Animation For Beginners!

This book is for those who are curious about **what's it like being an animator.** If you're reading this you probably already think that being an animator is pretty cool, but I know the actual reality of being a part of the animation industry could look a bit vague for people outside of it.

In this book I will tell you **everything I know** about getting into animation. I'll go over all the types of animation, the necessary software and hardware for each task, recommended reading material, the best schools for learning animation in depth, some basics concepts of animation and even taking the first steps to making your first film.

To buy the complete book please go to:

http://www.bloopanimation.com/animation-for-beginners-book

HOW TO MAKE AN ANIMATED MOVIE

I hope I convinced you that making a film is important, but if you're just starting out you probably have no idea how to even begin tackling such a project.

You might ask yourself - what do I need? How do I do that thing? What's the priority of the different tasks? How much time should I spend animating before I move on to lighting? How long should it be? How do I know if this idea is good and worth pursuing?

I can't answer every question completely, since every project is different, but I can break down the different steps it takes to make an animated short, and help you focus on the right questions and tasks.

This section will be all about the steps of making an animated movie.

Coming Up with an Idea.

Like I said in the previous section - your idea should be focused on the skill you're trying to show off. It should be very small and executable. I cannot stress this enough - if this is your first film - don't over do it! Don't take more than you can handle because you'll either not finish the film or get a mediocre one. Both results are useless and a waste of time.

So how DO you come up with the right idea for you? Start by restricting yourself to what you can't do. I call it the **Restriction Method.**

What is **The Restriction Method**? Don't worry, it's not some flaky theory, but a logical system I came up with that will get you to a solid idea, even if you feel stuck.

The Restriction Method is pretty much what is sounds like. It's all about making restrictions for yourself to induce creativity and ideas. You might think that artists want 'freedom' and 'space' but human nature proves the exact opposite. People want boundaries! They love them.

A quick example: If I told you to draw a tree, you might feel a bit 'ugh' or even freeze for a second. Then you'd probably scribble some generic tree and move on, not being creative or feeling inspired.

If, however, I told you to draw a tree using only triangles, an artist would get excited. She would start thinking about how to do it, start thinking about creative solutions and try to make something unique and interesting. I bet it wouldn't look generic at all and I bet every tree would look different.

That's what creativity is - finding interesting solutions to problems. A blank canvas has no problems, that's why it's so hard to face it.

Now that I explained what the Restriction Method is, let's examine the real life example of how I used it for my own film - LIFT UP.

Since I knew I will be doing this animated short film all by myself, I had to have restrictions. So I decided to write them down.

• The movie will have only two main characters.

• It will take place in 1 location

• It needs to be humorous.

• It will be under a minuet.

I already have a stronger starting point than most people just by writing down those rules for myself, but I took it a step further. Since I am not so good with 3D modeling, I decided to restrict myself even more.

I decided that my two main characters will be a ball and a cube. No eyes, no legs or arms. Not only would that make my 3D modeling and rigging process a lot easier but it would also be an amazing challenge as an animator, bringing life into such basic shapes. Two birds in one stone! In fact, one of the most common comments I got from people who watched the film was *“I can’t believe how much emotion you got out of a freaking cube!”*

So now that I have all the rules set up it’s time to come up with the actual story. I started thinking and broke down the elements in order to build the story:

What’s the main difference between a ball and a cube? Well, one of them is round and the other is flat. When will those differences make a difference? The first thing that came up to me was walking. If you don’t have any legs or arms it will be a lot easier to move around as a ball rather then a cube. So I already have a conflict between the characters: A cube who is slowly trying to walk down a path and an arrogant ball zooming around it, showing off, while the cube is struggling.

That’s a great start. I have established a conflict between the two characters and found an interesting dynamic. But then I needed to find the twist. Not a shocking twist but something that changes things around. I asked myself: *In what case would a cube*

have the advantage over a ball? The answer was clear: A slope. In a downhill slope the ball would roll quickly but going up the hill would be hard.

So now I have a cube and a ball walking down a long road, and while the cube is struggling to move forward, the ball is rolling around freely, mocking her. When they reach a hill, the cube climbs easily (since it has flat sides) but the ball cannot get enough momentum to follow.

Will the cube help the ball after its display of arrogance and selfishness? That was for me to decide, but look at that: I had a story. I would never have thought about that had I not restricted myself in the process.

Writing the Script

The next step after coming up with ideas is putting it down on paper. You discover a lot when you translate the story from your brain into written words. This is especially important if you have dialogue in the film.

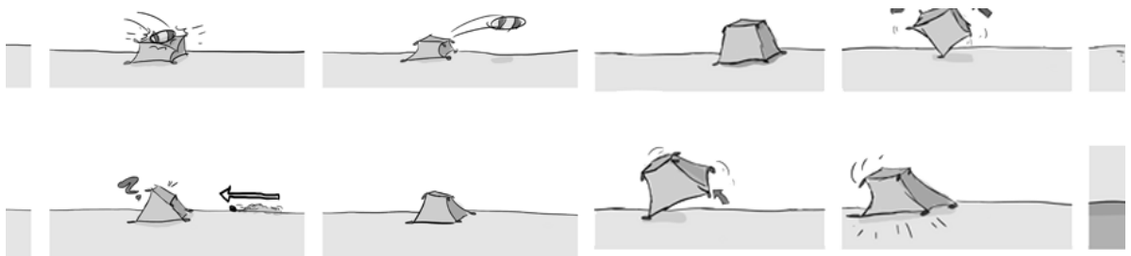
My first film Food For Thought had plenty of dialogue and I spend a lot of time with the script before moving on to drawings. On my second film LIFT UP, however, I skipped the script and went straight to storyboarding. That was because that story was more physical than verbal. I felt like drawing it instead of writing it would be easier, and it's just as effective in learning new things about the story.

I use Celtx for script writing, it's a great writing software that syncs on multiple devices. It's very friendly to use and fun to write with. Another great solution is Final Draft, which seems to be very popular with screenwriters. For more information on screenwriting format go here.

Storyboarding

After you came up with an idea and put it to writing, it's time for storyboarding. For you, animators and artists, this should be one of the most fun steps, despite looking daunting at first.

So what is a storyboard? A storyboard is a series of drawings meant for pre-visualizing the shots of a movie. It is an essential tool for the director (in this case - you) so they could get a sense of the way the movie is going to look and feel.



A storyboard is also used in live action productions and saves time on set. Since the camera angles were determined beforehand, the DP (director of photography) knows exactly what is expected of him during the shoot.

There are different approaches to storyborading. Some like to use colors, some only draw the outlines, some color in greyscale (my preferred method) and some go really deep into the details.

The storyboard's biggest role is to convey the story effectively, as close as possible to what the movie would look like at the end. That means that when someone is reading your storyboard they should instantly get the story.

A few things to help convey the story:

- Write captions under the drawing
- Use arrows to show camera movements
- Color the object to differentiate it from the background.
- My preferred template for storyboarding is six boards on a single page (each one 16×9 – HD ratio), three on top of three, with a few empty lines for writing captions under each one.

You can download a storyboard template I made for you and the full storyboard I made for LIFT UP here for reference.

Animatic

After the storyboard is done you'll need to turn it into an animatic.

Simply put, animatic is an animated storyboard. Boards are brought together in an editing program and are edited with the correct timing and pace of the film. They include basic sound effects and dialogue recordings.

Similar to storyboards, animatics are used for pre-visualizing the film before production starts. Animatics are extremely important for making an animated movie, since they let you see what the movie might look like for the first time. This is when you first get a sense of the pacing, the rhythm and the progression of the film.

This is also the last step before going into 3D, so it's important to make sure no more story changes need to be made.

Adobe After Effects is the most common software for creating animatics.

With After Effects you can:

- Manipulate the drawings with the puppet tool (if necessary).
- Easily add elements to the view screen (such as frame count, time-codes and shot number).
- Export in various codecs and formats.

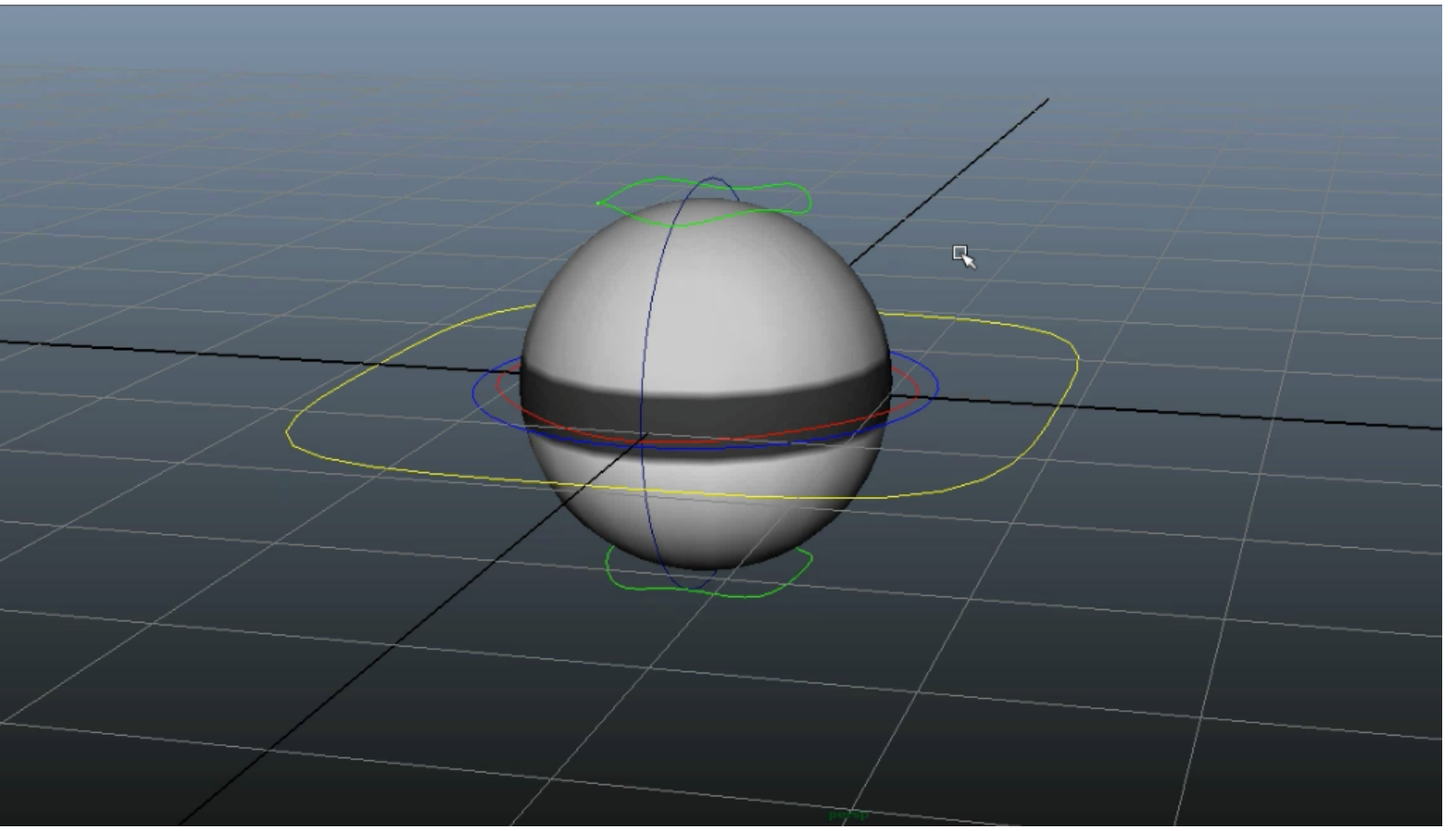
Modeling

After we got our story figured out and the animatic looks good, we step into the 3D world for the first time. We usually start with modeling the characters, props and environments.

Modeling in 3D is the process of building and shaping a character or an object in a 3D software, to match the design. The modeling is done based on the character design and is something I have less

experience with. That's the reason I chose to go with a cube and a ball when I made LIFT UP, since they are the easiest objects to work with. I worked within my restrictions.

For a deeper learning of modeling techniques I recommend checking out Mastering Autodesk Maya 2014 or Digital Modeling. If you're more into videos I'd recommend taking some Digital Tutors online courses.



Rigging

Rigging is the process of taking a 3D model and building a skeleton into it so it could move the way we want it to. This is a very important step for animators because they are the ones who will later have to move that skeleton. You need to know in advance what kind of movement or facial expression you want the character to make. That's why many animators have at least a basic understanding of rigging and are sometimes just as good at it as they are animating.

To learn more about rigging check out Mastering Autodesk Maya 2014 or any of the rigging courses at Digital Tutors.

Previsualization (Previz)

After you have all the 3D assets made (they are rigged and ready to go) you'll first make a previz of your entire film.

Previsualization (previz) is the process of making a stripped down version of your film before actually making it. Made within the 3D program, a previz is animated very basically, just enough to get the story across. Think of it like a 3D animatic.

In recent years, live action filmmakers have started making previsualizations before shooting their films, because it's such a great way to see how shots look before actually going out and shooting them. It could save a lot of time and money if you know the scene is going to work ahead of shooting.

For animation, just like live action, it's a necessary step. Animating takes so much time that you wouldn't want to waste days and days working on a shot only to find out later that the sequence doesn't work. After storyboarding and making an animatic, previz is the last step before diving into full animation.

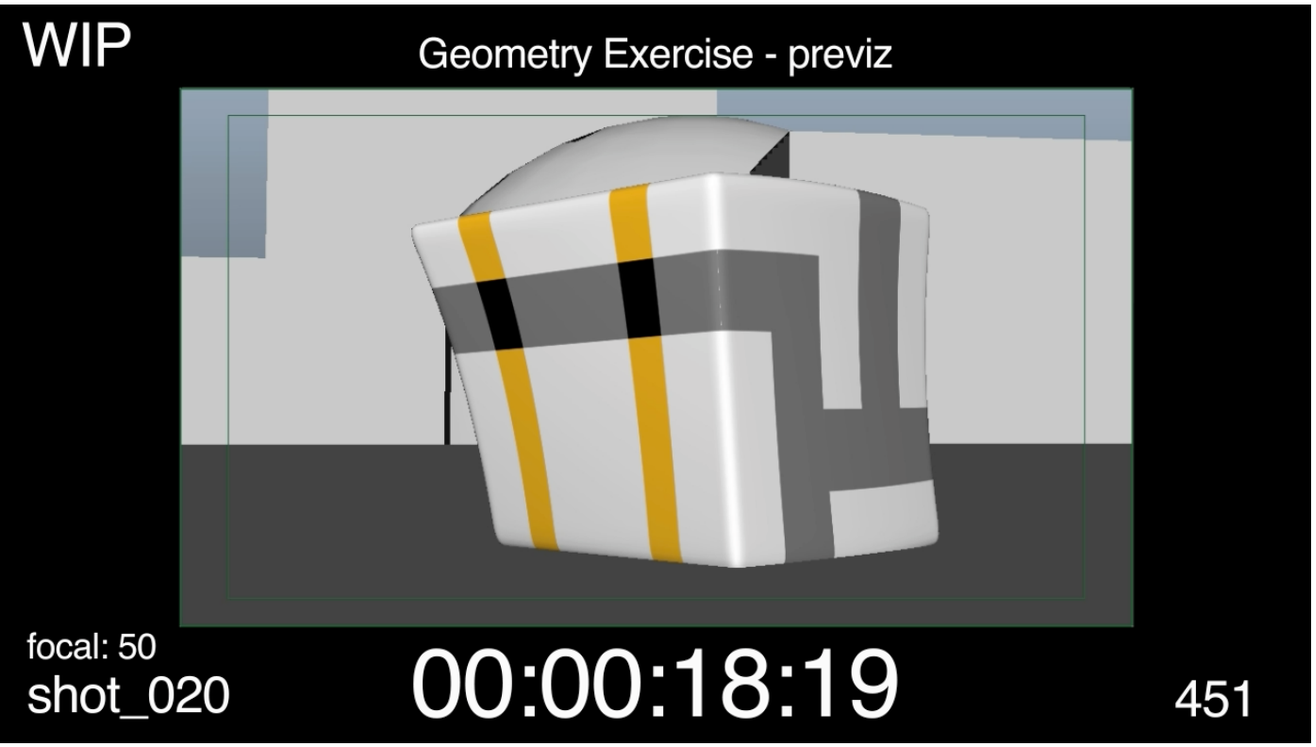
There's no one formula for the way previz looks, but I'll share with you the way I do it.

It's a good idea to leave space around your actual film for imputing various information. I usually just scale down the video and add a black background in my editing program (I use Adobe After Effects). Around the video there're a few elements I like to have shown:

- The film **title** on the top middle.
- **WIP** (Work in Progress) on the top left, so that viewers will know this is still in development.
- **Timecode** on the bottom middle – one of the most important elements.
- **Frame count** on the bottom right – timecode isn't enough, sometimes you need to know the exact frame count of shots, or when giving comments it's easier to specify what frames need changing.

- **Shot number** on the bottom left – so you can instantly know what shot you're watching when writing notes or comments.
- **Focal length** (or lens size) above the shot numbers – not a must have, but I like to know the kind of lens I used for each shot.

At the end you should have a version of your film with basic animation. The camera movement should be finalized, because you're going to keep it for the animation phase.



Camera Shots and Angles

Speaking of cameras, here are a few things you should know about setting up your shots, camera lenses and movement.

Great cinematography is always challenging to achieve. Great and convincing cinematography in 3D can be even more complicated. Why is it challenging? Because in a 3D environment (the 3D software) there are no limitations, unlike real life where you are restricted by the rules of physics or by the budget of your film.

Creating a flying helicopter camera shot and a simple tripod shot costs the same in 3D, and that could be a problem.

When first learning the capabilities of the 3D software, many newbies tend to go crazy with the camera. Either using an extravagant boom shot where it isn't needed, or creating shots that would be impossible to achieve in real life.

But hey! – you might say – isn't that what animation is for?

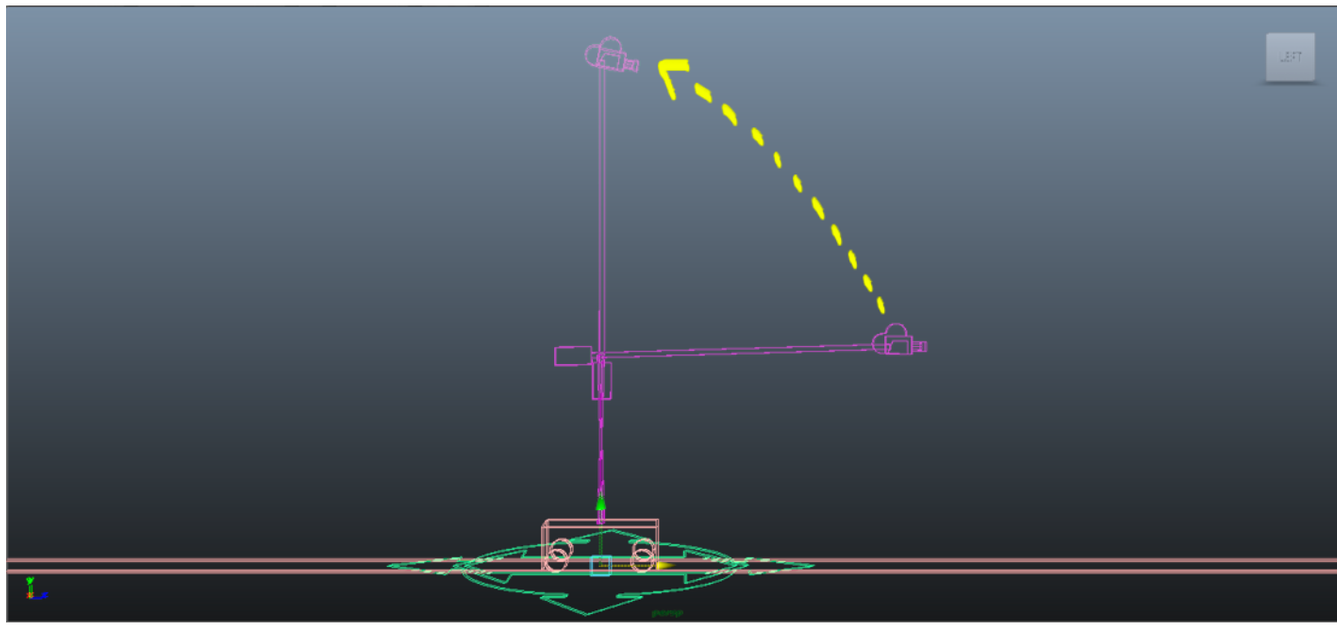
Well, yeah, if you have a good reason for it – sure go crazy. But going crazy just because you can isn't the right way to go about it. You must remember that the audience is used to watching movies in a certain way. Knowing basic rules of cinematography and understanding the uses of different lenses is critical to making a good animated film.

If you're using Maya, here are 2 camera rigs that I use:

- **Maya Camera rig (from creativecrash.com)**

The reason I think this rig is excellent, despite having many buttons and controls, is that it simulates a real dolly/boom rig.

This is important because when you are animating mildly complex shots it's important to have something that grounds you in reality. With this rig, if you're doing a big crane shot, you'll get that natural arc in the movement of the camera that is caused by the boom being a physical rod.



- **Maya camera**

This is the default Maya camera that anyone can create. The advantage of using that simple rig is that you can look through the camera lens and move around, just like in the perspective view. This is great for when you're just trying to figure out your shot and decide on a good direction for your camera angle and lens.

Speaking of lenses, let's talk about them for a second. In Maya we determine the lens in the 'Focal Length' attribute. If you're familiar with lenses then you should be able to figure out the right sizes for your needs, but if you need a little guidance, here is a quick reference:

- **8-15 focal length:** Used for very wide shots, landscape, establishing shots, creating deep perspective.
- **35-55 focal length:** Used for close ups, medium shots, whenever you just want to show a character doing something without being too intrusive.
- **80 – 200 focal length:** Used to flatten out the perspective, extreme close ups or for quick action shots.

Voice Acting

If your film has any dialogue you'll probably need voice actors. When I made Food For Thought I was facing a very dialogue heavy film and the search for a voice actor was not something I had experience with.

Luckily, I was introduced to Voices.com, a great website for finding voice actors. It's really great, because you can submit a sample dialogue and get dozens of auditions from actors reading your script within 24 hours. Hearing my script come to life was one of the most exciting moments in the production.

Animation

This is what it's all about right? This book is about getting into animation. Of course, I'm not going to cover the entire art of animation in this section, but I can tell you what's it like animating, and the skills required.

First of all, it's important to know that you'll most likely be focusing on very short segments of animation at a time.

What do I mean by that?

A film is broken down to sequences. Each sequence is made out of a few scenes and every scene is made out of shots. A shot is defined as a take, in part or in its entirety, that is used in the final edited version of the film. It's the piece of the film between two edits, a "piece of time". In live action film a shot is everything between the moment you start recording to the moment you stop the camera. Then in the editing process the editor cuts these shots to the timeframe they need.

In animation we only animate those final timeframes for the final edit. In a film they might shoot the same scene from 3 different angles, where in animation we only animated the time needed for each angle. It's much less flexible but since animation is such a time consuming task studios just can't afford to have all angles animated.

A shot is usually very short, so in reality an animator wouldn't animate a shot that's more then a few seconds at a time.

The camera movement and angle should already be in place from the previz, and the character rigs should be in the right places. Before jumping into animating, however, some preparation is needed.

Here are a few things you can do:

- **Shoot reference.** Even though you think you might know what an action looks like, you'll be surprised how much you don't think about until you watch the action and analyze it. It's good practice to record yourself on video doing that action even if you're not going to animate it exactly the same, it's good to have that reference nearby. You can also YouTube it instead of shooting it yourself. Say you need to animate a skydiver, it's probably easier to look online for a reference video than shoot one yourself.

- **Thumbnail the shot.** If you have good drawing skills, it might be good to thumbnail the main poses of your shot and then refer to them while you animate. I admit it's something I do not do since I like diving

straight into the animation, but it's something I know many good animators do, so keep that in mind.

After the preparation we start by blocking out the shot. Then, we refining it until it's done.

For more detailed information about the process of animation read the '6 Steps of Animation' section.

Texturing Lighting and Rendering

Once animation is finished and you're happy with the way the movie feels it's time to handle the way it looks. The process of texturing, lighting and rendering your film is very technical, but basically it's taking each shot of the film and establishing the lights and appropriate 3D materials to the characters and environment before rendering the final output.

For example, if the character is furry you'll need to find a way to create fur material to add to it. The same goes for reflective materials like glass.

After setting up all the materials and the lights in the shot we determine the render settings (resolution, quality and many others depending of the type of render engine). Now all that's left is the actual rendering.

Studios would usually use a render farm, which is a network of many computers connected together for the sole purpose of rendering. That results in faster render time. If the scene isn't too complex you can render it on your own computer (I rendered LIFT UP by myself on my 2010 iMac).

The topic of texturing lighting and rendering is extremely complex and deep. If you intend to learn more about it I recommend checking out Mastering Autodesk Maya 2014 or some great online courses at Digital Tutors.

Editing

After each shot is rendered, we replace the previz shots already set up on the timeline with those new renders. The actual editing process has mostly already happened in the previz and animation stage, since we kept updating the shots with new ones as we worked.

Unlike live action, in which the editing happens after the footage has been shot, the editing in animation takes place throughout the whole process, all the way from the first animatic to the last render.

After the shots are all put together we perform color matching on them. Color matching (or color correcting) is the process of changing the colors of each shot to match each other. Often times different shots might look different despite happening in the same location, and so we need to subtly grade them to match each other. After that is done we'll do a final grade for the whole film to establish a general look and feel for the whole film.

To see this effect, check out some of your favorite action movies and try noticing if there's any dominant color throughout the film.

Sound Design

Unlike soundtrack (or score), sound design mostly refers to editing together the found effects, folly, ambiance and dialogue of the film. It's done very similarly to editing a film. There's a timeline with the video of the film on top of it, and we slowly insert bits of sound effects according to the action in the film.

There's separate tracks for dialogue, wind, people chatter, footsteps, and everything else that happens in the scene.

I find it to be a very fun and creative process since it requires a lot of creativity and out of the box thinking.

Once it’s all mixed together with the music of the film, it’s time to export one final sound file and add it to the editing program. Then all that’s left is exporting the final film.

Picking a name for the film

Before this section is over I wanted to talk briefly about finding a name for the film.

Not so easy to do.

I’ll try to give you some ideas on how to go about finding a good name by sharing the story of how I came up with the name LIFT UP, and believe it or not, it was much more methodical than you’d think.

When I tried to come up with a name for LIFT UP I knew I wanted something creative but not corny. Cute but not too cute. I wanted something that reflected the characters journey of helping each other, and maybe incorporate the hill and going up a slope somehow.

A good system to finding names is choosing an idea, and going to town on it as much as you can, and then doing the same for another idea.

For example, lets say we want a name with a square or a cube in it, since the main character is a cube. I would just make a list like that:

- **Squared Away**
- **Squared**
- **We’re Square**
- **Rectangled**
- **Cubism**
- **Rounding Corners**
- **Sharp Edges**

Then I would focus on a different element, maybe the ball:

- **Bounce**
- **Bounced**
- **Bouncing**
- **In the Ball Park**
- **Round and Round**
- **Up and Down**
- **Rolling**

Then maybe something about the hill, or moving up:

- **Up the Hill**
- **Moving Forward**
- **Over the Hill**
- **Path**
- **Hill Side**
- **Over the Hump**
- **Lift Up**

Then I pick my favorites from both lists:

- **Up and Down**
- **Moving Forward**
- **Rectangled (one of my favorites, but still too out there)**
- **Lifted (taken by a Pixar short)**
- **Lift Up**
- **Rounding Corners (again, a geometry joke. Irrelevant)**
- **Bounce**
- **Over the Hill**
- **Squared Away**
- **Cubism**

The reason it's a good system is that it lets you focus on a single idea and get the most out of it, instead of looking at a white canvas and trying to come up with something. It's not so different from the restriction method I wrote about in a previous section.

So I looked at the list. They were all cute, but with names, just like love, when it's right you just know it.

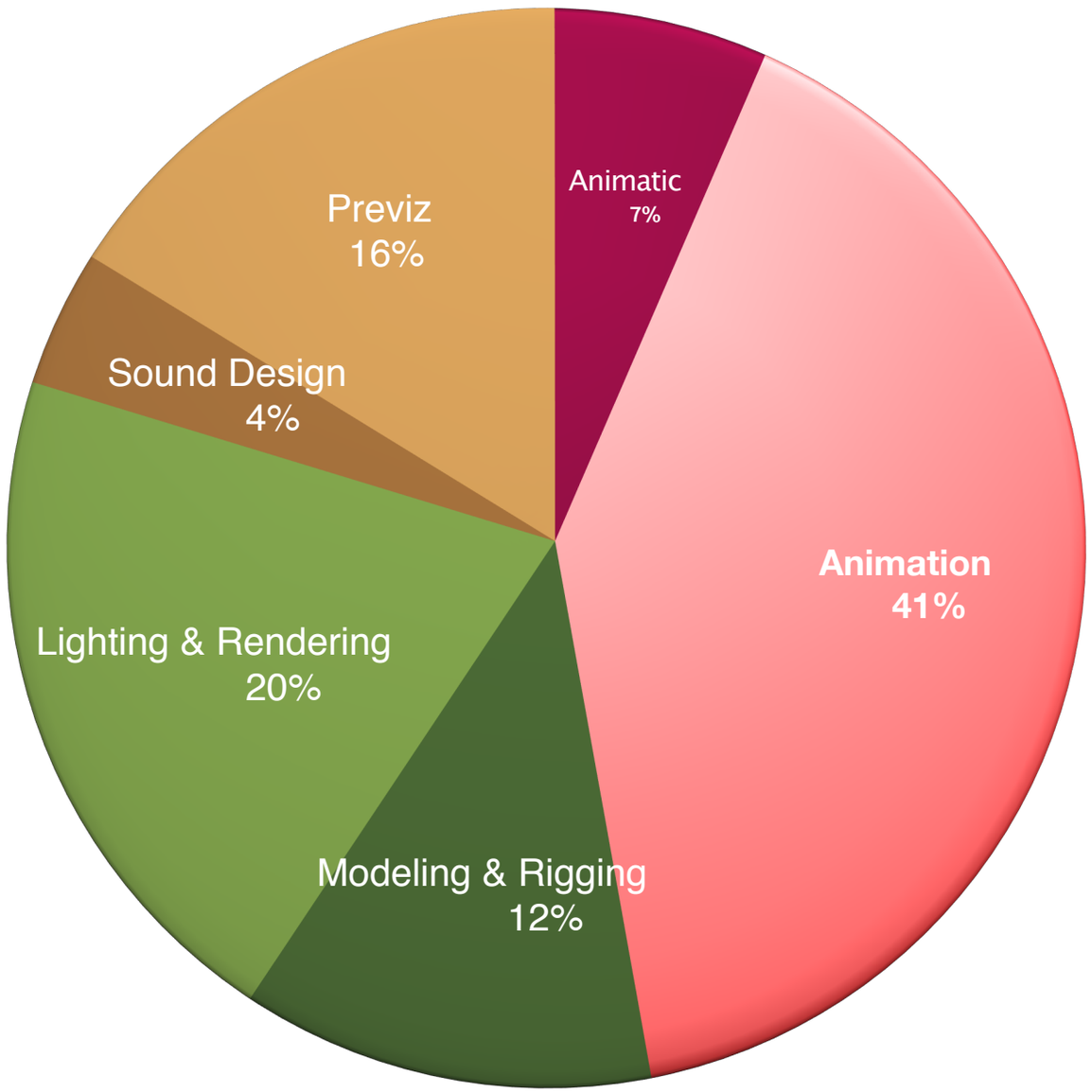
Only one of them was right.

All the other names I found either lacked emotion or were too emotional and cutetsy.

As you know, I went with LIFT UP. The name was good because it captures the emotional journey they go together, and the physical as well. They both 'lift' each other up on that journey, and the double meaning, of course, is an emotional lift up (like cheering someone up).

It's short and sweet.

Here's an estimated chart of how much time I've spent on each step in LIFT UP:



THANK YOU FOR READING THIS SAMPLE

To get the complete book go to:

http://www.bloopanimation.com/animation-for-beginners-book