Where to begin... well... I suppose the first thing to consider in drawing a character is its **Construction**. The character must be constructed out of basic shapes — that is to say **3D**imensional shapes, spheres, boxes, and cylinders.

**Not 2D**imensional shapes such as circles, squares, and rectangles.

Are you able to draw the basic shapes so that they look 3D and not 2D?

If so... you are ready to move on.
Manipulating the Basic Shapes

You can STRETCH 'EM!

BEND 'EM!

TWIST 'EM!

SQUASH 'EM!

It's better if you have something to squish 'em against! So, add a touch of shadow!
Let's practice manipulating the basic shapes starting with the ball.

Plot a series of arcs for it to follow...

And bounce the ball along it!

Note where the ball is squashed at the bottom of each arc where it comes to a sudden halt upon meeting with earth. Then, the ball immediately pops to a stretch as its rubbery composition propels it rapidly to the top of the next arc. BUT HOLD!! Here is where gravity does its thing! The ball meets this force and slows in its ascent, being pushed back down earth for another squish!!! Heh heh heh!

This is why you should slow out of the tops of the arcs!
REMEMBER

IF YOUR BALL IS MADE OF RUBBER, IT WILL HAVE ELASTICITY, AND WILL SQUISH UNIFORMLY OR ELLIPTICALLY.

A TOUCH O'S BAWN!

IF YOU FLATTEN IT ON THE BOTTOM, IT WILL LOOK LIKE A
SORRY, SQUASHED MEATBALL
NO PERSON TO SOURCE!

SO, AFTER YOU'VE GOT THAT DOWN, TRY ANIMATING IT IN PERSPECTIVE!

Plot a series of arcs growing either bigger towards the camera or smaller away from the camera.

By the way, you can use a shadow to show the ball's relationship to the earth throughout.

After that, try it with the other basic shapes, the box and the cylinder — imagine they're made outa rubba! Or even that they may be alive! Have some fun!
Once you've mastered manipulating the basic shapes,
you're ready to start constructing a character?
Let's make a meld of two basic shapes,

**The Ball** and **The Box**

Put 'em together and waddaya got?

Boo!... / Boo!

The famous flour sack!
Let's just give the sack some nubs at the corners, to act as arms and legs...

Because you see...

Flour Sack represents the basic torso of the 2 legged character!

Play with him and see what you can make him do!

Try to keep your basic shapes loose and 'organic.' Flour Sack has a life of his own.
Next let's add some legs to the sack...

Arms attach to the upper corners of the upper body box.

Legs attach to the sides of the pelvic ball.

And... the head...

Goes between the shoulders created at the top of the upper body box.
We'll call this guy Mr. Basic.

His head is made up of a cranial sphere...

...and a smaller ball attached to it describing the jaw.

The jaw area begins below the ear.

The whole head sits on the chamber of the neck.

Remember to contour the eyes to the shape of the cranial sphere as they move around it!

Slap on some more parts onto the cranial sphere, so he doesn't look like Marvin Martian!
Basic Hand starts with a box for the flat of the hand...

Add an opposable thumb, rough in a shape for the attitude of the fingers.

Elaborate and divide the fingers.

Arms are 2 cylinders.

Taper at wrists.

Straightened limbs should be composed of 2 cylinders, even tho...

Limbs may appear to be 1 cylinder when straightened.

Use 2 shapes for the foot.

...they prove to be 2 cylinders when bent.
AND NOW... See if you can make Mr. B. move...
In the next few pages he will take you through the basic principles of animation.

Practice drawing him in different poses.
Animation Principle #1

We've already practiced squashing and stretching the basic shapes individually... but how about when they're joined together as a character?

Squash & stretch the body, arms, and legs to convey different attitudes.

Play with the entire body construction.

A simple swap is a good way to practice.

Remember to maintain the volume of your basic shapes!
**Principle 2: Anticipation**

Well, we all know that in order to make our character jump up, WE NEED TO SHOW HIM GOING DOWN FIRST. IF WE DON'T, HE WILL APPEAR TO FLOAT UP OFF THE GROUND.

This would be fine if he was on the moon...

**But on earth, he must contend with gravity... So he must do this...** BEFORE he can do this!

As a general rule, EVERY ACTION MUST HAVE AN ANTICIPATION. THE ANTICIPATION TELEGRAPHS TO THE VIEWER WHAT IS ABOUT TO HAPPEN.

The viewer sees what is going to happen...

The follow thru is simply a given.

Given the proper anticipation for a hit...

THE VIEWER NEED NOT EVEN SEE THE MOMENT OF IMPACT!
PRINCIPLE #3

The story, the most important element of ANY narrative entertainment MUST BE TOLD CLEARLY, but since we don't have a story yet, let's just say we should show what our character is doing clearly enough so the action can be read.

For instance, who can tell what this guy's doing?

Turn him around and the answer is obvious! He's straightening his tie!

It is said that every drawing in a scene should clearly define what is going on, so plot everything out and be sure the viewer is given all the information he/she needs.

Dear Ma...

Let's get everything we need to see into view!

And what kinda way is this to stage a scene?
Principal #4 STRAIGHT AHEAD
& POSE to POSE

These are 2 main approaches to creating action...
...or, animating!

STRAIGHT AHEAD MEANS YOU
DO THE DRAWINGS IN SEQUENCE,
ONE AFTER ANOTHER...

Usually used to create
wildly expressive action!!

Pose to Pose MEANS YOU PLOT OUT THE ACTION IN A SERIES
OF POSES - THEN GO BACK AND IN-BETWEEN THE POSES!

This method is most commonly
used to ensure action needed to
clearly denote the story point...

Thank you.
PRINCIPLE #5  FOLLW THROUGH AND OVERLAPPING ACTION

These are simply ways of keeping your character “alive.”
Nothing will remind a viewer that he is watching drawings like having those drawings pop to a sudden stop. Yet, some poses need to be seen long enough for the viewer to register them.

There are a few ways to deal with this conundrum...

**You can settle in to a held pose**

Hit a more extreme position than your final one...

And settle back into the final held pose.

**Yes! There is much more to this principle... but let’s hold off on the rest till later...**

**OR...you can use a moving hold!**

Your two “extreme positions” will be essentially the same pose...

**Just make as many inbetweenes as you need for the pose to be seen.**
We already mentioned slowing out of the tops of our arcs when we were bouncing our balls... slow... our SHHRRRS back on page?...

As a general rule: action will usually tend to slow out of the tops and bottoms of an arc, or what are usually the extreme poses in your action.

A NOTE FOR A SLOW OUT LOOKS LIKE THIS

One would usually use a slow IN to SETTLE INTO A HOLD POSE... but remember... in animation, NOTHING is WRITTEN IN STONE!

Professor BIMAC

HENCE... SLOW OUT OF YOUR EXTREMES!

AND HEY, IF YOU IN BETWEEN EVERYTHING EVENLY LIKE THIS ∙ 0 ∙ 4 ∙ 8 ∙ 9 IT MIGHT END UP LOOKING LIKE BAD CG5 ANIMATION!
**Principle #7**

**Secondary Action**

Let's say we give Mr. B. a big floppy hat!

You can use it to create a secondary action - movement created by the primary action.

Here, the primary action is the run. Drag the floppy hat back in the path of action to create a secondary action.

In order to fully understand the principle of secondary action, let's do an exercise called the waving flag!

What you need to do is make a flag (attached to a pole of course) that appears to wave as if blown by a gentle wind. It should not look as if it has a life of its own, but should appear to move as an inanimate rectangle or triangle that has a breeze blowing it.

The primary action is in the main body of the flag - camera - then two... the secondary action is in the tip or end of the flag as it is pulled about by the main body.
The more inbetweens you put between your extremes—the slower your action will be drawn out. So how do you figure out how many you want to make your actions? The only true answer to that is: "Experience!"

But until you gain experience, here are some rough guidelines.

It takes 0 inbetweens to do something super fast... like when you catch a brick.

(KEO inbetweens) to move slowly from one extreme to the next...

Fill in the space from one extreme to the next with an arched abstract of the moving part to create a "zip between!"

Or simply slow out of the lower extreme by making 0 inbetweens closer to it.

2 inbetweens might be used... say... during a walk...

And to settle, or use a moving hold, use as many inbetweens as you need!
PRINCIPLE #9: ARCH

We all know what an ARCH IS...

We use it as a PATH OF ACTION when we're plotting a move from one pose to the next.

Animation without ARCHES will tend to look MECHANICAL.

Try to SEEK OUT MILD, NICE, NATURAL ARCHES to MOVE YOUR ACTION ALONG.

And don't OVERARCH! Choose the right degree of curve to suit your action!
**Principle #10**

**Exaggeration**

Let's face it, cartoons were not invented for their ability to convey subtleties!

OK, so no cartoon character ever won an Oscar for best actor...

But let's see Al Pacino do this!

Make each required attitude of your character as big as you can!

Run the gamut of emotions!!

Push physical types to the extreme!

Stretch your imager to its limits!
Again... always remember to construct your characters using basic shapes. This, if done correctly, will give your character the look of being 3-dimensional.

Any character animated in the traditional classical way will have a construction formula that he/she/it can be broken down to. Whether squashed, stretched, twisted, tapered, or bloated, they are all basic 3-dimensional shapes. You just have to connect them and move them around in the right way!

ONE THING IS CERTAIN: the higher your level of basic drawing skills - the more suited you will be to classical animation.

SO... DRAW! DRAW! DRAW!
 Principle #12: Appeal

Hey, to make a character appealing, you've got to make him as cute as possible, right?

Wrong!

What appeal really means is that the eye of the viewer is attracted to the screen rather than repelled by say... bad design.

Whatever role your character plays, you've got to make the viewer want to watch him/her/it.

A wide variety of characters can have appeal... some more than others.

But, good, clean, basic drawing will insure that people will say, "I know more!"
Beyond

The Basics

When once you find yourself a master at Mr. Basic, you can begin to expand upon him...

The basic construction can be altered...

To create a pudgy character...

A gangly character...

Or a female character...
Play Around with altering the basic body construction to create different characters.
Many times in animation an artist will endeavor...

To capture the movement of the figure in a natural or realistic way, this can be accomplished thru rotoscoping, but this process robs the animation of the spark of life that a talented animator can give. A proven method of creating naturalistic movement in a character is line action reference, culled from film or video-tape, viewed frame by frame, and drawn.

This technique can be used by anyone who has a solid grasp of the construction of the figure.

So let's start grasping!

Figuratively!
Let's start with **2 Legged Characters**.

**Ancient Animators** have discovered, that in a 2 legged character, bodily movement usually begins at the center of gravity, or pelvic region... So that is what we will start on.

**THE PELVIC CYLINDER**

**In general,**
- A male human's pelvic cylinder is fairly straight.
- In a female the cylinder tends to widen at the base (hip) and taper at the top (waist).

**THE UPPER-BODY BOX**

- A man's upper-body box tends to be dominant over the pelvic cylinder.
- In a woman's body, the pelvic cylinder is usually the dominant shape.

**A woman's center of gravity is slightly lower than a man's.**

**Vive la difference!**
A General Rule of Body Attitude is that when the pelvic cylinder is tilted one way, then the upper body box will have to tilt the opposite way, to create a balance in the figure.

In these 2 figures, the weight is more on one leg than the other. When the weight is on one leg, it pushes the pelvic cylinder up on that side.

Realistic hands are constructed from a box with a series of cylinders attached.

Male digits are thicker.

Feet are somewhat squashed sphere with a box attached. Toes are ball-like cylinders.

A woman's fingers taper at the ends.

A toe construction.
The male head is usually more angular... while a female head tends to be rounder in construction.

Use the ear at the base of the sphere as a point to anchor the jaw box to.

Musculature should be added after the initial construction.

Cranial sphere on top.

Eyes near the base of the sphere.

The neck cylinder on a woman is more slender than a man's (usually).

The musculature on a female arm is far less pronounced usually.

An extra curve is added near the knee.

Cylinders taper at the ankles, a good way to achieve this. Into cross the lines in construction, then rough out the shape in final line.

Men's legs can be muscular, women's may be shapely.
OK Kids! Let's try working from some live reference!

Let's say our subject is the lovely lady pictured here. We would start by asking ourselves, "Which way is her pelvic cylinder angled?"

Why, yes! It is angled slightly to the right!

Next, let's draw the upper body box. Note the dynamics!

Her weight is on her right leg, which is why the pelvis is angled that way. Connect it to the cylinder and draw it straight to the ground. The other leg is relaxed.

Finally, add all fine detail, shading, costuming and accessories.

Connect the basic shapes that form the rest of the figure... then build on them!

The final should not be a literal rendering. But a stylization adaptable to animation.
Construct the entire figure using basic shapes. Then, using that as a framework, build on the rest of the details.

The pelvic crumble is angled forward. The upper body also leans forward.

The waist also leans forward. How about a more life drawing than scanty clad figure in an action pose? Here much of the body is covered up by loose clothing and the pelvic cylinder is partially obscured by a prop (e.g., baseball).
Practice drawing the human figure in as many possible positions as you can. Using a live model is best of course, but if you can't get one, use reference from magazines or videotape.

If you have a VCR or video disk player with a freeze-frame, try animating a selected sequence by picking out the "key frames" you will use as extremes, and sketching them in scale, then simply in-between the poses...you should have an animated recreation.
The 4-Legged Character

If you've gotten a good handle on human construction, then it's time to try drawing animals!

Let's take flour sack and turn him forward...

The REAR LEGS...

...connect to the pelvic ball. They relate to the legs of the 2-legged character as shown.

The FRONT LEGS RELATE TO THE ARMS OF THE 2-LEGGED CHARACTER

ADD A NECK & HEAD...

AND YOU GOT YOUR BASIC ANIMAL
Practice drawing animals. Begin as with the human figure, with basic construction, and build the detail on top.

As with human action, footage of animal movement can be used as reference. Try re-creating a horse's run, or a dog's trot from video reference if you have the equipment to do so.
As you set sail into the sea of animation, just remember...there are billions of things to animate, and as many ways to animate them! You, as a character animator, are an actor...and a giver of life! When your characters come alive, the viewer will forget that they are watching drawings, and experience what it's like to be...

"Touched by a Toon."

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