



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** Dimensional shapes, spheres

Boxes



AND

CYLINDERS



NOT 2 Dimensional shapes
Such as



circles



squares



& rectangles

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

IF SO... YOU ARE READY TO MOVE ON

MANIPULATING the Basic Shapes

YOU CAN STRETCH 'EM!

BEND 'EM!

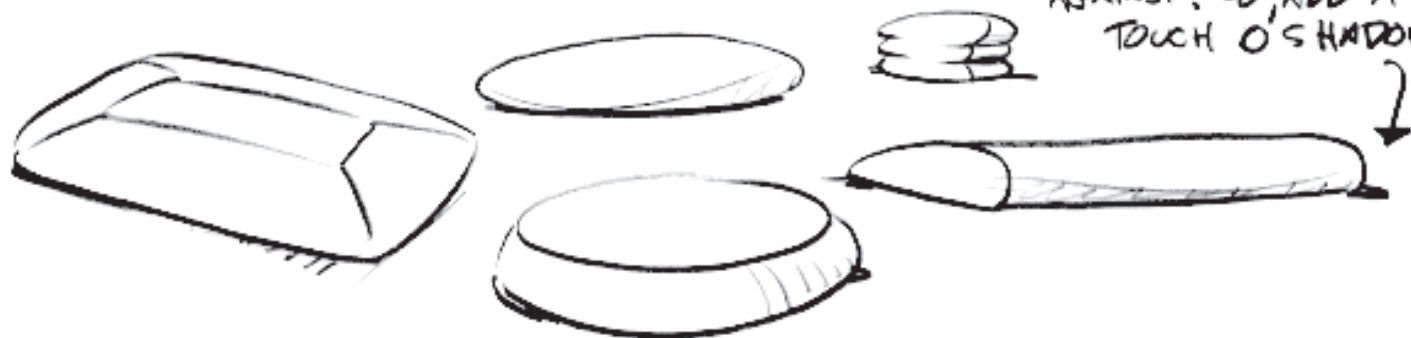


TWIST 'EM!



SQUASH 'EM!

IT'S BETTER IF YOU HAVE SOMETHING TO SQUASH 'EM AGAINST! SO, ADD A TOUCH O' SHADOW!



NOW

Let's practice manipulating the basic shapes starting with the ball.



PLOT A SERIES OF ARCS FOR IT TO FOLLOW...

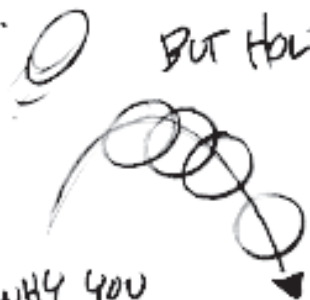


And bounce the ball **ALONG** it!



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 IT'S RUBBERY COMPOSITION PROPELS IT RAPIDLY TO THE TOP OF THE NEXT ARC.



BUT HOLD!! HERE IS WHERE GRAVITY DOES IT'S THING! THE BALL MEETS THIS FORCE AND SLOWS IN IT'S ASSENT - BEING PUSHED BACK TOWD EARTH FOR ANOTHER SQUASH!! 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 SQUASH UNIFORMLY OR ELLIPTICALLY



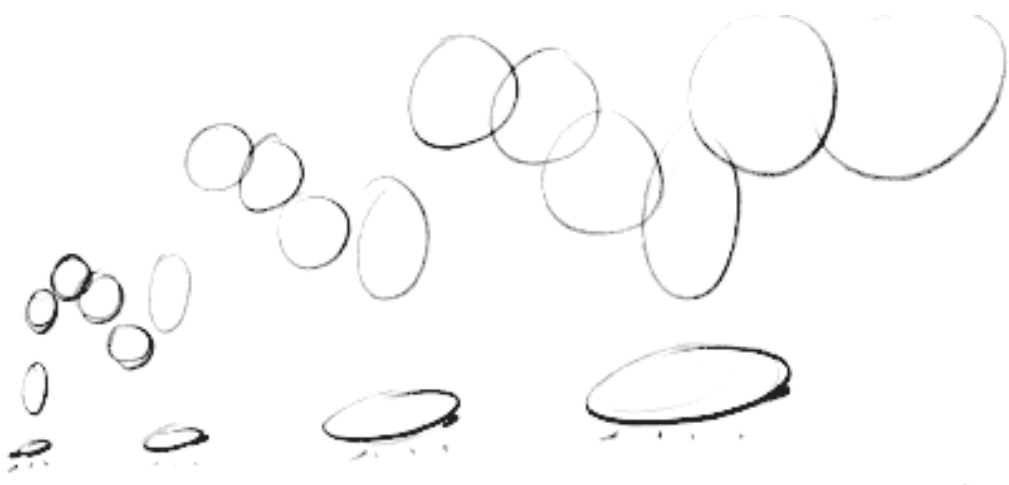
A TOUCH O'S HADOW!

IF YOU FLATTEN IT ON THE BOTTOM, IT WILL LOOK LIKE A SORRY, SQUASHED MEATBALL



So, After you've got that down, try animating it in PERSPECTIVE!

Plot a series of ARCS GROWING EITHER BIGGER TOWARD CAMERA OR SMALLER AWAY FROM 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 OUTTA RUBBAH! 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?



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 TARSO
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...



LEGS ATTACH TO THE SIDES OF THE PELVIC BALL



ARMS ATTACH TO THE UPPER CORNERS OF THE UPPER BODY BOX



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 CYLINDER 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 OPPOSEABLE THUMB,



ROUGH IN A SHAPE FOR THE ATTITUDE OF THE FINGERS



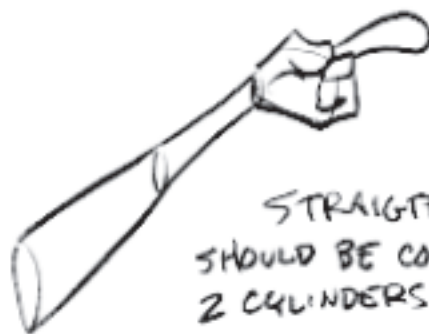
ELABORATE AND DIVIDE THE FINGERS



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.



... THEY PROVE TO BE 2 CYLINDERS WHEN BENT!



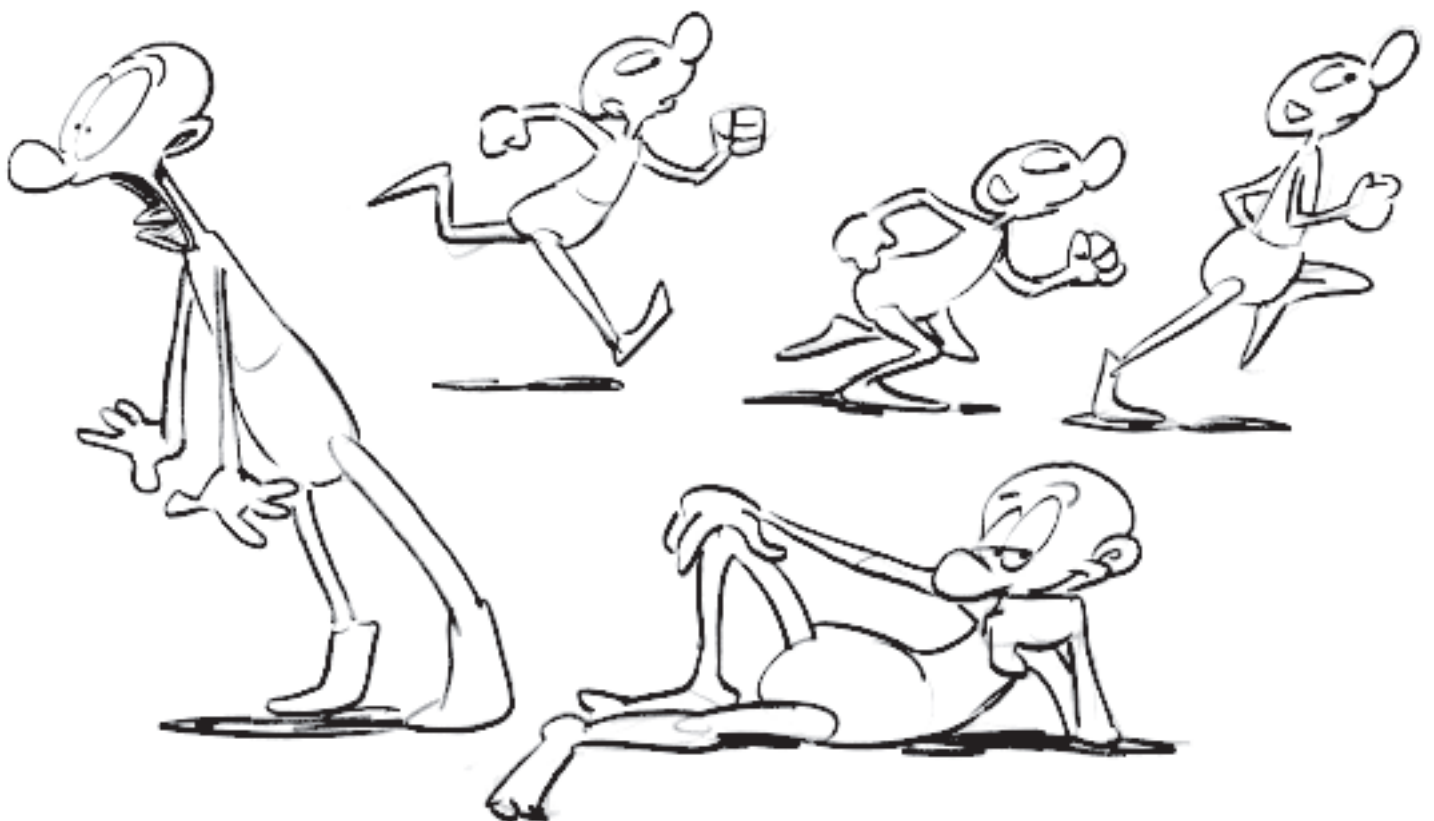
USE 2 SHAPES FOR THE FOOT!

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

SQUASH and STRETCH

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 CRANIAL SPHERE AND JAW TO CONVEY DIFFERENT ATTITUDES



Play with the entire body construction -



A Simple Jump is a good way to practice

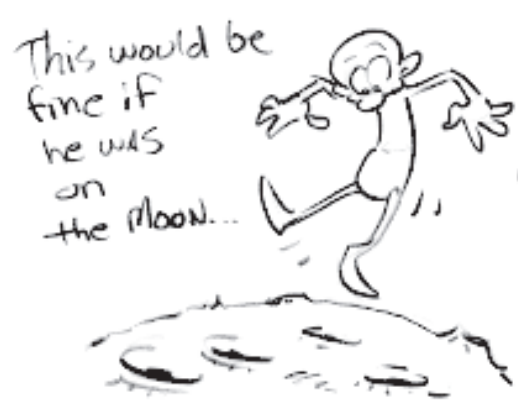


Remember TO MAINTAIN the VOLUME OF YOUR BASIC SHAPES!

PRINCIPLE #2

ANTICIPATION

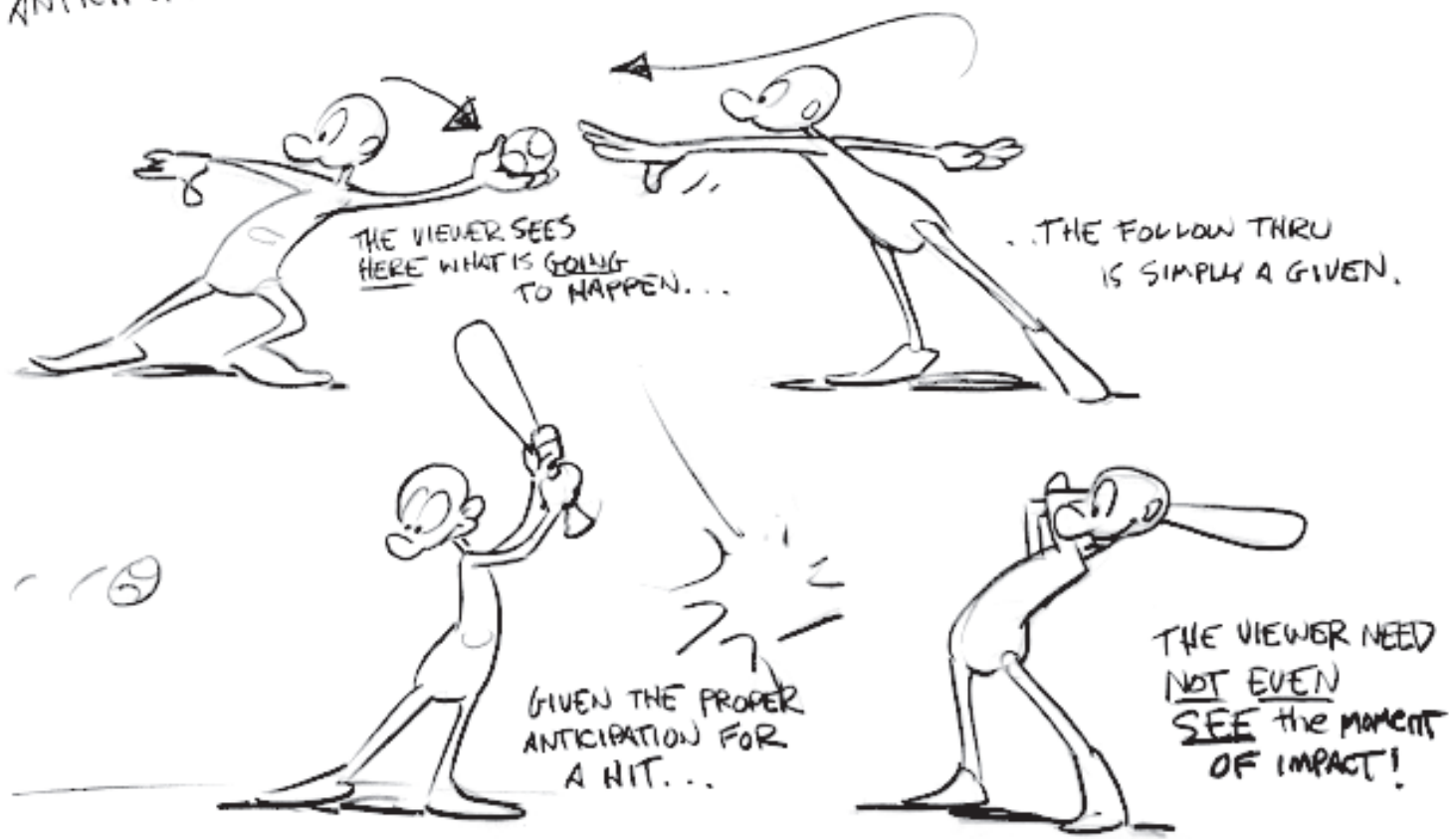
Well, we all know that in order to make our character jump up ↑ WE NEED TO SHOW HIM GOING DOWN ↓ FIRST. IF WE DON'T, HE WILL APPEAR TO FLOAT UP OFF THE GROUND.



BUT on earth, he must contend with **GRAVITY**... so...



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

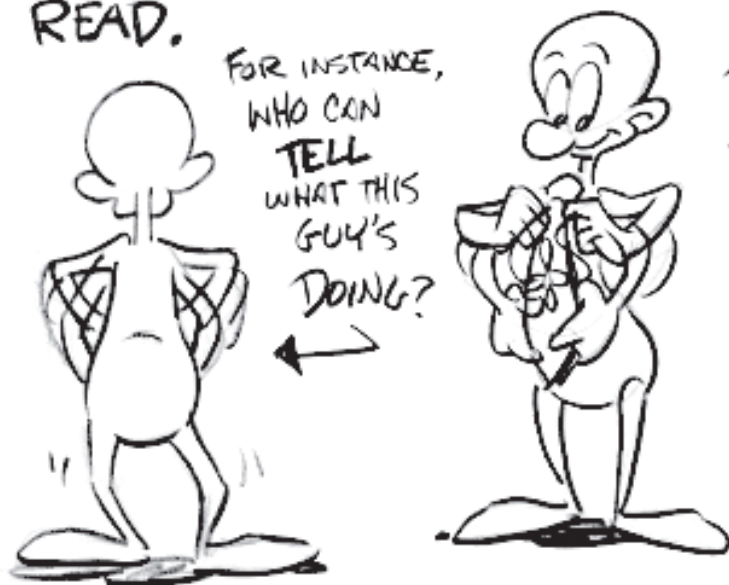


PRINCIPLE #3

STAGING

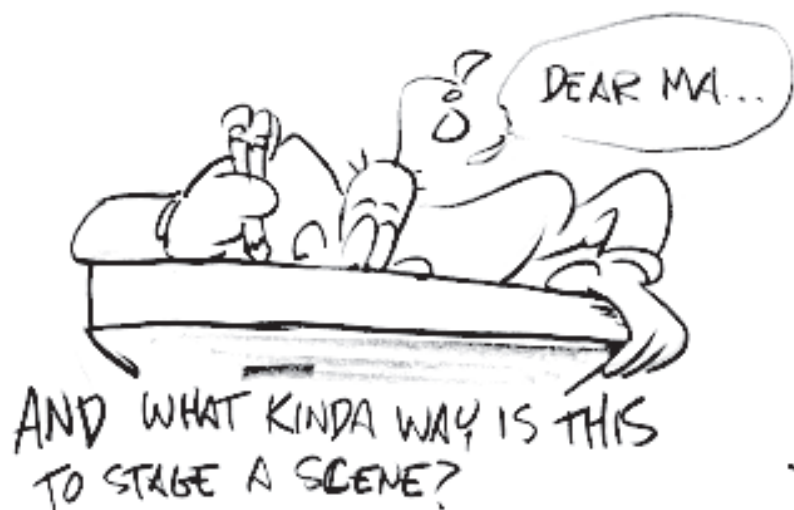
The Story, the most important element of ANY NARRATIVE entertainment MUST BE TOLD CLEARLY, but since we don't have a story yet, let's just say we should show what our character is doing clearly enough so the action can READ.

Page (13)



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



AND WHAT KINDA WAY IS THIS TO STAGE A SCENE?



PRINCIPAL #4 STRAIGHT AHEAD & POSE TO POSE

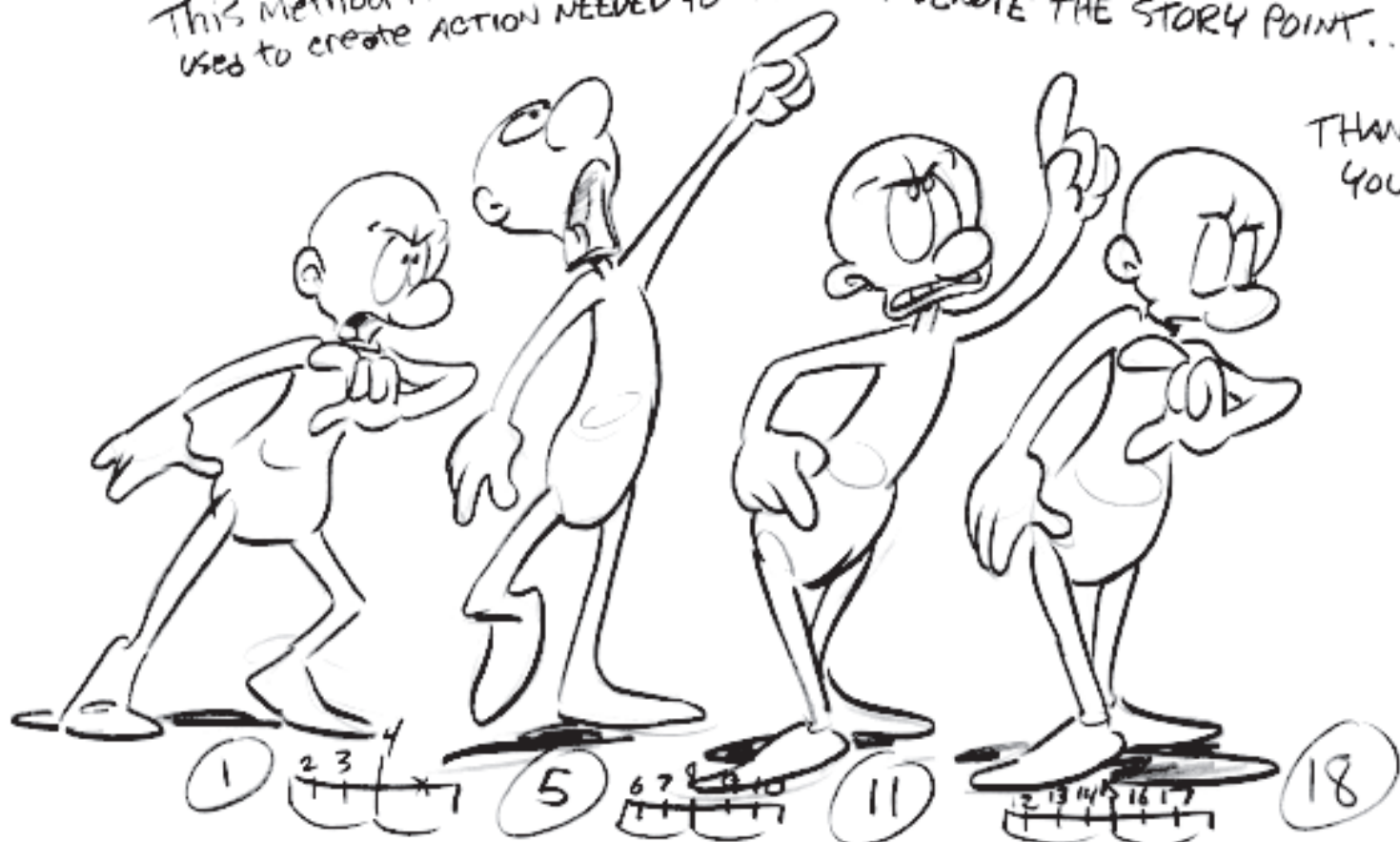
These are 2 main approaches to creating Action...
or.. animating!

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 INBETWEEN THE POSES!

This method is most commonly
used to create ACTION NEEDED TO CLEARLY DENOTE THE STORY POINT...



PRINCIPLE #5 FOLLOW 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

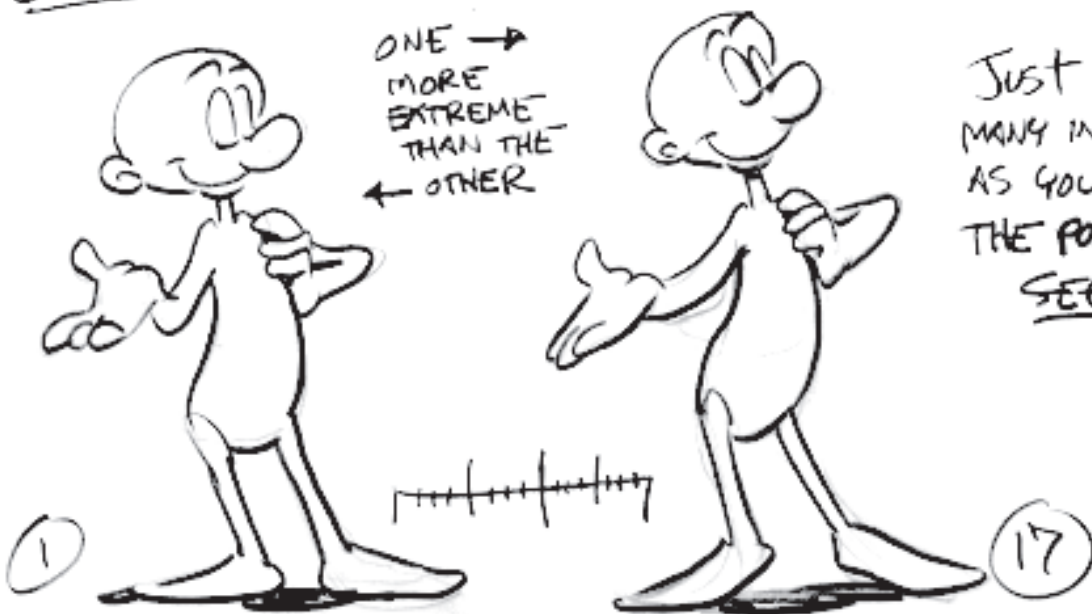


HIT A MORE EXTREME POSITION THAN YOUR FINAL ONE...

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...

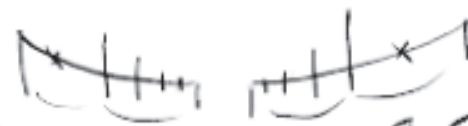
OR... YOU CAN USE A MOVING HOLD!
YOUR 2 "EXTREME POSITIONS" WILL BE ESSENTIALLY THE SAME POSE...



ONE → MORE EXTREME THAN THE ← OTHER

JUST MAKE AS MANY IN-BETWEENS AS YOU NEED FOR THE POSE TO BE SEEN.

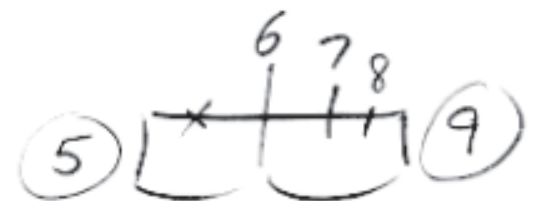
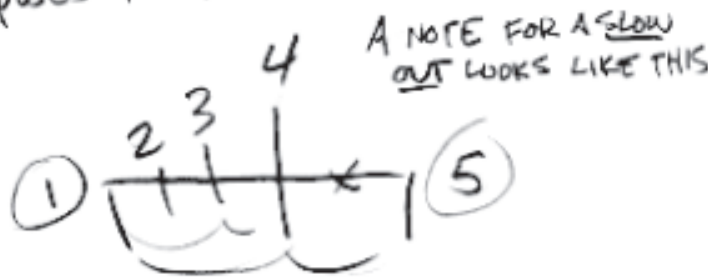
PRINCIPLE #



SLOW IN & SLOW OUT

We already mentioned slowing out of the tops of our arcs when we were bouncing our balls... them... our SPHERES back on page 3...

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 IN LOOKS LIKE THIS

One would usually use a slow in to settle into a HELD POSE... but remember, in animation

Mechanical motion theory states that any object traveling in one direction must overcome inertia in order to AN ALTERNATE CHANGE TO TRAJECTORY.



HENCE... SLOW OUT OF YOUR EXTREMES!

AND HEY, if you inbetween every thing evenly like this → ① 2 3 4 ⑤ it might end up moving like BAD CGI ANIMATION!

Professor Basic



PRINCIPLE #1

SECONDARY ACTION

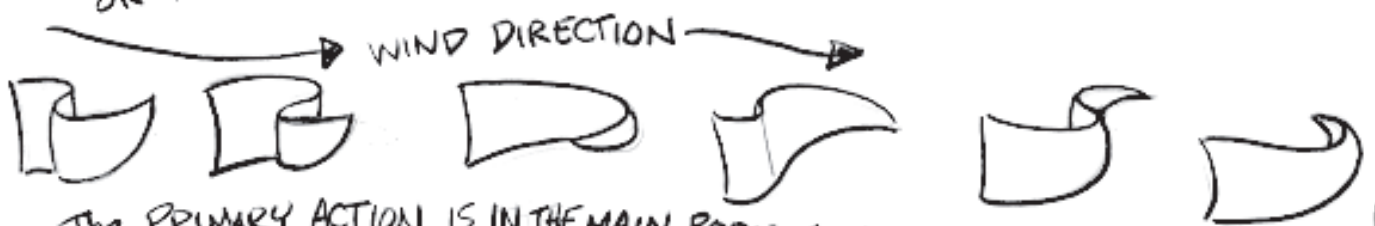
Let's say we give Mr. B. a big floppy hat!



You can use it to create 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! IS MAKE A FLAG (ATTACHED TO A POLE, OF COURSE) 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 (EASIER) THAT HAS A BREEZE BLOWING IT -

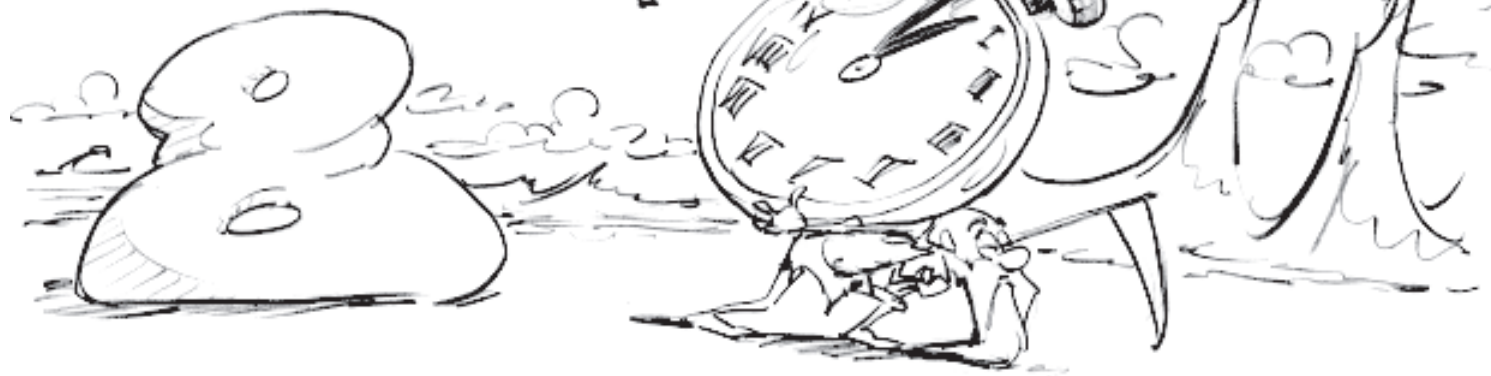


The PRIMARY ACTION IS IN THE MAIN BODY OF THE FLAG AS THE WIND BLOWS A RIPPLE THRU IT FIRST AWAY FROM CAMERA - THEN TWD... THE SECONDARY ACTION IS IN THE TIP OR END OF THE FLAG AS IT IS PULLED ABOUT BY THE MAIN BODY

HINT: THE ACTION IN THE TIP SHOULD DESCRIBE A FIGURE 8!

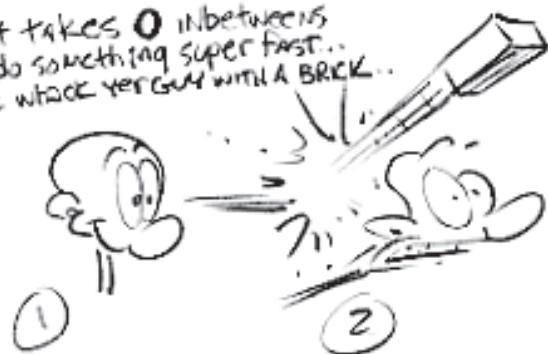
PRINCIPLE

TIMING

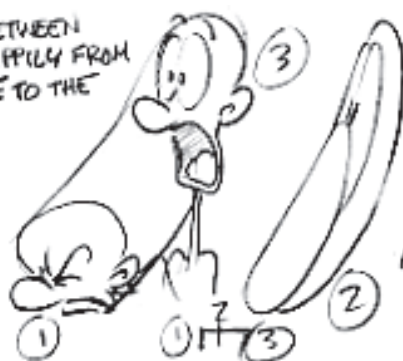


The MORE INBETWEENS YOU PUT BETWEEN YOUR EXTREMES - THE LONGER YOUR ACTION WILL BE DRAWN OUT. SO HOW DO YOU FIGURE OUT HOW LONG YOU WANT TO MAKE YOUR ACTIONS? THE ONLY TRUE ANSWER TO THAT IS: "EXPERIENCE"
 BUT until you gain experience, here are some rough guidelines...

It takes 0 inbetweens to do something super fast... like whack yer guy with a BRICK...



USE 1 INBETWEEN TO MOVE ZIPPILY FROM ONE EXTREME TO THE NEXT...



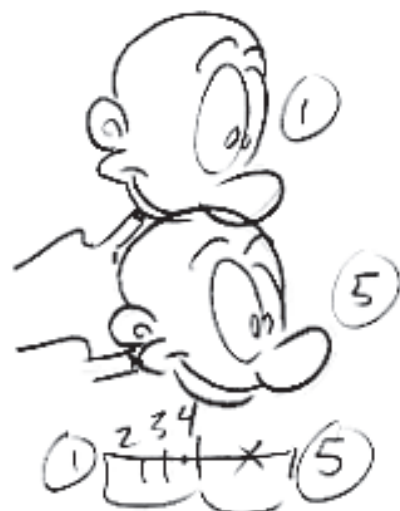
Fill in the space from (1) EXTREME TO THE NEXT WITH AN ARCHED ABSTRACT OF THE MOVING PART TO CREATE A "ZIP-TWEEN"



OR simply slow out of the lower extreme by MAKING 1 INBETWEEN 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

ARCS

We all know what an ARC IS...

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



Animation without arcs will tend to look Mechanical



TRY TO SEEK OUT NICE, LOOSE, NATURAL ARCS TO MOVE YOUR ACTION ALONG.



And don't OVER ARC!
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!

NHoo-HA!!



RUN THE GAMUT OF EMOTIONS!?



Push physical types to the extreme!



STRETCH YOUR IMAGINATION TO ITS LIMITS!

PRINCIPLE #11 SOLID DRAWING

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.



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

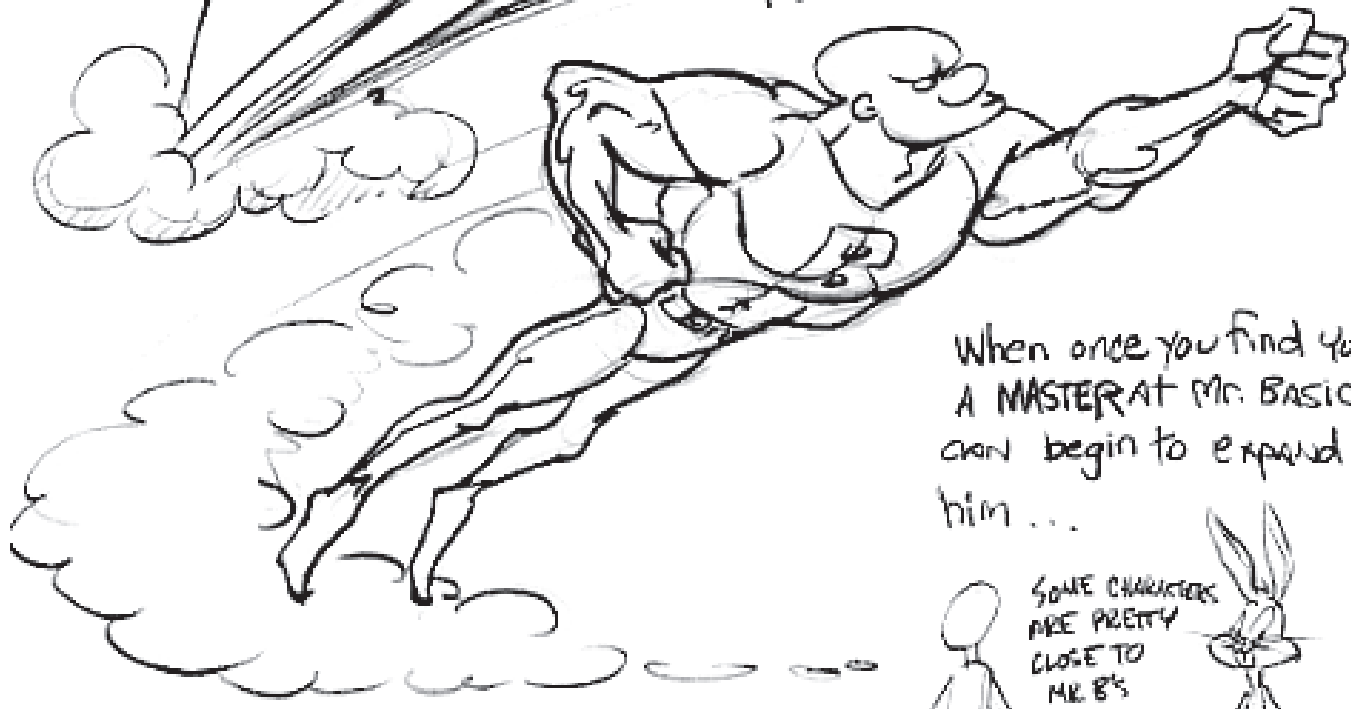


A WIDE VARIETY of characters can have appeal... Some more than others...

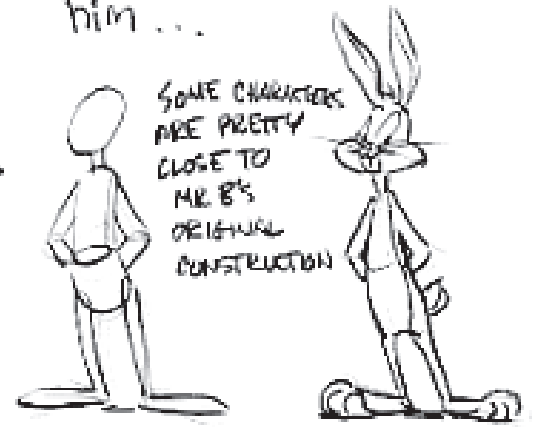


BUT, GOOD, CLEAN BASIC DRAWING WILL INSURE THAT PEOPLE WILL SAY, 'SHOW ME MORE!'

BEYOND THE BASICS



When once you find yourself A MASTER AT MR. BASIC, you can begin to expand upon him ...



SOME CHARACTERS ARE PRETTY CLOSE TO MR. B'S ORIGINAL CONSTRUCTION

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 roto-scoping, 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 **LIVE 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!



Let's
START
WITH

2 LEGGED CHARACTERS,

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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

* THE "OLD MEN" OF LORE

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



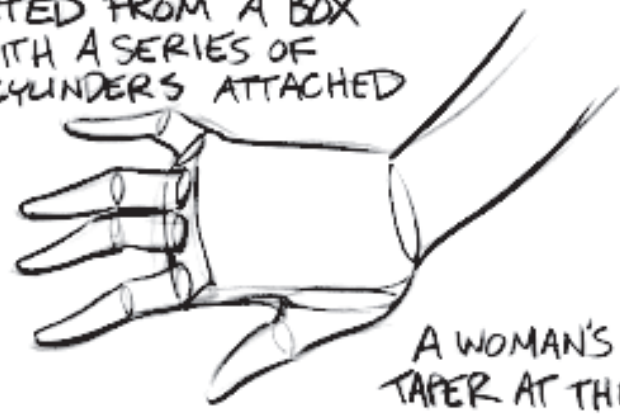
LEGS ATTACH TO SIDES OF PELVIC CYLINDER



REALISTIC HANDS ARE CONSTRUCTED FROM A BOX WITH A SERIES OF CYLINDERS ATTACHED



MALE DIGITS ARE THICKER



A WOMAN'S FINGERS TAPER AT THE ENDS

FEET ARE A SOMEWHAT SQUASHED SPHERE WITH A BOX ATTACHED

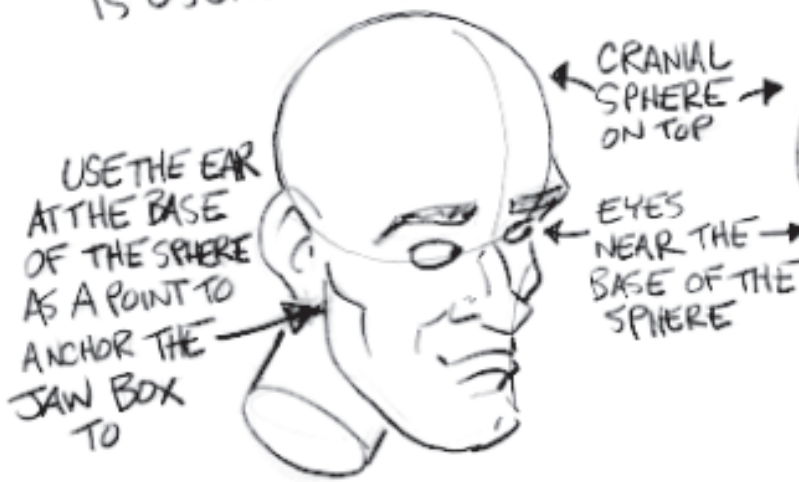
TOES ARE BALL-LIKE CYLINDERS



A TOE CONSTRUCTION

The male head IS USUALLY MORE ANGULAR ...

WHILE A FEMALE HEAD TENDS TO BE ROUNDER IN CONSTRUCTION

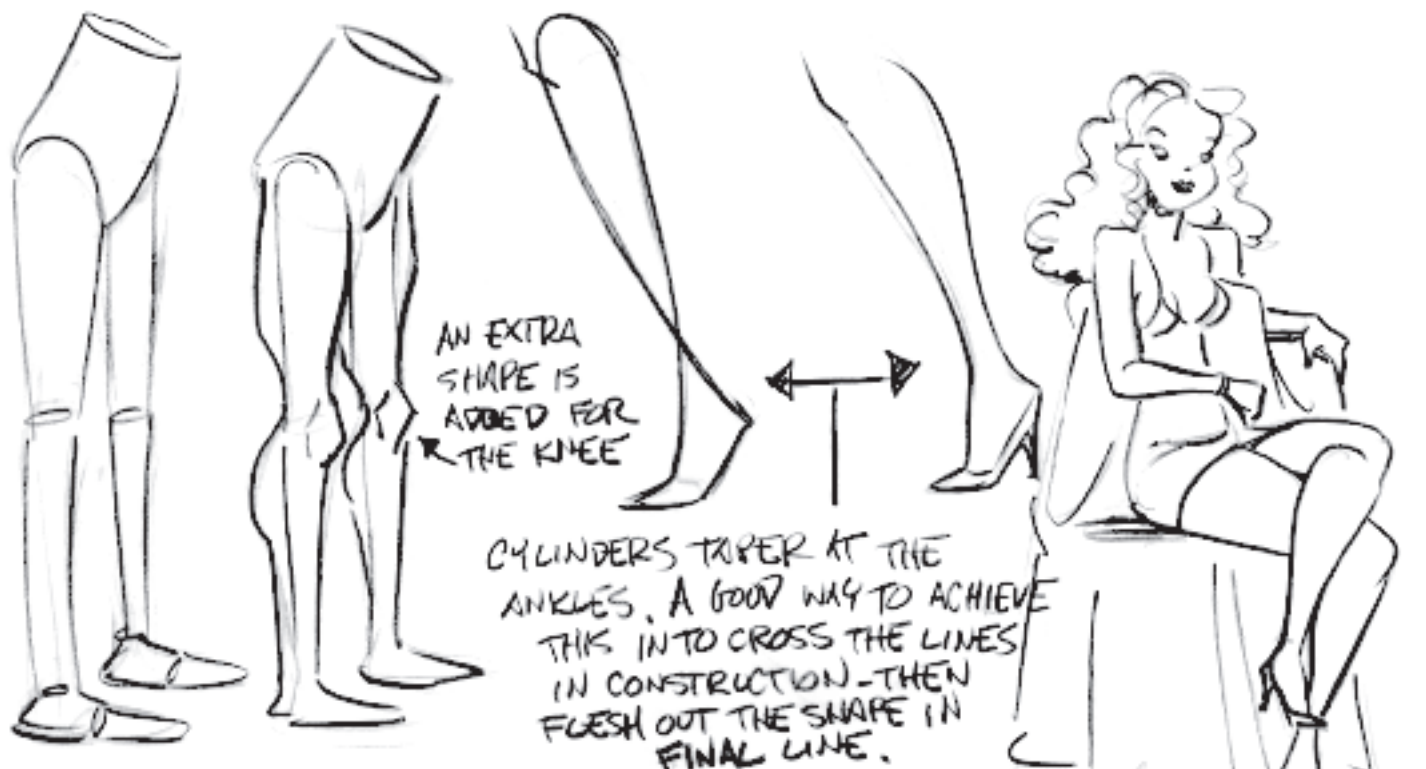


THE NECK CYLINDER ON A WOMAN IS MORE SLENDER THAN A MAN'S (USUALLY)

MUSCULATURE SHOULD BE ADDED AFTER THE INITIAL CONSTRUCTION



THE MUSCULATURE ON A FEMALE ARM IS FAR LESS PRONOUNCED USUALLY



Men's LEGS CAN BE MUSCULAR .. WOMEN'S MAY BE SHAPELY

DK 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?"

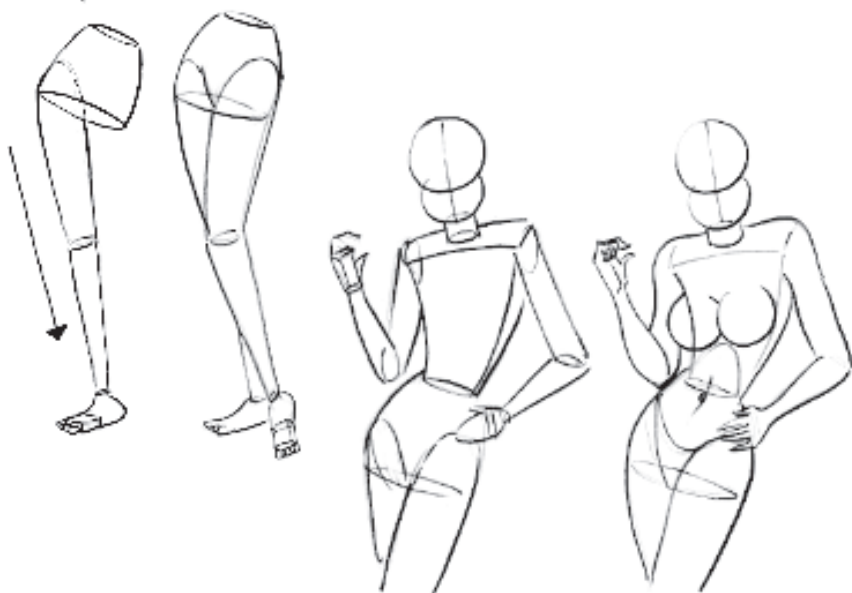
Why, YES! it is angled slightly to the right!



Next, let's draw the upper body box



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.



CONNECT THE BASIC SHAPES THAT FORM THE REST OF THE FIGURE... THEN BUILD ON THEM!

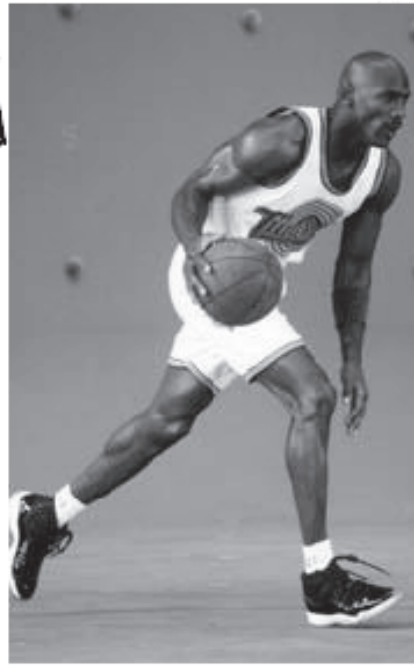
Finally, add all fine detail, shading, costuming and accessories.



The final should not be a literal rendering. But a stylization adaptable to animation

Ahhh, But there's more to life drawing than scantily clad babes! How about a male 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.
(the basketball)

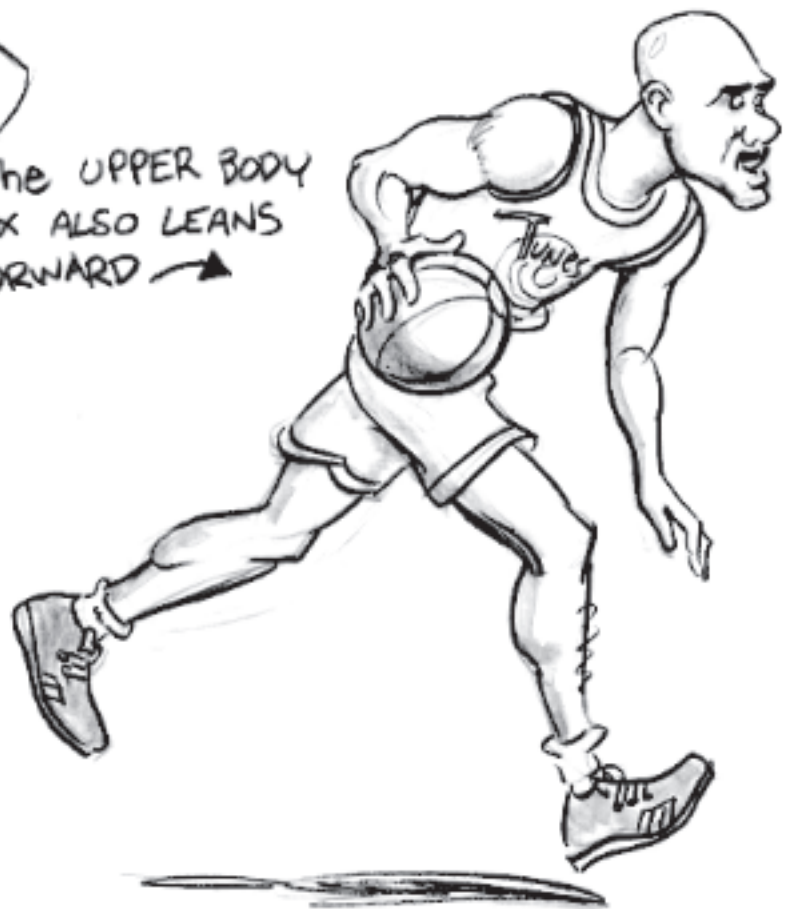


YOU MUST LEARN TO SEE THROUGH the obstructions WITH YOUR "MIND'S EYE" to the Basic shapes of the figure

The pelvic CYLINDER IS ANGLED FORWARD



The UPPER BODY BOX ALSO LEANS FORWARD →



CONSTRUCT THE ENTIRE FIGURE USING BASIC SHAPES.

THEN, USING THAT AS A FRAMEWORK, BUILD ON THE REST OF THE DETAILS.

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.



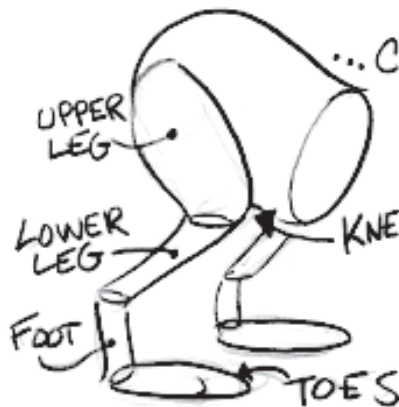
If you have a VCR or VIDEO DISK PLAYER WITH A FREEZE-FRAME, TRY ANIMATING A SELECTED SEQUENCE BY PICKING OUT THE "KEY FRAMES" YOU WILL USE AS EXTREMES, AND SKETCHING THEM IN SCALE. THEN SIMPLY IN-BETWEEN THE POSES... YOU SHOULD HAVE AN ANIMATED RE-CREATION.

The 4 Legged CHARACTER

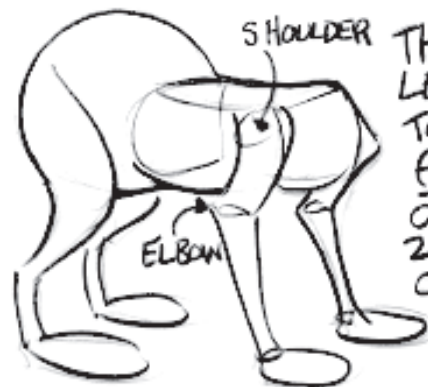
If you've gotten a good handle on human construction, then it's time to try drawing animals!



Let's take Flour sack AND TURN him forward...



...CONNECT TO THE PELVIC BALL. THEY RELATE TO THE LEGS OF THE 2 LEGGED CHARACTER AS SHOWN.

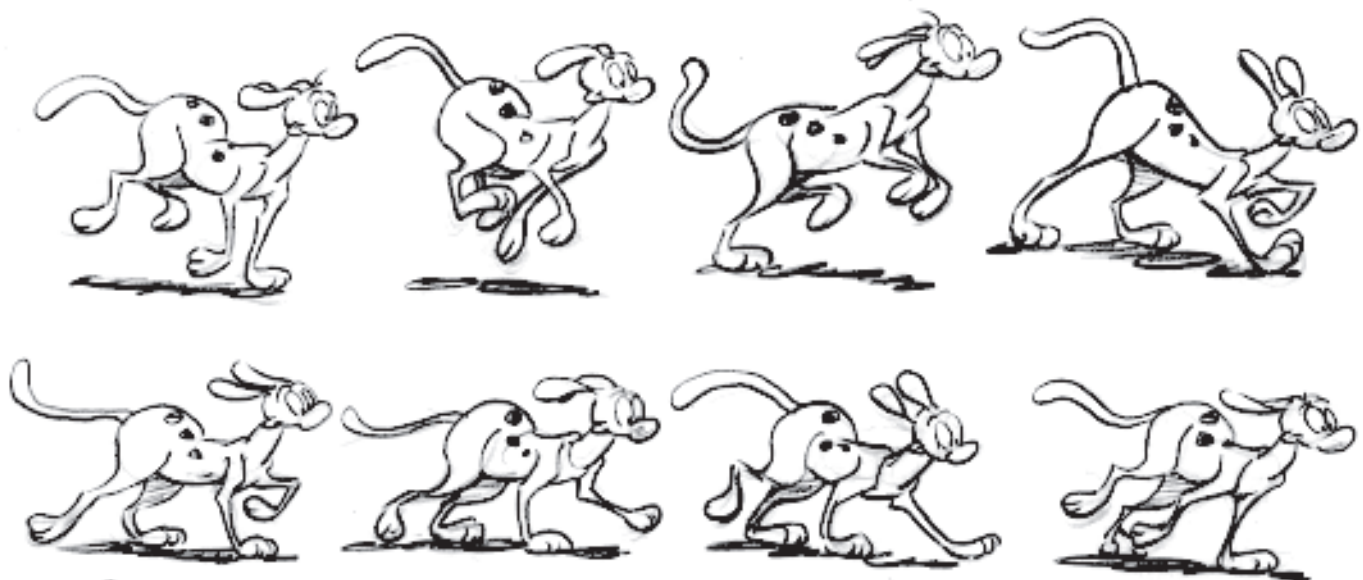
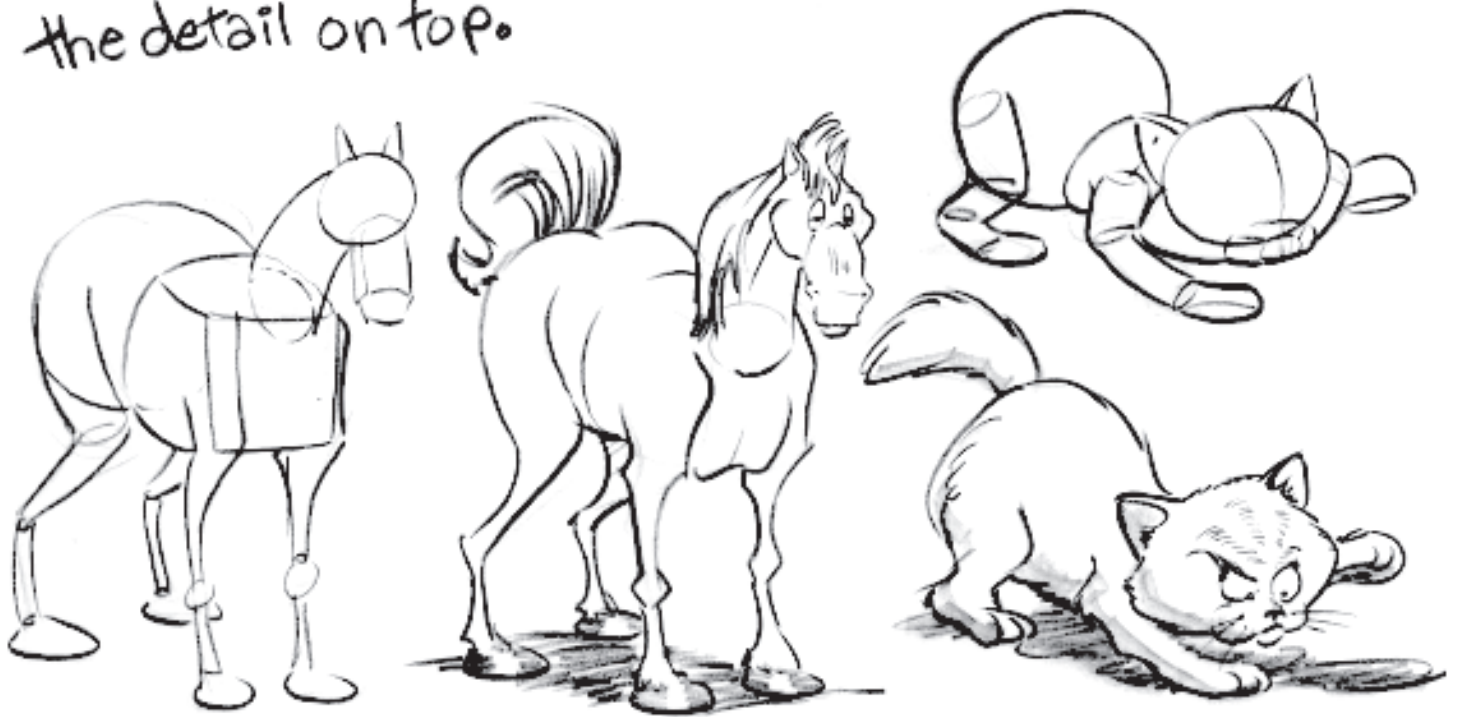


THE FRONT LEGS RELATE TO THE ARMS OF THE 2 LEGGED CHARACTER




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.



So As you set sail into the sea of animation, just remember...there are zillions 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 its like to be..

