

SIMPLIFIED DRAWING FOR
PLANNING ANIMATION



By Wayne Gilbert

For information on upcoming animation training workbooks and seminars, visit:

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Simplified Drawing for Planning Animation

Whether you are a professional animator, a computer artist, or just a hobbyist, this workbook is the fastest way to plan your animation with simple, informative sketches.

- 1) DRAWING YOUR CHARACTER
 - a) SKETCHING HEAD & NECK
 - b) SKETCHING TORSO AND LIMBS
- 2) DRAWING HUMAN ANATOMY
 - a) CARTOONED OR CALCULATED HUMAN ANATOMY
- 3) DRAWING SHAPES AND PERSPECTIVE
 - a) DRAWING LIPS

My heartfelt thanks and respect go to my special teachers,
Jim Macaulay, Zach Schwartz, Louis Krawagna,
and Charlie Bonifacio.

Simplified Drawing for Planning Animation:

Whatever medium you animate in, computer, pencil and paper, stop motion or cut outs, the fastest way to plan your animation is with simple, informative sketches.

- 3) a) **POSING YOUR CHARACTER**
 b) **PLANNING ANIMATION**

- 2) a) **SIMPLIFIED HUMAN ANATOMY**
 b) **CARTOONED OR CARICATURED HUMAN ANATOMY**

- 1) a) **GEOMETRIC SHAPES AND PERSPECTIVE**
 b) **WARM UPS**

As you see, the sections are not in the usual order. You should study them in sequence of 1 - 2 - 3, but you are probably all fired up and ready to draw characters and learn about planning animation and will skip to the fun part anyway. Read through the information as it is. After you have familiarized yourself with all of the information begin with the warm ups, learn how to draw geometric shapes in perspective, commit to knowledge, the body's simplified shapes and their relationships to one another and then draw characters and plan animation.

Picture in your head what you are about to draw.

Think about the content in your drawing, not the drawing itself. When you know the content it is much easier to do the drawing. The detail in the drawing is not as important as the **ACTION/ACTING** information. Learn to simplify what you draw so that you can focus on communicating the idea behind the drawing and the idea behind the animation.

Clear, informative thumbnail sketches are essential to planning a drawing or planning an animated scene. Simplified Drawing for Planning Animation is focused on helping you to achieve just that — clear, simple and powerfully informative drawing.

Chapter 3

- a) POSING YOUR CHARACTER
- b) PLANNING ANIMATION

When animating, always know the reason behind a character's movements. By showing the reason behind the way a character moves, you are showing the personality, emotion and the result of what the character thinks — ACTING. The entire body should reflect the emotion and psychology of the character.

Research, Research, Research, Research....

Analyze your reference, don't just look at it. Get up and act it out and record it on video tape if possible. Thumbnail your attitudes and actions. Look for the best and most entertaining way to deliver your drawings and animation.

"Spend half of your time planning your scene and the other half animating it."

Frank Thomas and Ollie Johnson authors of *The Illusion of Life*.

Simplified Drawing For Planning Animation is an approach to short-hand drawing that will make planning your animation easier and in turn can make animating much easier.

Mastering the skills of drawing is a life long adventure. Although this information has been simplified and is focused on drawing for planning animation, it will enhance your drawing skills for Figure Drawing, Comic Art and Illustration. You can only simplify what you thoroughly know.

The best way to learn is to translate information into your own drawings and words. Start a collection of books, notes on animation, samples of drawings and video tapes, get a sketch book and begin to translate the important information into your own drawings and words. Create your personal book of prioritized information.

Remember, read through the information as it is. After you have familiarized yourself with all of the information begin with the warm ups, learn how to draw geometric shapes in perspective, commit to knowledge, the body's simplified shapes and their relationships to one another and then draw characters and plan animation.

• DESIGN THE ESSENCE OF THE CHARACTER

START WITH 3 LINES - 2 SIDES, SHOULDERS AND A HEAD SHAPE. ALTER THESE LINES AND MAKE SMALL CHANGES TO THE DESIGN UNTIL YOU HAVE THE CHARACTER THAT YOU WANT.

EXPERIMENT WITH THE VISUAL IMPACT OF SIMPLICITY

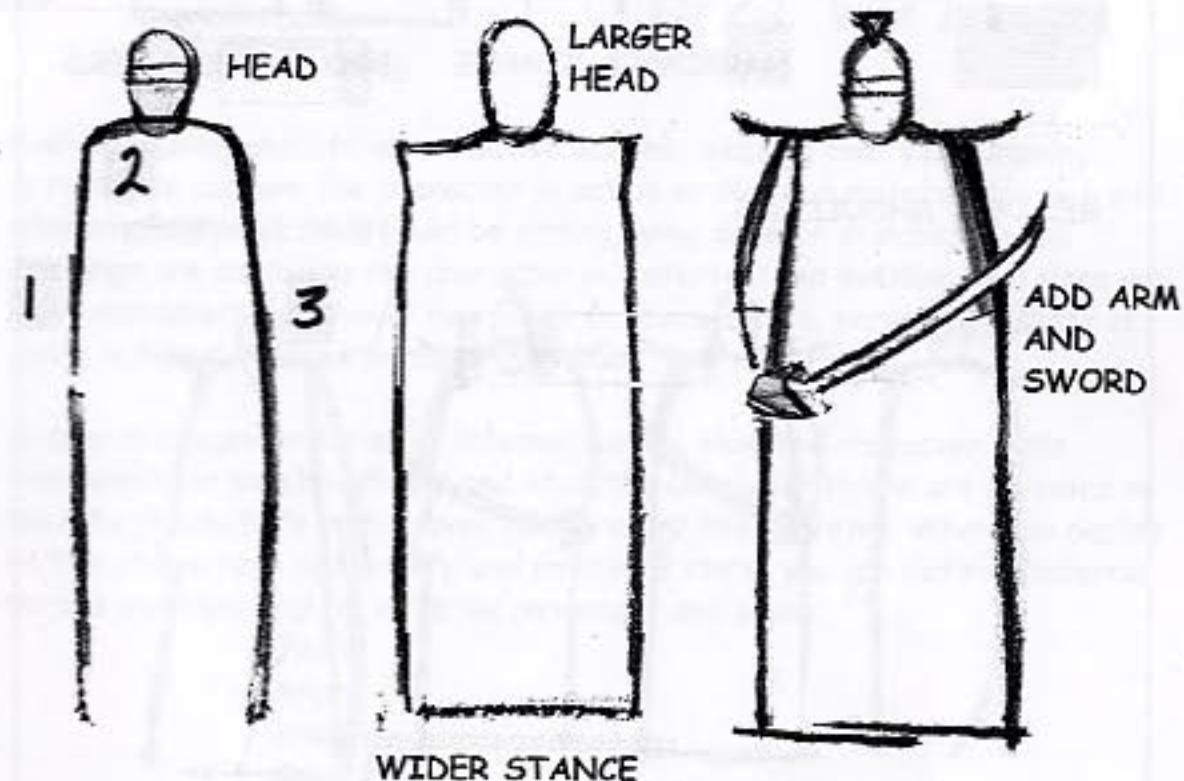
USE DULL SOFT LEAD OR GREASE OR GREASE PENCILS.

DETAILS WILL COME MUCH LATER. THE STRENGTH OF YOUR DRAWINGS COMES BEFORE DETAILS.

ROUNDED SHOULDERS

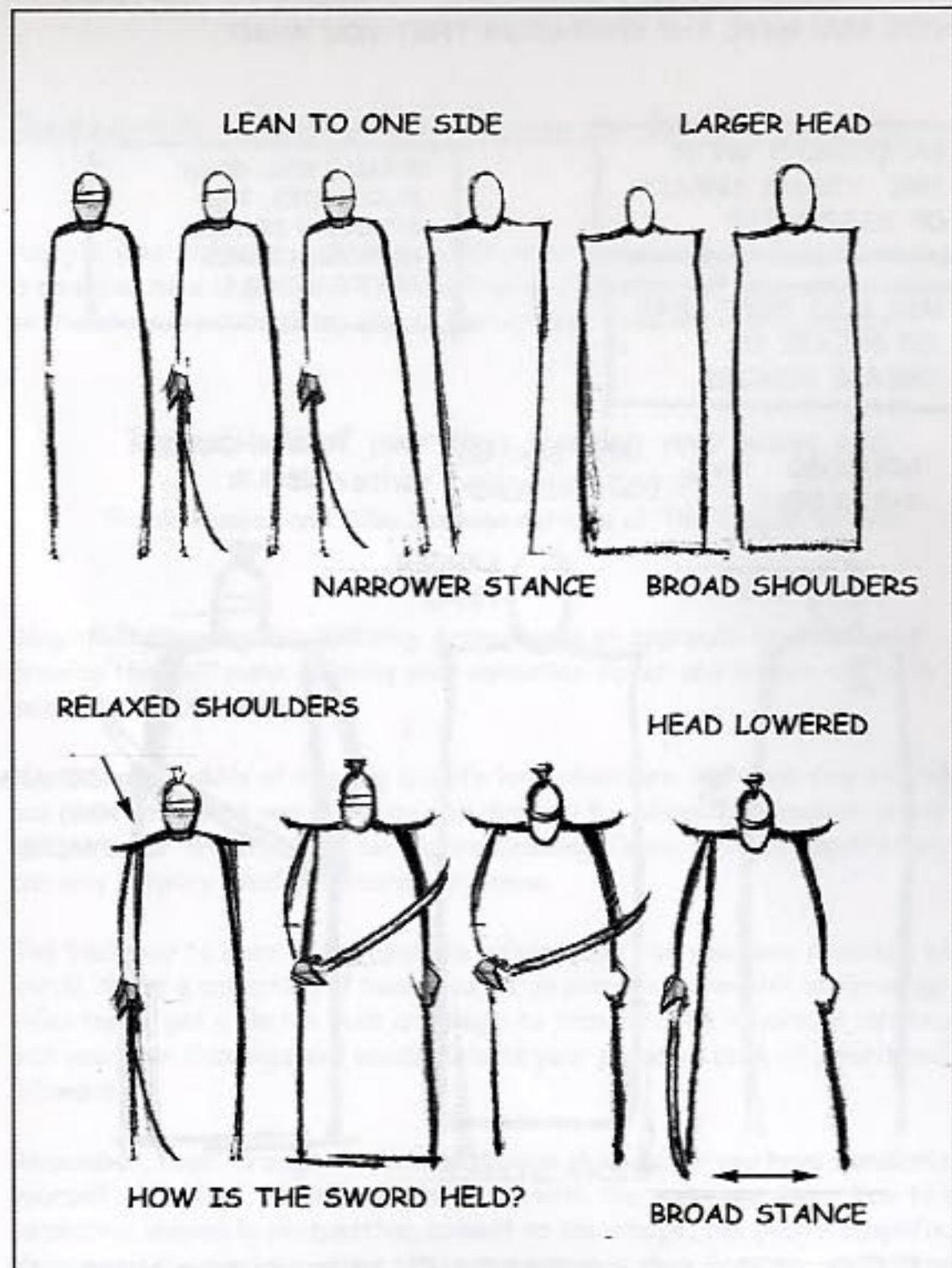
ADD SQUARE SHOULDERS

ADD SHOULDER ARMOUR



KEEP IT AS SIMPLE AS POSSIBLE

DESIGN THE ESSENCE OF THE CHARACTER



What makes a good pose?

A good pose is one that clearly describes the action and acting that you wish to convey. That pose must describe the forces that have influence over the character.

The term "force" is emphasized in animation because without a force there will be no movement. It is equally important to show force in individual drawings and computer generated images.

Two areas of force for you to describe in your work are ACTION and ACTING. Action is an external force. Action is possibly the easiest to show in your drawings and animation. We see action. It is something that the character does.

- Pulling
- Pushing
- Lifting
- Sitting
- Lying
- Standing

Pushing, pulling and lifting are active actions, meaning that your drawing is trying to capture the character in action or during a movement or in a mid position. Passive actions could be sitting, lying down or standing. These drawings are capturing the character in a start or end position that does not imply movement but should represent emotional state, personality, state of mind, — how does the character sit, stand, lean or lie down.

Acting is a representation of internal forces. How the character feels emotionally or psychologically and what the character thinks are revealed in how the character's body moves to represent these states. When you decide on the character's personality and emotional state, you are defining internal forces and they dictate external movement and poses.

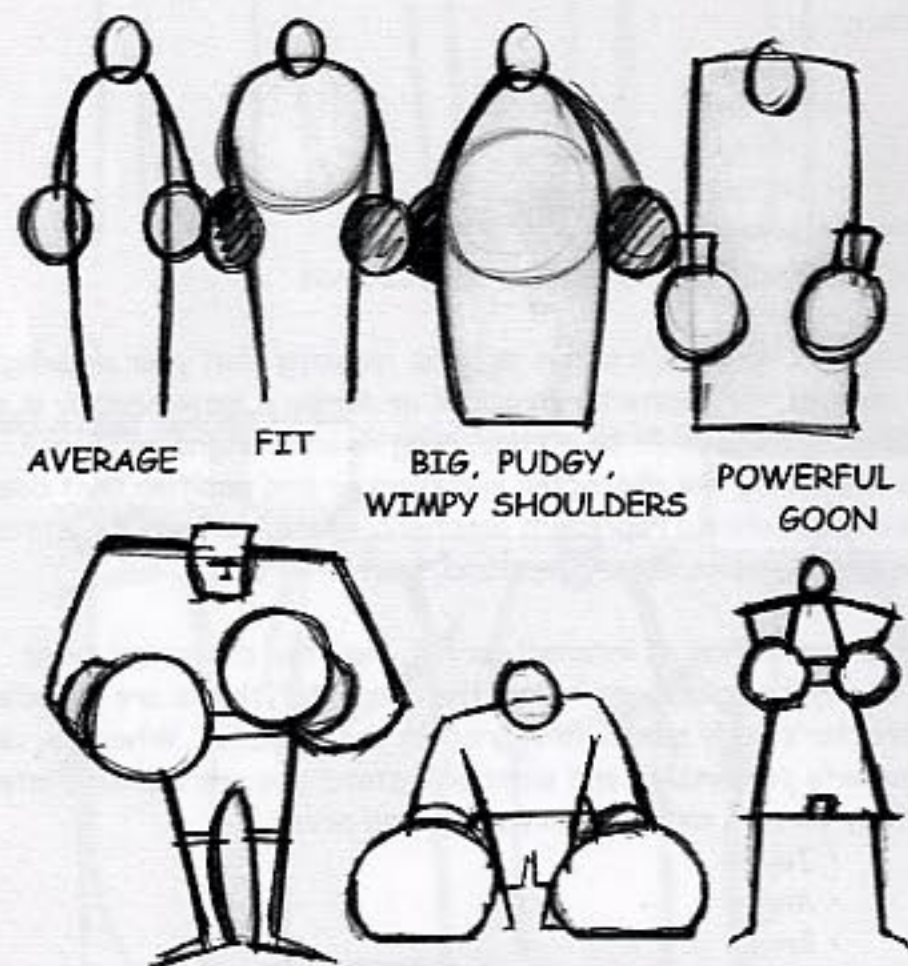
- Joyful
- Angry
- Brave
- Cowardly
- Energetic
- Lazy

Internal and external forces dictate a character's posture and movements.

Posing your character before planning your animation.

Let's say that you are going to animate a short film about boxing. First do as much research as you can. Look through books, watch video tapes of boxing matches even cartoons of boxing. Go to a boxing match if you can and take your camera, video camera and sketch book. (use them) Go start a fight — no wait — let that one go.

Do a series of design sketches in search of creating the 'character' or personality that you will animate. Start with the previous exercise of design, using only the simplest of lines and shapes to describe the character type that you will animate.

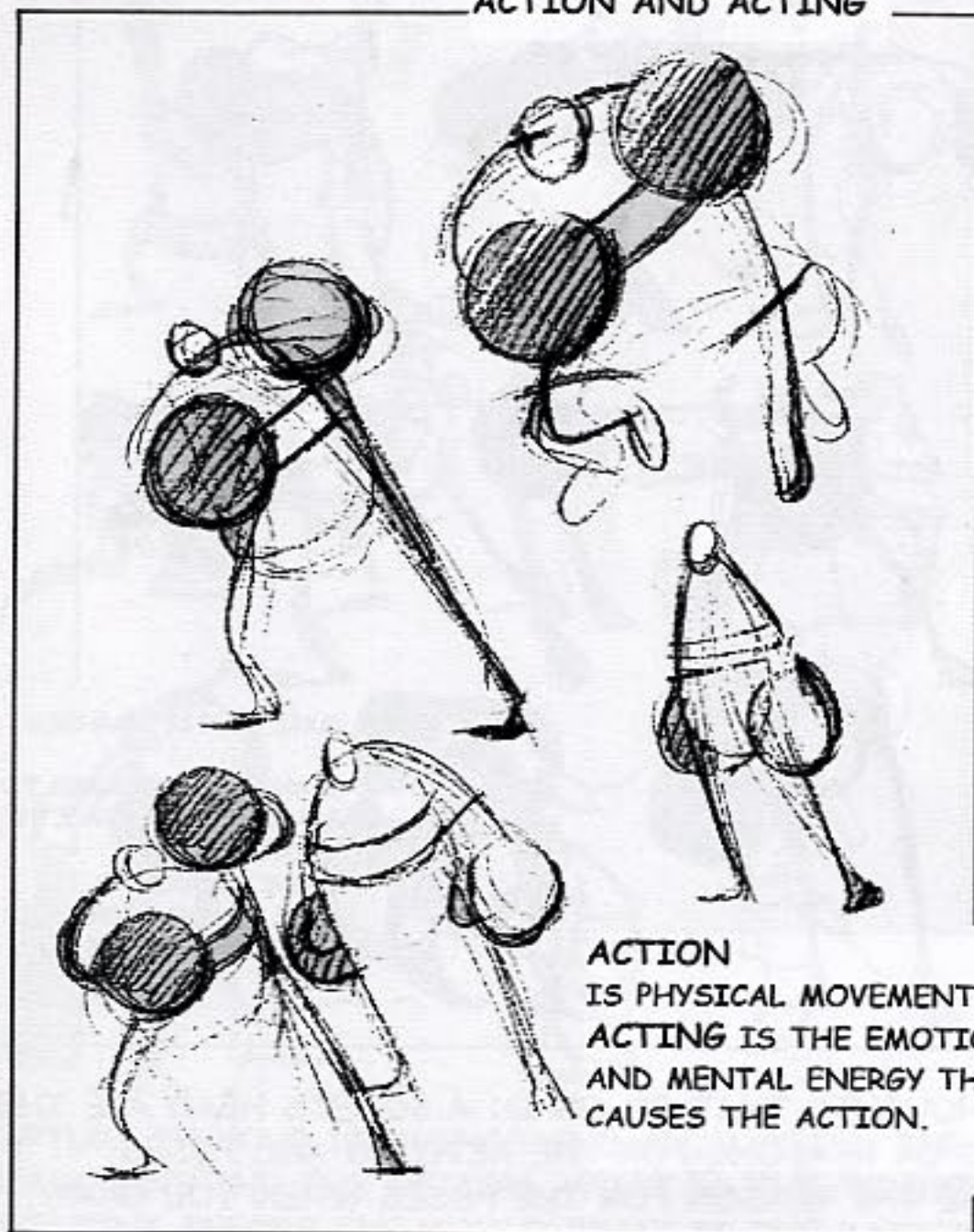


DO 2 OR 3 PAGES OF THIS TYPE OF SIMPLE DESIGN SKETCHES FOR BASEBALL, GOLF, HOCKEY, BASKETBALL...

POSING

YOUR POSES MUST CONTAIN BOTH

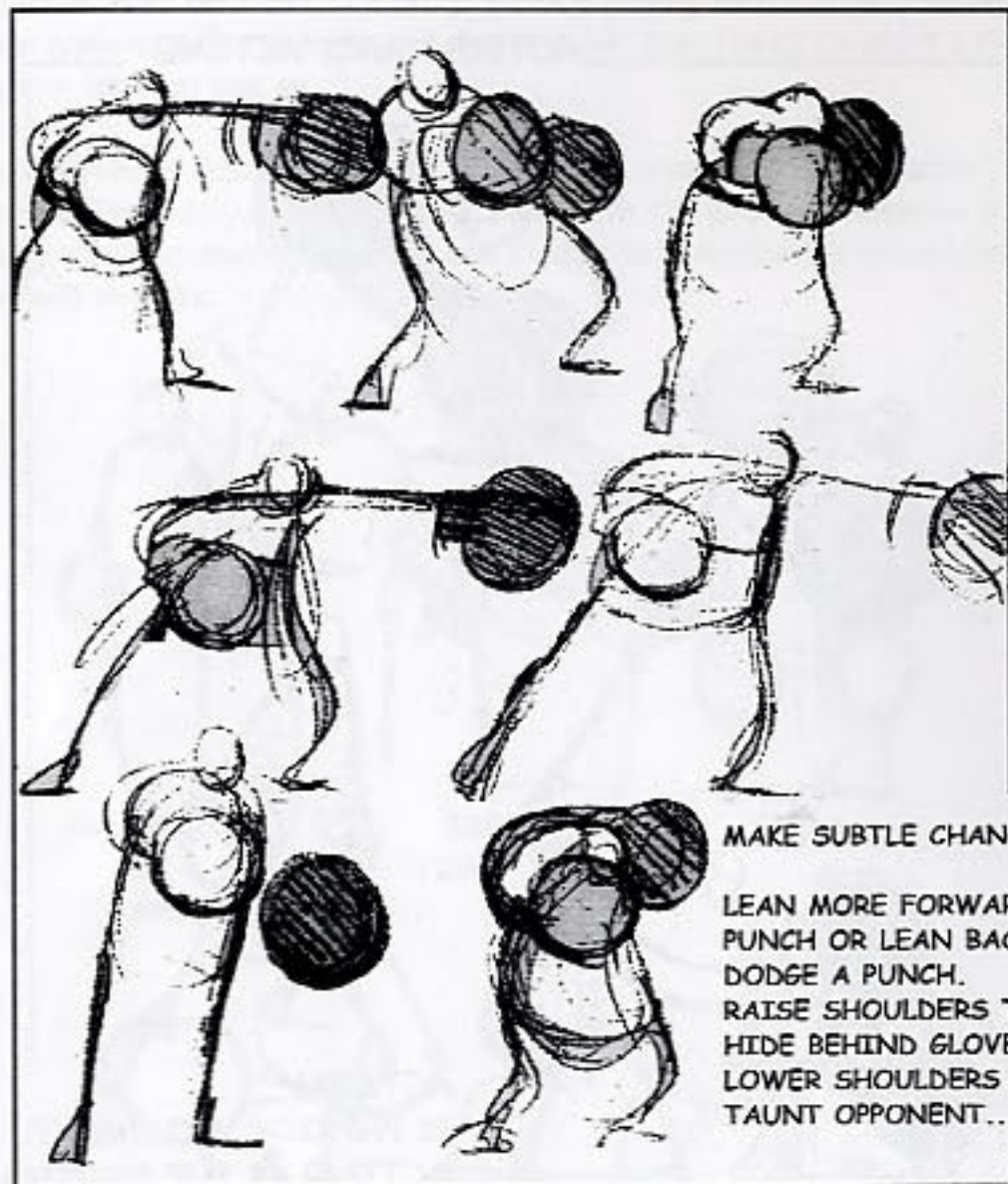
ACTION AND ACTING



ACTION IS PHYSICAL MOVEMENT. ACTING IS THE EMOTIONAL AND MENTAL ENERGY THAT CAUSES THE ACTION.

POSING

DRAW POSES TO SHOW AS MUCH ACTING AND AS MANY ACTIONS AS YOU CAN IN 1 HOUR.



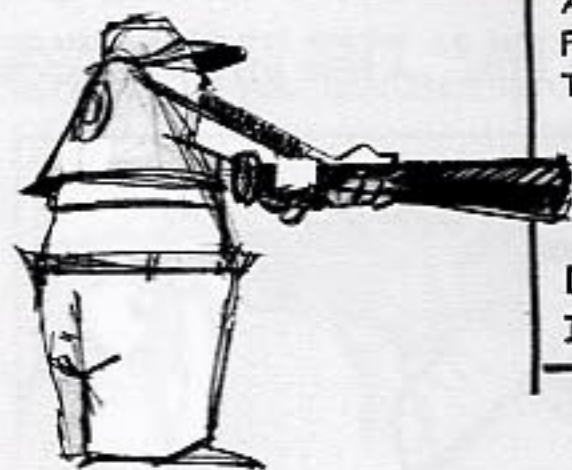
THE THOUGHTS THAT GO ON IN A BOXER'S HEAD ARE THE FORCES OR REASONS FOR THE ACTIONS AND POSES. CAPTURE THE REASON FOR THE POSES WHEN YOU DRAW.

POSING

CHOOSE ANY SPORT OR BETTER STILL...A FEW DIFFERENT SPORTS.



CAPTURE IN YOUR DRAWINGS AND ANIMATION, THE REASON BEHIND THE ACTION. WHAT IS THE PITCHER THINKING BEFORE THE PITCH? WHAT IS THE BATTER THINKING BEFORE THE PITCH? LET THESE THOUGHTS CREATE THE POSES.



ADDED DETAILS MUST FOLLOW THE CONTOURS OF THE BODY.

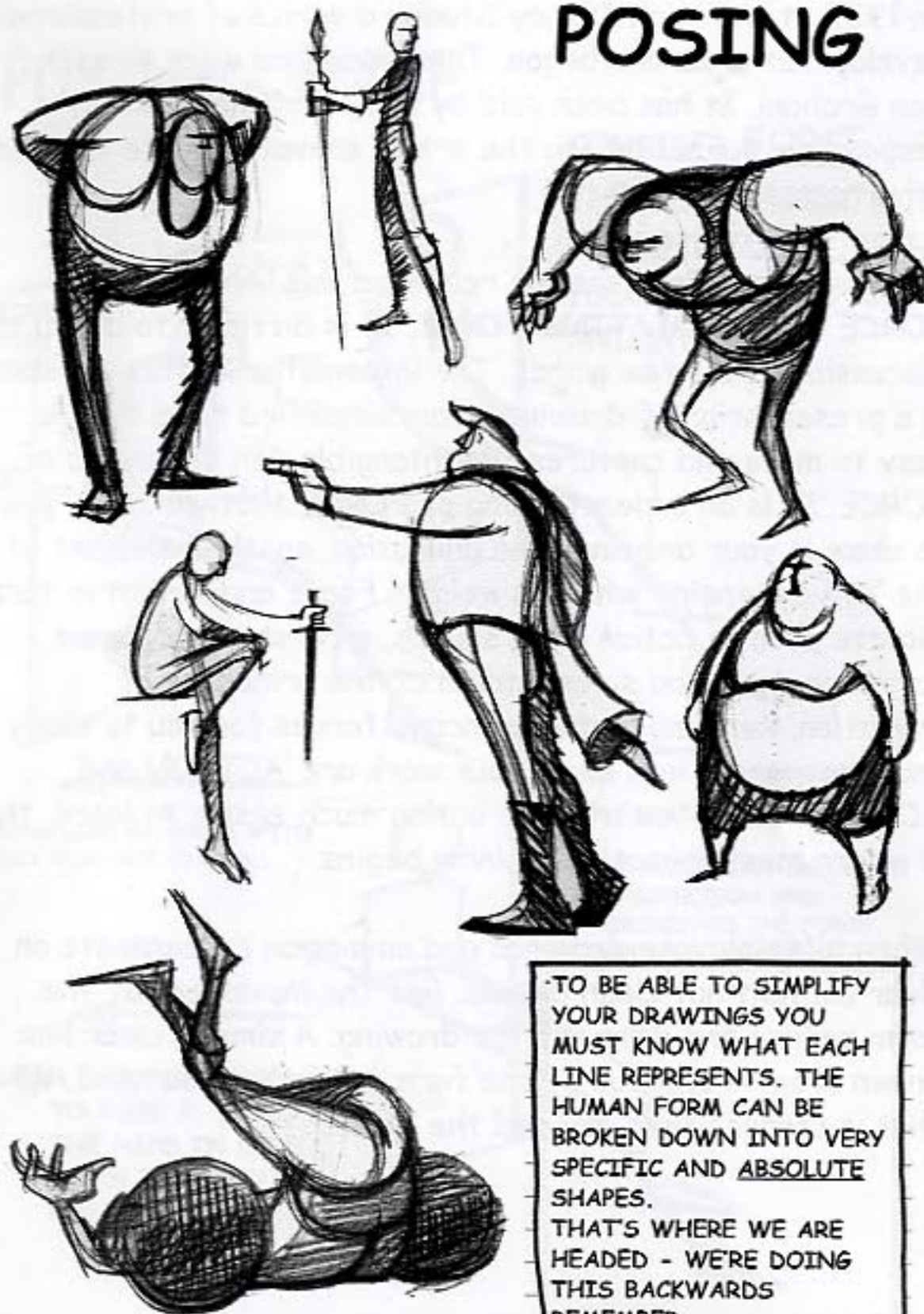
GEOMETRIC SHAPES ARE THE FIRST THINGS YOU SHOULD LEARN TO DRAW IF YOU WANT TO IMPROVE QUICKLY.

THE BODY CAN BE BROKEN DOWN INTO A FEW VERY SIMPLE GEOMETRIC SHAPES. THESE SHAPES ARE CONNECTED TO ONE ANOTHER TO ALLOW MOVEMENT. POSTURE IS CREATED BY THE ALIGNMENT OF THESE SHAPES. FROM POSTURE WE GET ATTITUDE - THE INNER ESSENCE OF THE CHARACTER



SUBTLE RE-ALIGNMENT OF THESE BODY PARTS CAN DRASTICALLY CHANGE YOUR CHARACTER'S VISUAL ATTITUDE.

POSING



TO BE ABLE TO SIMPLIFY YOUR DRAWINGS YOU MUST KNOW WHAT EACH LINE REPRESENTS. THE HUMAN FORM CAN BE BROKEN DOWN INTO VERY SPECIFIC AND ABSOLUTE SHAPES. THAT'S WHERE WE ARE HEADED - WE'RE DOING THIS BACKWARDS REMEMBER.

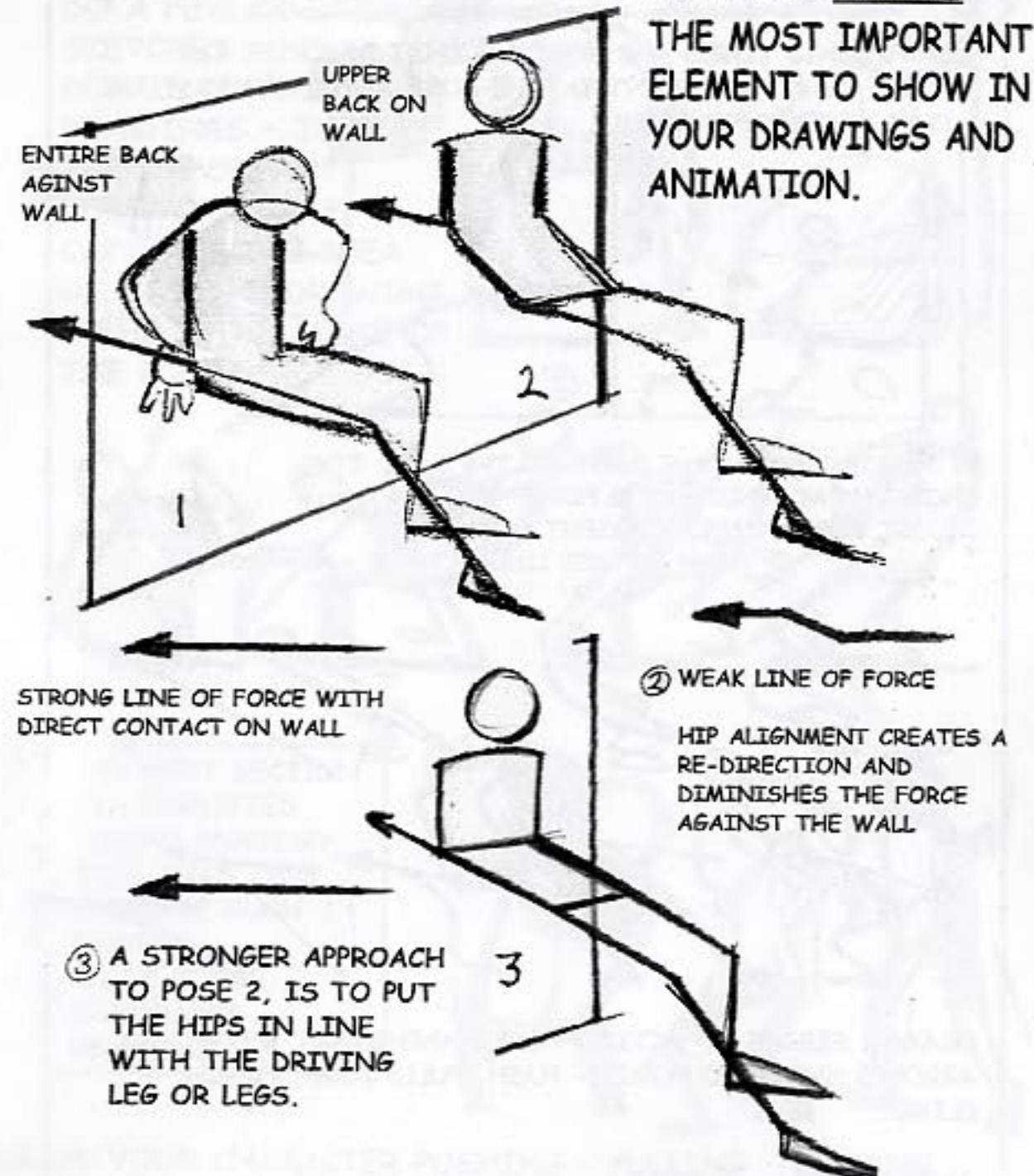
In 1937 at the Walt Disney Studio, a series of professional development sessions began. These sessions were head by Don Graham. It has been said by many that he was responsible for advancing the art of animation more than any other person.

The most important session recorded was 'ANIMATING FORCE vs. ANIMATING FORM'. It is difficult to distill the discussion into a few words. The information in this workbook is a presentation of drawing clear, simplified form that is easy to move and captures the intangible 4th dimension of FORCE. It is an understanding of FORCE that will allow you to show in your drawings and animation, another element of the '4th dimension' which is weight. Force and weight in turn dictate path of action arcs, squash, stretch and delayed action or drag, and so on into all of the principles of animation. Remember, two principle forces for you to study and incorporate into all of your work are 'ACTION and ACTING'. Since you will find action much easier to learn, that is where most animation training begins.

When planning your drawings and animation concentrate on clear content not clean details. Get the movement of the form before the detail of the drawing. A simple, clear line drawn from knowledge of the form is all that you need. When that is correct then you add the detail.

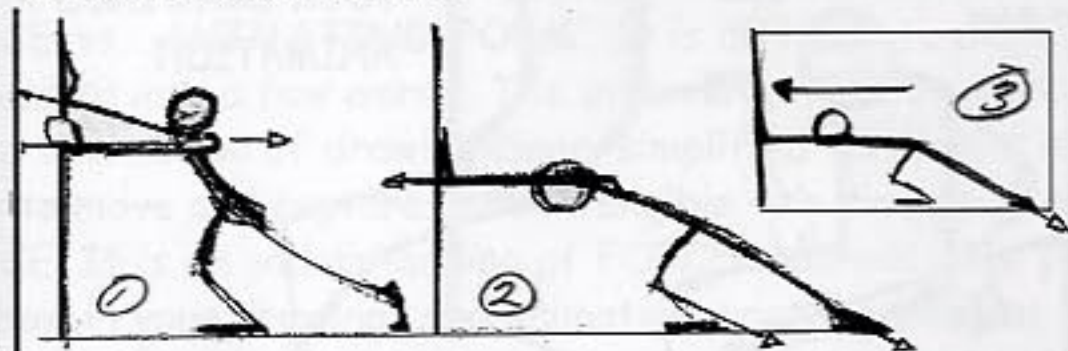
POSING - FORCE

CONSIDER FORCE THE MOST IMPORTANT ELEMENT TO SHOW IN YOUR DRAWINGS AND ANIMATION.



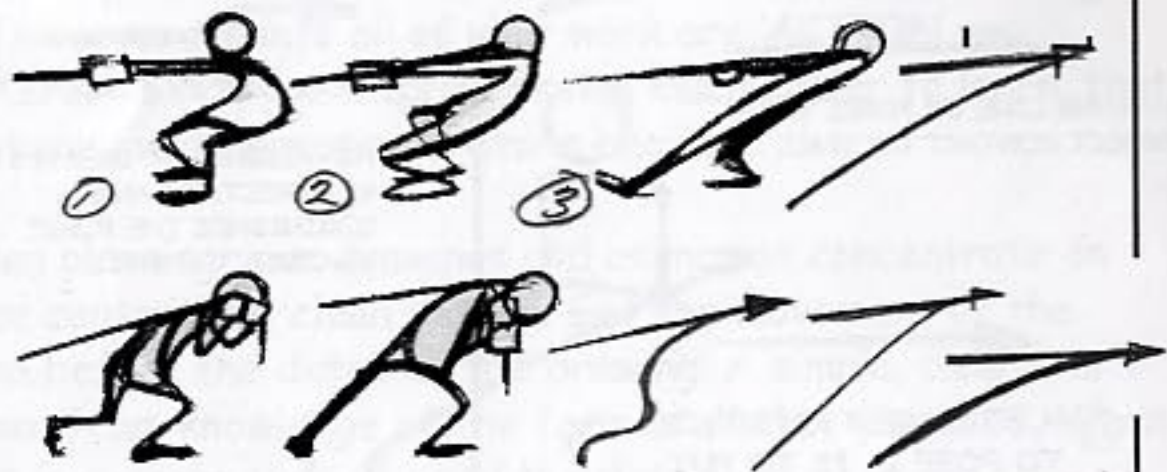


DRAW ONLY LINES AND ARROWS THAT DESCRIBE THE FORCE THAT YOU WANT IN THE POSE AND THEN POSE THE CHARACTER INTO THEM.



BY PUTTING A CONCAVE CURVE TO THE BACK, IT SHOWS WEAK, UNDIRECTED FORCE - OR THE OBJECT BEING PUSHED IS LIGHT.

② MORE FOCUSED LINE OF FORCE - MORE POWER



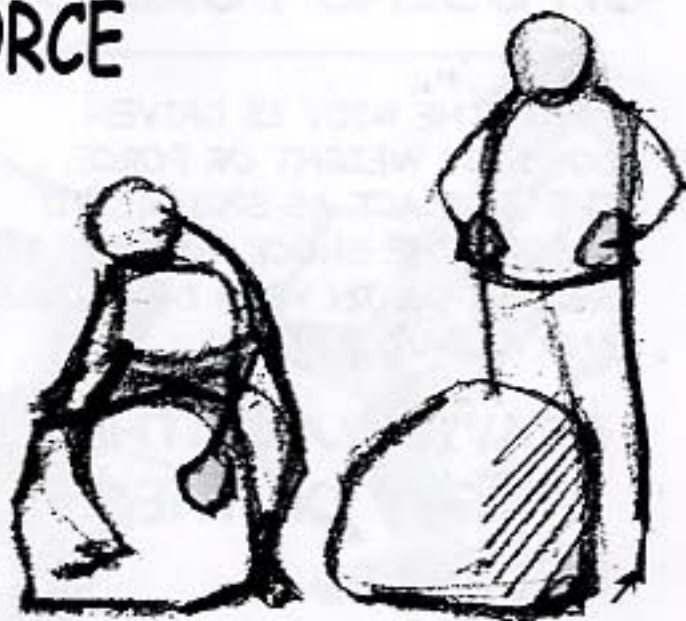
DRAW A SERIES OF ACTION POSES AND START WITH ONLY ARROWS SHOWING FORCE - PUSH, PULL, JUMP, PUNCH, CLIMB...

ANIMATION CAN BE PLANNED FROM THESE SIMPLE CLEAR LINES.

POSING - FORCE

EXERCISE:

DO A FEW PAGES OF SKETCHES - NO DETAIL IN YOUR DRAWINGS - JUST THE IMPORTANT LINEWORK THAT CAPTURES THE IDEA BEHIND THE DRAWING - SHOW THE FORCE OF THE POSE.



THE NEXT SECTION ON SIMPLIFIED HUMAN ANATOMY WILL MAKE THIS EXERCISE MUCH EASIER. WE'RE GOING BACKWARDS REMEMBER

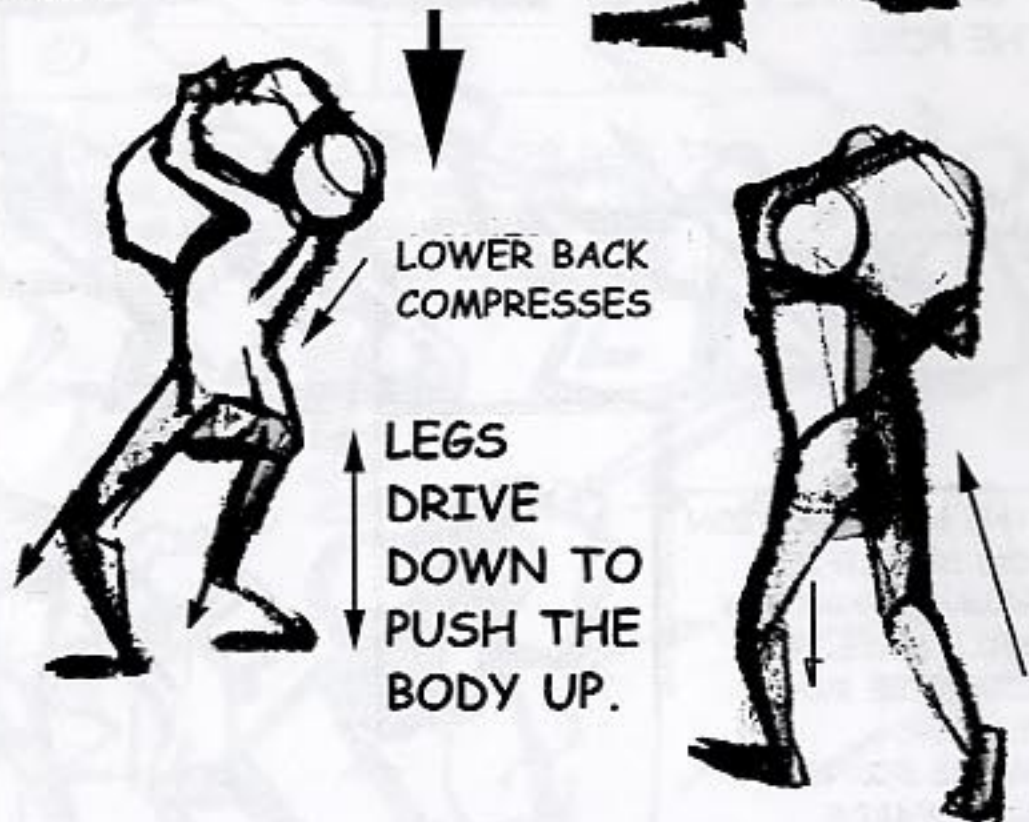


DRAW YOUR CHARACTER PUSHING - PULLING - LIFTING - CLIMBING OR JUST PICK A SPORT AND START DRAWING. BE SURE TO RESEARCH WHAT YOU DRAW.

OPPOSING FORCES

←————→
WHEN THE BODY IS DRIVEN DOWN BY WEIGHT OR FORCE, THE LEGS ACT AS SPRINGS TO ABSORB THE SHOCK - STRIVE TO SHOW THIS IN YOUR DRAWINGS AND ANIMATION.

GRAVITY AND THE WEIGHT OF THE ROCK

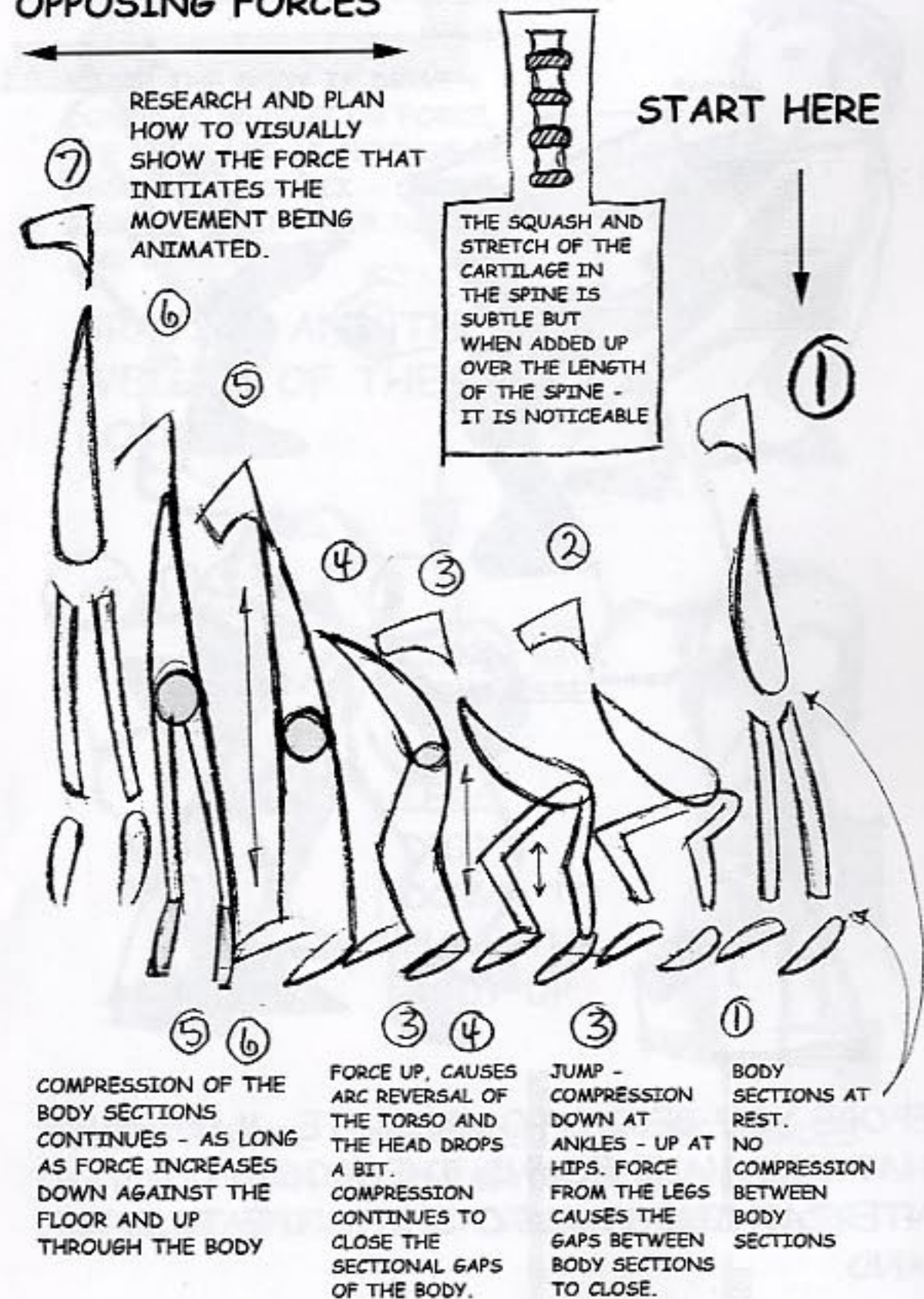


TAKE THE TIME TO UNDERSTAND THE FORCES THAT YOU PLAN TO ANIMATE. PLAN YOUR SIMPLE DRAWINGS WITH ARROWS OF FORCE.



BEFORE YOU BEGIN TO ANIMATE, MAKE SURE THAT YOU HAVE FOUND THE MOST ENTERTAINING WAY TO SHOW THE TASK AT HAND.

OPPOSING FORCES

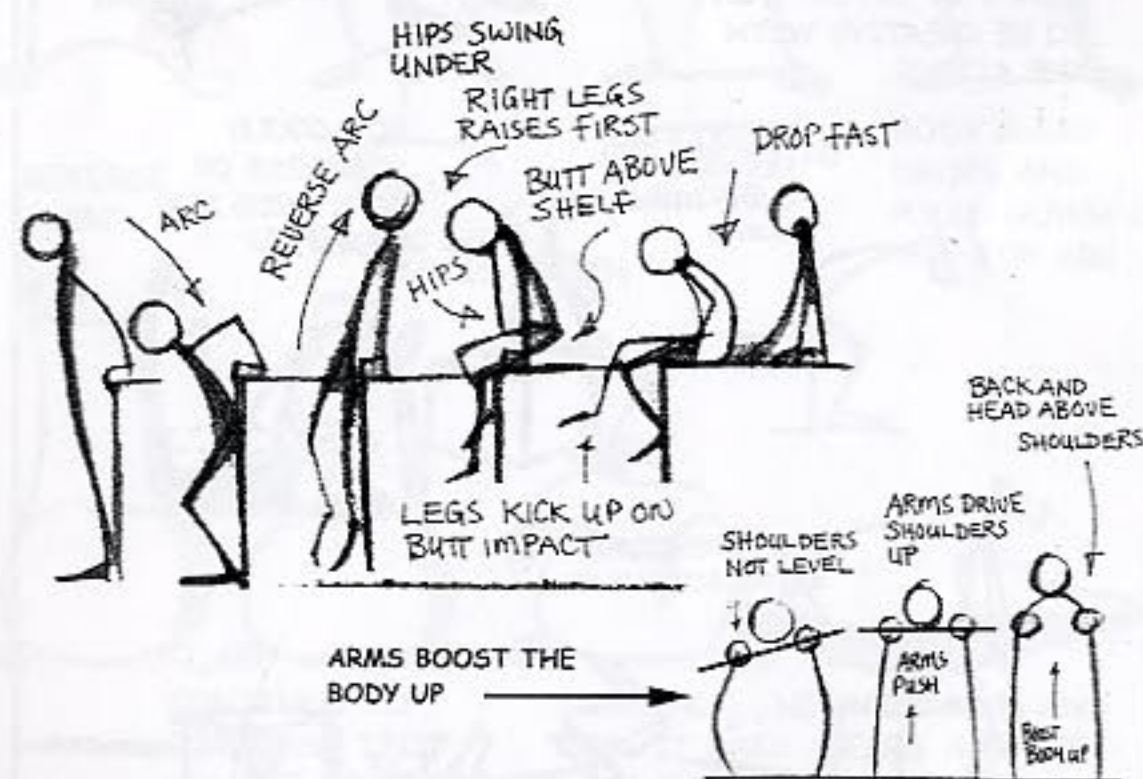


PLANNING WHAT TO ANIMATE



KNOW WHAT YOU ARE GOING TO DRAW BEFORE YOU START DRAWING. KNOW WHAT YOU ARE GOING TO ANIMATE BEFORE YOU BEGIN TO ANIMATE.

YOU WILL LEARN MORE ABOUT ANIMATING DURING THE PLANNING OF SCENES THAN YOU WILL ANIMATING BY TRIAL AND ERROR.



THUMBNAIL YOUR ANIMATION WITH SIMPLE AND PRECISE INFORMATION - SKETCHES

PLANNING WHAT TO ANIMATE

WITH HIS BACK TO THE BOX, HE LOOKS, TAKES 1 OR 2 STEPS BACK AND SITS DOWN.

HERE IS ANOTHER EXAMPLE OF A SEEMINGLY SIMPLE ANIMATION EXERCISE. THE OPTIONS OPEN TO YOU IF YOU DO SOME CREATIVE PLANNING COULD MAKE THIS AN EXTREMELY IMPRESSIVE PORTFOLIO PIECE.

NOT ONLY IS THERE POTENTIAL FOR BROAD AND SUBTLE ACTION ANALYSIS, THERE IS PLENTY OF OPPORTUNITY TO BE CREATIVE WITH THE ACTING.



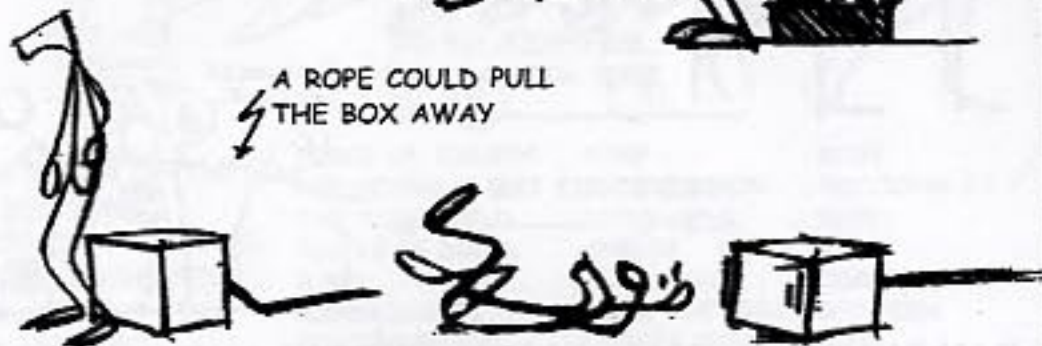
HE COULD USE HIS HAND TO GUIDE HIMSELF DOWN



BOX COULD COMPRESS OR SINK INTO THE FLOOR.



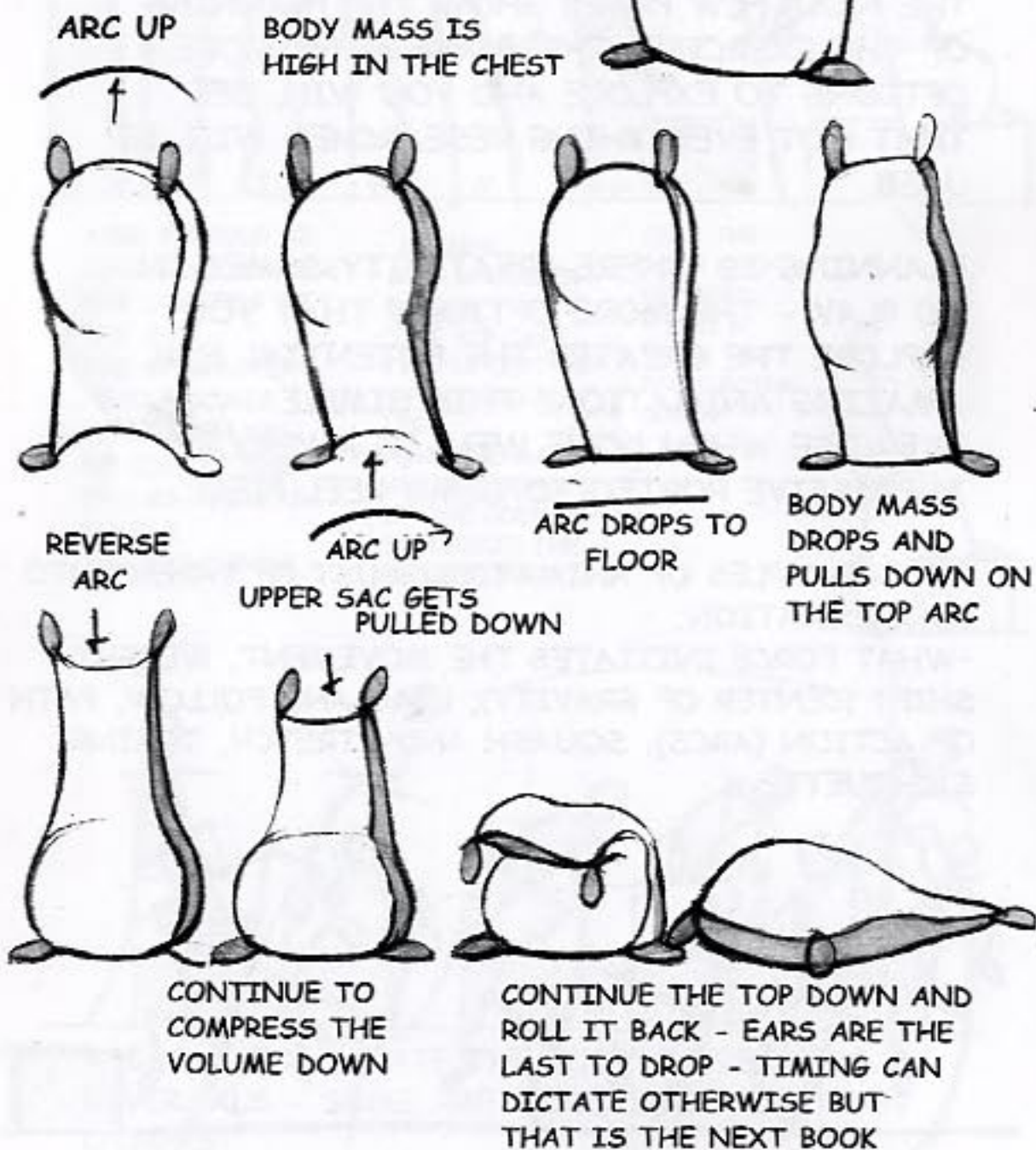
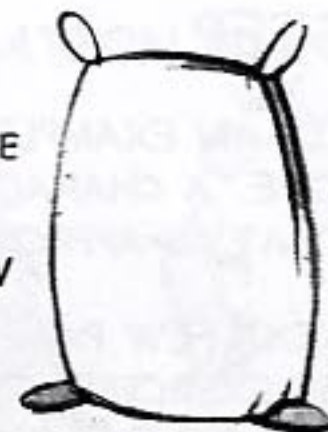
A ROPE COULD PULL THE BOX AWAY



ANIMATION PLANNING

A NEW ANIMATION EXERCISE FOR THE FLOUR SAC:

WEIGHT SHIFT/LEAD AND FOLLOW



BOX STEP

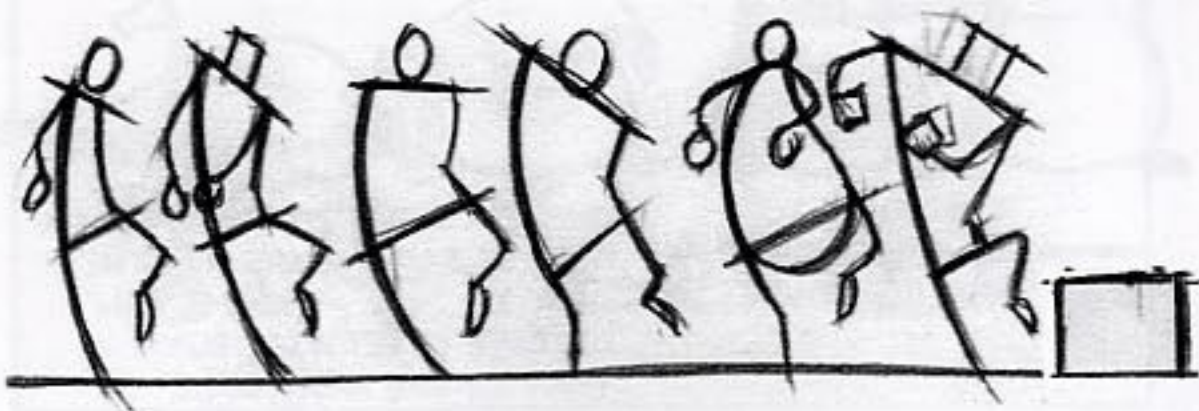
HERE IS AN EXAMPLE OF A SEEMINGLY SIMPLE EXERCISE. A CHARACTER STEPS UP ONTO A BOX THAT IS APPROXIMATELY KNEE HIGH.

THE NEXT FEW PAGES SHOW THE PLANNING OF THE EXERCISE. THERE ARE MANY MORE OPTIONS TO EXPLORE AND YOU WILL SEE THAT NOT EVERYTHING RESEARCHED WILL BE USED.

PLANNING IS WHERE CREATIVITY COMES IN TO PLAY - THE MORE OPTIONS THAT YOU EXPLORE THE GREATER THE POTENTIAL FOR AMAZING ANIMATION. THIS SIMPLE EXERCISE WHEN DONE WELL IS A VERY IMPRESSIVE PORTFOLIO/DEMO REEL PIECE.

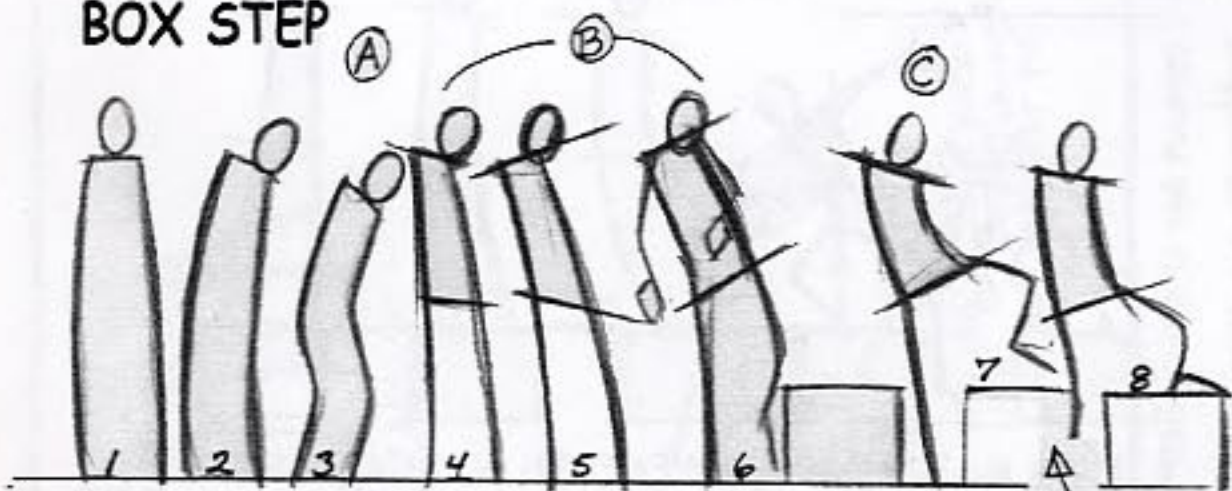
ALL PRINCIPLES OF ANIMATION MUST BE TAKEN INTO CONSIDERATION.

• WHAT FORCE INITIATES THE MOVEMENT, WEIGHT SHIFT (CENTER OF GRAVITY), LEAD AND FOLLOW, PATH OF ACTION (ARCS), SQUASH AND STRETCH, TIMING, SILHOUETTE...



ANIMATION PLANNING

BOX STEP

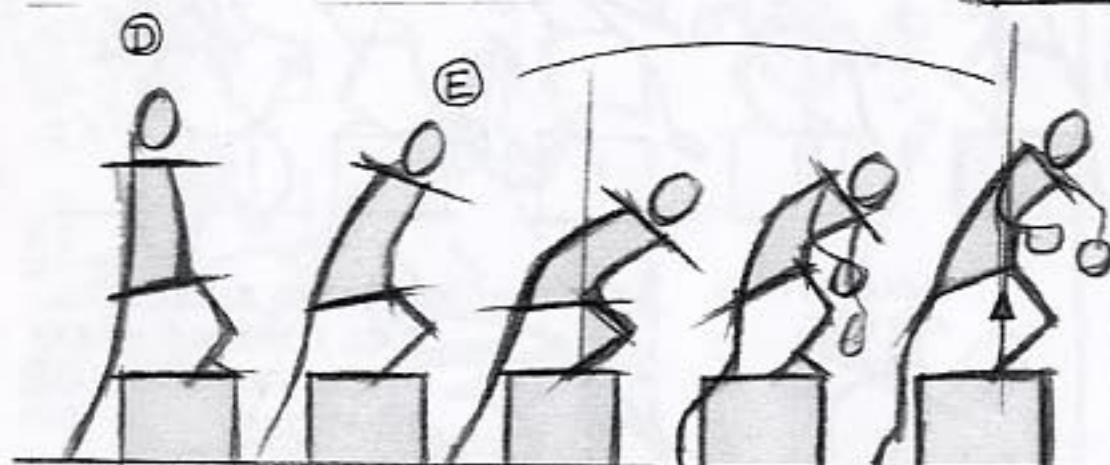


2 OR 3 COULD BE USED AS THE POSE FOR LOOKING AT THE BOX. THE CHARACTER REALLY COMES TO LIFE WHEN WE BELIEVE IT SEES, THINKS, REACTS TO THE SURROUNDINGS.

- STANDS
- LEFT SHOULDER RAISES
- TILT RIB CAGE
- PULL UP LEFT HIP WHICH PULLS UP LEG

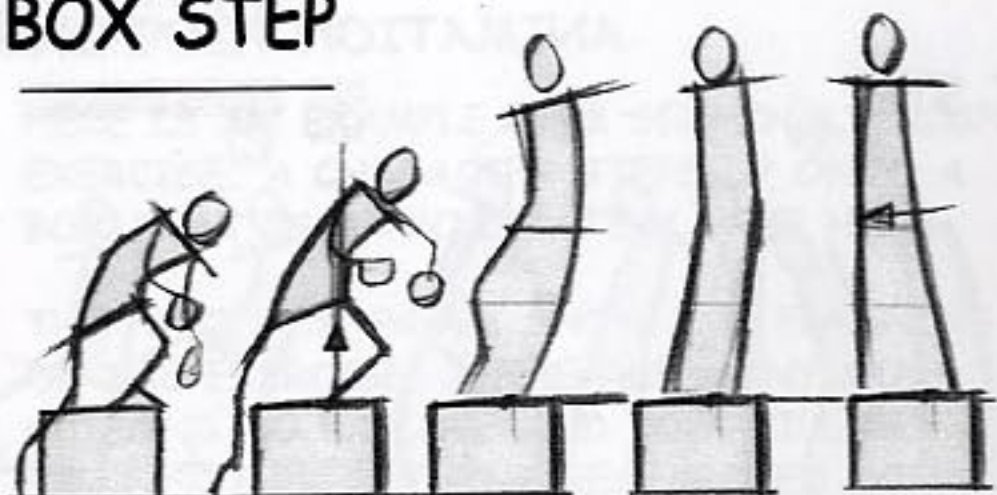
PLAN THE MAJOR ARC REVERSALS OF THE BODY TO EMPHASIZE THE WEIGHT SHIFT

LEAD THE BODY SHIFT BETWEEN 7 AND 8 WITH THE FOOT GOING DOWN



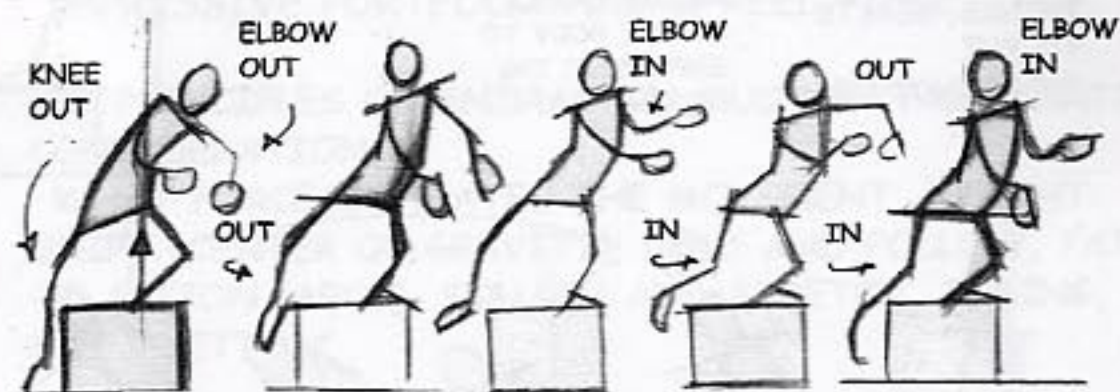
A·B·C·D·E INDICATE THE BODY CURVE / ARC REVERSALS - SOME ARE MORE DRAMATIC THAN OTHERS

BOX STEP

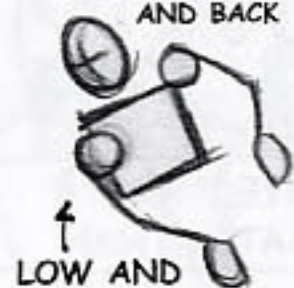


PLAN MAJOR BODY MOVEMENTS SUCH AS WEIGHT SHIFTS FIRST. SHOW ARMS WHEN THEY ARE NEEDED TO SUPPORT THE MOVEMENT OR HELP BALANCE THE POSE. DO NOT OVERLOOK THE PLANNING OF THE ARM MOVEMENTS BEFORE YOU BEGIN TO ANIMATE.

EXPLORE THE MANY OPTIONS FOR EACH PART OF THE ACTION.



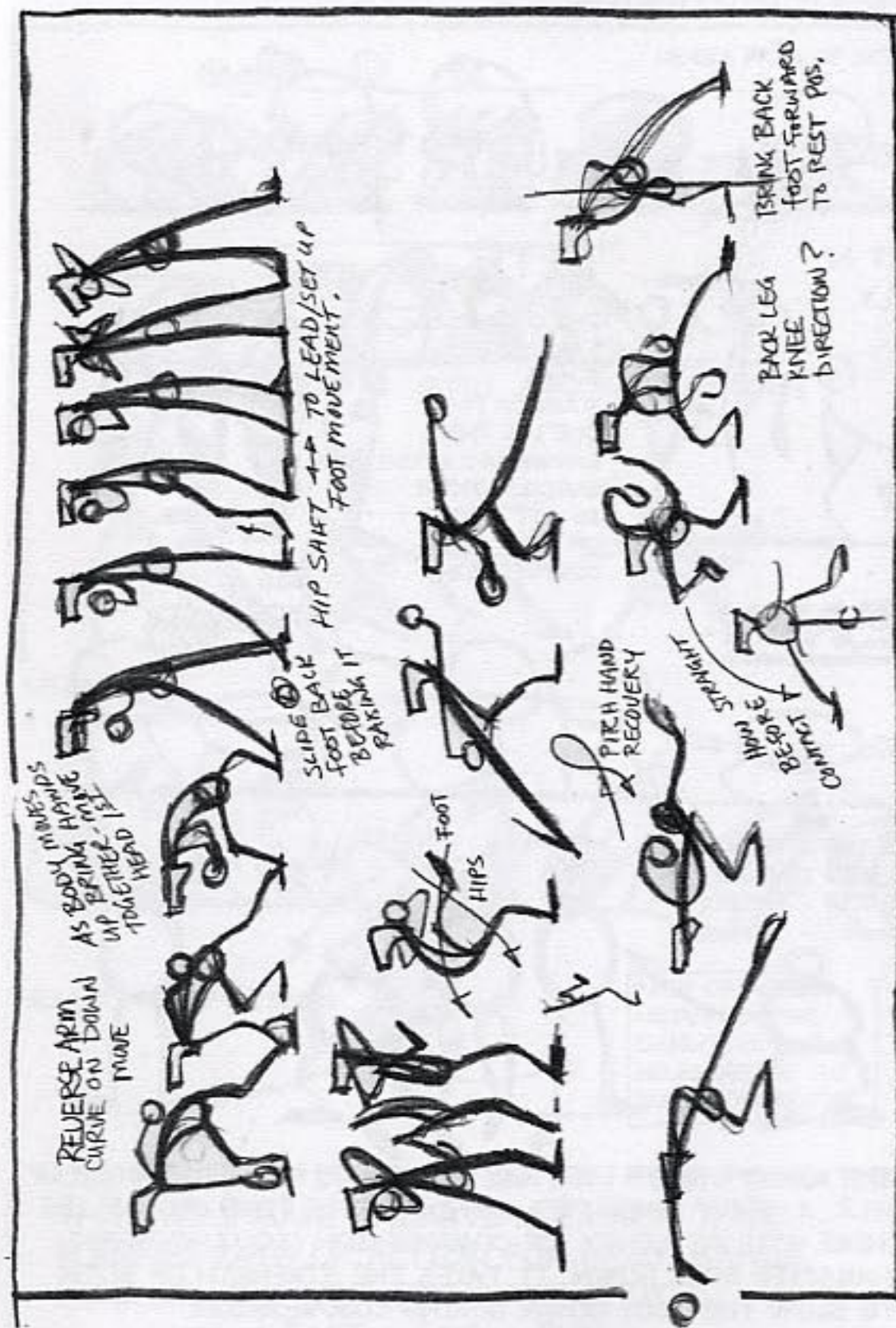
SHOULDER HIGH AND BACK



LOW AND FORWARD



RELAXED SHOULDERS FALL FORWARD WHEN THE CHARACTER LEANS DOWN



THIS IS AN EXAMPLE OF A PLANNING PAGE - SOMETIMES NOTES WILL ONLY MAKE SENSE TO THE PLANNER. STAY LOOSE, INFORMATIVE - DON'T GET HUNG UP ON DETAIL - KEEP SIMPLE STRUCTURE AND PROPORTIONS.

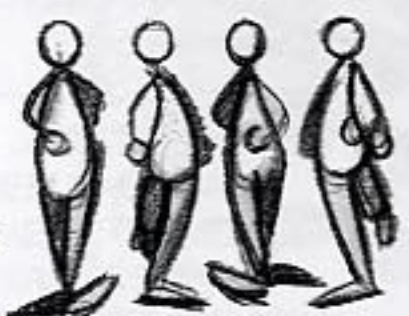
SIMPLE THOUGHTS FOR PLANNING HOW TO SHOW WEIGHT



LIGHT N' LIVELY

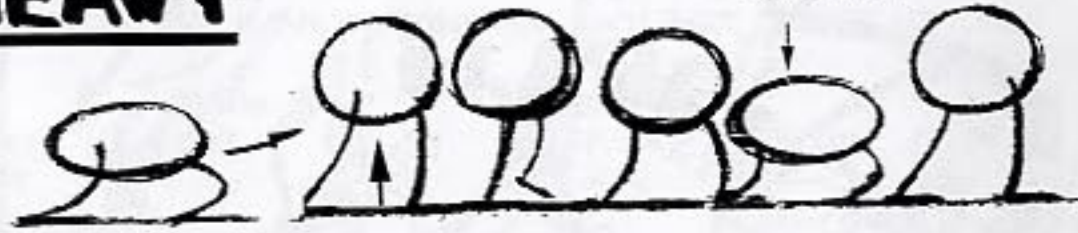
"LITE"

THE CHARACTER EASILY STEPS, JUMPS, BOUNCES ON ONE LEG AND CAN MOVE QUICKLY. THERE IS NOT A LOT OF COMPRESSION.

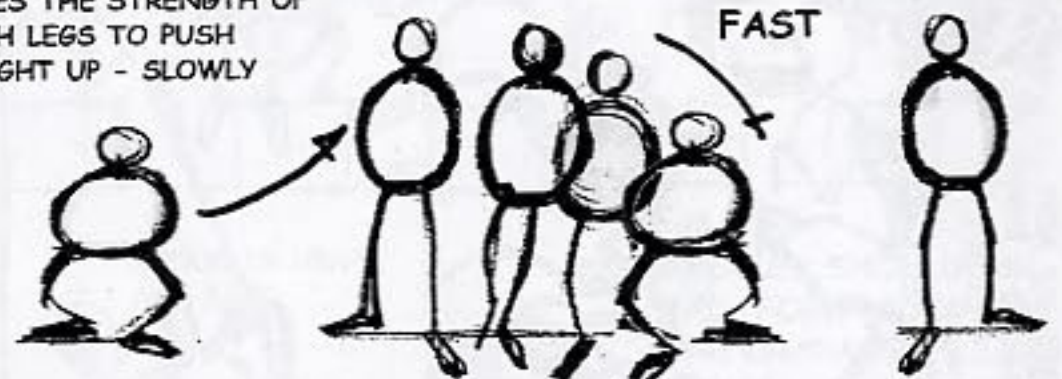


BIG SQUASH

HEAVY



TAKES THE STRENGTH OF BOTH LEGS TO PUSH WEIGHT UP - SLOWLY



TO SHOW HEAVY - BOTH LEGS ARE NEEDED TO FORCE THE BODY UP - SLOWLY. A HEAVY CHARACTER SPENDS LITTLE TIME ON ONE LEG AND THERE WILL BE PLENTY OF COMPRESSION (SQUASH) WHEN THE CHARACTER GOES DOWN. IT TAKES THE STRENGTH OF BOTH LEGS TO SLOW THE BODY DOWN DURING COMPRESSION.

HEAVY SUITCASE PULL - ANIMATION PLANNING

HEAD'S PATH OF ACTION

DRAG 1 PULL UP 2 SETTLE 3 / 4 ANTICIPATE 5 (HOOK UP) 6

BACK FOOT SHIFTS IN ON #3

HEAD P-O-A

HEAD PATH OF ACTION

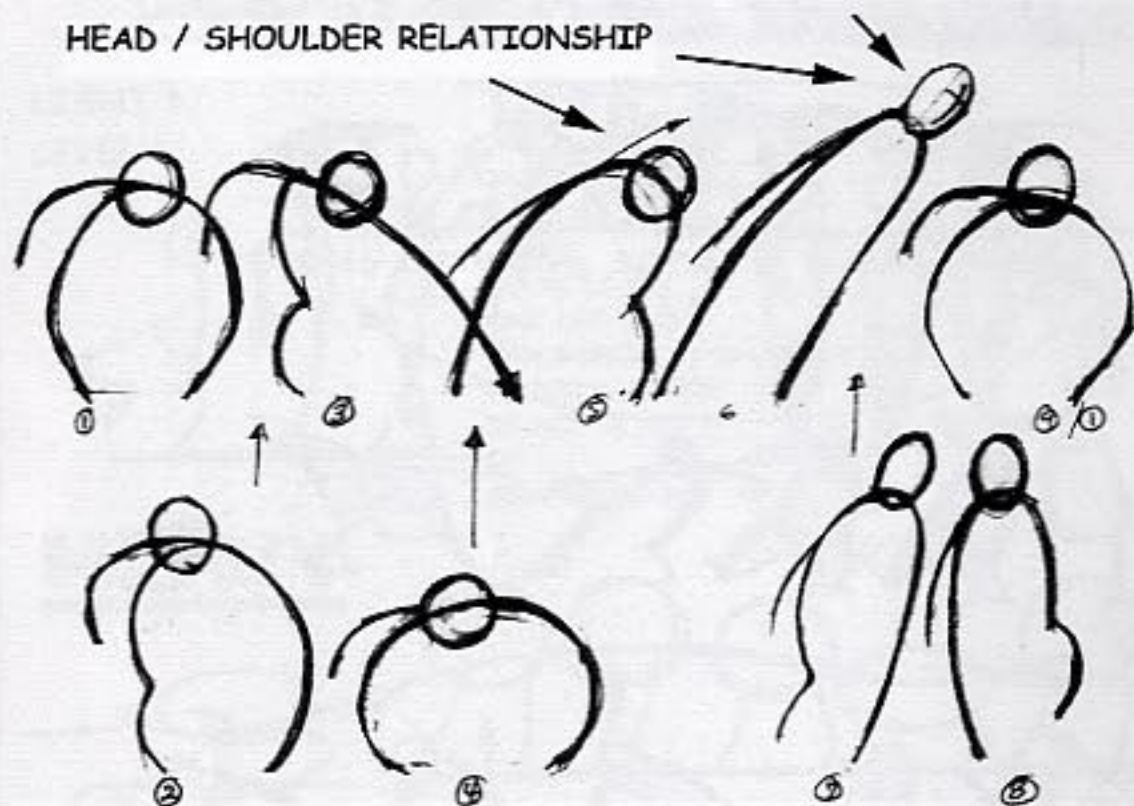
PATH OF ACTION NOTES FOR THE CHARACTER'S HEAD HELPS DEFINE THE BODY MOVEMENTS

USE NOTES TO DRAW ATTENTION TO INFORMATION THAT WILL MAKE ANIMATING EASIER. A WELL PLANNED PATH OF ACTION FOR HEAD, HANDS, HIPS...MAKES COMPLETING THE SHOT FAST · EASY · FUN.

WALK - FORCES AT WORK

HEAD TILTS AND EYE DIRECTION CAN BE WORKED OUT IN THESE PLANNING SKETCHES

HEAD / SHOULDER RELATIONSHIP



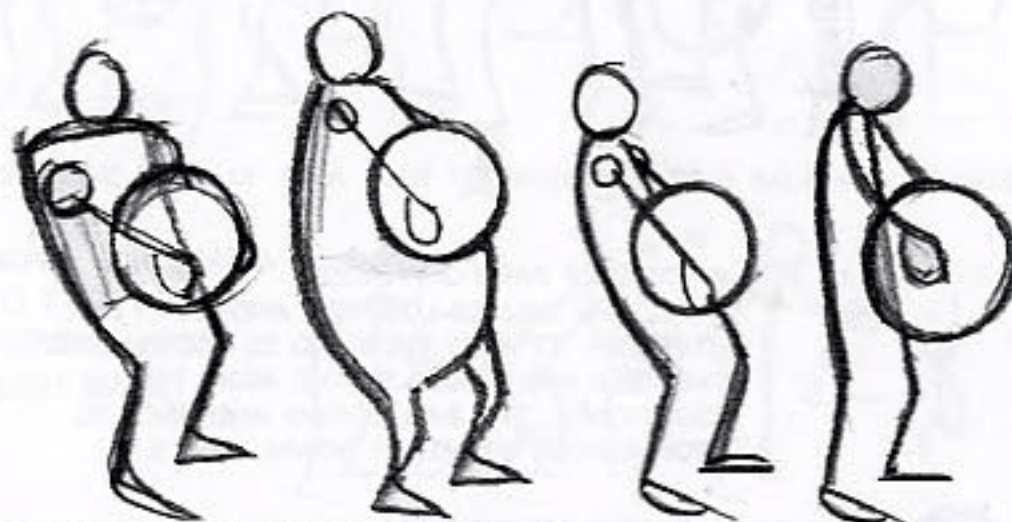
A QUICK SHUFFLE STEP
(LEFT - RIGHT HOP)

2 · 4 · 7 · 8 ARE SKETCHES OF ADDED INFORMATION MADE AFTER THE FIRST SET OF PLANNING SKETCHES WERE DONE.

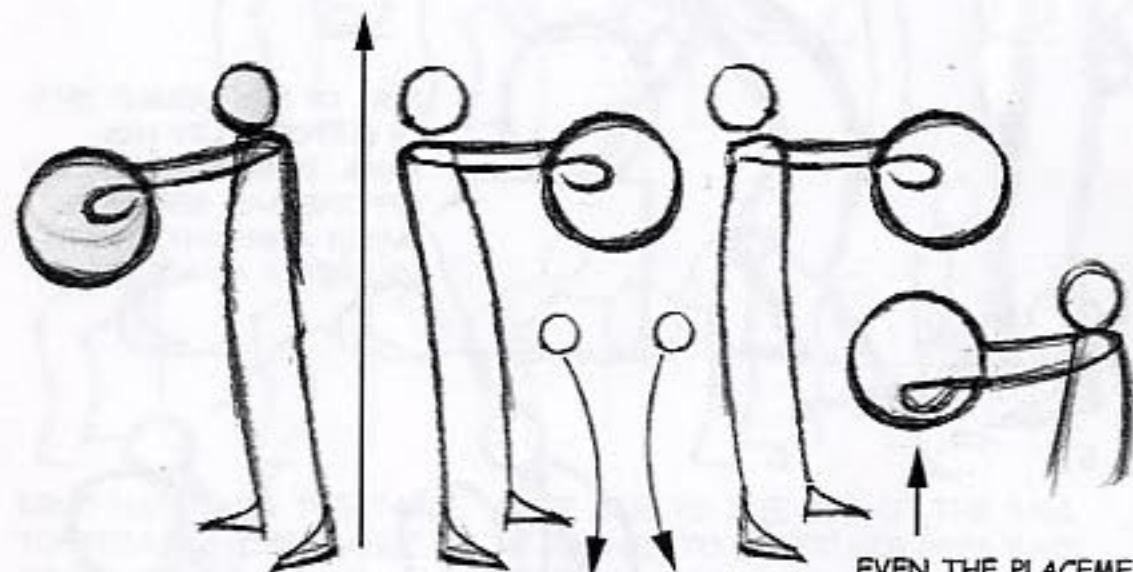
SCENE PLANNING · MAKING DECISIONS BEFORE YOU START TO ANIMATE HELPS TO KEEP COMMUNICATION CLEAR:
DIRECTOR - LEAD ANIMATOR - ANIMATOR - ASSISTANT (COMPUTER).
CONCENTRATE ON DEFINING THE FORCES AT WORK IN YOUR DRAWINGS.

BALANCE · WEIGHT · FORCE

THIS EXERCISE IS TO PLAN THE ANIMATION OF A CHARACTER LIFTING A VERY HEAVY BALL ONTO A LEDGE.



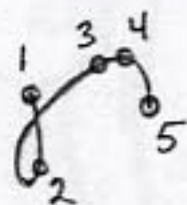
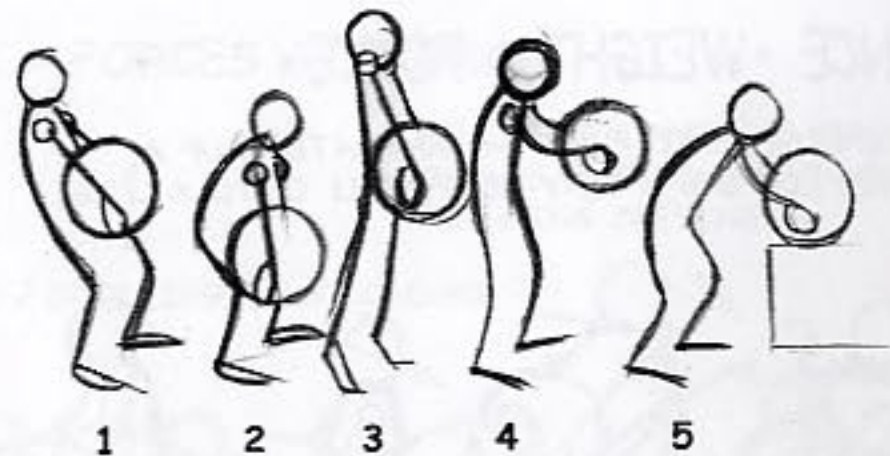
THE DESIGN OF THE CHARACTER IS NOT AS IMPORTANT AS THE CONTENT OF THE DRAWING. BE PRECISE WITH THE INFORMATION ABOUT BALANCE, WEIGHT, AND FORCE IN YOUR SKETCHES BEFORE YOU BEGIN ANIMATING.



THE BODY LEANS BACK TO COUNTER BALANCE THE WEIGHT OF THE BALL.

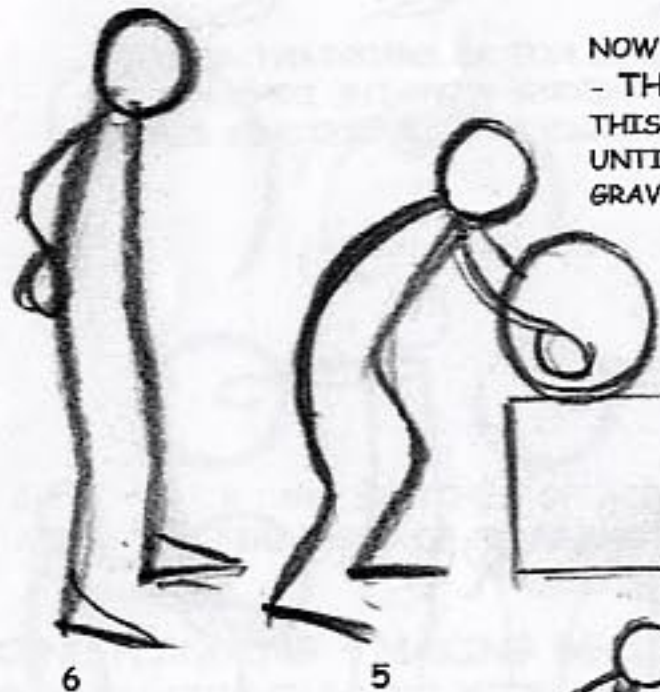
WHAT BODY ARC BEST DESCRIBES WHAT YOU WANT TO SHOW.

EVEN THE PLACEMENT OF THE HANDS ON THE BALL IMPLIES HOW HEAVY IT IS.



A POSSIBLE PATH OF ACTION:
 1 - 2, THE BALL IS LOWERED AND WITHOUT STOPPING, IT ARCS BACK AND IS DRIVEN UP BY THE LEGS AND PULLED BY THE ARMS TO POSITION 3. THE BALL SLOWS AND ARCS TO DROP ALMOST STRAIGHT DOWN - 4 - 5

NOW FOR THE FUN AND TRICKY PART - THE RECOVERY - THIS GUY CANNOT STAND UP (5 - 6) UNTIL HE ADJUSTS HIS CENTER OF GRAVITY.



PART OF HIS WEIGHT IN 5 IS SUPPORTED BY HIS ARMS. IF HE TAKES HANDS OFF THE BALL BEFORE HE MAKES A WEIGHT SHIFT - HE DOES A FACE PLANT.



HOW DO YOU GET FROM HERE TO HERE?



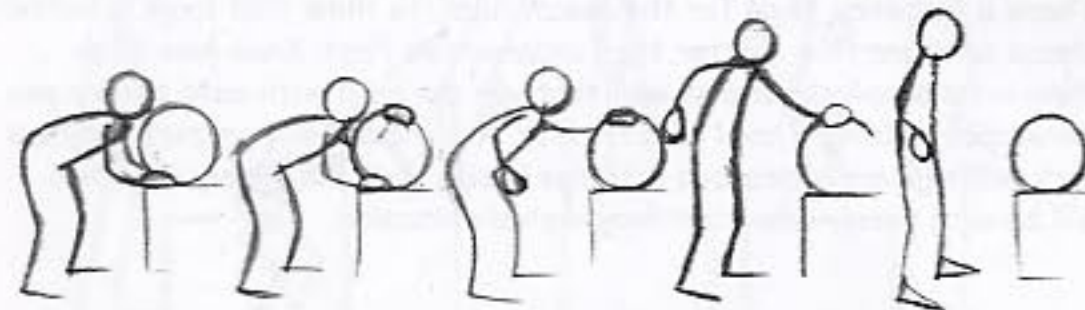
MOVE ONE HAND UP AT A TIME TO PUSH BACK TO A BALANCED STANCE

MOVE ONE HAND TO THE TOP OF THE BALL AND PUSH BACK.



LEGS STRAIGHTEN UP AS HE PUSHES BACK.

DROP HANDS TO THE TABLE SHIFT HIPS BACK AND STAND UP



DROP HANDS TO THE TABLE, MOVE ONE TO THE TOP OF THE BALL TO STEADY HIS BALANCE AS HE PUSHES TO SHIFT HIS HIPS BACK SO HE CAN STAND UP - OR - STEPS CLOSER TO THE BALL SO DOESN'T HAVE TO SUPPORT WEIGHT WITH HIS HANDS.

KEEP YOUR DRAWINGS SIMPLE AND LOADED WITH ANALYTICAL INFORMATION.

Planning your animation with simplified drawing.

Decide what action you are going to animate and define the forces that influence that action.

Let's say that you have decided to animate a character who jumps on to a box and then off the box. Is this going to be just an action exercise, or will there be acting analysis also? If there is going to be acting, here are some questions to ask yourself before starting.

1. **The character:** appearance, strength, emotional state, reason for jumping on the box
2. **The box:** height, stability, distance from character

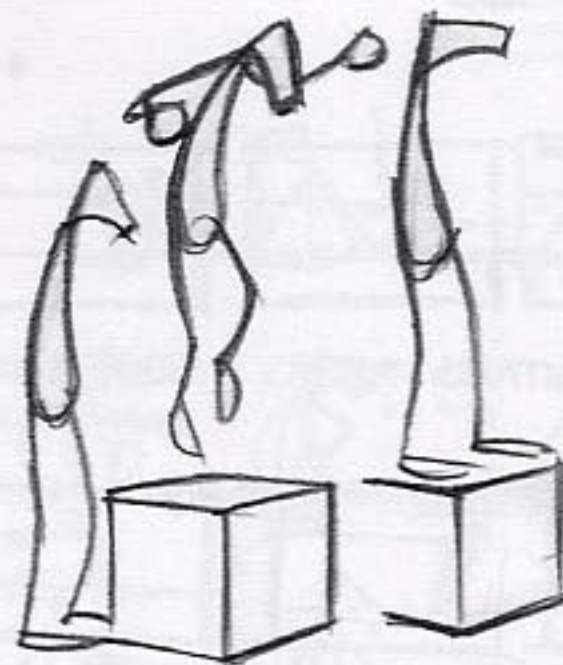
"Write down your personal feeling about the situation and the characters in the scene. Type of action used, attitude of the characters toward each other should be detailed. Thumbnail ideas that are in line with the attitudes that you have described."

Frank Thomas and Ollie Johnson

If you have a tendency to go for the spectacular, to think that more is better, then please consider this: master the fundamentals first. Know how to do something in its simplest form so well that you can do it with ease before you even think about adding a level of difficulty. Any studio that properly reviews your work will be more impressed with the basics done extremely well than they will be with poorly executed complicated animation.

Repetition of a task is the way to master it.

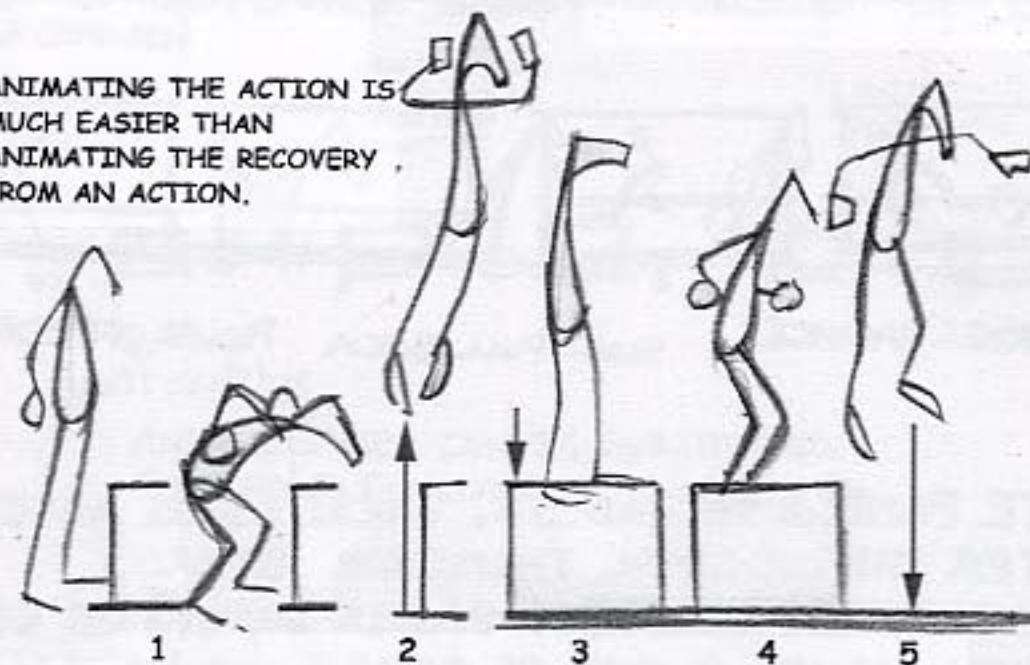
JUMP • LAND • RECOVER



TRY THIS SIMPLE (YAH RIGHT) EXERCISE:
JUMP UP - JUMP DOWN
PLAN EVERY COMPONENT
OF THE EXERCISE WITH
AS MUCH DETAIL AS YOU
CAN THINK OF.

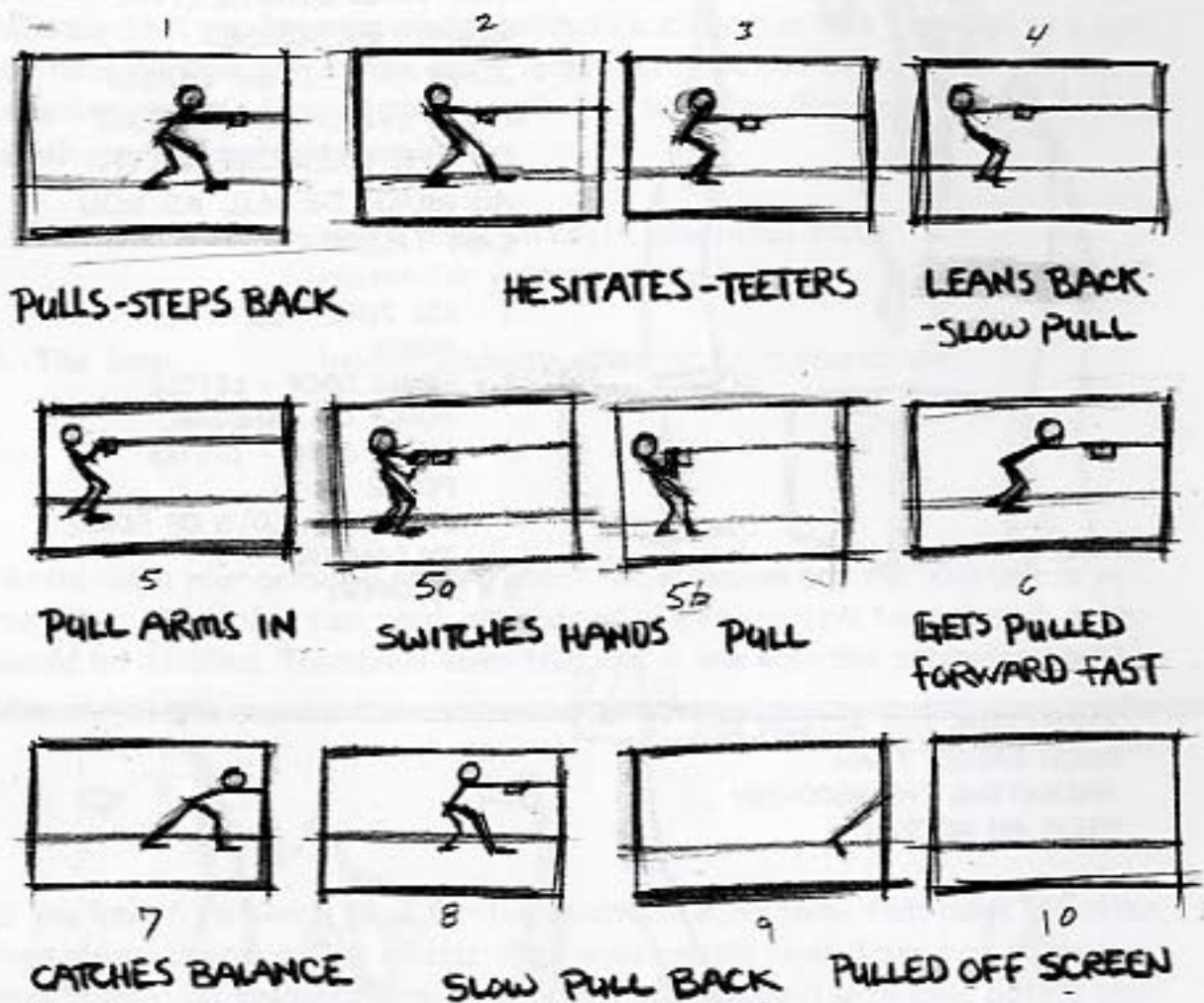
- 1 • BIG JUMP - LOTS OF FORCE
- 2 • SMALL DROP - LITTLE FORCE ON LANDING.
- 3 • SMALL JUMP - LITTLE FORCE
- 4 • BIG DROP - LOTS OF FORCE IN LANDING.
- 5 • RECOVERY

ANIMATING THE ACTION IS
MUCH EASIER THAN
ANIMATING THE RECOVERY
FROM AN ACTION.



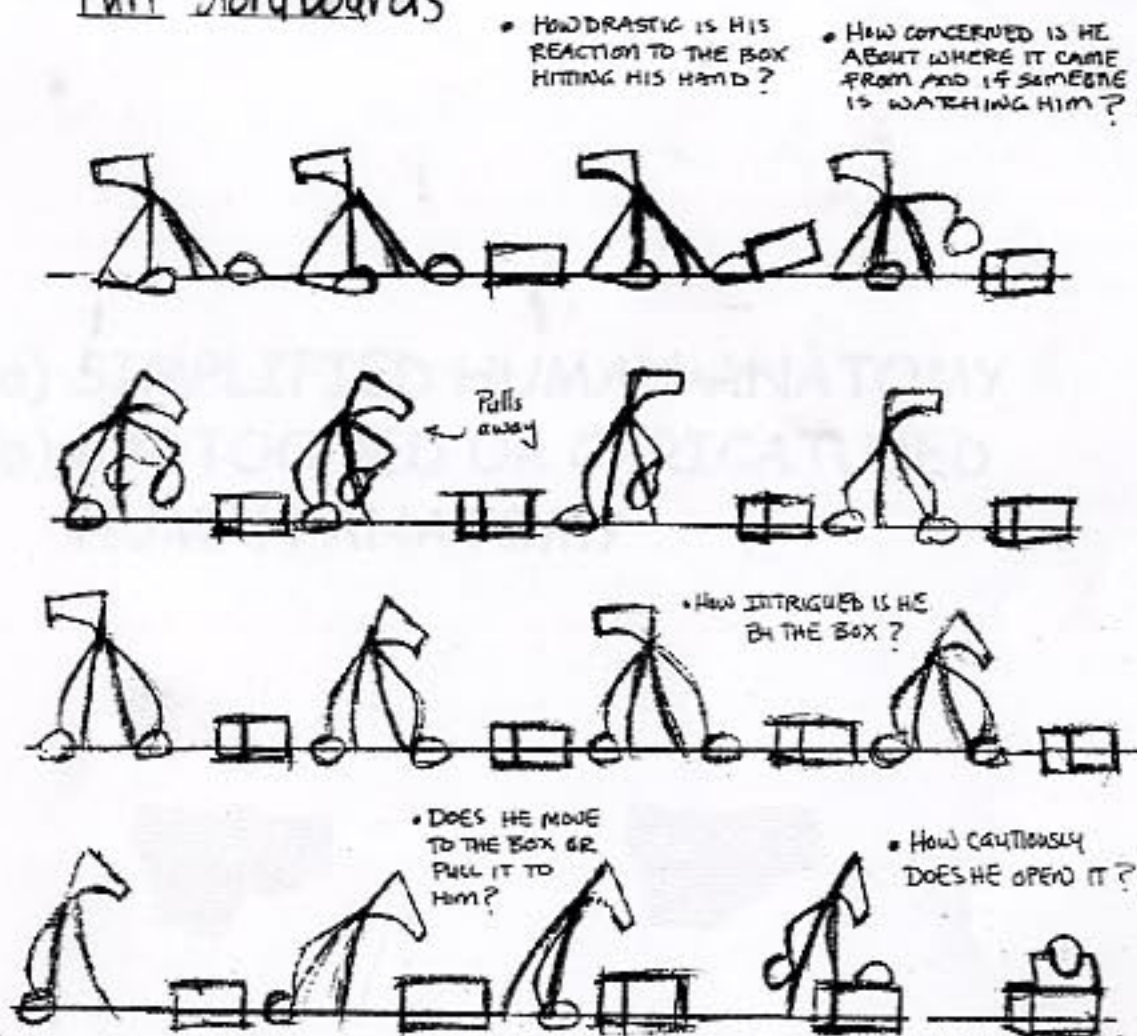
WHAT MOVES FIRST? WHAT FOLLOWS? WHAT WILL THE PATH OF ACTION BE? HOW HIGH WILL HE JUMP? HOW MUCH COMPRESSION WILL THERE BE IN RELATIONSHIP TO EACH JUMP? WILL HE BE OFF BALANCE WHEN HE LANDS AND IF YES, HOW WILL HE RECOVER HIS BALANCE - OR WILL HE?

ANIMATION PLANNING RUFF STORYBOARDS



NOTE PANELS 5a and 5b. THESE WERE ADDED AFTER THE ORIGINAL THUMBNAIL BOARDS WERE DONE. PLANNING PAGES SHOULD BE VERY ROUGH, USUALLY OUT OF ORDER, -ONCE YOU HAVE ALL OF THE NECESSARY INFORMATION, ORGANIZE IT THE WAY YOU WANT IT.

ruff storyboards



ruff sketches

ANY CHARACTER CAN BE SUBSTITUTED ONCE YOUR PLANNING IS COMPLETED



In this section you will see an approach to simplified structure of the human body derived from basic geometric shapes (Section 1, the not fun section that doesn't interest you yet). To further your awareness of the human form refer to the books mentioned and consult your own choice of books.

You may already have a number of books on drawing and it is certain that all good books on the subject contain the same information. Often the information is delivered only through drawings and too much is left for us to visually decipher. In Burne Hogarth's books, he supports the visual content with amazingly clear text. **Dynamic Figure Drawing**, by Burne Hogarth is the most highly recommend book for clear information that will help you learn to draw the human form in detail and in simplicity.

The Torso

Dynamic Figure Drawing - B. Hogarth
Pages 21, 22, 44 - 47, 55
Bridgman's Life Drawing - George B. Bridgman
Pages 23 - 33
Atlas of Human Anatomy For the Artist - Peck
Pages 32, 33, 38

Legs and Feet - hip, knee and ankle

Dynamic Figure Drawing
Legs, pages 30 - 40, 48 - 54, 156
Feet pages 37 - 40
George Bridgman's Life Drawing
160 - 169
Atlas of Human Anatomy For the Artist - Peck
Pages 134 - 143

Arms and Hands - shoulder, elbow and wrist

Dynamic Figure Drawing, B. Hogarth
Arms, pages 26 - 30, 55 - 58, 136
Hands, pages 37, 120 - 124
Drawing Dynamic Hands, B. Hogarth
George Bridgman's Life Drawing
Pages 148 - 158
Atlas of Human Anatomy For the Artist - Peck
Pages 114 - 127

Neck and Head

Dynamic Figure Drawing
Drawing the Human Head, B. Hogarth
Pages 59, 60, 91 - 94
George Bridgman's Life Drawing
Pages 95 - 133
Atlas of Human Anatomy For the Artist - Peck
Pages 10 - 20

Full Body - three simplified versions of human form.

Dynamic Figure Drawing, Hogarth - pg. 44, 51, 55
Bridgman's Life Drawing, Bridgman - pg. 31
Atlas of Human Anatomy For the Artist, Peck - pg. 195

BALANCE - center of gravity

Atlas of Human Anatomy For the Artist - pg. 207 - 211
Bridgman's Life Drawing, Bridgman - pgs, 28 - 33

For each of the above sections of information, take a variety of animated cartoon characters and translate their simplified structural definitions to match what has been presented.

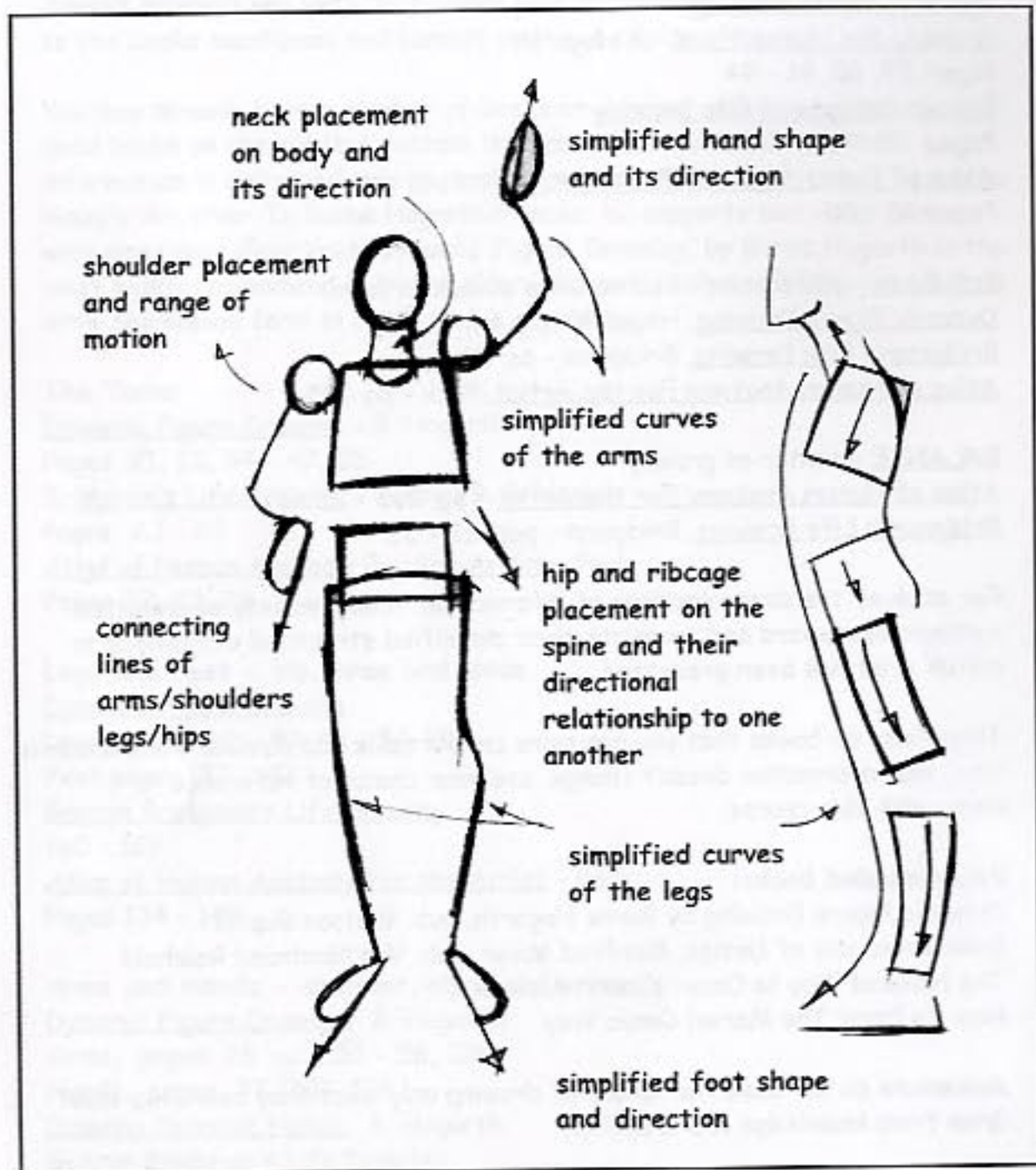
There may be books that you are more comfortable and familiar with, which is fine, the information doesn't change, use your choice of reference along with this course.

Recommended books:

Dynamic Figure Drawing by Burne Hogarth, pub. Watson Guptill
Basic Principals of Design, Manfred Maier, pub. Van Nostrand Reinhold
The Natural Way to Draw, Kimon Nicolaides.
How To Draw The Marvel Comic Way

Animators do not have the luxury of drawing only what they see. They must draw from knowledge and creativity.

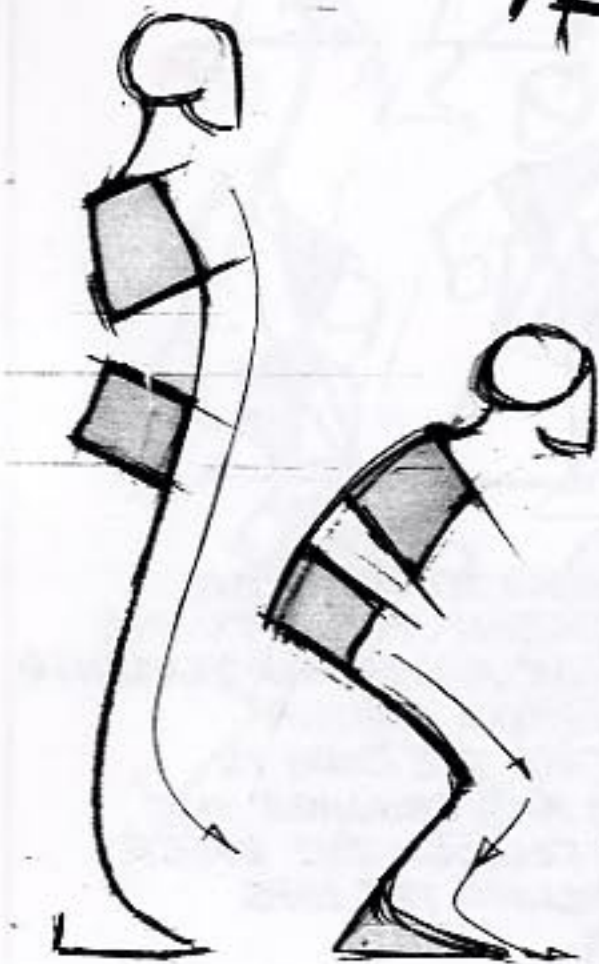
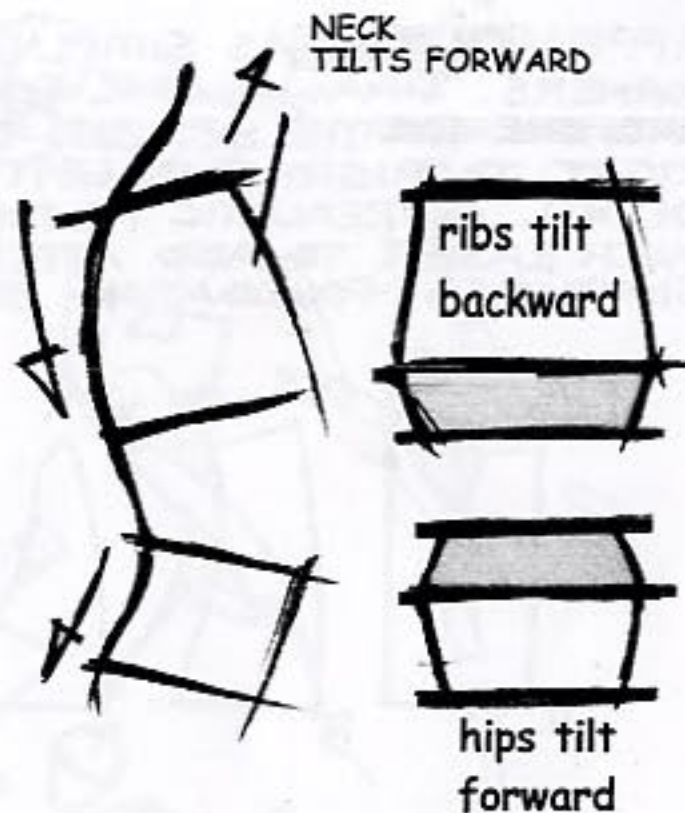
SIMPLIFIED HUMAN ANATOMY



THIS IS WHAT YOU MUST KNOW TO CONFIDENTLY SIMPLIFY YOUR DRAWINGS FOR PLANNING ANIMATION

THE TORSO

THE ANGLES OF THE RIB CAGE AND HIPS ARE CREATED BY THE ANGLES OF SPINE WHERE THEY ARE CONNECTED, AS IS THE ANGLE OF THE NECK.

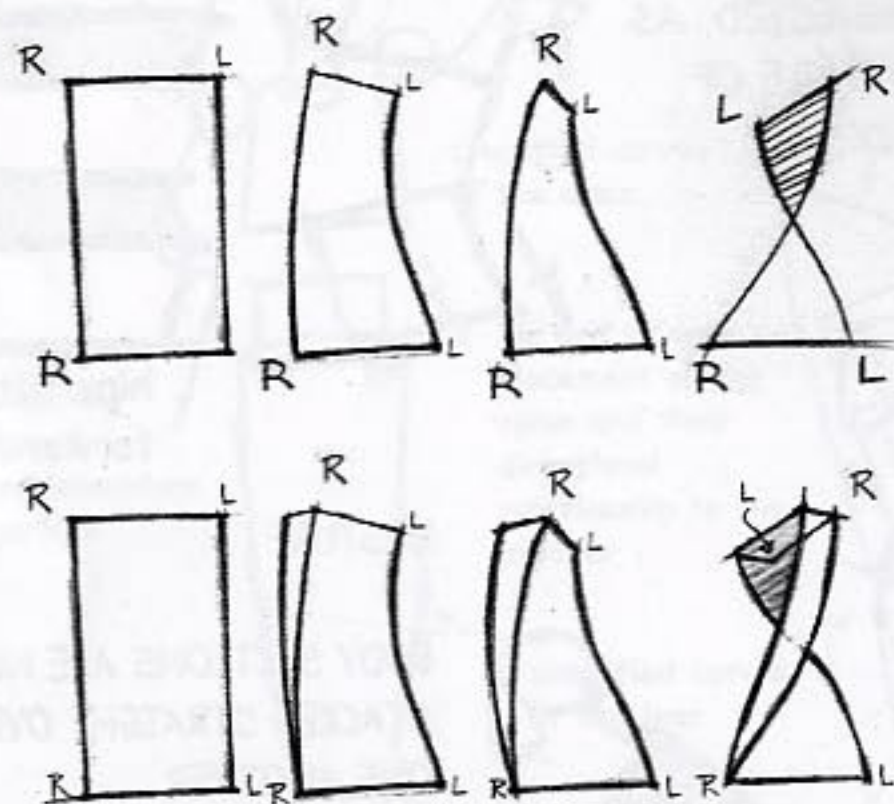


POSTURE

BODY SECTIONS ARE NOT STACKED STRAIGHT OVER ONE ANOTHER. POSTURE IS CREATED BY THE CURVATURE OF THE SPINE, BENDING OF LEGS, HOW SHOULDERS ARE HELD, THE ANGLE OF THE NECK....

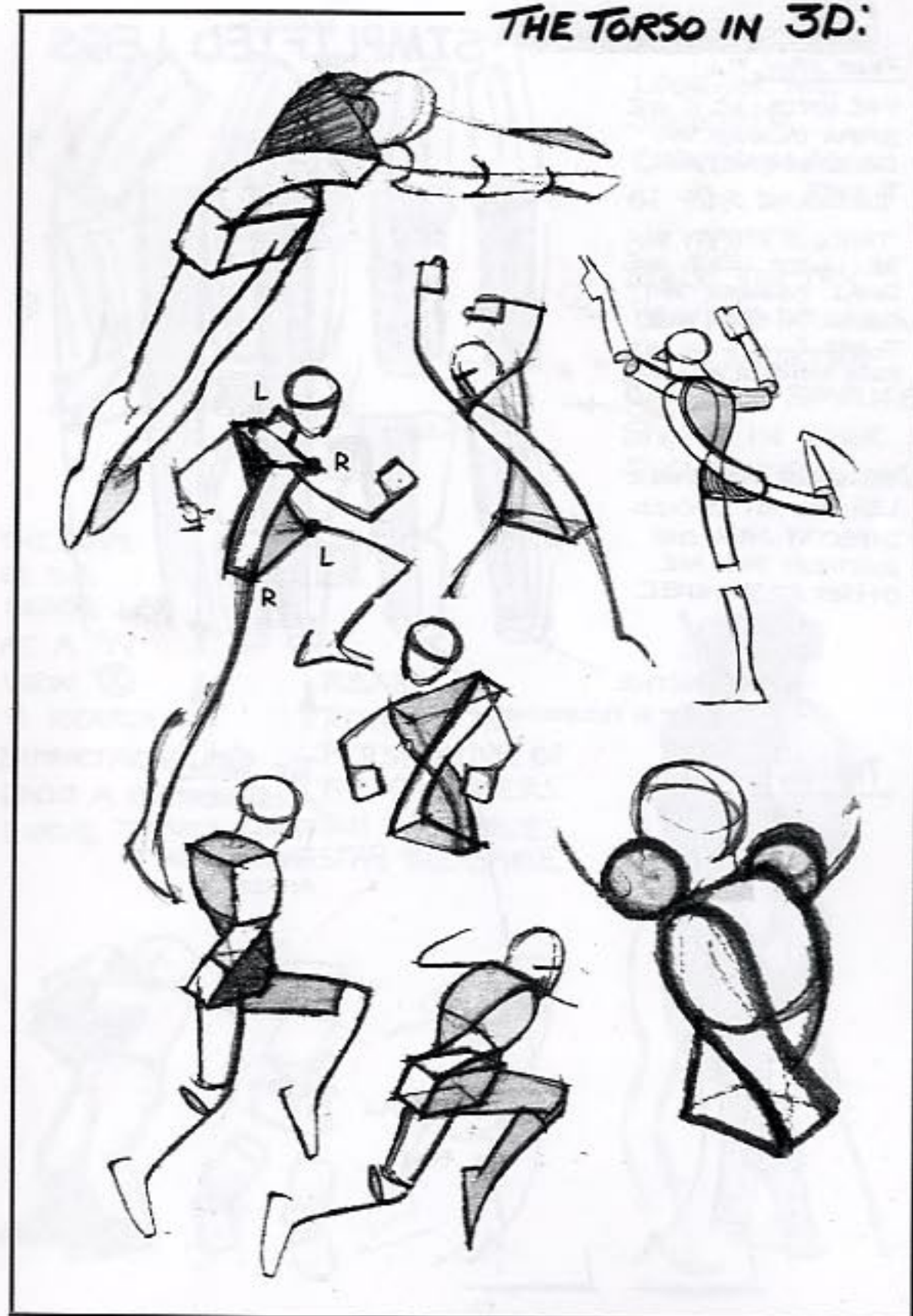
THE TORSO IN 3D:

APPROACH THIS AS SIMPLY AS CONNECT THE CORNERS. DRAW A LINE FOR THE SHOULDERS AND ONE FOR THE HIPS AND THEN CONNECT RIGHT TO RIGHT AND LEFT TO LEFT. THE DETAIL OF REALISTIC PROPORTIONS WILL BE MUCH EASIER TO ADD AFTER YOU KNOW THE SIMPLIFIED FOUNDATION SHAPE.



UNDERSTANDING HOW TO DRAW THE TORSO IN 3D IS VERY IMPORTANT FOR APPLYING TWIST AND TORQUE TO YOUR ANIMATION. TWISTING A BODY OR AN OBJECT CREATES A USUAL TENSION OR FORCE. TWISTING THE BODY IS ESSENTIAL FOR PLANNING AND SHOWING THE PRINCIPLE OF LEAD AND FOLLOW. THE UPPER BODY CAN TURN FIRST, PULLING THE HIPS AROUND OR VICE VERSA.

THE TORSO IN 3D:



SIMPLIFIED LEGS

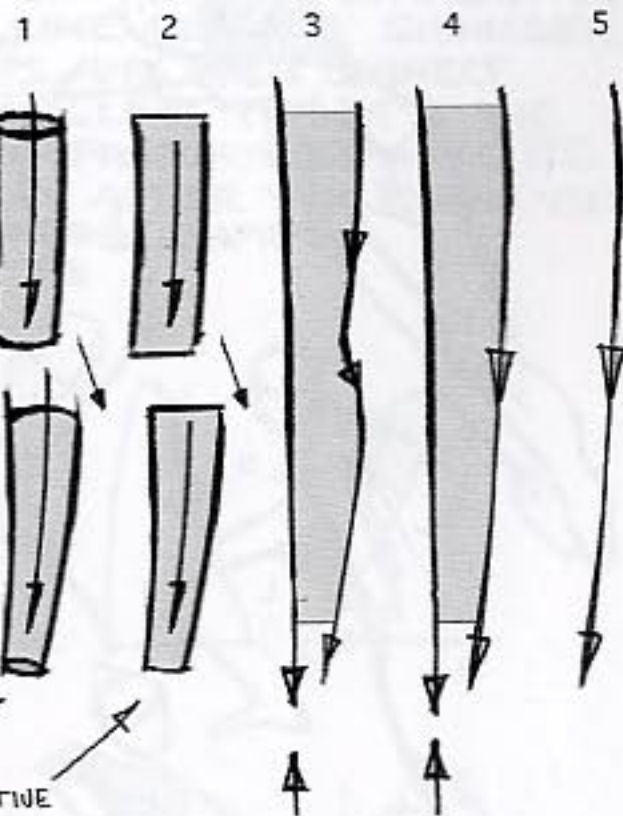
FRONT VIEW

THE UPPER LEG IS ONE SIMPLE CYLINDER THAT CURVES IN FROM HIP TO KNEE

THE LOWER LEG IS ONE SIMPLE CYLINDER THAT CURVES IN FROM KNEE TO ANKLE. MUCH THINNER AT ANKLE

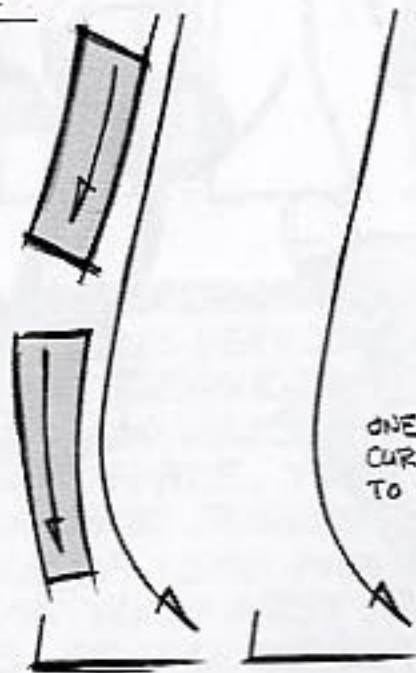
THE UPPER AND LOWER LEG ARE NOT STACKED DIRECTLY OVER ONE ANOTHER. THEY ARE OFFSET AT THE KNEE

IN PERSPECTIVE
NOT IN PERSPECTIVE



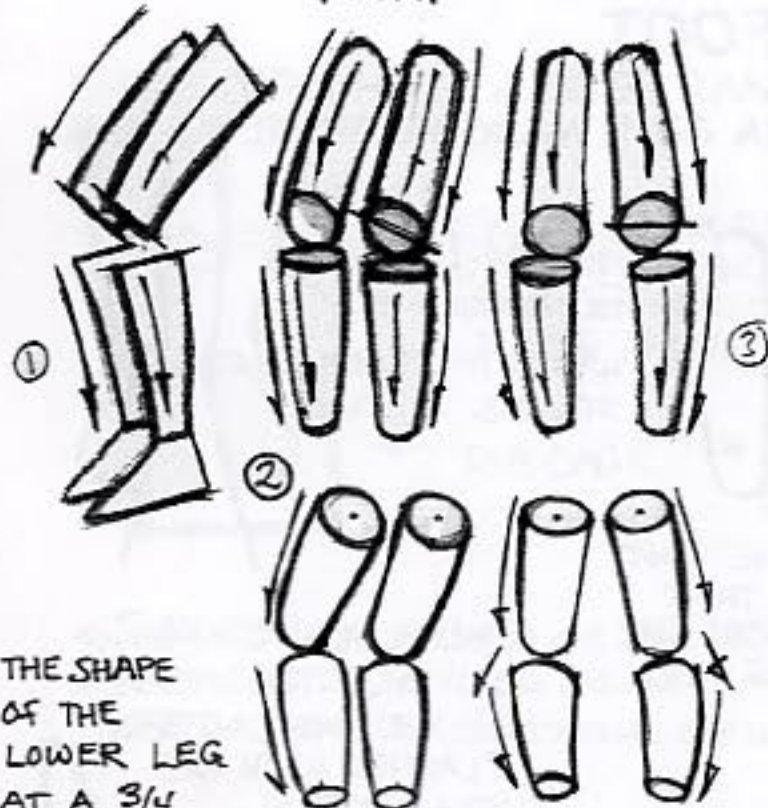
THE INSIDE ALIGNMENT IS FAIRLY STRAIGHT FROM CROTCH TO ANKLE

PROFILE



ONE SIMPLE CURVE TO FOOT

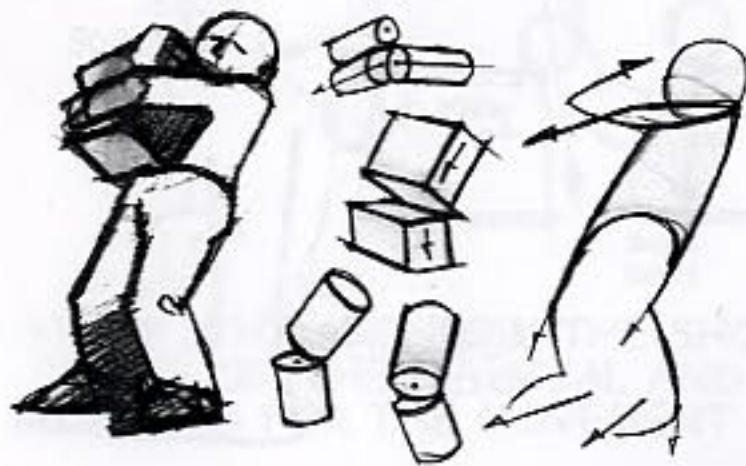
FRONT



THE SHAPE OF THE LOWER LEG AT A 3/4 VIEW ② IS NEARLY SYMMETRICAL AND LACKS A DOMINANT CURVE

REAR REVERSE THE PERSPECTIVE OF THE CYLINDERS BUT THE CURVES STAY THE SAME

LOOK FOR THE STRUCTURAL CURVES IN ALL OF YOUR DRAWING NO MATTER WHAT STYLE YOU TRY. PRACTICE DRAWING SOLID STRUCTURE BASED ON SIMPLIFIED SHAPES IN YOUR FIGURE DRAWING.



SIMPLIFIED FOOT



THE FOOT IS THE FOUNDATION ON WHICH THE BODY STANDS

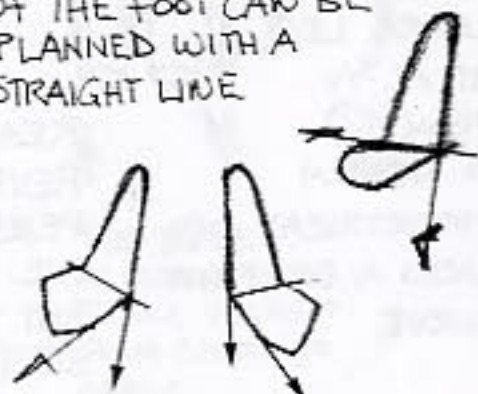


TO SUPER SIMPLIFY THE FOOT PLAN A STRAIGHT LINE THAT REPRESENTS THE INSIDE OF THE FOOT FROM HEEL TO BIG TOE

EVEN WHEN STANDING ON TOES - THE INSIDE OF THE FOOT CAN BE PLANNED WITH A STRAIGHT LINE

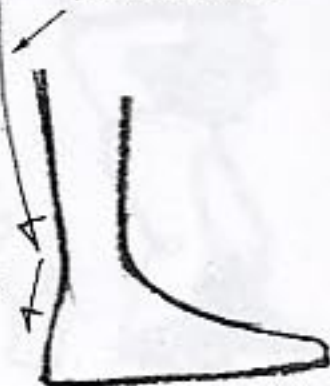


AS WITH THE HAND - CHOOSE THE DIRECTION THE FOOT IS POINTED FIRST - THEN DRAW A SIMPLE SHAPE THAT IS POINTED IN THAT DIRECTION

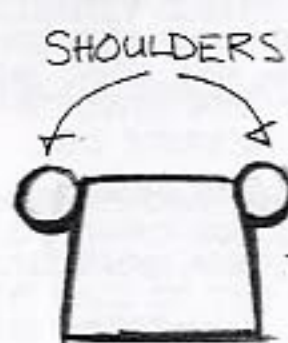


LOWER LEG CURVE

HEEL CUTS BACK



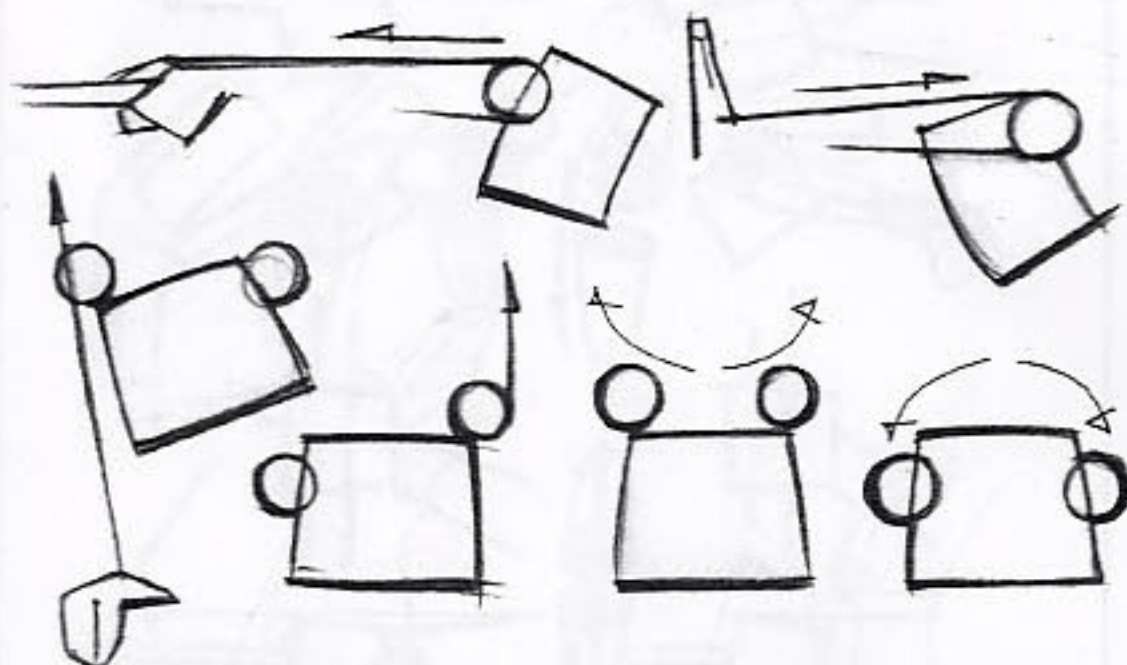
SHOULDERS HAVE A HUGE RANGE OF MOTION. USE IT IN YOUR DRAWINGS AND ANIMATION.



• YOUR SHOULDER IS THE FIRST TO MOVE WHEN YOU RAISE YOUR HAND OVER YOUR HEAD - TRY IT, FEEL IT, UNDERSTAND IT.

RIB CAGE

- THEY CAN BE PUSHED OR PULLED IN ALL DIRECTIONS
- THEY CAN BE PULLED DOWN BY THE WEIGHT OF AN OBJECT OR THE EMOTIONAL WEIGHT OF SADNESS.



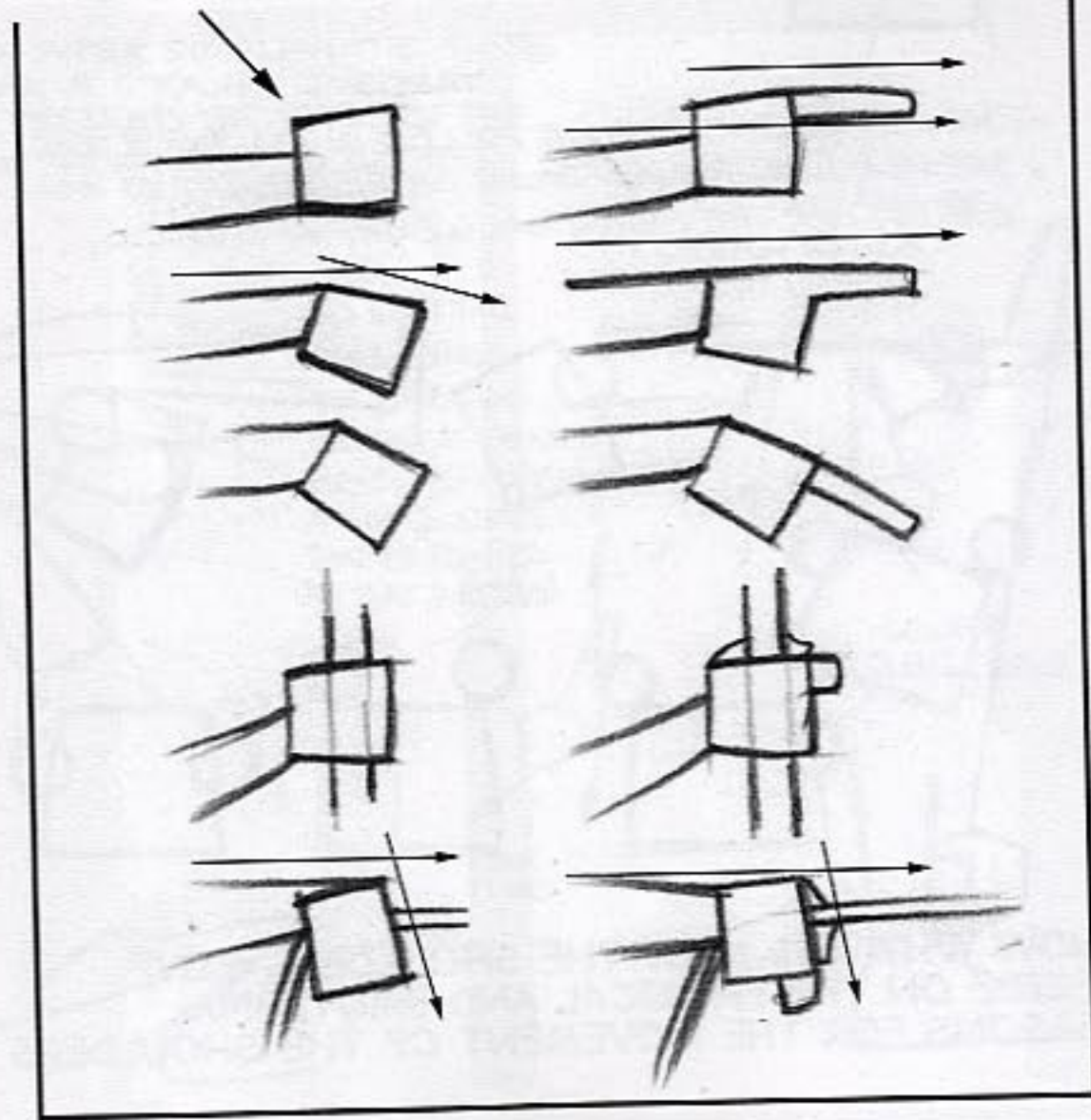
KNOW WHY AND HOW THE SHOULDERS MOVE. DECIDE ON THE PHYSICAL AND EMOTIONAL REASONS FOR THE MOVEMENT OF THE SHOULDERS.

SIMPLIFIED HANDS

DRAW FIRST THE PALM OR BACK OF THE HAND HOW IT DIRECTIONALLY LINES UP WITH THE FOREARM.

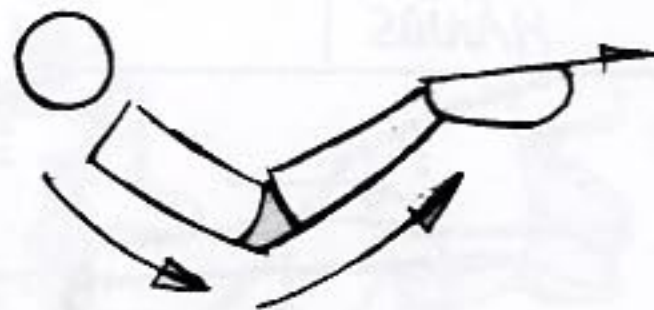
THE DIRECTIONAL RELATIONSHIP OF THE FOREARM AND INDEX FINGER WILL ALMOST ALWAYS CAPTURE THE GESTURE OR ESSENCE OF THE POSE

SLIGHTLY MORE NARROW AT WRIST



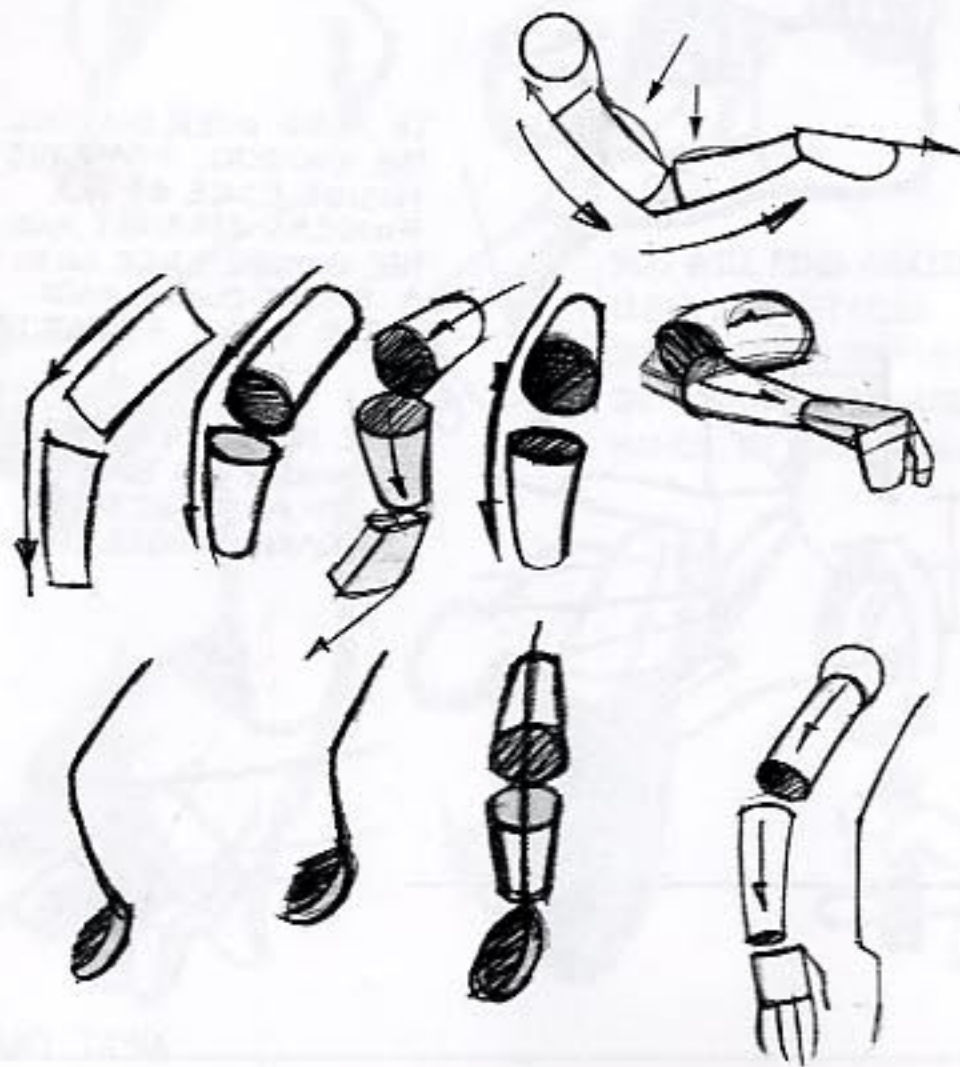
SIMPLIFIED ARM CURVES

THE ARM HAS TWO SLIGHTLY CURVED CYLINDERS - THE UPPER ARM AND THE LOWER ARM



THERE IS ONE SIMPLIFIED, FLOW THROUGH CURVE THAT RUNS FROM ARMPIT ALONG THE BACK OF THE ARM TO THE WRIST

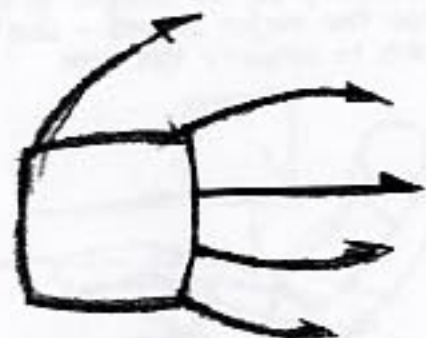
the bicep and forearm muscle are secondary curves smaller in length than the major curves - don't use them to simplify the arm



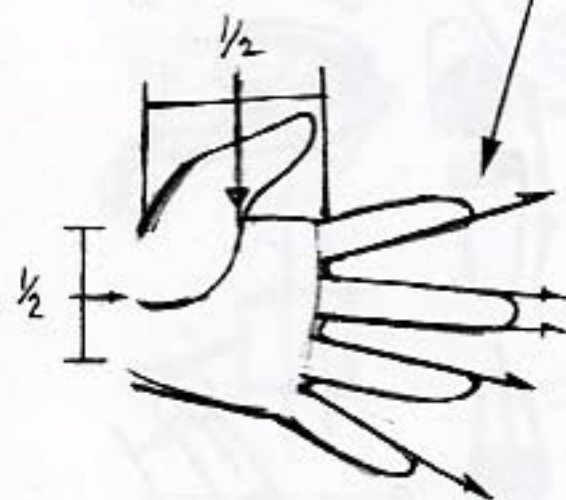
SIMPLIFIED HANDS

HANDS CAN BE VERY EXPRESSIVE WITHOUT DETAIL

- KEEP THIS IN MIND:
- THE MIDDLE FINGER IS STRAIGHT
 - THE OTHER FINGERS GENTLY CURVE TOWARD THE MIDDLE FINGER.



TO AVOID OVER CURVING THE FINGERS, DRAW THE INSIDE EDGE OF THE FINGERS STRAIGHT AND THE OUTSIDE EDGE WITH A SLIGHT CURVE AND TAPER TO THE FINGERTIP



THE MIDDLE FINGER IS STRAIGHT ON BOTH SIDES WITH A SLIGHT TAPER TOWARD FINGER TIP.



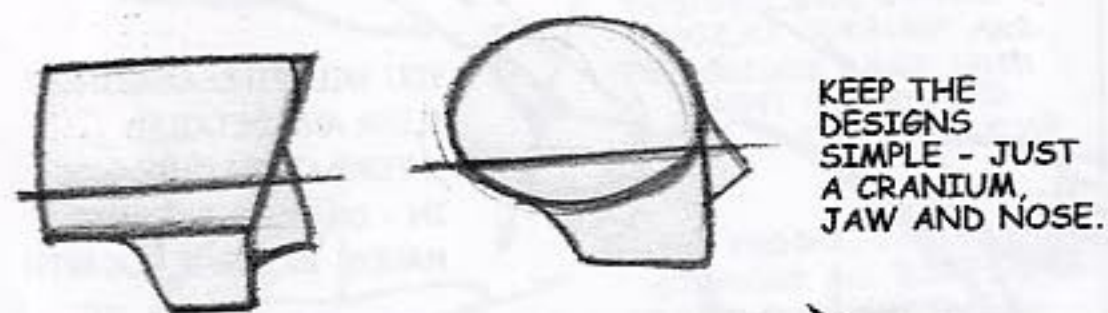
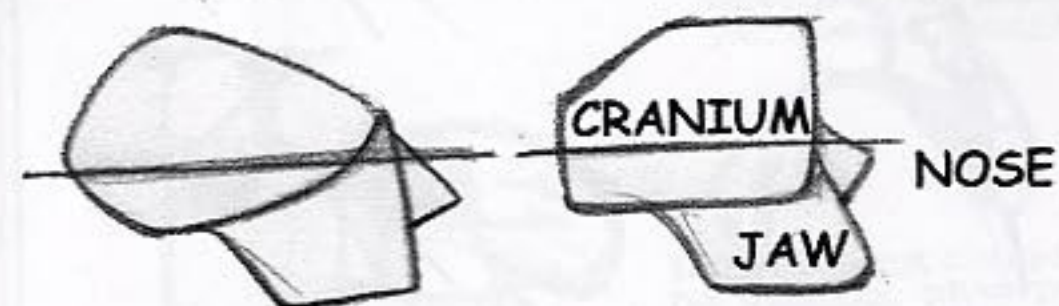
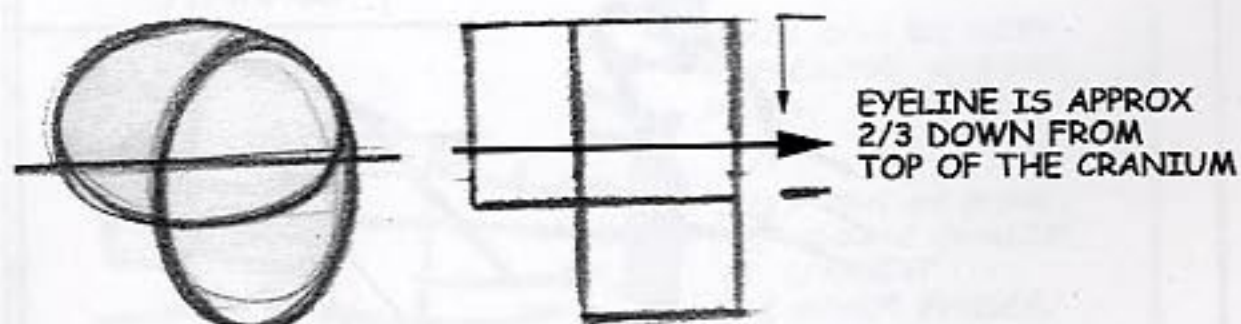
NEXT PAGE

SIMPLIFIED HANDS



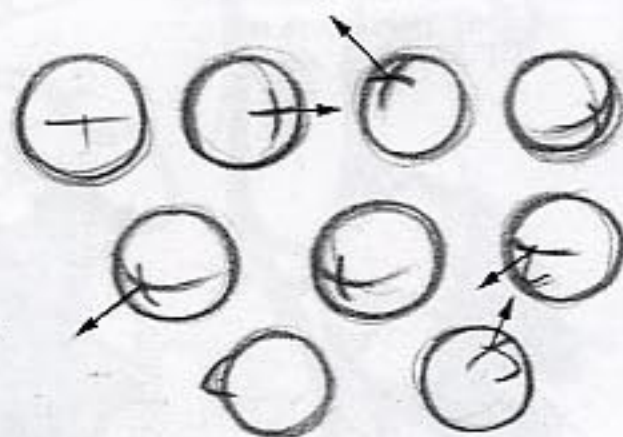
YOU WILL FIND AMAZINGLY CLEAR AND DETAILED INFORMATION ON HANDS IN - DRAWING DYNAMIC HANDS, BY BURNE HOGARTH

THE HEAD SIMPLIFIED



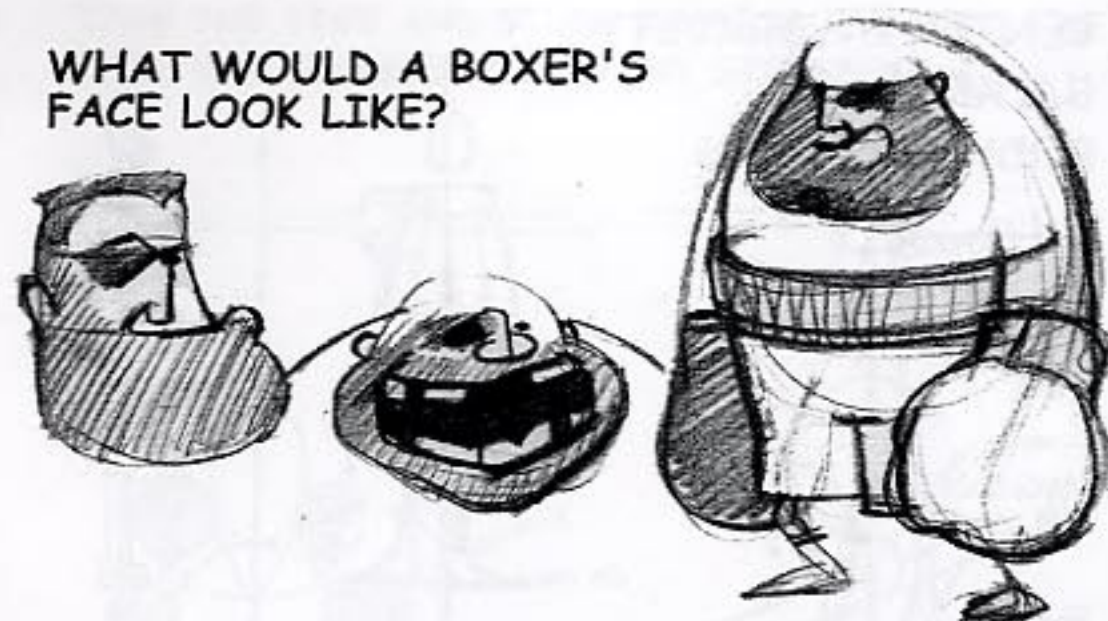
WHEN SIMPLIFYING THE HEAD, A CIRCLE WILL DO THE JOB.

AS WITH THE FIRST CHARACTER DESIGN EXERCISE, DRAW A FEW PAGES OF ALTERED HEAD SHAPES. GO CRAZY AND DON'T TRY FOR REALISM.

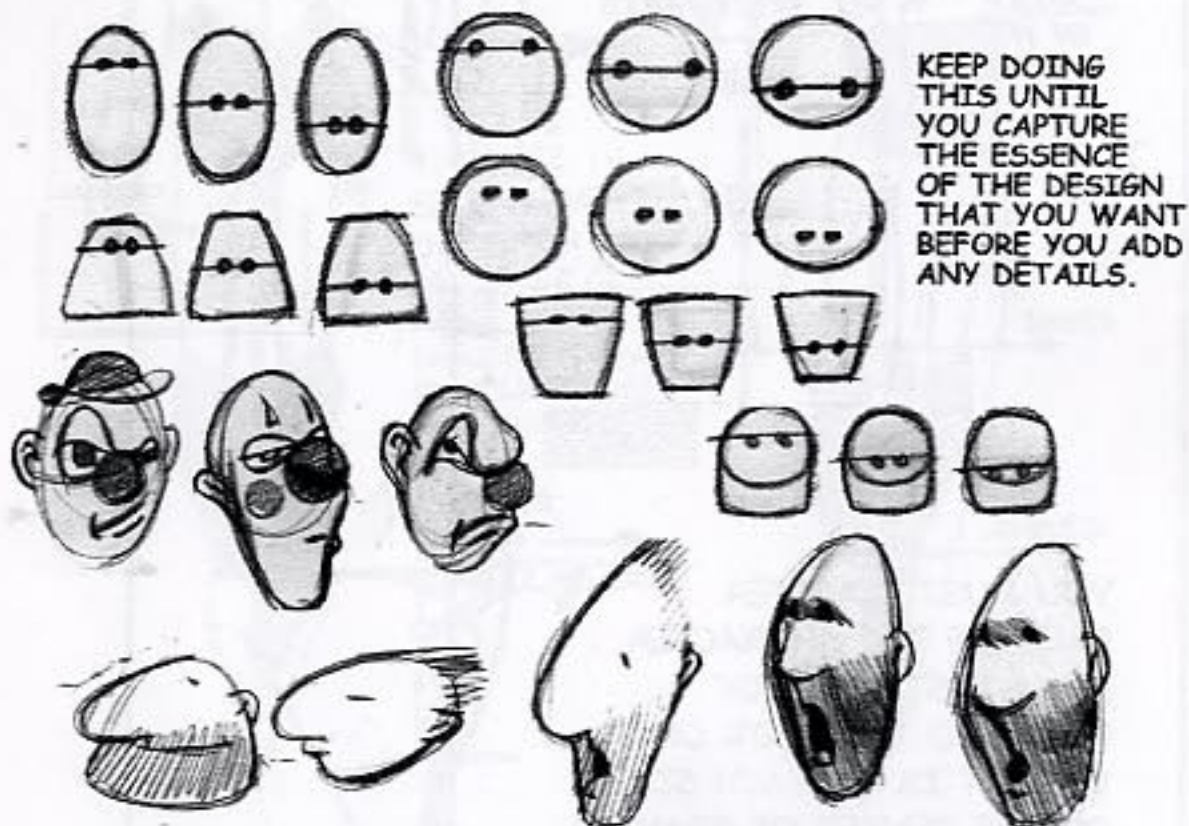


FOR BASIC PLANNING AND SIMPLICITY OF DESIGN JUST DRAW A CIRCLE AND CROSS HAIR LINES THAT INDICATE EYE DIRECTION AND THE CENTER OF THE FACE.

WHAT WOULD A BOXER'S FACE LOOK LIKE?



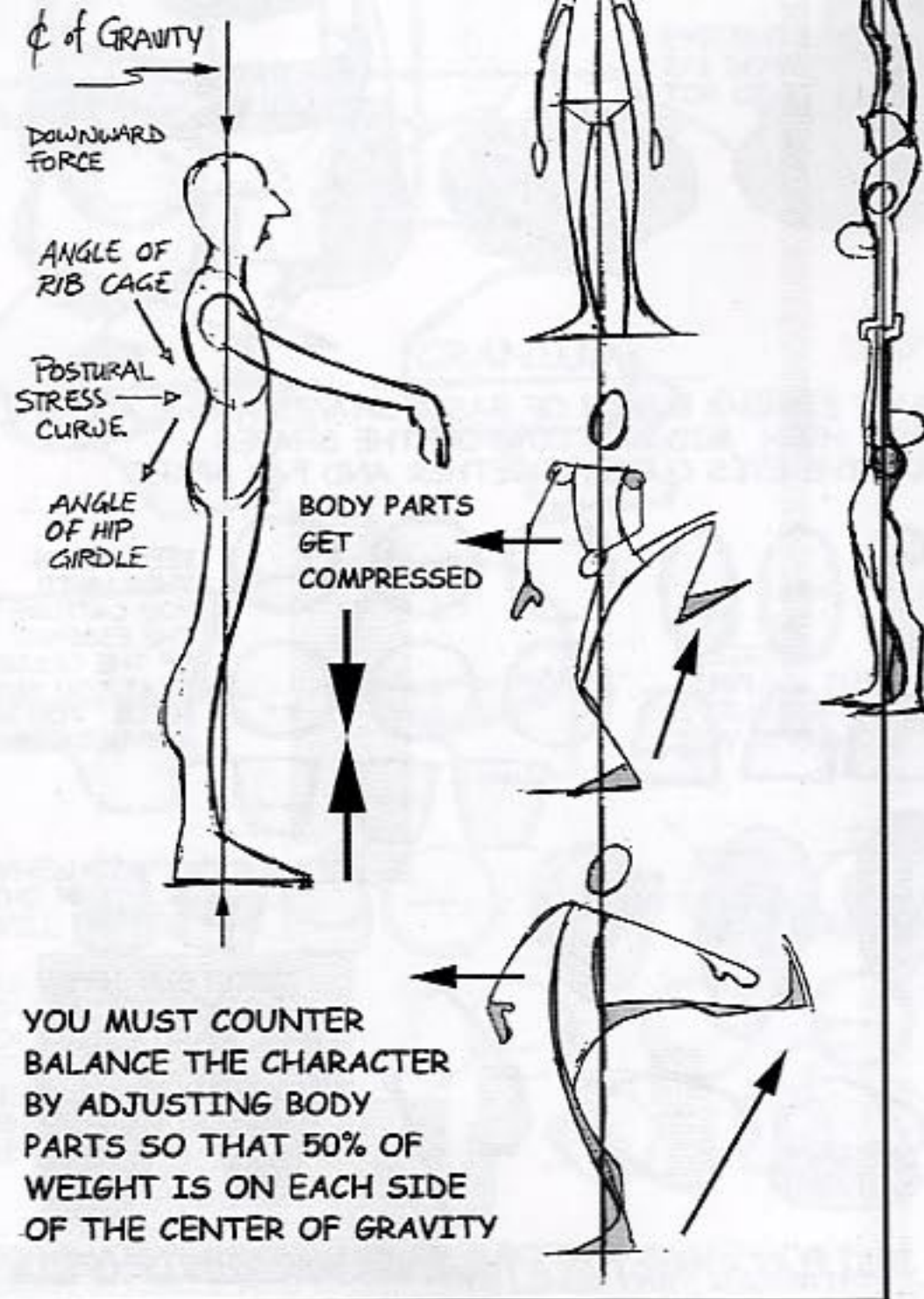
JUST DRAW A BUNCH OF BASIC SHAPES AND PLACE THE EYES HIGH, MID AND LOW ON THE SHAPES. PUT THE EYES CLOSE TOGETHER AND FAR APART.



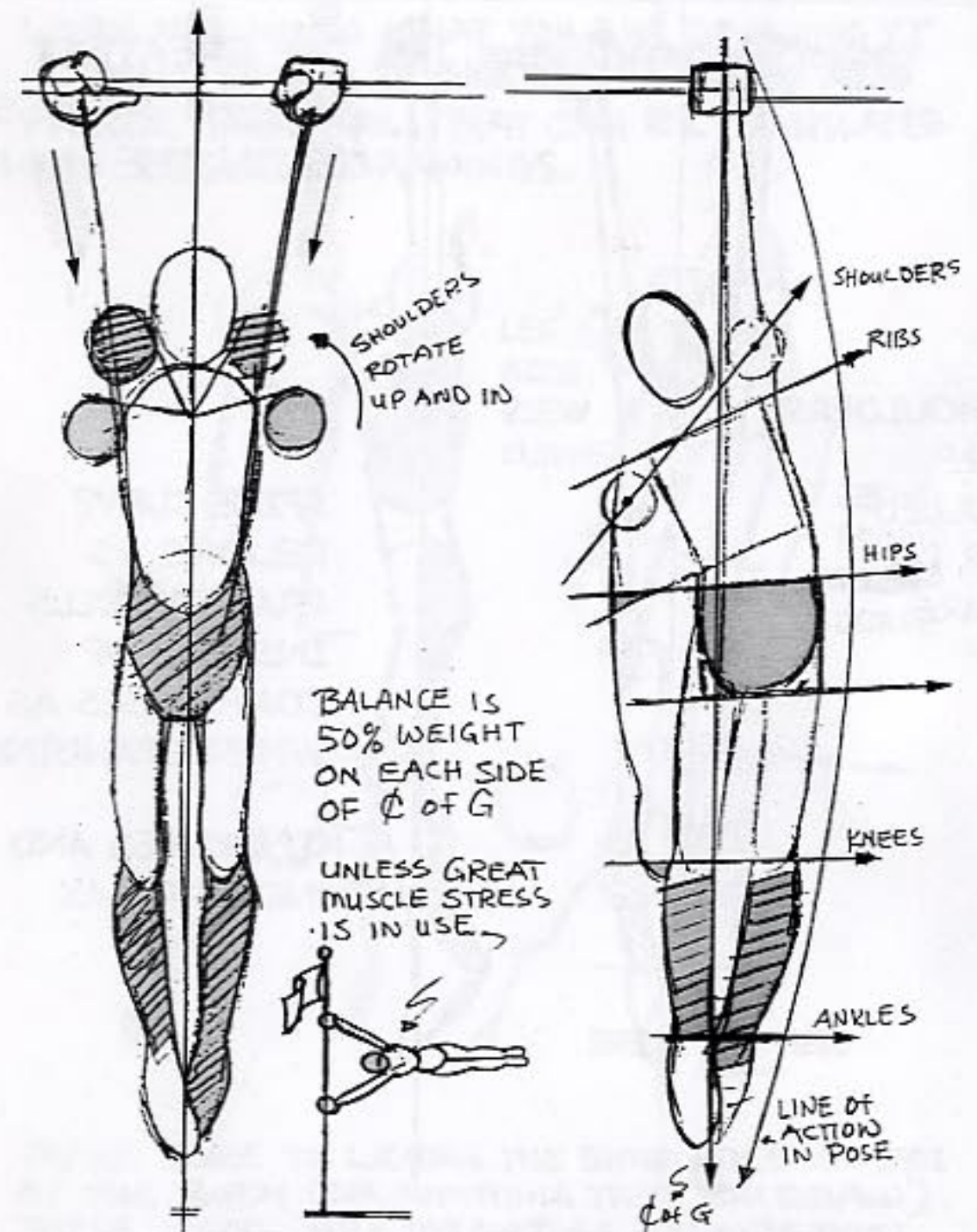
KEEP DOING THIS UNTIL YOU CAPTURE THE ESSENCE OF THE DESIGN THAT YOU WANT BEFORE YOU ADD ANY DETAILS.

JUST PLAY - HAVE FUN - THERE ARE HUNDREDS OF OPTIONS

CENTER OF GRAVITY BALANCE AND BODY SECTIONS

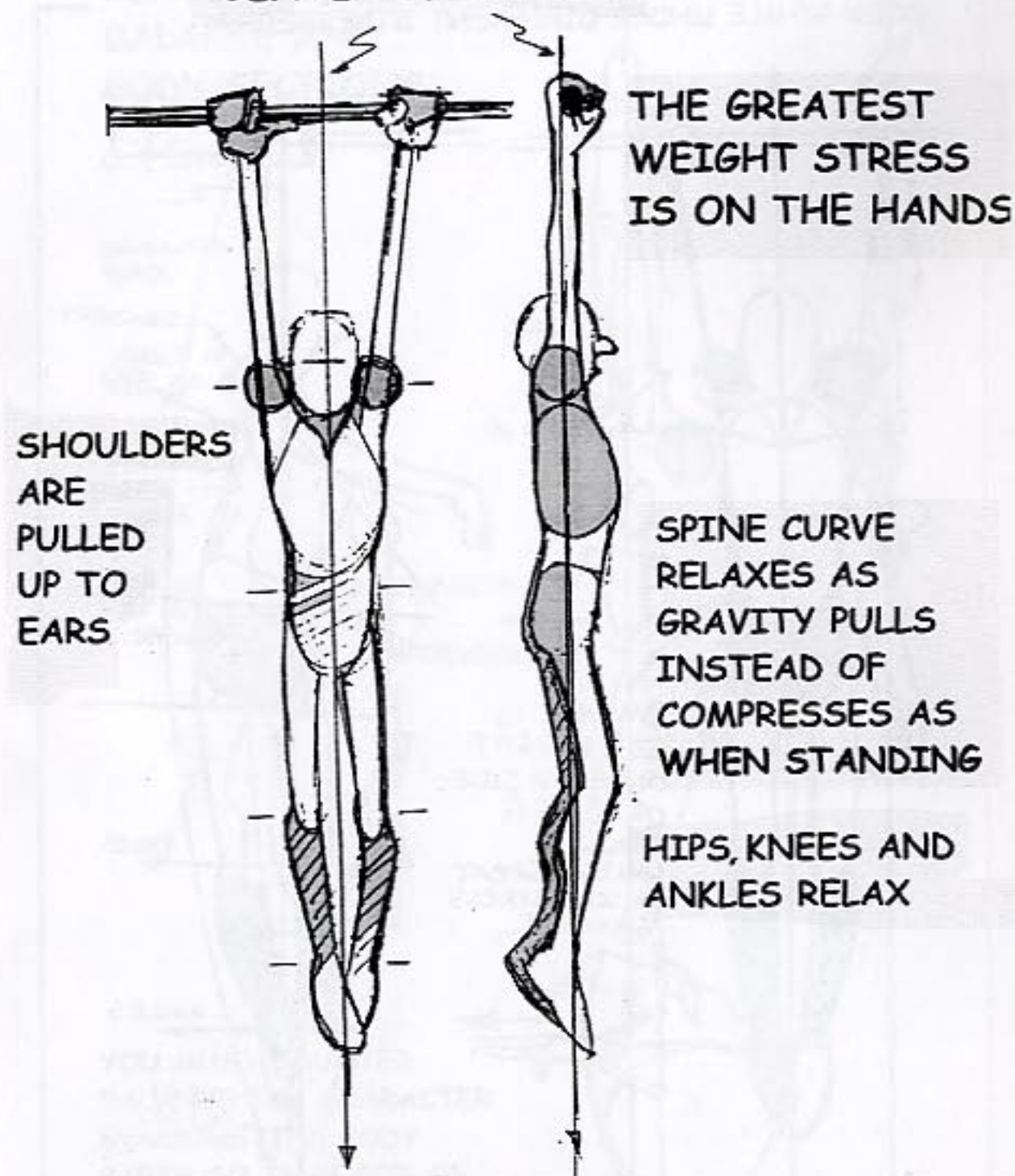


TAKE THE TIME AND STUDY WHAT HAPPENS TO THE BODY WHILE UNDER DIFFERENT STRESSES.



THEN PUT THAT KNOWLEDGE TO WORK IN YOUR ANIMATION AND DRAWING

CENTER OF GRAVITY



THE GREATEST WEIGHT STRESS IS ON THE HANDS

SHOULDERS ARE PULLED UP TO EARS

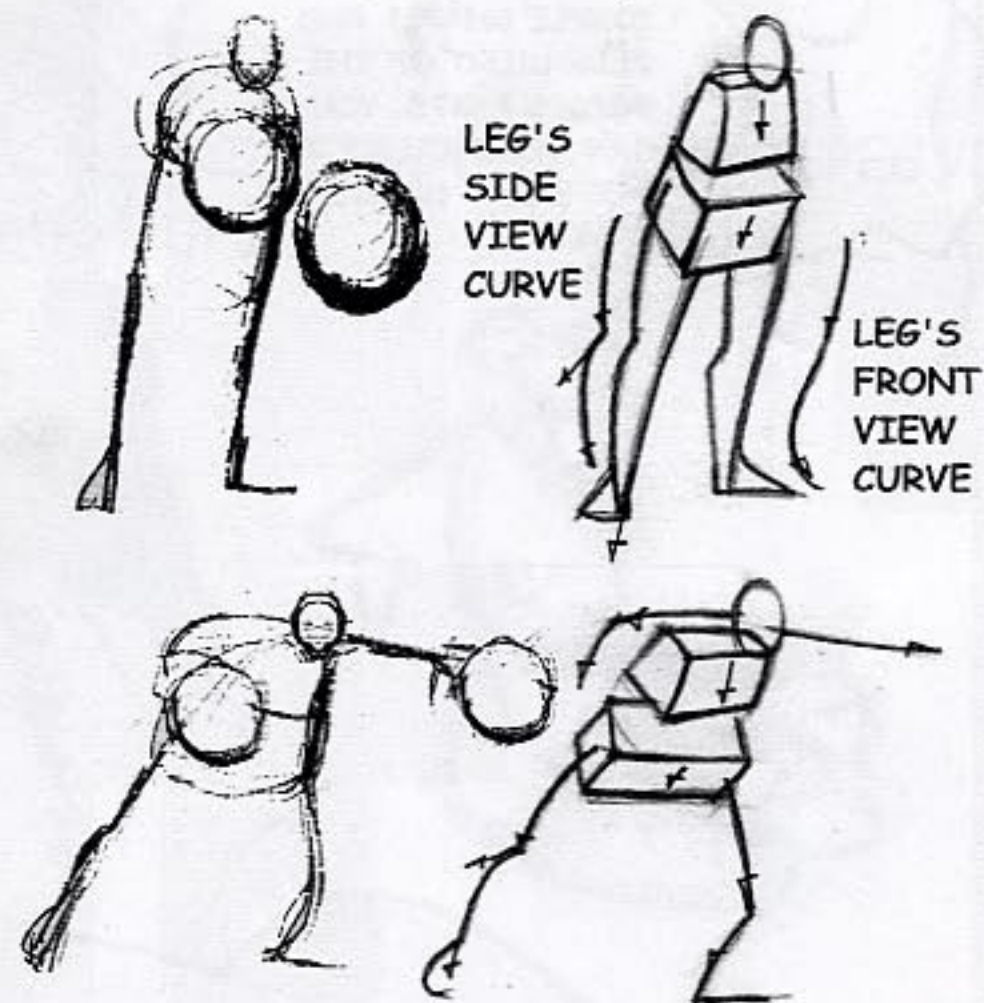
SPINE CURVE RELAXES AS GRAVITY PULLS INSTEAD OF COMPRESSES AS WHEN STANDING

HIPS, KNEES AND ANKLES RELAX

STUDY THE FORCES AT PLAY IN YOUR DRAWINGS AND ANIMATION

SIMPLIFIED ANATOMY

WHEN YOU KNOW WHAT YOU ARE DRAWING IT IS MUCH EASIER TO SKETCH OUT ROUGH AND PRECISE THUMBNAILS THAT CAN BE TRANSLATED INTO DETAILED DRAWINGS.

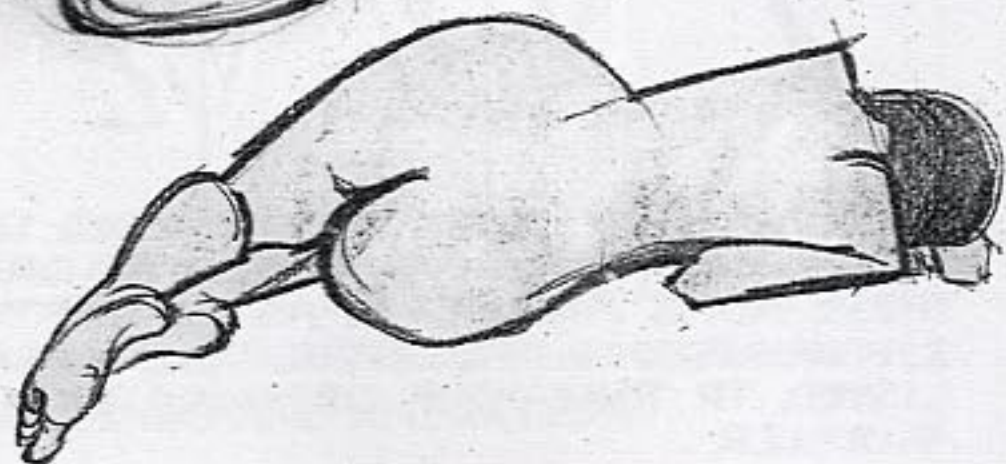


MAKE SURE TO LEARN THE SIMPLIFIED SHAPES OF THE BODY (OR ANYTHING THAT YOU DRAW). THESE NOTES ARE MEANT AS FOUNDATION INFORMATION - RESEARCH THE BOOKS LISTED TO TAKE YOUR DRAWING SKILLS FURTHER.

FIGURE DRAWING



WHEN YOU KNOW THE
SIMPLE SHAPES AND
ALIGNMENT OF THE
BODY'S PARTS, YOU
CAN MORE EASILY TRY
DIFFERENT DRAWING
STYLES.

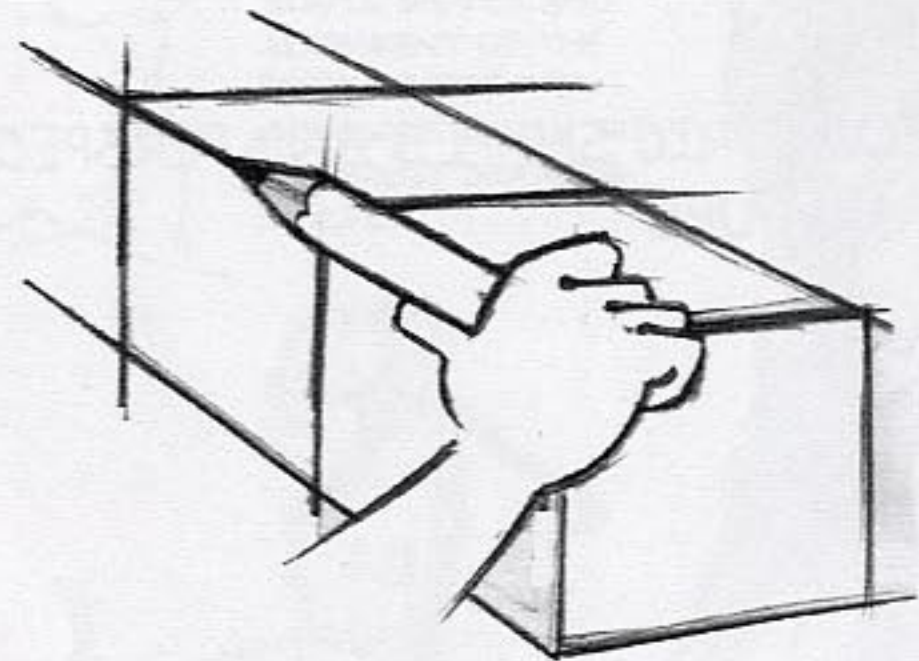


Chapter 1

- a) GEOMETRIC SHAPES AND PERSPECTIVE
- b) WARM UPS

Try to draw objects such as boxes, blocks, balls, cones and tubes. If you don't have access to these shapes, draw what you see in this book and go to the library to get **BASIC PRINCIPLES OF DESIGN** by Manfred Maier and study Volume One.

Get used to using visual reference to keep your lines straight by making all vertical lines parallel to the edge of the paper that you are working on. Use your pencil or thumb to line up perspective lines.

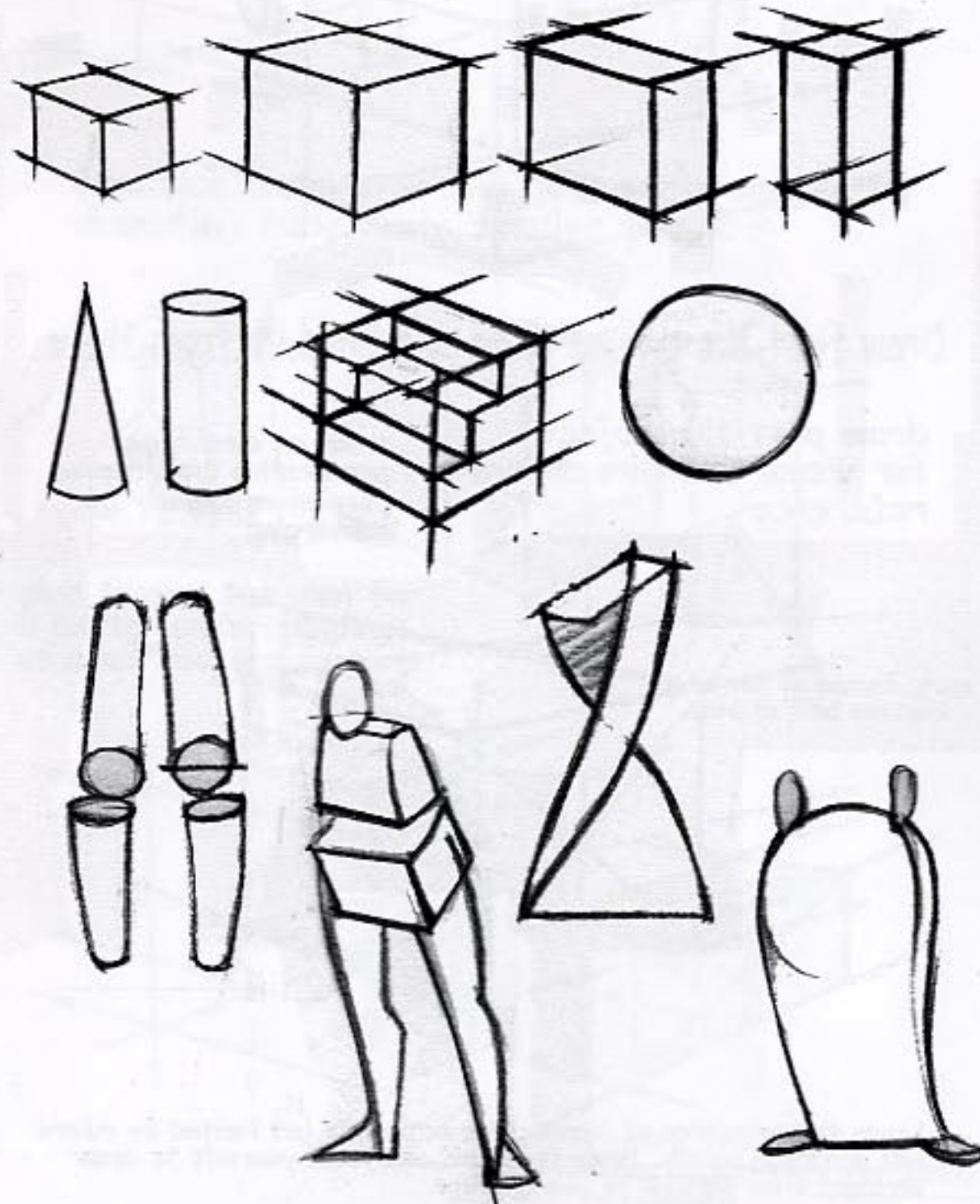


It is good to draw past the edges as you lightly search for the confines of the shapes that you are depicting. By drawing past the edges you can check to see that your lines are traveling in the right direction. This creates a see through form that shows the method used to construct it. Stay light with your lines. When it is right... make the lines of the visible edges darker. Use 4B or 6B pencils.

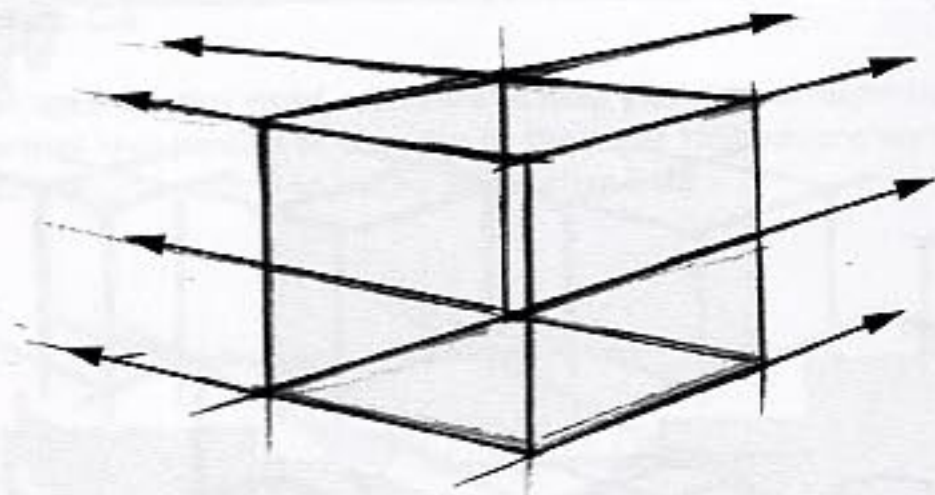
TAKE THE TIME TO BE PRECISE WITH YOUR LINES. START LIGHT AND KEEP WORKING THE LINE UNTIL YOU HAVE WHAT YOU WANT.

Use diagonals to locate the center line of a cube. This method allows you to find the perspective center which shows the cube's diminishing size as it moves toward the vanishing points. Draw lines from corner to corner and where they cross is the center of the surface.

GEOMETERIC SHAPES



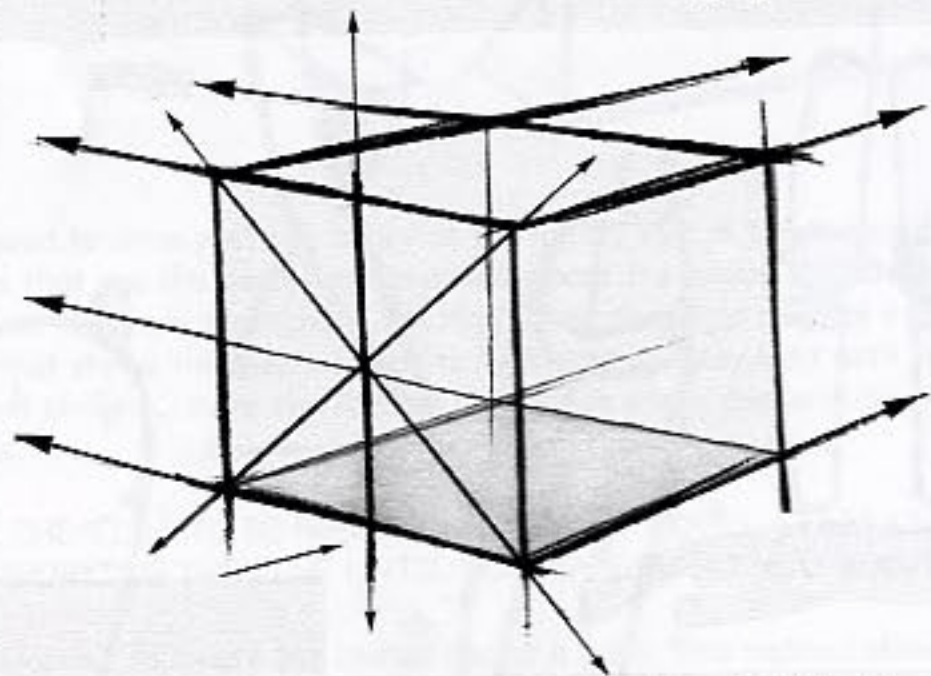
GEOMETRIC SHAPES



Draw first the ground plane and build up from there.

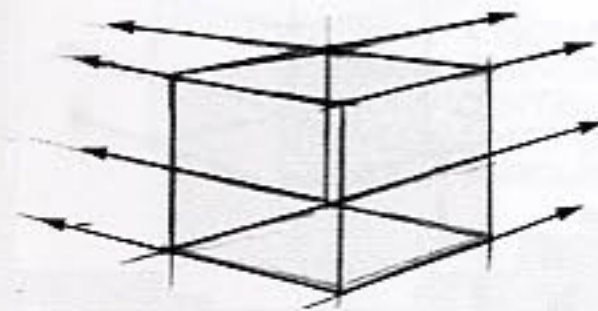
draw past the object
for visual and directional
reference

make all directional
perspective lines appear
parallel or slightly
converging

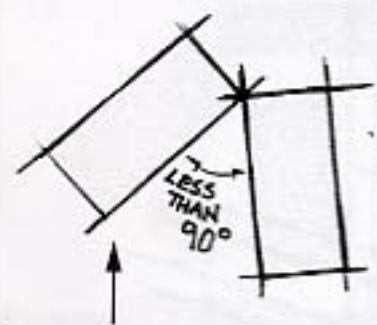


Learn the principles of perspective but don't get limited by rulers and vanishing points. Draw freehand and train yourself to draw straight lines parallel to one another.

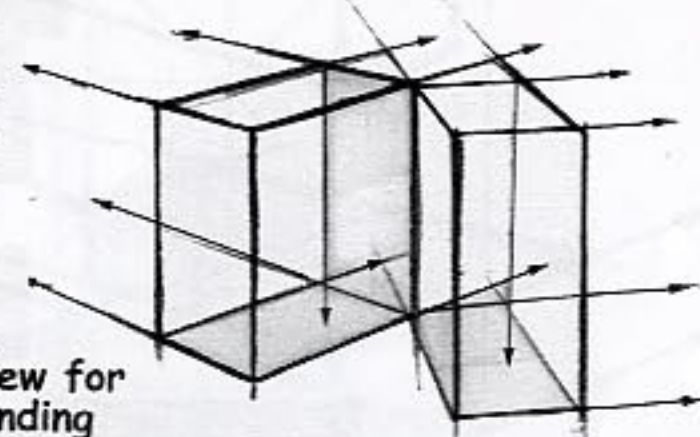
DISSECTING CUBES



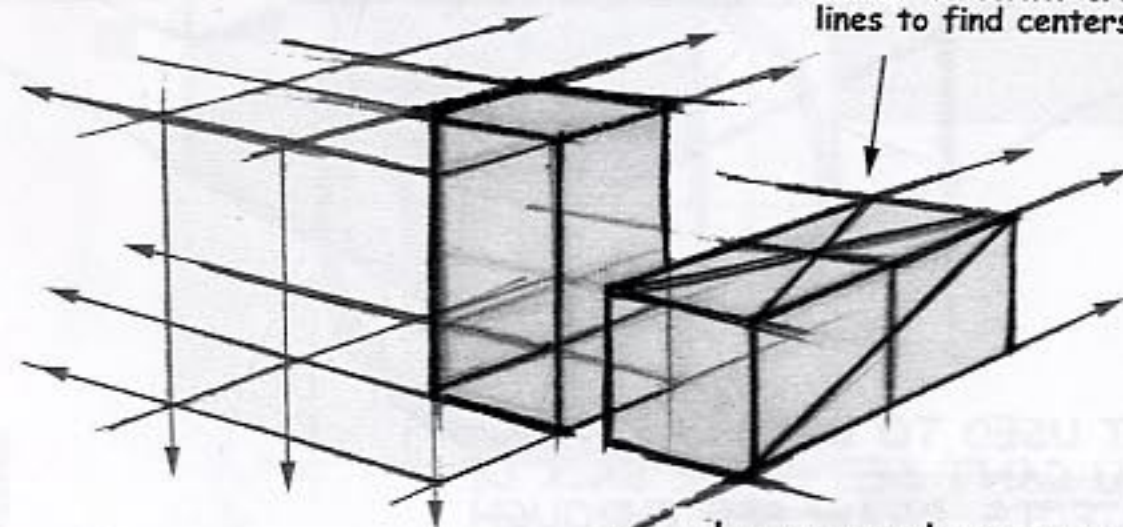
Practice understanding geometric shapes by dissecting cubes into smaller shapes.



plan from a top view for
a better understanding
of what you are drawing



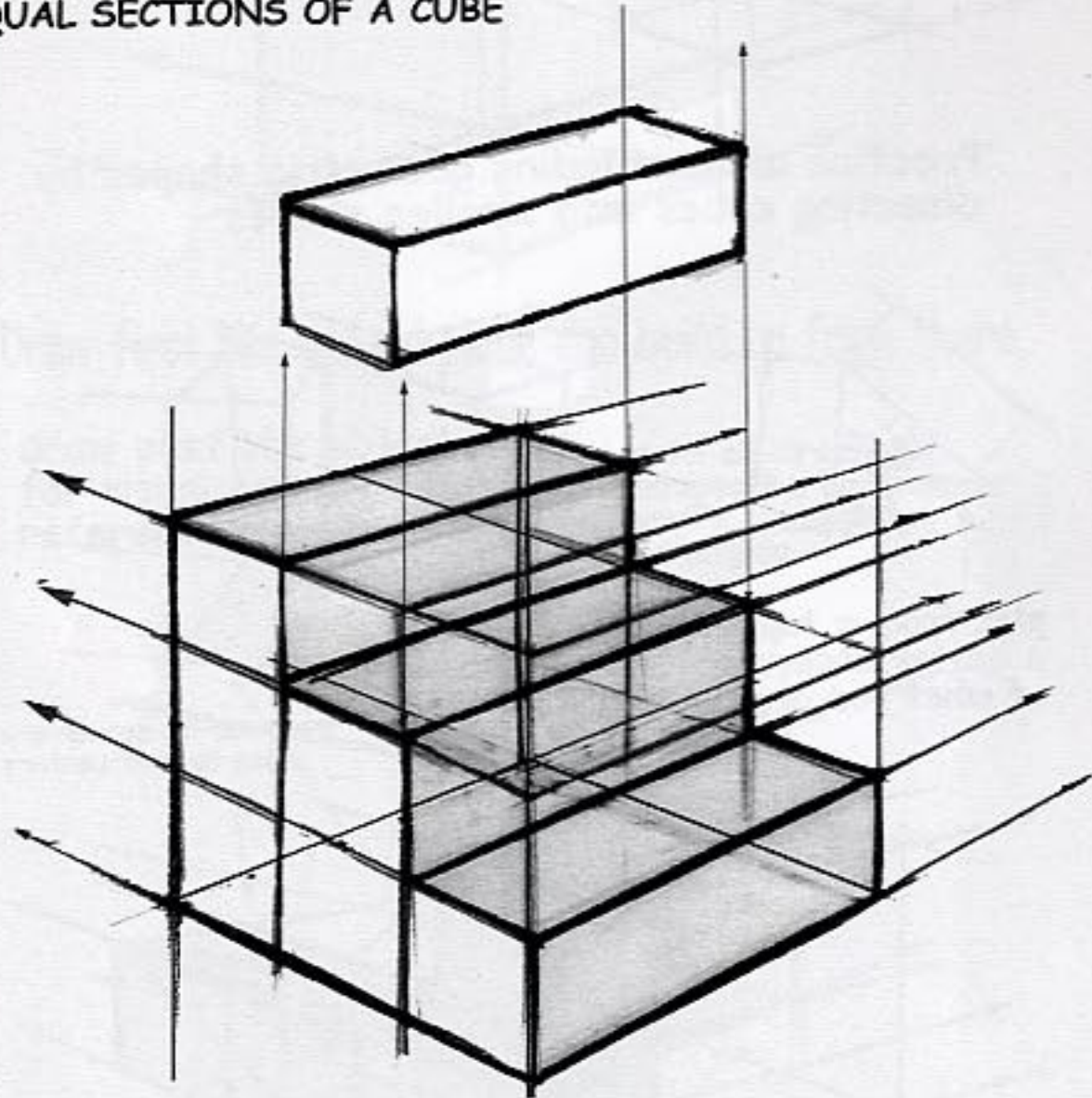
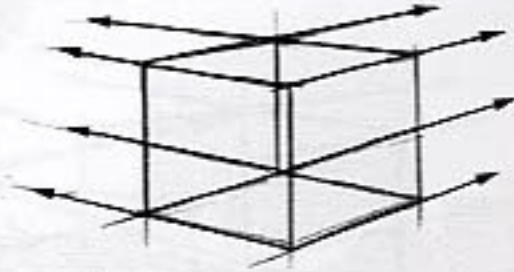
corner to corner cross
lines to find centers.



always overdraw your
directional lines for good
reference

GEOMETRIC SHAPES

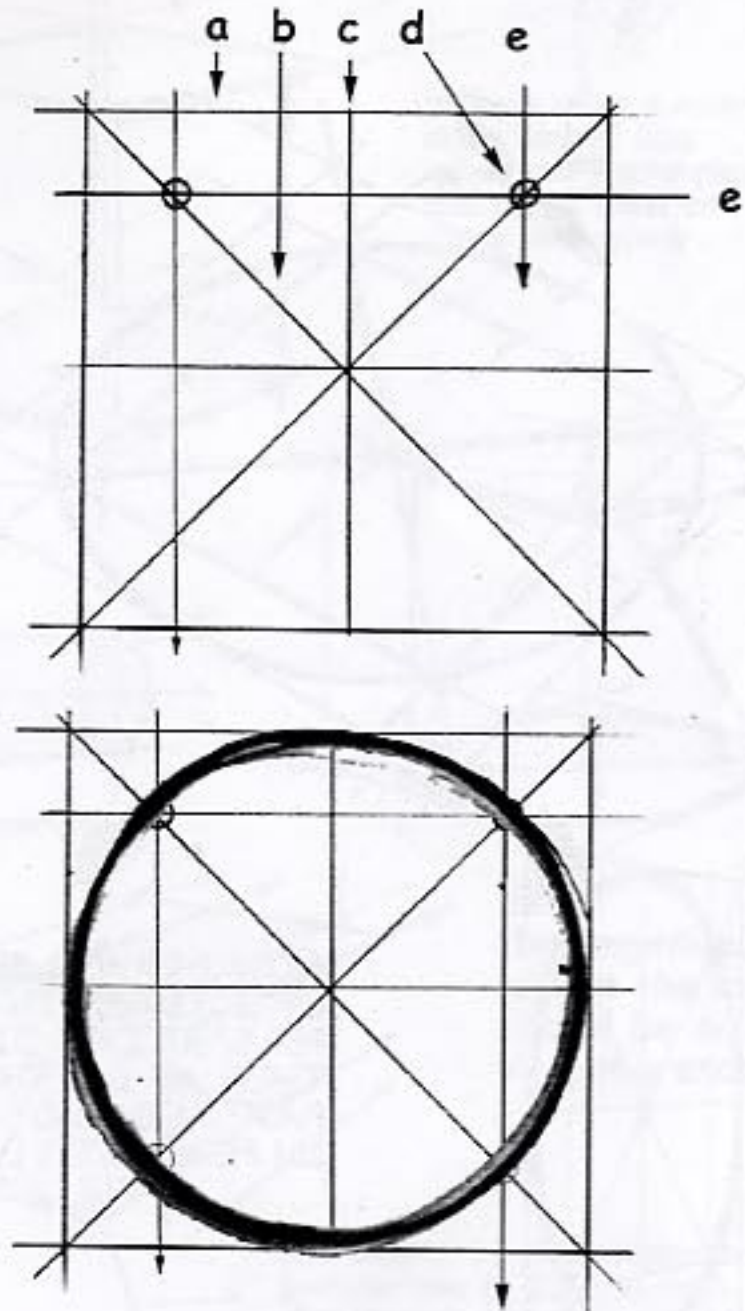
THINK OF THIS EXERCISE
AS CUTTING AND REMOVING
EQUAL SECTIONS OF A CUBE



GET USED TO DRAWING WHAT
YOU CAN'T SEE — THE BACK OF
OBJECTS. DRAW SEE THROUGH
STRUCTURAL LINES.

Simplified ellipse - eyeball it

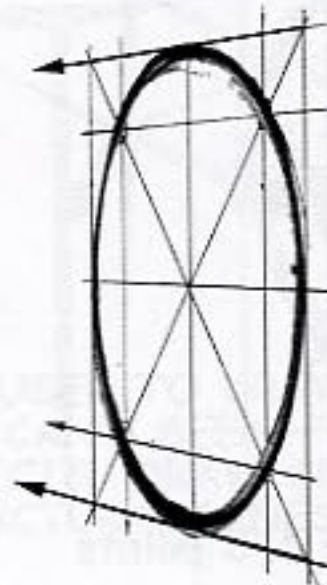
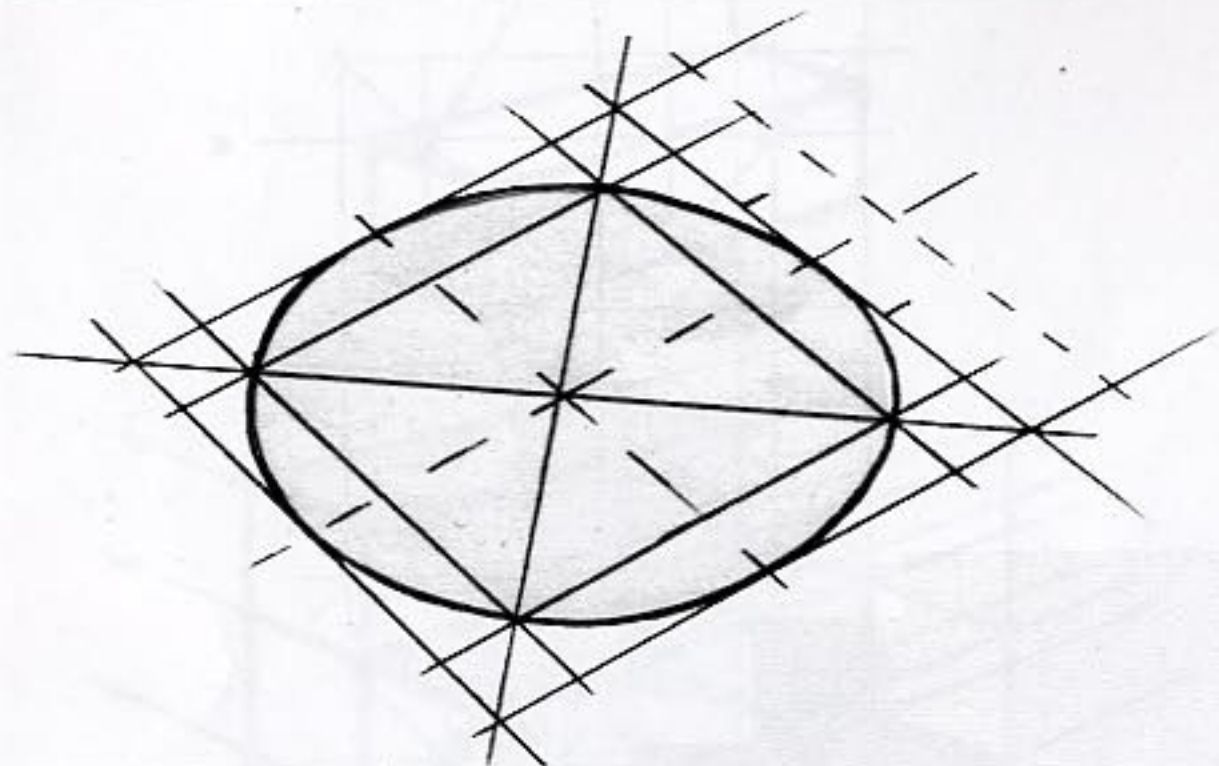
- DRAW A SQUARE
- DRAW CORNER DIAGONALS
- DRAW CENTERS
- EYEBALL 1/3 OF EACH QUARTER
- DRAW THROUGH THE 1/3 POINTS



draw a circle through the 1/3 points

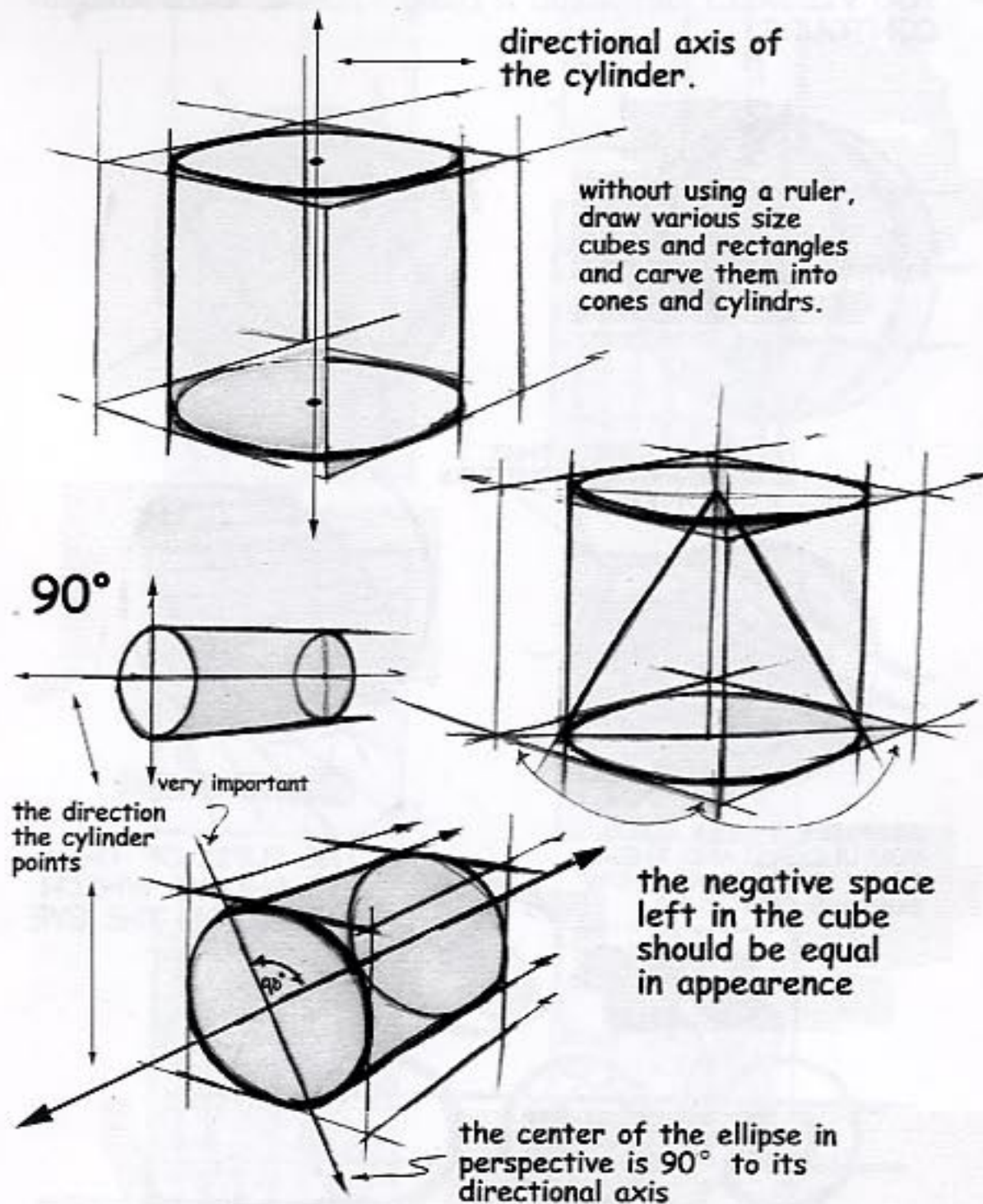
Simplified ellipse

- DRAW A SQUARE IN PERSPECTIVE
- DRAW CORNER DIAGONALS
- DRAW CENTERS
- EYEBALL 1/3 OF EACH QUARTER
- DRAW THROUGH THE 1/3 POINTS



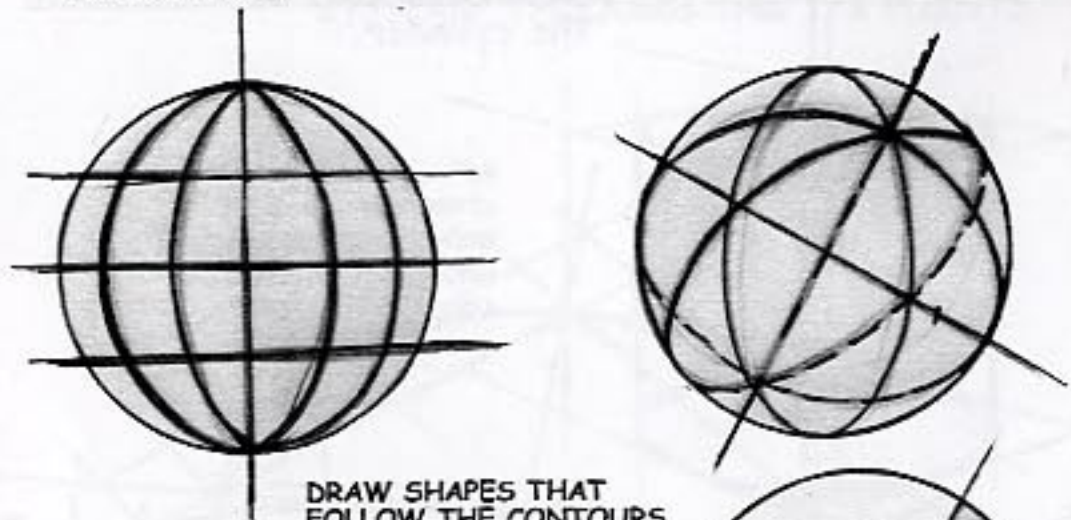
NOW DRAW A SERIES OF SQUARES IN PERSPECTIVE, DIVIDE THEM AS ON THE PREVIOUS PAGE AND ADD THE CIRCLE IN PERSPECTIVE.

ELLIPSES

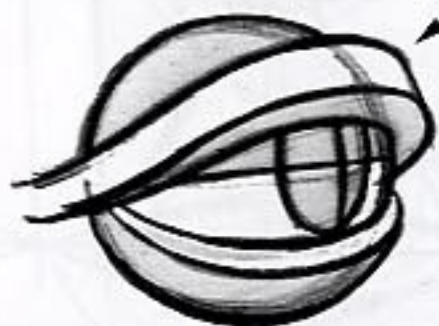


SPHERE

A SPHERE LOOKS THE SAME FROM ALL VIEWS UNTIL YOU VISUALLY DESCRIBE A DIRECTIONAL AXIS AND CONTOURS.



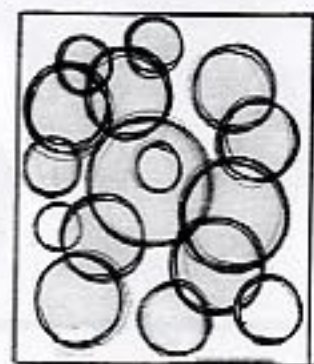
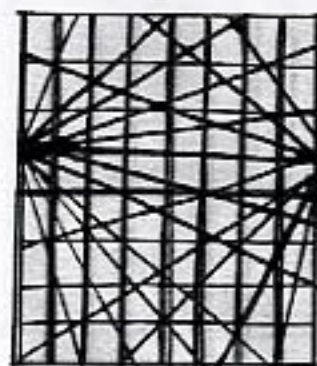
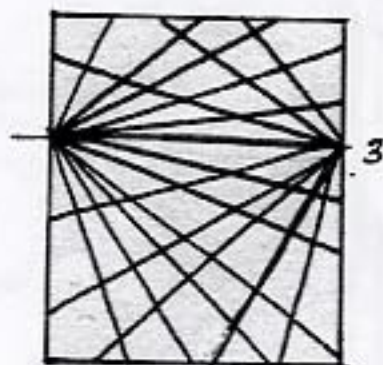
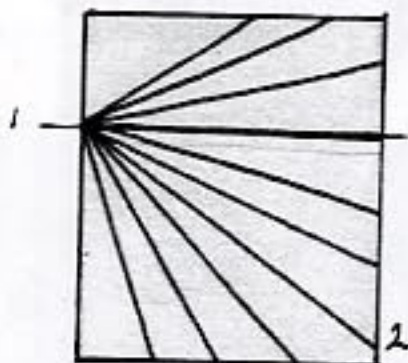
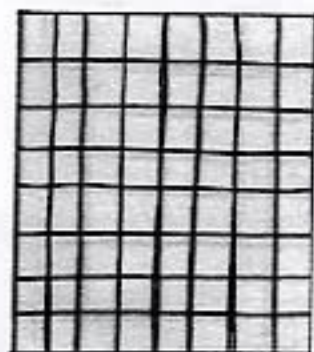
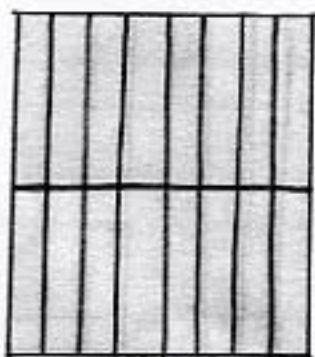
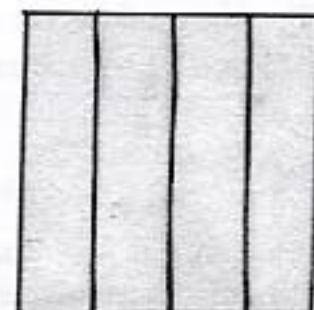
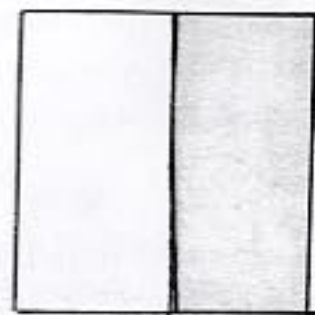
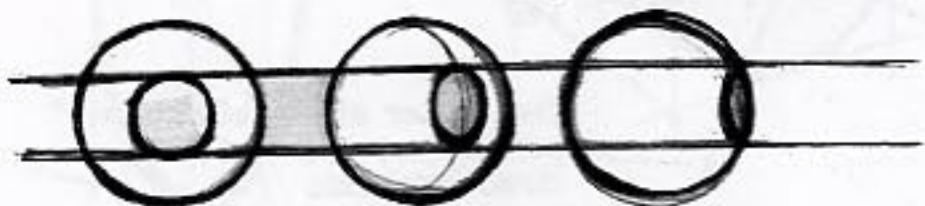
DRAW SHAPES THAT FOLLOW THE CONTOURS OF A SPHERE



SIMPLIFY SHAPES UNTIL YOU UNDERSTAND THEM. DRAW LINES THAT SHOW SURFACE CONTOURS.



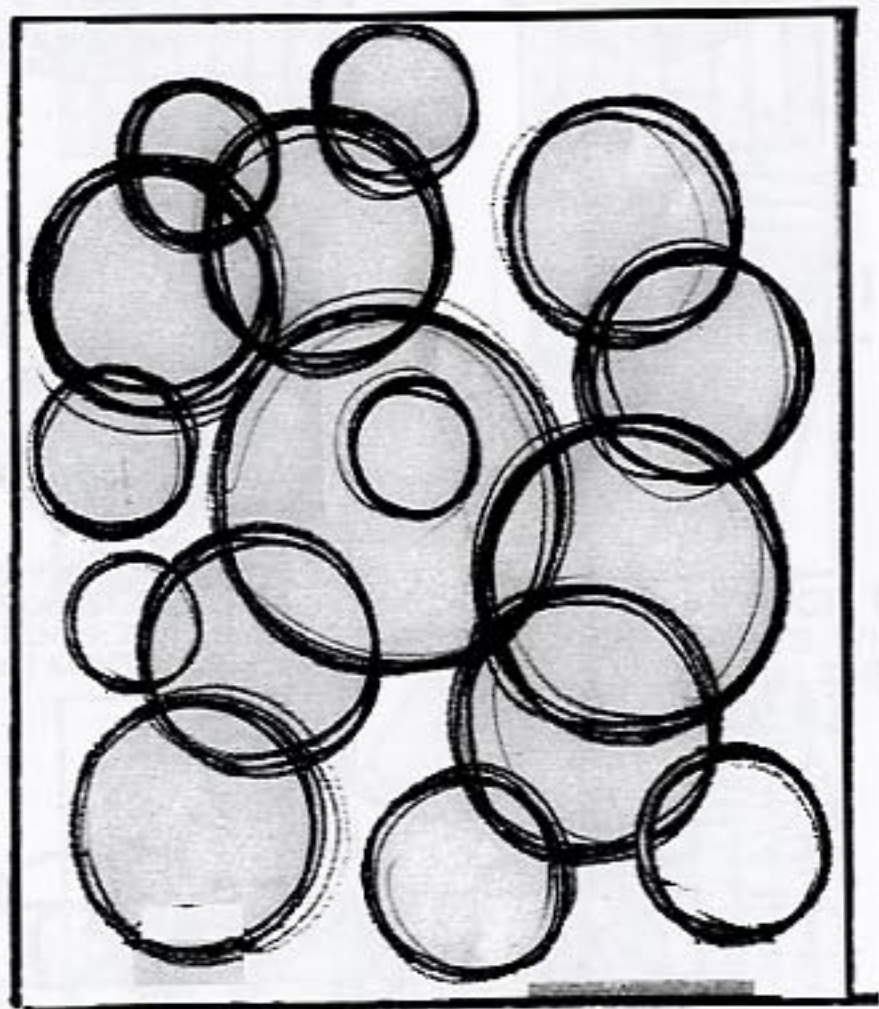
THE PUPIL OF THE EYE SHOWS WHICH DIRECTION THE EYE IS LOOKING.



Warm ups: Always do warm ups. As with any exercise, muscles should be stretched and loosed up before use.

Circle warm ups:

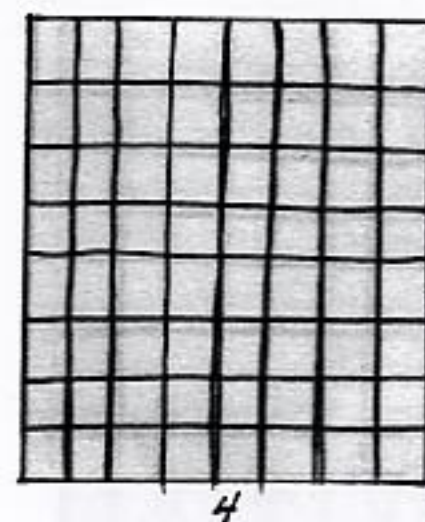
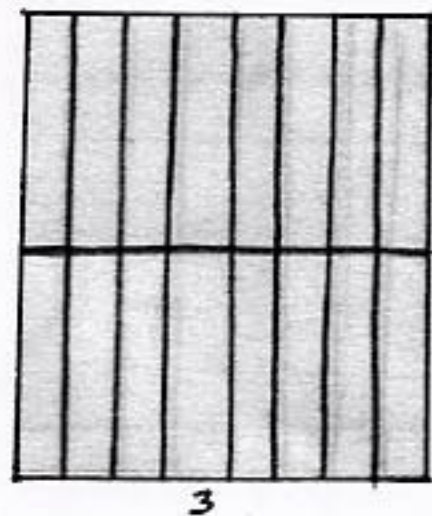
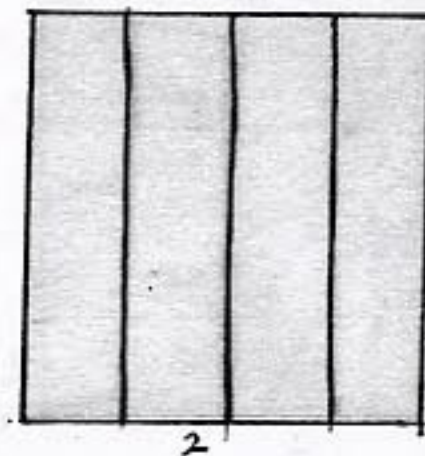
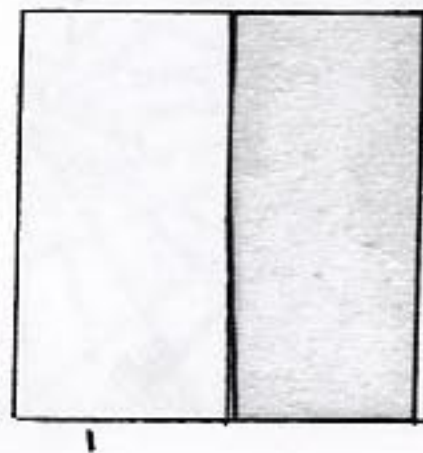
Using the entire arm, not just the wrist, create a series of circles on a page. Use various sizes of circles with some darker lines than others to practice pressure control. Circles should overlap and do not worry about what the page ends up looking like.



Straight line warm ups.

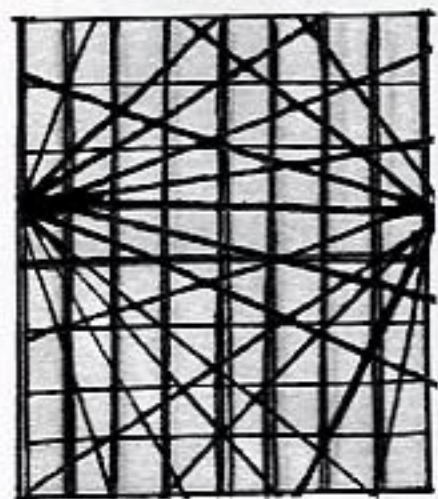
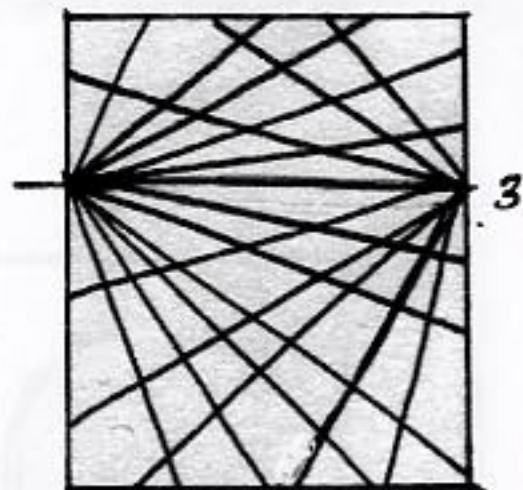
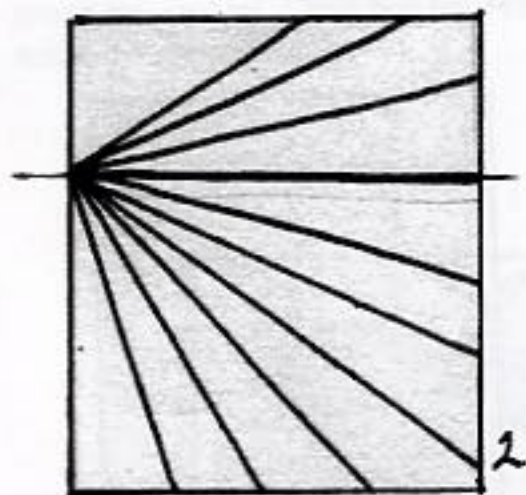
Purpose: to loosen up the straights for free and easy lines. The page is to remain straight and stationary. Control will come through the arm and body.

- 1) Divide the page in half with a straight freehand line (vertical or horizontal).
- 2) Divide halves in half.
- 3) Continue a third time.
- 4) Stop the verticals and repeat the process horizontally.



Diagonal practice:

- 1) Do a horizontal line approximately 1/3 from the top of the page.
- 2) At the edge of the page where the line hits it, do a series of radiating diagonals.
- 3) Do the same from the opposite side of the page and line meeting point.

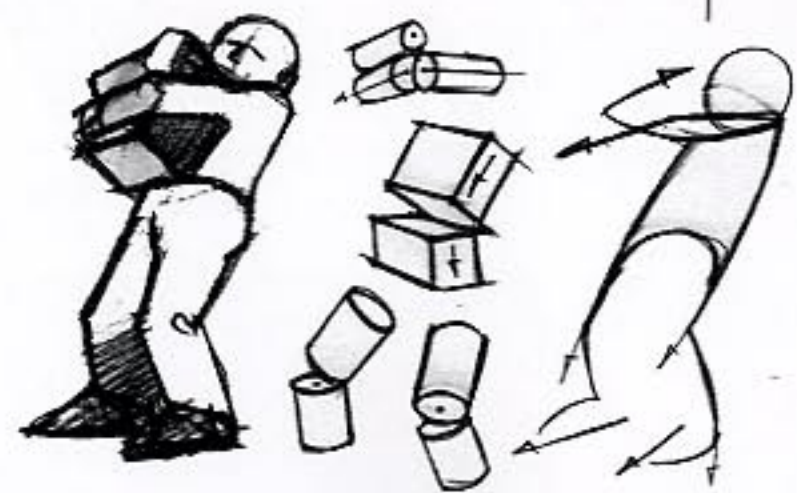


Now start here and work your way to the front of the book

WILEY-INTERSCIENCE
A JOHN WILEY & SONS PUBLICATION

SIMPLIFIED DRAWING FOR PLANNING ANIMATION

By **Wayne Gilbert** and **Robert Taylor**, with special thanks
to **Jim Musyck, Zach Schwartz, John Filderman,**
and **Charles DeLano.**



By Wayne Gilbert