

"This never before combination of ingredients gives an unforgettable learning experience in art and math...this book fuels the synergy between the left and the right brain to take advantage of your child's full learning potential."

Dr. Shribala Kumar, Psychiatrist

**SIEE** what you're



**LOOKING AT!**



*Featuring  
Roscoe the Squirrel!*

**ART**  
from a  
**NEW**  
Point of VIEW!

**FLIP**  
**TO SEE** ⇌  
**IT ANIMATE**  
**ALONG THE BOTTOM!**

# SEE WHAT YOU'RE LOOKING AT!



Published by  
**EDU DESIGNS**, a Non Profit  
501(c)(3) Corporation whose mission is  
to produce and distribute multimedia materials  
for the education, motivation and character development of children.

## EDU DESIGNS

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All Artwork and Text  
by Ruth Elliott except where noted  
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Fifth Edition



# HOW TO USE THIS BOOK:

The chapter headings in **SEE WHAT YOU'RE LOOKING AT**, feature interesting facts and anecdotes from the life of Roscoe the squirrel.

**Hands-on Lessons** combining Geometry and Art for High-Interest Fun!

The **Try it!** section gives the student an opportunity for Independent practice in each lesson!

**NEW WORDS FOR YOU!**  
Provides definitions to new words, adding reading and vocabulary.

**ANIMATION in ACTION!**  
The bottom of every page is part of an **animated sequence** to show movement: When 'flipped' from the back of the book to the front, a man is seen running across the page and Roscoe the squirrel scampers along!

## MATERIALS NEEDED

- 1- PAPER
- 2- PENCILS (Soft Pencils are best: 2B, B and Prismacolors; china marker or charcoal for rough sketches; HB or Harder pencils for clean drawings)
- 3- ERASERS (*Pink Pearl*, or soft white eraser, and a kneaded eraser)
- 4- TRACING PAPER

- Optional:**
- 5- STRAIGHT EDGE OR RULER
  - 6- GLUE
  - 7- SCISSORS
  - 8- ADDING MACHINE PAPER
  - 9- COMPASS, PROTRACTOR
  - 10- Light board or light table



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The bottom of each page is a part of a flip book that is used to demonstrate animation. Holding the book with one hand, start flipping the pages with your other hand from bottom to top, letting the pages come down one by one to see the movement! The opposite side of the book also has animation! Enjoy!





# Acknowledgements

I am thankful for the many folks (and God) helping me along the way: Teachers, friends and family. Especially my mom who first taught me to draw. This book would not have come into being Without the practical assistance from certain individuals as well. I thank my friend Mary Hake for suggesting it in the first place and her good ideas in proofreading. And to her husband Steve for his encouragement and generous support. Also to my late husband David Elliott for allowing me the time to do it. Plus a big thank you to my husband, Jas Hilsdon for assisting in editing the latest edition. I extend my heartfelt gratitude and appreciation to Educational Consultants Diana Cullquipuma, (BA in Childhood Development, MA in Education) and Elizabeth Elliott, (Lead Elementary Science Enrichment Teacher and NASA MAVEN Educator Ambassador) for their invaluable help in correlating The Core Standards into the lessons. ~ Ruth Elliott

**BENEFITS of ART in TEACHING STANDARDS:** It is a well-known fact that Stress inhibits learning [1].

Sadly, the emphasis upon performance in the standards testing process creates an atmosphere of greater stress – on the student as well as the teacher. Fortunately, Art is a stress reliever [2], utilizing the parts of the brain that increase memory and higher thought.[3] With this in mind, ART employs a hands-on approach to logical reasoning, using relevant objects in our environment to connect us to the need for mathematical and spatial understanding. This book is unique in correlating concepts of ART and MATH, which develop creative and critical thinking skills, giving children confidence in their problem-solving skills. [4]

**SEE WHAT YOU'RE LOOKING AT** by Ruth Elliott, references the Core Standards, including Mathematics Content Standards from the National Council of Teachers of Mathematics, for K-8 in the areas listed below:

## Number and Operations

- Understand numbers, ways of representing numbers, relationships among numbers, and number systems
- Understand meanings of operations and how they relate to one another
- Compute fluently and make reasonable estimates

## Algebra

- Understand patterns, relations, and functions
- Represent and analyze mathematical situations and structures using algebraic symbols
- Use mathematical models to represent and understand quantitative relationships
- Analyze change in various contexts

## Geometry

- Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships
- Specify locations and describe spatial relationships using coordinate geometry and other representational systems
- Apply transformations and use symmetry to analyze mathematical situations
- Use visualization, spatial reasoning, and geometric modeling to solve problems

## Measurement

- Understand measurable attributes of objects and the units, systems, and processes of measurement
- Apply appropriate techniques, tools, and formulas to determine measurements

## Data Analysis and Probability

- Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them
- Select and use appropriate statistical methods to analyze data
- Develop and evaluate inferences and predictions that are based on data
- Understand and apply basic concepts of probability

[1] Researcher Paul MacLean, chief brain researcher at the National Institute for Mental Health.

Plus, David Sousa, author of *How the Brain Learns: A Classroom Teacher's Guide and Learning Manual*

[2] Professor Terry Looker and Dr. Olga Gregson, of the Department of Biological Sciences at MMU.

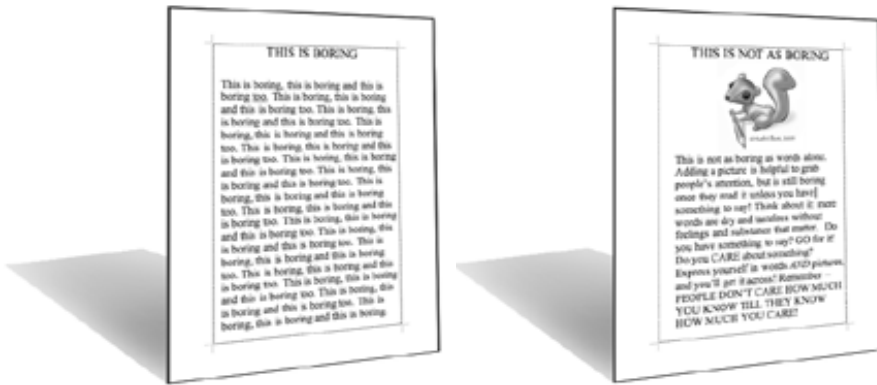
[3] In the 1999 article: *Linking Brain Research to Art*, Perry & Janet Rettig indicated, (quoting Goleman, 1995), that "students are more likely to recall information when it is embedded in an emotional context.

[4] (from the research by The Imagination Project at UCLA, by James S. Catterall, Richard Chappleau and John Iwanaga, July 1999). "...gains for arts-involved youngsters ...become more pronounced over time...this pattern also holds for children from low-income and low parent education level homes." Plus in Nicholas Bezruczko's Study, "Links Between Children's Clay Models and School Achievement" (1997), Art trained groups had 15% higher reading and math scores on standardized tests than did students without arts education.



# WHY ART?

Look at the two pages below:



Which one makes you want to read it more?

The one **WITH** the picture, or the one **WITHOUT** it?

## ART COMMUNICATES!

If you want to get your point across  
**FASTER & BETTER**, include **ART**!

**ART BUILDS OUR BRAINPOWER:** Art is critical to our understanding of math and many other subjects. It increases our ability to conceptualize, allowing us to think spacially. While many books ask you to mindlessly copy without understanding, **SEE WHAT YOU'RE LOOKING AT** guides you to observe, examine and become conscious of what is right in front of you, but what you hadn't seen before. Albert Einstein said,

***"Imagination is more important than knowledge."***

Why? Being able to *visualize* something *before it even exists* is essential to creative thinking. Art develops eye-hand coordination along with mental focus, critical for success in other aspects of our lives.

## ART BUILDS OUR HEARTPOWER:

People remember things better that make them **FEEL** something. Stories get to the core of our emotional being. Tales of Roscoe the baby squirrel sprinkled throughout the book inspire compassion and kindness towards animals. **Your FEELINGS** are important. Express yourself in words AND pictures, and you'll get it across better! What do YOU care about?

**MANY THANKS,**  
Ruth Elliott-Hilsdon,  
[director@edudesigns.org](mailto:director@edudesigns.org)  
*Building Brains and Hearts Through the Arts*



For over 27 years, Emmy Award Winning artist Ruth Elliott created animation artwork for Hanna Barbera, Disney, Warner Brothers, Cartoon Network, and other studios on projects such as Scooby Doo, The Simpsons, The Smurfs, Space Jam, Fern Gully, The Tigger Movie and others. An author and illustrator, her books include The Richest Kid in the Poor House, The Night Princess, Little Blossom and more. The mother of 7 children, her dream has always been to inspire kids with good character and education. She founded the non profit EDU DESIGNS to bring that dream into reality.

***"Seek the secrets of  
the HEART and find  
abundance of the ART."***

***Seek the secrets of  
the ART and find  
abundance  
of the HEART."***

***~ Jas Hilsdon***





# The TRUE STORY of How I Came To Be Roscoe's Mother!

by Ruth Elliott

My friend Arthur was gardening when he saw a baby squirrel fall down from his nest high up a pine tree into some bushes below. "What should I do?", he thought.

He feared the mother squirrel might not come back to get him if a human had touched him, so he left him there, hoping she would return. But she never did and all night long the infant squirrel lay alone on the cold ground, his eyes still unopened and without any fur on his tail yet to keep him warm.

The next morning, Arthur's cat came into the house carrying something in her mouth the way a mother cat will do for her kittens. It was the baby squirrel - and he was still alive!

He wondered,  
'Who can take care of him?'  
He only knew of one person who loved animals and might know what to do for him: Me, Ruthie.

He brought the baby squirrel to me that day with some goat's milk to feed him, and told me, "This is Roscoe!"

It was the beginning of quite an adventure, as you will see in the following pages.

Like Roscoe, we will begin to feel our way in the world, and then open our eyes and learn to **'SEE what we are LOOKING at!'**

*My friend Arthur saw the baby squirrel fall from the tall tree!  
What would you do?*

Run and get Ruthie!



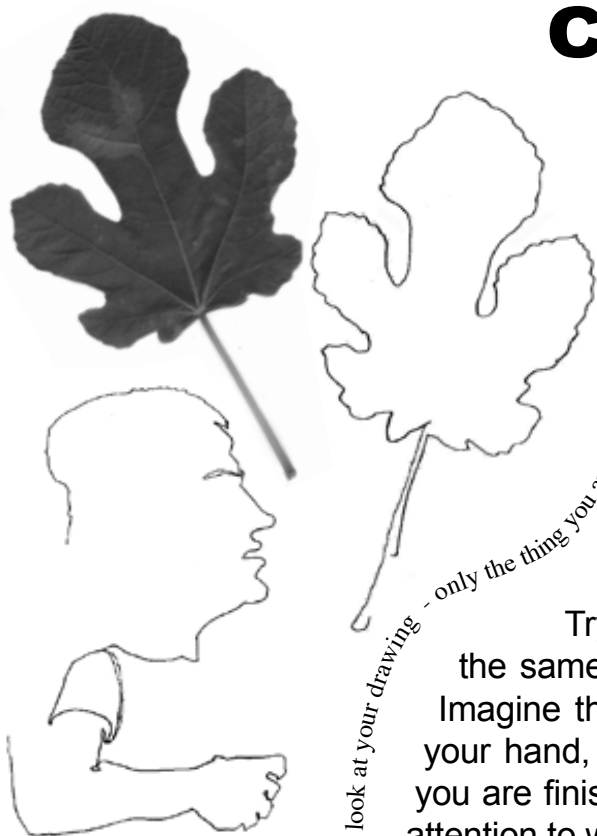


### The Story of Roscoe Continues:

When I first got Roscoe, I put him in a little box with cotton in it. I fed him Goat's milk, the easiest thing for a baby animal to digest when it's own mother's milk isn't available. The hardest part was finding a bottle with a small enough nipple. My husband searched all over town and found a little balloon shaped like a hummingbird. I poked a small hole in the tip of the 'beak' to use as his bottle. Roscoe was so hungry! After I fed him, you could see his full tummy through the thin skin on his stomach!



## LOOSEN UP AND FEEL with CONTOUR DRAWING!



In Contour Drawing you don't

look at your drawing - only the thing you are drawing - until you are done!

Before Roscoe's eyes opened, he learned to identify the things around him by feeling his way around. Contour Drawing is a way to slow down and really feel the surface of the object you are drawing. This is how it works:

Choose something to draw: A leaf, or the person next to you, perhaps. Then look at your sketch pad once - just to place your pencil in the middle of the page where you are going to begin. After that, **ONLY LOOK AT THE OBJECT YOU ARE DRAWING-AND DO NOT LOOK AT YOUR PAPER UNTIL YOU ARE COMPLETELY DONE!**

Try to make your eye and your pencil move at exactly the same speed along the edge of the object you are drawing. Imagine that your eye is controlling your pencil and is acting as your hand, touching the surface of what you are drawing. When you are finished, you will be able to see how much you really paid attention to what you were looking at! Even if it's way off, it is a great experiment in observation and coordinating what your eye sees and what your hand draws.

### New WORDS for YOU!

C O N T O U R

**CONTOUR DRAWING** is feeling the forms on the outer surface of the thing you draw.

**Try it!** Choose an object to draw. Place your pencil on the page. Now look **ONLY** at the object, not the paper. Focus your attention intently and feel as though your pencil is touching what you are drawing. Try drawing a leaf. Then a person. Then choose another object to draw!



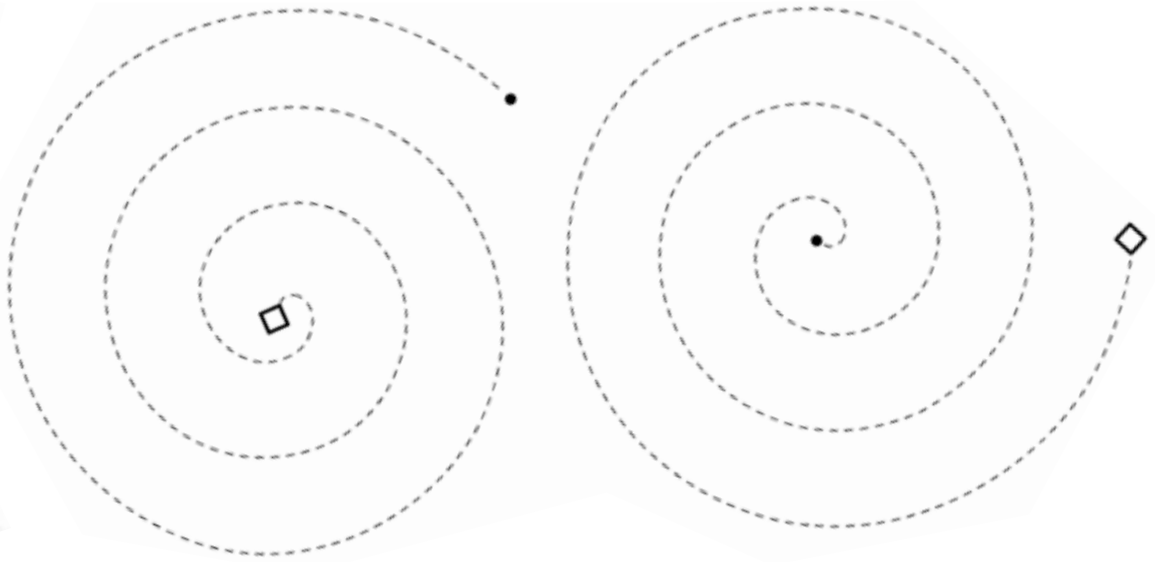


# Exercising **HAND CONTROL**

## Using the natural rotation of the wrist

### Exercise 1

This exercise trains the hand to find it's comfort zone to draw curves using the natural rotation of the wrist. **Right handers:** Start at the DOT. **Left handers:** Start at the Square. Keep your hand resting in a comfortable position as you draw the first curved line. As soon as you feel it's getting harder to draw, turn the **paper** (not your hand), to the next spot you need to draw, to keep drawing with the same comfortable wrist motion you did before.



Remember - when you are done drawing one curved line, leave your hand where it is and turn the **PAPER** to the next place to draw.

### Exercise 2

**FOR THE LEFT PINWHEEL:**

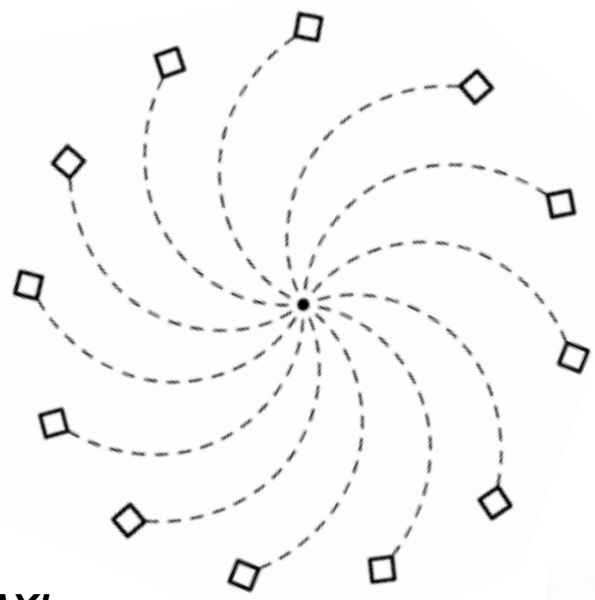
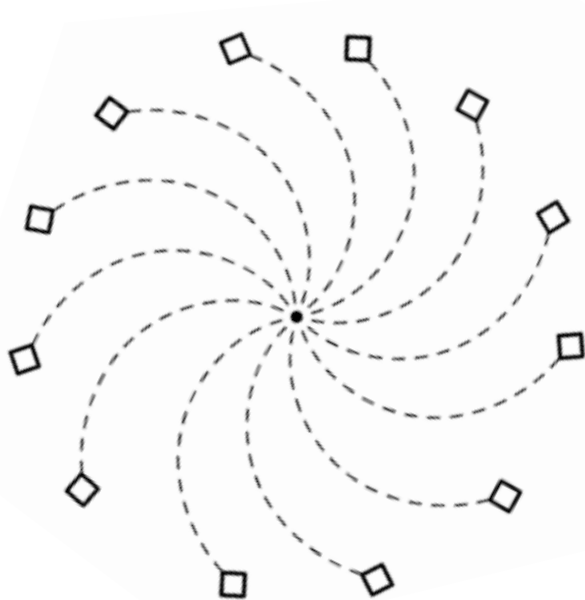
**Right handers:** Start at the DOT.

**Left handers:** Start at the SQUARE.

**FOR THE RIGHT PINWHEEL:**

**Right handers:** Start at the SQUARE

**Left handers:** Start at the DOT



**RELAX!**  
**LEARN TO TURN YOUR PAPER!**





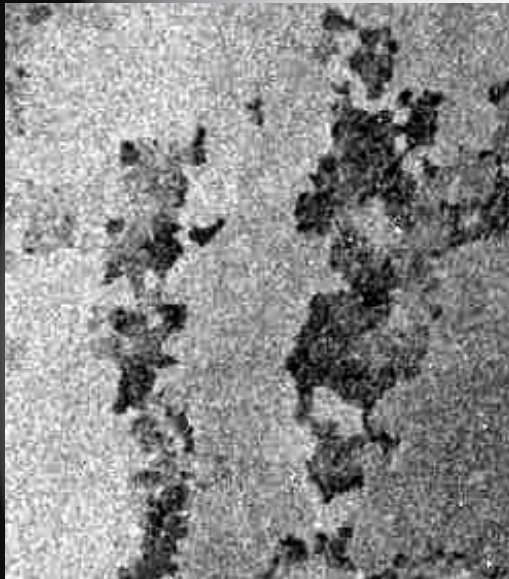
### The Story of Roscoe Continues:

As Roscoe grew, his eyes opened and began to see things around him. He was learning to recognize the shapes and identify what they were. Everything was new to him!



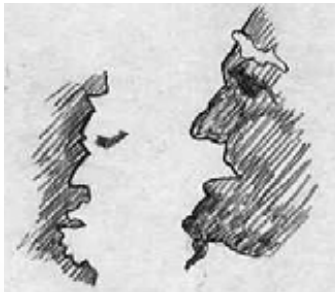
## LEARN TO 'SEE' WHAT YOU'VE BEEN MISSING!

As Roscoe opened his eyes to a new world of seeing, we can too! Look at the world around you with 'fresh' eyes! Just LOOK at what you can SEE!



Can you see images in the photos to the left? The one on the top is lime deposits on a shower door! What do you see?

↓ Here is what I saw.



↑ Here's a picture of a Sea Captain. But wait! When you look at it upside down - it becomes a mermaid!

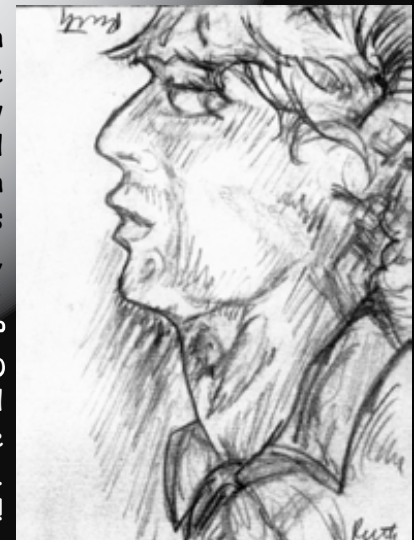


↙ On the left is an image seen on a towel.



↑ Here is what I saw. What do YOU see?

Who is this person to the right? Turn it upside down and see another! Now when you turn it, it's hard NOT to see the upside down image as well! The mind tends to see things in the usual way, right side up - but when we show it another point of view, we develop more visual awareness, and begin to see more than we did before. It's an Optical illusion!



### New WORDS for YOU!

**Try it!** See if you can invent an optical illusion of your own!

O P T I C A L  
I L L U S I O N

An **OPTICAL ILLUSION** is when something appears to change into something else when looked at from another way.







### The Story of Roscoe Continues:

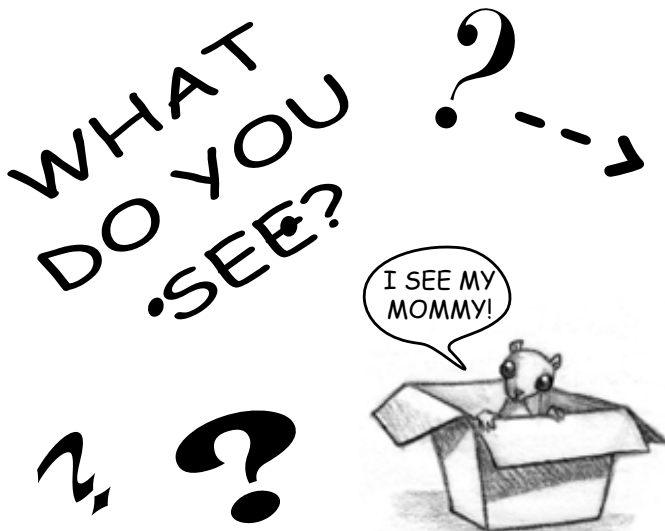
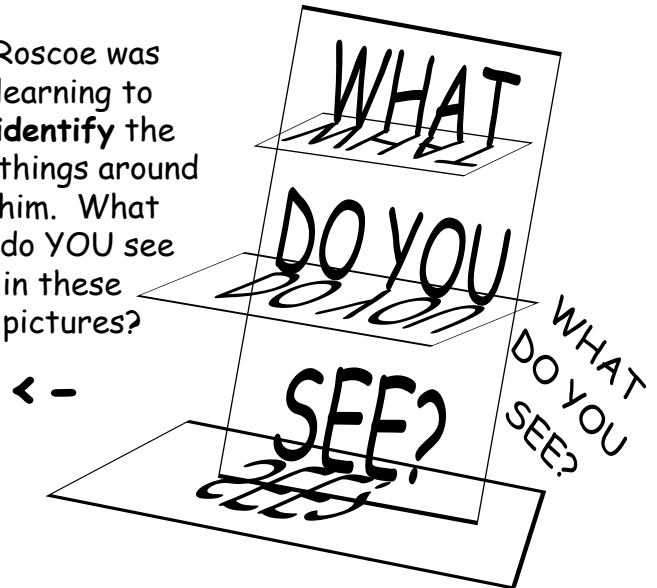
Roscoe was getting bigger! He still didn't have much hair on his tail, but after he kept jumping out of his box to play, we gave him a bigger box. Taking care of him was important and took most of my time, so I learned to work faster to get everything done! Roscoe was like my first kid!



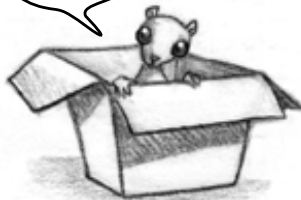
## WHAT DO YOU SEE?



Roscoe was learning to identify the things around him. What do YOU see in these pictures?



I SEE MY MOMMY!



### Try it!

Turn the page around from different angles. What do you think these shapes look like? There are no right or wrong answers. Then turn the page and see what it looked like to me!

### New WORDS for YOU!

To **IDENTIFY** is to recognize and name something.

I D E N T I F Y





### The Story of Roscoe Continues:

The first time Roscoe tried to climb or eat a bite of something new, it felt unfamiliar, but after a while it was as 'easy as pie'. You will learn to 'feel' your way and begin seeing things in a new way as you practice drawing.

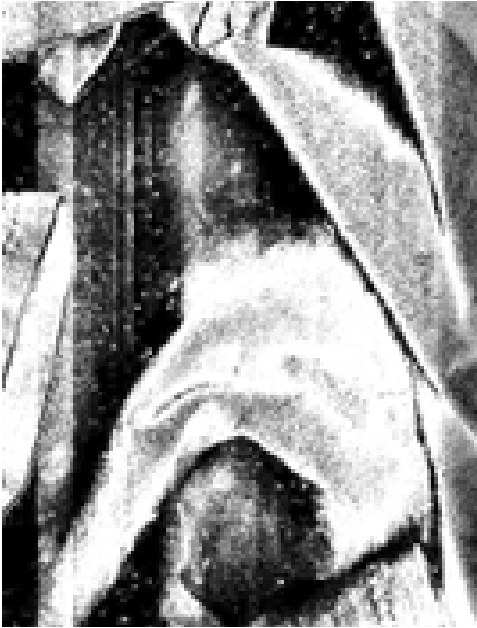
It looks like a circle to me!



Here is what I saw -  
What did you see?

## WHAT DID YOU SEE?

### Have you ever looked at a spot on the wall? The floor? Or a wrinkle in the bed covers - and thought it looked like something else?



Did you ever 'see' something when you looked at clouds: A face, an eye, an animal or something else?

Then you've experienced seeing with your *imagination*, using a part of your brain that is very creative. Some people say it's the 'right side' of our brain. Either way, we can be in our 'right mind' and use that part of our brain whenever we want to for art! Practice!

Look at the wrinkled cloth in the photos to the left. At first it just looks like wrinkles, but when I tried to see the whole thing at once, I saw the figure of a person who's back is turned toward us. I traced the outline of what I saw on the right so you can see what it looked like to me. And you might see something else in it, too.



What do YOU see in these photos of wrinkled cloth?

The old saying,

**"Beauty is in the eyes of the beholder"** is

really true, for each person will see different things in every picture depending on what is inside of them!

**Try it!** Look around you. See if you can see 'hidden' pictures in the surfaces around you. Spots on the walls, floors, tree bark, wood grain, stains on the carpet, folds of your clothing, etc.

### New WORDS for YOU!

I M A G I N A T I O N

**IMAGINATION** is the ability to form images in your mind







### The Story of Roscoe Continues:

When he was a little bigger, we discovered a strange thing. Roscoe was afraid to climb trees! Maybe he still remembered falling out of the tree when he was little? We made a little 'tree' out of logs nailed together for him to practice on inside the house. After practicing every day, pretty soon he was running all over the house. But he was still afraid to climb high. He refused to stay in the nest we made for him on top of a table, and instead made his own nest under our bed! He just had to do it his way to feel comfortable!



### GET TO KNOW YOUR PENCIL:

Rub the point back and forth over a piece of scratch paper first. It will create a sharp angle at the point, and give better control over the line!

## PRACTICE

See how comfortable it is to draw a curved line, using the natural rotation of the wrist.

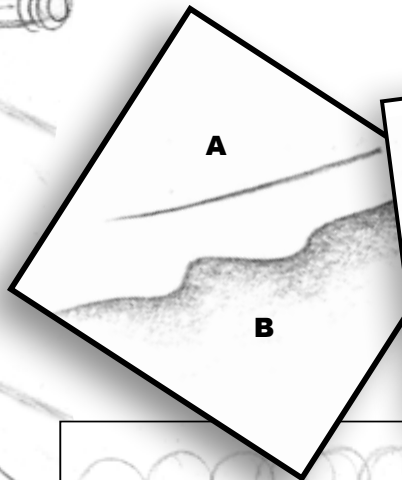
**A**

Then draw a straight line, to feel the difference!

**B**

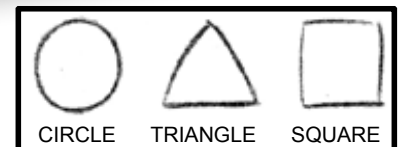
## BASIC

## SHAPES!

**A****B**

The way you hold your pencil will determine the type of line. Holding it normally, like in **A**, will make a thin solid line.

Holding it on its' side, like **B**, makes a shaded line. Experiment, and after a while you'll learn how to control the kind of mark you want to make - it's sharpness or dullness, by the way you hold your pencil.



CIRCLE

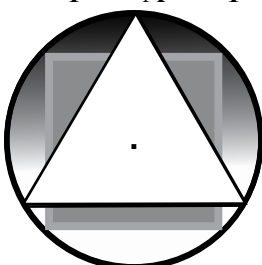
TRIANGLE

SQUARE

A CIRCLE is ROUND  
TRIANGLES have THREE sides.  
SQUARES have FOUR equal sides.

### New WORDS for YOU!

R O T A T E



**Try it!** 1. With the sharp point of your pencil, draw a crisp, clean line. 2. Using the *angle* at the point draw a thicker, dark line. 3. With the side of the pencil lead, draw a shaded line. 4. Practice drawing circles, triangles, and squares till you feel as if your hand knows how to do it almost by itself. This trains your hand and finger muscles for better control.

A circle **ROTATES** around a center point. Our hand rotates at the wrist joint. Controlling our hands is the starting-point!





### The Story of Roscoe Continues:

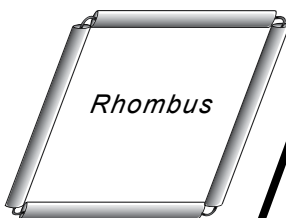
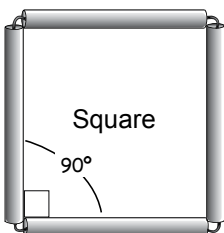
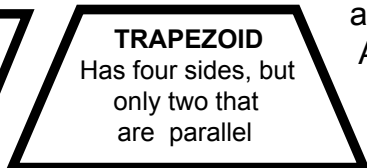
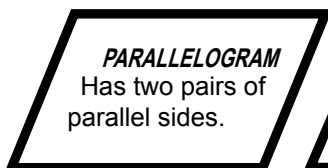
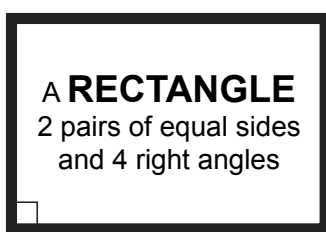
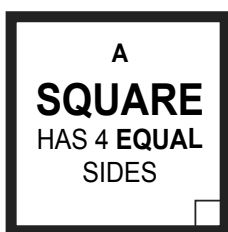
What an industrious little fellow! What was he was doing in the bathroom? I went in, and saw him on his hind legs reaching up and unrolling the toilet paper into a huge wad in his mouth! As soon as the wad was bigger than he was, he ran straight into our bedroom and stuffed it under our bed! "Are you making a new nest?", I asked. In the next few days I began to notice my underwear disappearing from my dresser drawer. Should I look under the bed? Could it be in there? Would it disturb him if I looked? If I did find it, would I ever wear it again?



## QUADRILATERALS

'QUAD' means *four*, and 'LATERAL' means *side*.

The **SQUARE**, **RECTANGLE**, **PARALLELOGRAM**, **TRAPEZOID** and **RHOMBUS** have FOUR sides and are called **QUADRILATERALS** and yet they are not the same! **How are they different?**



### What's the difference?

A **SQUARE** and a **RECTANGLE** are similar because they each have **RIGHT ANGLES** at all Corners. (A right angle is  $90^\circ$ , represented by the little square in the corner). How the **SQUARE** and **RECTANGLE** are different is that a **SQUARE** has equal sides, and the **RECTANGLE** has two sides that are longer.

A **PARALLELOGRAM** and a **TRAPEZOID** are both quadrilaterals that do not have  $90^\circ$  corners.

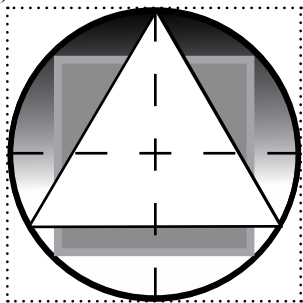
A **RHOMBUS** is a Quadrilateral that has **EQUAL SIDES**, and whose opposite sides are **PARALLEL**.

A **SQUARE** is a Rhombus, but a Rhombus is **NOT** a square, because it doesn't have the  $90^\circ$  angle.

**Try it!** Make your own **RHOMBUS**: **1-** Get 4 straws plus a piece of string or yarn that's as long as four and a half straws. **2.** Thread through all four straws. **3-** Tie the two ends together. You can make it look like a **square**, or lean it over to form a **RHOMBUS**!

## New WORDS for YOU!

360 DEGREES



4400 Years ago the Babylonians observed that it took approximately 360 days for the Sun to complete its circular path through the seasons (one year). So they decided that the Circle should have  **$360^\circ$  (Degrees)**. We still make them that way today! If you divide  $360^\circ$  by 4, it gives you  $90^\circ$  - which is what we call a **RIGHT ANGLE**. 4 of them put together form a **SQUARE**! If you cut a square in half **DIAGONALLY** it makes two triangles! When you add up the three angles of a Triangle of any kind it comes to **EXACTLY  $180^\circ$**  (exactly **HALF** of  $360^\circ$ !)

**Try it!** Get a protractor and some paper, and measure the angles!





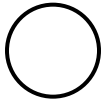
### The Story of Roscoe Continues:

As he grew, Roscoe began to eat other things besides goat's milk. Some of his favorite foods were shaped like basic shapes: fruits, nuts, and avocados. He also loved apple and carrot juice. I was busier than ever feeding him now!



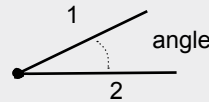
# GEOMETRIC SHAPES!

Figures formed by **closed straight lines** are called **POLYGONS**. In Greek, Poly means "many" and gonos means "angles". How DO you make a Polygon? READ ON!



A Circle is **one curved** line, so it is **not** a polygon.

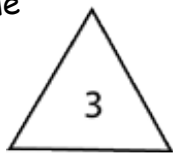
This is called the **VERTEX** (Where two lines **MEET!**)



**Two** straight lines that touch at **one** end form an **angle**, but they do not **all** touch, so they are **not** called a polygon.

**ANSWER:** You need at least **THREE** straight lines closed on all sides to make a **POLYGON!**

Here are some **Polygons** with different numbers of sides.



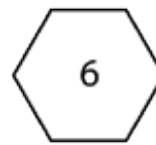
triangle



square



pentagon



hexagon



heptagon

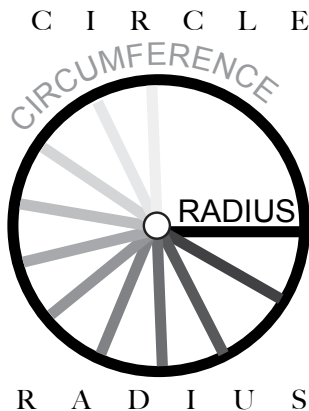


octagon

**Try it!** Practice drawing the polygons above.

Can you see how the more sides are added, the more it begins to look like a circle?

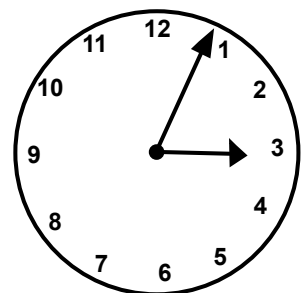
## New WORDS for YOU!



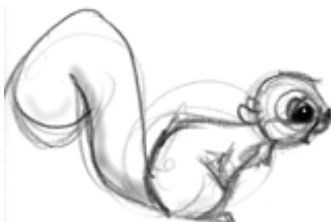
In **GEOMETRY** a Circle is described as 'a point or series of points that move equally around a center point'. (The point in the middle is its' **Center**). If you measure from the exact center to the edge, it will ALWAYS be the same at EVERY point of the circle! That part is called the **RADIUS**. The Length *around* the outer edge of the Circle is called its' **Circumference** (like the outer edge of a disc). It might seem easy, but drawing a Perfect circle is almost impossible without a compass or template (something to trace around). But it's good practice to try!

## WHAT TIME IS IT?

The Hands of a Clock go around, just like the radius rotates around the center of the Circle!



**Try it!** 1. Draw a Circle. 2. Draw a point in it's center. 3. Then make it into a clock by drawing the numbers 1 - 12. Add the hour and minute hands. What time is it on your clock?



Time to Practice DRAWING!







## The Story of Roscoe Continues:

One thing Roscoe enjoyed eating was Corn Chips, whether they were square, rectangular, triangular or circular!

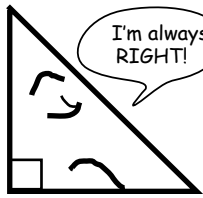
Mmm!  
Rectangles!



# TRIANGLES!

## New WORDS for YOU!

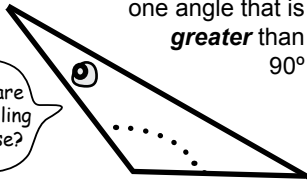
Each triangle is identified by its' different ANGLES. Check these out!



A **RIGHT** Triangle has one  $90^\circ$  angle, shown by this symbol ( $\square$ )!

An **OBTUSE** Triangle has one angle that is **greater** than  $90^\circ$

Who are you calling Obtuse?



(I'm sharp!)

An **ACUTE**

Triangle has all angles less than  $90^\circ$



An **EQUILATERAL**

Triangle's sides are **all** the **same** length!

I'm always the same!



(equal!)

An **ISOSCELES**

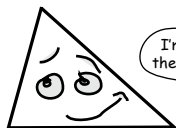
Triangle has only 2 sides that are the same



I'm in balance!

The sides of A **SCALENE**

Triangle are **ALL different** lengths!



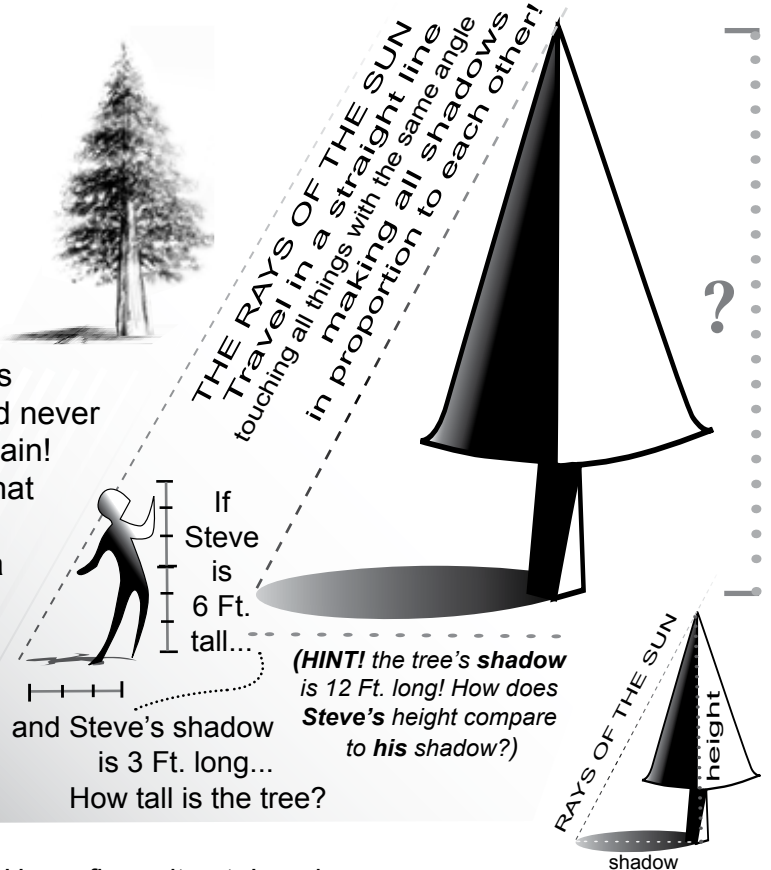
I'm not the same!

## How TALL is that TREE?

Roscoe climbed way up a tree! I was afraid he would never come down again!

How tall was that tree, anyway?

If it had been a sunny day, I could have figured it out EASILY, by looking at the shadows!



THE RAYS OF THE SUN Travel in a straight line touching all things with the same angle making all shadows in proportion to each other!

If Steve is 6 Ft. tall...

and Steve's shadow is 3 Ft. long...

How tall is the tree?

(HINT! the tree's shadow is 12 Ft. long! How does Steve's height compare to his shadow?)

Here's how YOU can figure it out: Imagine a TRIANGLE formed by these three sides: 1 - Steve's Height (which is **6 feet tall**), and 2 - his shadow

(which is **3 feet long**), and 3 - the angle of the sun's rays. The Sun's rays shine the exact same angle on the tree, too. Since we know that Steve's **height** is twice as long as Steve's **shadow**, we know that the height of the tree has to be **twice** as long as the length of **its shadow**! That's because the TRIANGLES formed by each have the same PROPORTION. Steve and HIS shadow have the same PROPORTIONS as the height of the tree, and its shadow (since the angle of the sun is the same for both). The tree's shadow is **12 feet long**. Did you guess the Height of the tree?

ANSWER: If you said 24 feet, you're correct!

**Try it!** Practice drawing a RIGHT triangle, an OBTUSE triangle, an ACUTE triangle, an EQUILATERAL triangle, an ISOSCELES triangle and a SCALENE triangle. Put a funny face on each one and label them.





### The Story of Roscoe Continues:

Just as Roscoe learned to make use of everything around him, we can learn to identify simple shapes in the objects around us.

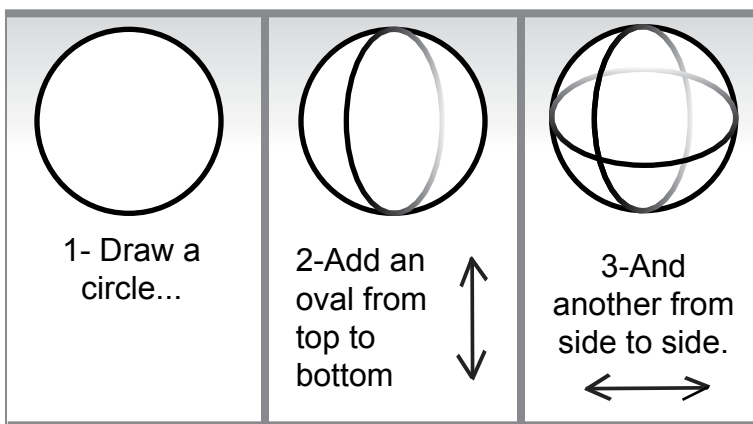
Ask yourself: What shape is it? Round, Square? Triangular?



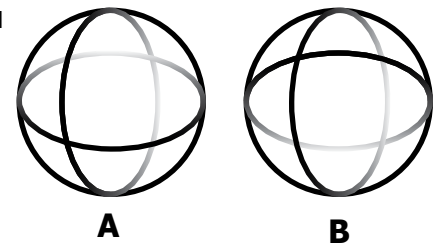
## MAKE SHAPES THAT APPEAR 3-D!

### From a Flat Circle to a Sphere

Once you feel comfortable drawing flat, two-dimensional shapes, you can make your drawing appear solid by following the directions below.



Whatever you darken gives emphasis to that part and adds 'weight' to it. Darken one side of

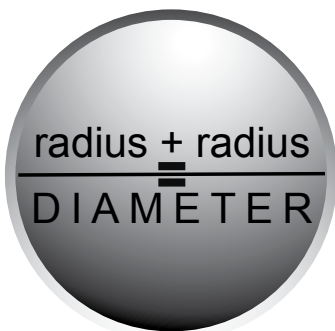


each inner oval more than the other. The darker line will appear to be in front. Notice how the sphere (A) above, looks like we are seeing it from above. The sphere on the right (B) looks like we are seeing it from below!

**Try it!** Follow the directions above to draw a sphere from above or below.

### New WORDS for YOU!

S P H E R E



D I A M E T E R

A **SPHERE** is a three dimensional object in which all points on it's surface are the same distance from the **center**. The **RADIUS** (write '*r*' for radius), goes *half-way* through the circle. The line that goes all the way *across a circle through it's center* is called it's **DIAMETER**, (write '*d*' for diameter). The DIAMETER cuts the circle into two **equal** halves. So, twice the length of the Radius is equal to the length of the Diameter! In MATH, you can write it out like this to make it quick to understand:  **$2r = d$** .





### The Story of Roscoe Continues:

Roscoe loved acorns. Most people never eat acorns because of their bitter flavor. Native Americans ate them, but only after they were dried for months and then soaked in water to remove the toxins and tannic acid.



## Ovals

### From Oval to Acorn

I love acorns for their beautiful shape and feel.  
Let's see how to DRAW one! We use a similar process as when drawing a sphere.



1. Start with a rough sketch of an egg-shaped oval.



2. Add a small oval across the bottom half, for the cap that holds the acorn.



3. Add an extra line around the bottom half to show thickness of the cap.



4. Put a stem underneath (two curved lines plus a tiny oval at the end of the stem).



5. Erase any construction lines you don't want to show.



6. Darken those lines you want to keep, add shading and then it's done!

**Try it!** 1. Follow the instructions above to draw an acorn!

### New WORDS for YOU!

O V A L



E L L I P S E

An **OVAL** looks like 'a squashed circle', but is also described as an **ELLIPSE**. It can represent a circle tilted in space: a wheel turned slightly to the side; or a cross-section of a cylindrical object, like a roll of cookie dough sliced at an angle!



YUM! OVAL COOKIES!







### The Story of Roscoe Continues:

Some friends came over to use the hot tub out back. They used our bathroom to change in, and put all their jewelry on the dresser drawer near our bed. When they came back later the jewelry was gone! Oh no! Where did it go? They gave us a funny look. My husband was afraid they would think we took it! Then suddenly I remembered Roscoe! Now it was time to look under the bed! Sure enough (much to our relief) we found the jewelry, the underwear, a few avocados, fruits, nuts - and wads and wads of toilet paper!



## From OVAL

## to Cylinder:



(1) Draw an Oval.



(2) Draw another Oval below it;



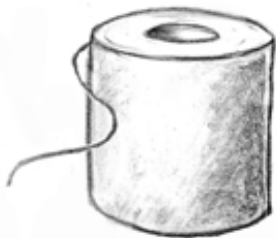
(3) Connect the outer edges with two lines.



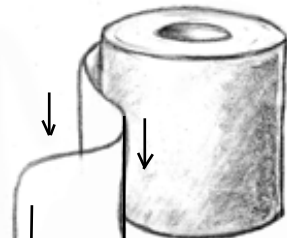
(4) Erase the lower inside curve, to make it look solid



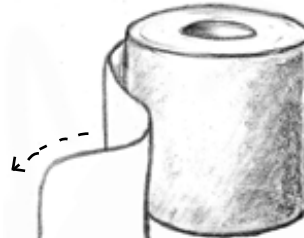
(5) Add a tiny oval inside the top one, plus some shading & you have a toilet paper roll!



(6) To create the billowy folds of paper that unroll, first draw an 'S' just coming off the top of the roll.



(7) Draw 3 lines straight down from the edges of the curve: erase what will not show behind the front paper.



(8) Draw the bottom of the unrolled paper like the (dotted) top one.



(9) Add some extra shadows and you're done!

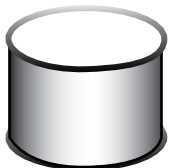
**Try it!** 1. Follow the instructions given to draw a roll of toilet paper.

2. Draw three other objects that are shaped like a cylinder, e.g., can, drinking glass, pipe, jar, etc.

## New WORDS for YOU!

C Y L I N D E R

A cylinder has two equal round bases.

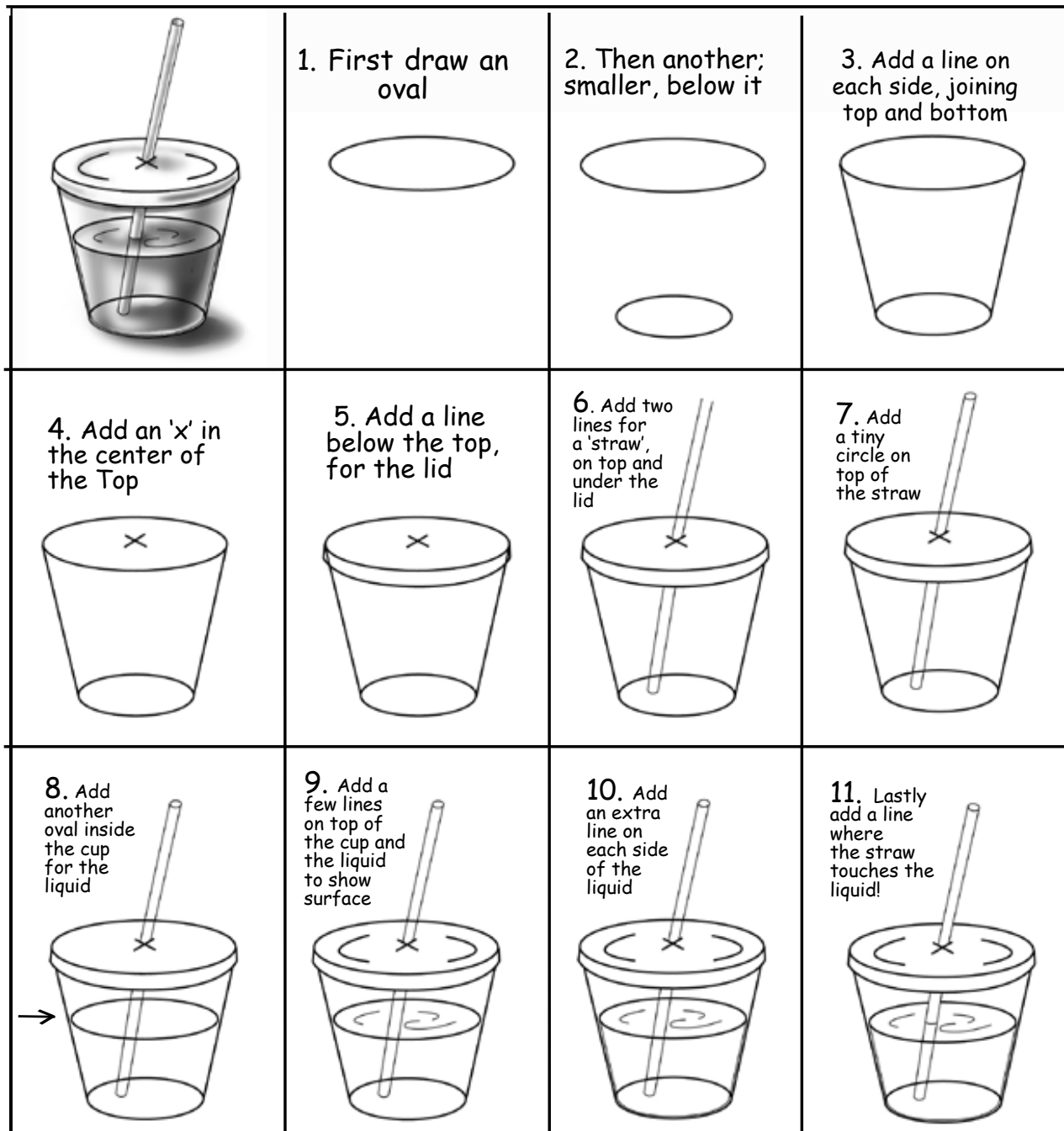


I CAN draw a can!



## FROM OVAL to CYLINDER, continued:

Use what you learned on the previous page to  
**DRAW THIS TRANSPARENT FAST FOOD CUP!**



**Try it!** 1. Follow the instructions given to draw this **transparent** fast-food cup. 2. Draw another cup that is opaque (*not* transparent). Hint: Erase any lines that wouldn't show through.

### New WORDS for YOU!

**TRANSPARENT** means 'see-through'.

**OPAQUE** means you *can't* see through it.

TRANSPARENT



OPAQUE





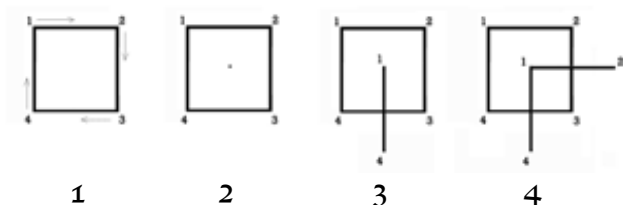
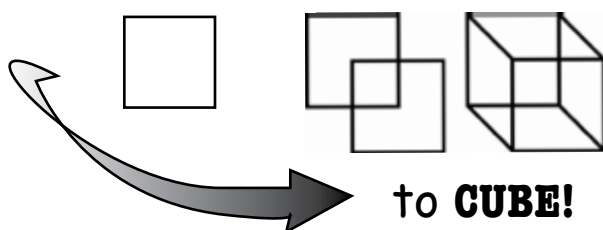
### The Story of Roscoe Continues:

After Roscoe's 'stealing' episode, I discovered how he had gotten into my dresser drawer even with the drawers shut.

He had crawled under the small space at the bottom, and inside, behind all the drawers in the back, and up, up, up into the very top drawer to get my underwear – all without my knowing it! By the way, I never wore *those* undies again!

## From SQUARE to CUBE

Go from 1 SQUARE to 2 SQUARES,



1. Draw a square. 2. Add a dot in the center of the square so you'll know where to start drawing the next square. Add the lines in 3, 4, 5, 6. Then (at 7) draw straight lines connecting each corner to the corresponding corner of the other square. In the chapter on Perspective, we will learn even more ways of drawing cubes!

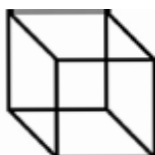
### Having trouble knowing which corner to connect with which?

Try this tip: Number each of the corners (the same for each) on both squares after you create them. Connect the corners that have the same number and you will complete the entire cube!

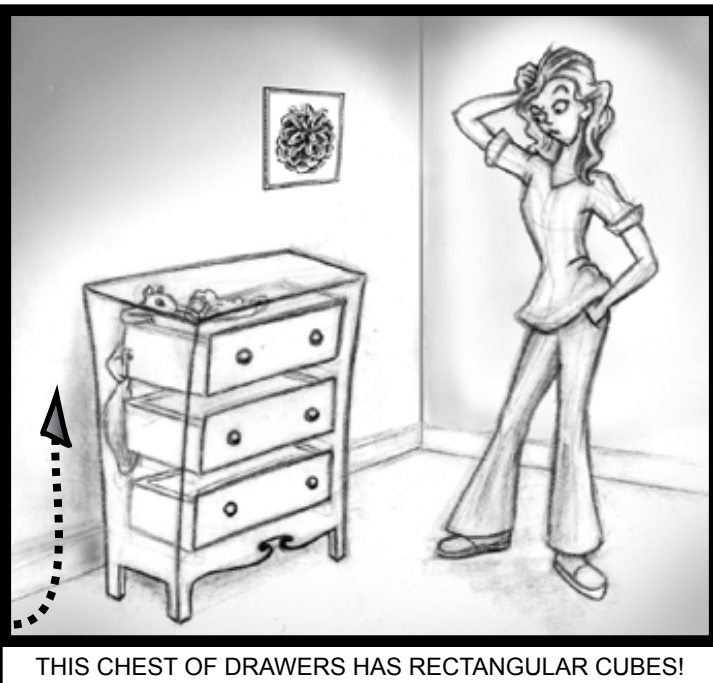
**Try it!** Follow the instructions here to draw a **transparent** (see-through) cube. Now erase the lines that wouldn't show if it was a solid (**opaque**) cube. Try creating other cubes of different sizes. Draw three objects that are shaped like a cube. Hint: TV Set, Box, a house, etc.!

### New WORDS for YOU!

C U B E



A cube is a three dimensional figure with six sides, and a square on each side.





## INSTRUCTIONS

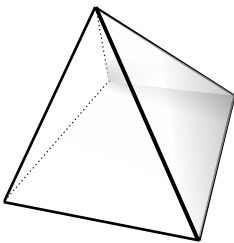
- 1- **Photocopy** this page, and cut out the copy along the dotted line.
- 2- **Fold** along the Dark Lines to crease them.
- 3- **Join** the sides together to form the CUBE.
- 4- **Glue or tape** the flaps on the inside.

What  
is a  
Square?

\*pg 13

Create your own  
**'CUBE-MAKER'**  
Follow the instructions  
to make and then  
**PLAY THE GAME!**

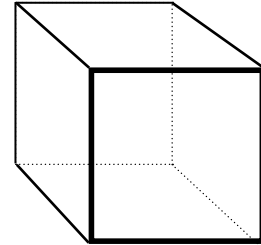
How Many Sides has



a Pyramid with  
a **square** base? \*pg 22



How Many Sides has a  
**CUBE?**



\*pg 20

## HOW TO PLAY THE GAME:

Take turns rolling the CUBE. Read what the top face says and answer the question. If you don't know the answer, look it up in the book (\*shows page #). If you DO know the answer, you get to roll again and ask someone else the next question. If Roscoe's picture comes on top, you have to pass your turn to the next person. Keep playing the game till you know the answers by heart!

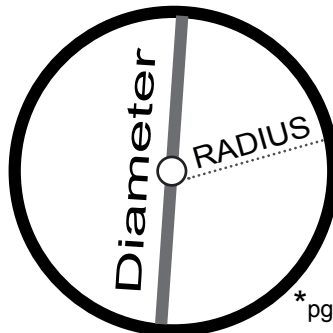
What is another



word for OVAL?

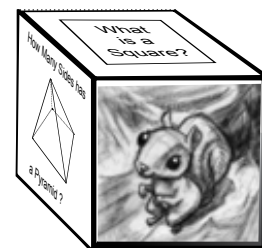
\*pg 17

Define DIAMETER



\*pg 14

Define RADIUS

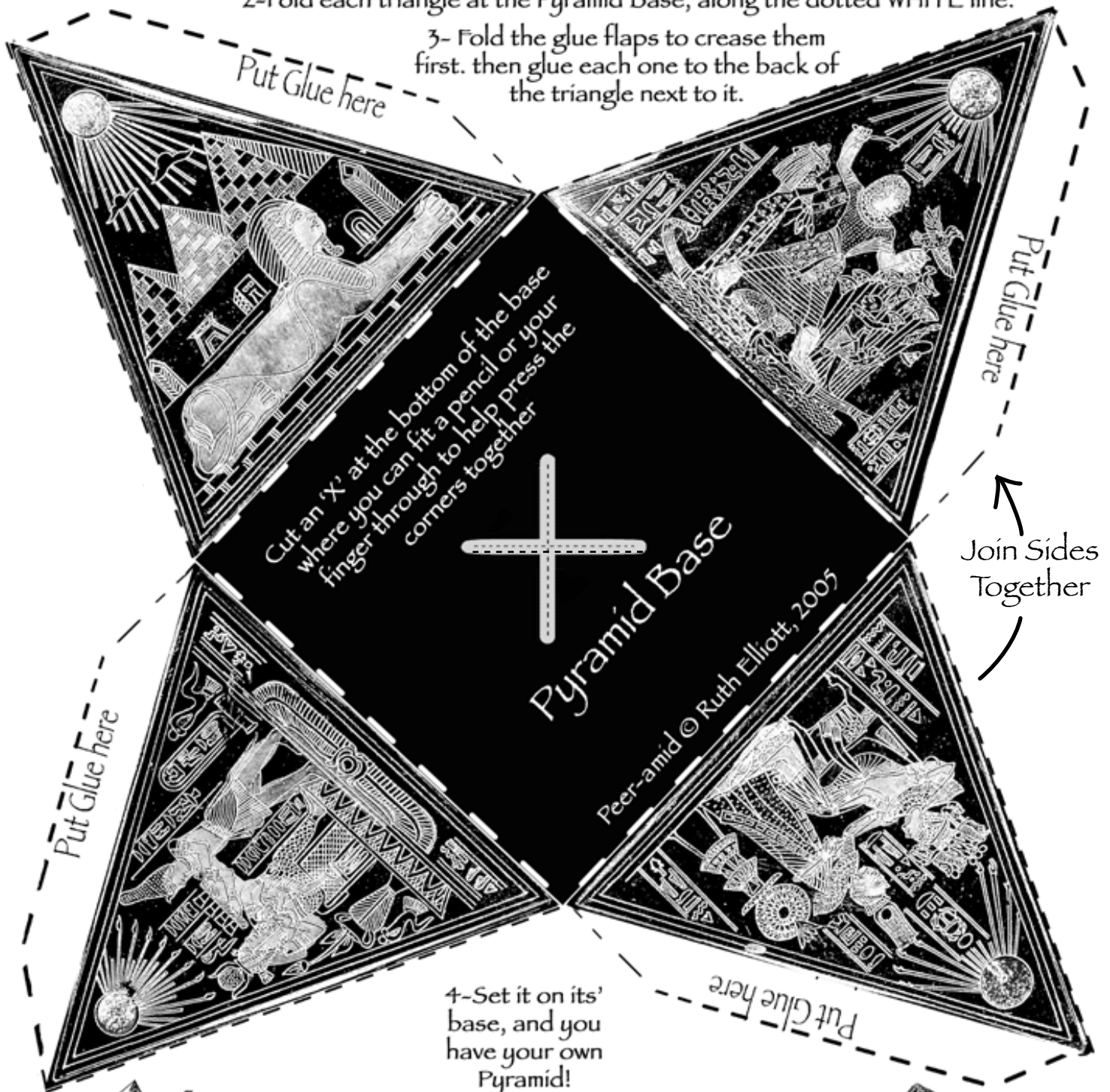


# CREATE YOUR OWN PYRAMID! (Photocopy this, & cut out the copy)

1- Cut out along the dotted black line. Cut a small 'X' in the middle of the Pyramid base, (to reach inside with a pencil or finger to help join the corners together).

2- Fold each triangle at the Pyramid Base, along the dotted WHITE line.

3- Fold the glue flaps to crease them first. then glue each one to the back of the triangle next to it.



4- Set it on its' base, and you have your own Pyramid!

## New WORDS for YOU!

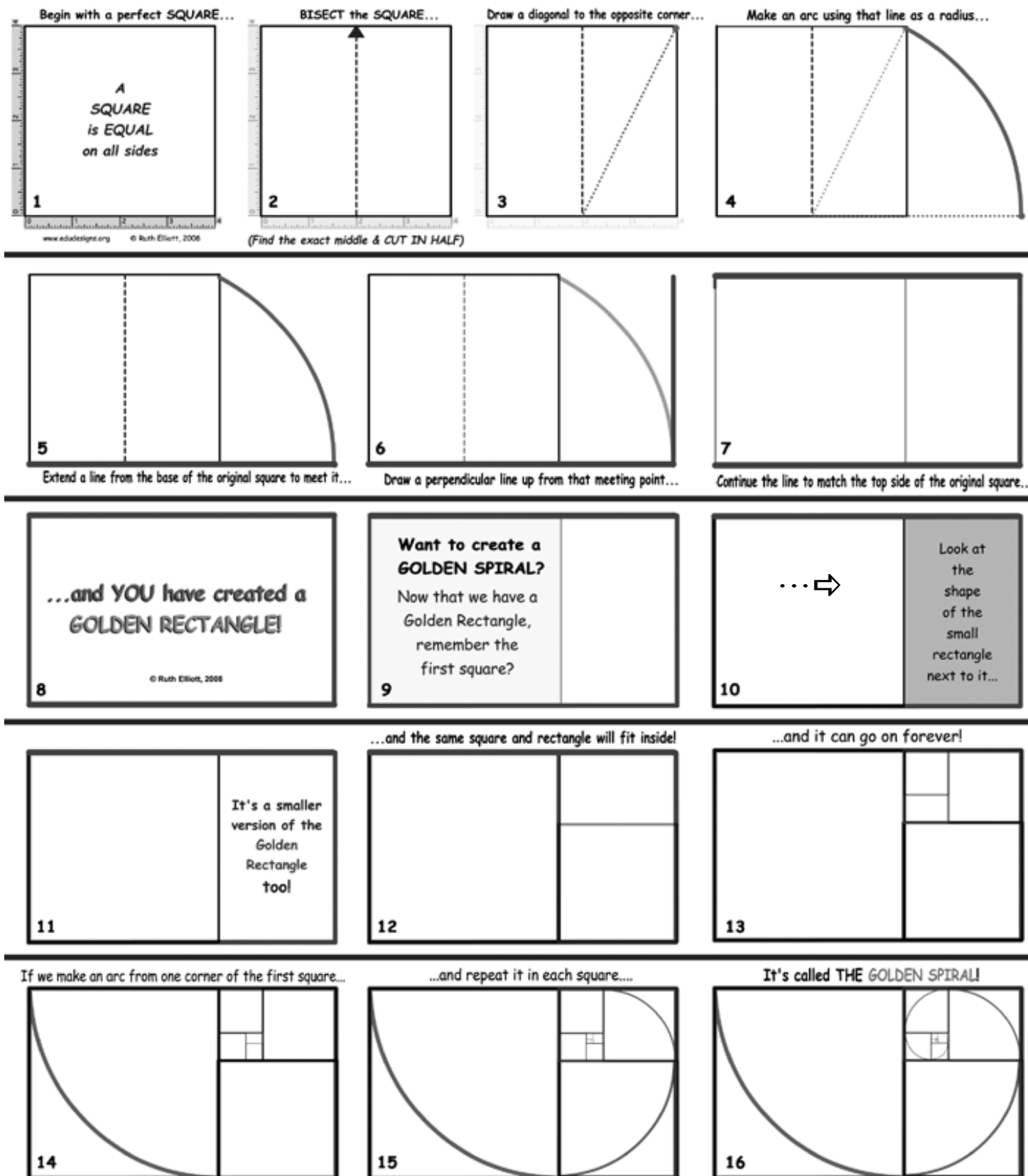
### P Y R A M I D

The 4-Sided **PYRAMID** here has a square base, and 4 triangular faces, giving it 5 sides in all.



# The **GOLDEN RECTANGLE** and **GOLDEN SPIRAL**

Classically the most aesthetically pleasing rectangle is called the Golden Rectangle. It has a ratio (or relationship) between it's sides of 1 to 1.618, called The **GOLDEN Ratio**. Here's how to make a Golden Rectangle and Spiral!



## New **WORDS** for **YOU**! R A T I O

A **RATIO** is the relationship between two numbers

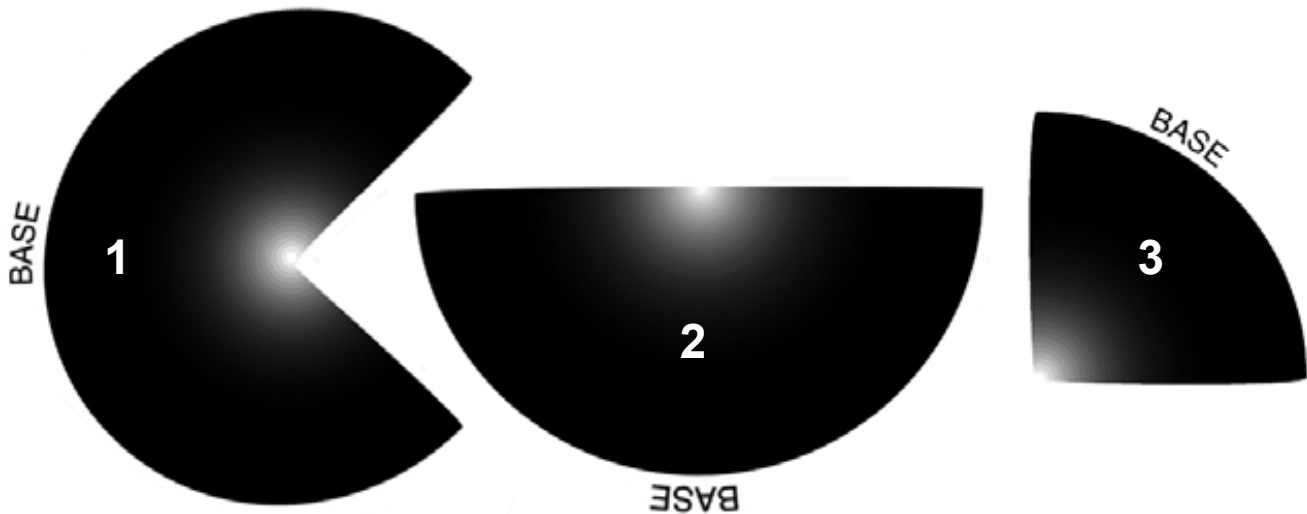
**Try it!** With a Ruler, Compass and Protractor, create a **GOLDEN RECTANGLE** and **Golden SPIRAL**!



# CONES



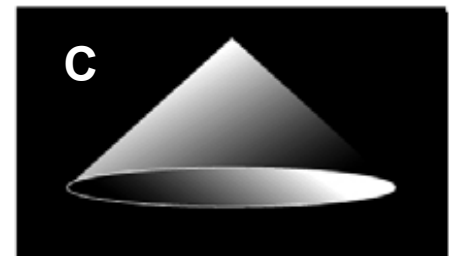
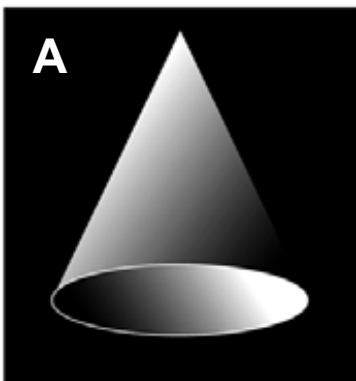
**The Story of Roscoe Continues:**  
CONES are one of Roscoe's favorite shapes - Pinecones, that is! Did you know that one squirrel can eat the seeds from 150 pinecones a day?



A Larger BASE (the circle part at the bottom) will make a lower cone.

A smaller base will make a taller cone.

Which of the shapes above would make each of the cones below?



**Try it!** Cut out two circles. Cut one of the circles in half to make #2. Cut a 1/4 piece out of the other circle to make #1 and #3. Tape the straight edges together to make cones of different heights to find the answers to the questions given. **3.** Draw the cones you have created.

## New WORDS for YOU!

C O N E



A **CONE** has a circle for its base, and sides that taper to a point.

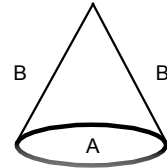
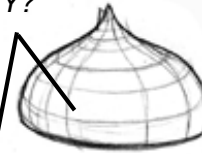
**Answer:** 1 makes C; 2 makes A; 3 makes B



# From TRIANGLE To CONE

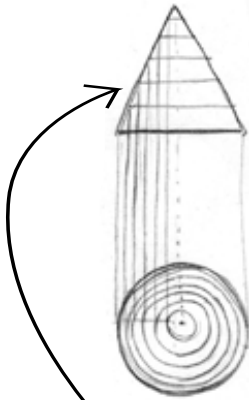


These two are not cones  
- WHY?



To draw  
a cone,

(A) first draw  
an ellipse (an oval),  
at one end, and then  
(B) two **straight** lines from  
each side of it that converge  
(meet) at the other end.



This cone  
looks like a triangle from the side. But  
when you look at it from above  
what you will see is a series of  
circles of different diameters  
all stacked on top of  
each other in order,  
from largest to  
smallest  
!

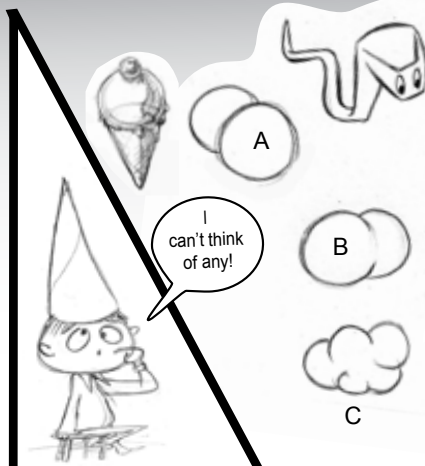


A Pyramid and a Cone may look alike,  
but one can ROLL and one can't! Do you know  
why? (Hint: The Base of a Pyramid is square!)

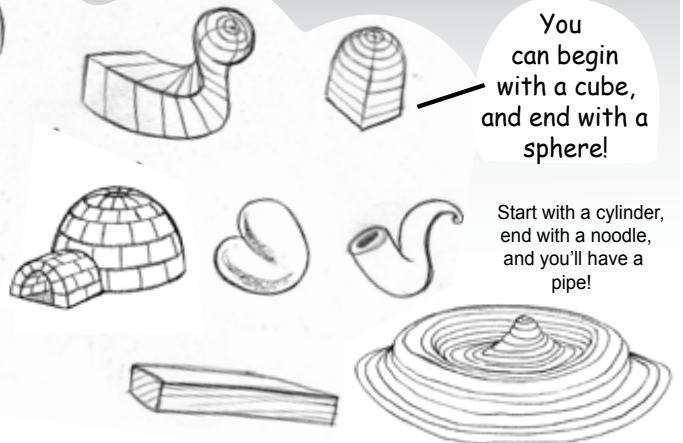
Can you think of other objects that also roll?  
Do you know why? (They must be circular or round to roll!)

**Try it!** Fold a paper in half. On one side  
draw some objects that roll, and on the other side  
draw some objects that don't roll.

Begin by  
combining a circle with  
another circle (A). If  
you erase part of the line  
where each of them touch,  
(B) it becomes another  
form, like candy blobs that  
have been melted together.  
If you add more circles,  
erasing part of the lines  
in the center where they  
touch the others, it almost  
looks like a cloud (C). Begin  
the adventure of inventing  
different shapes, by  
combining ones you already  
know with each other- and  
see what YOU come up with!



## SHAPES: INVENT YOUR OWN!



You  
can begin  
with a cube,  
and end with a  
sphere!

Start with a cylinder,  
end with a noodle,  
and you'll have a  
pipe!

**Try it! New WORDS REVIEW!** Draw several new shapes that combine at least two basic shapes  
(i.e.: sphere, cylinder, cone pyramid or cube, etc.). Identify the shapes you are using.

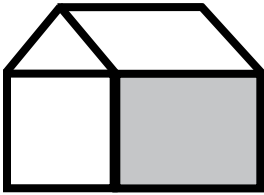
## New WORDS for YOU!

C I R C U L A R

**CIRCULAR** means 'shaped  
like a circle'.



**Try it!** Make this house in 5 steps:



### The Story of Roscoe Continues:

Perspective is a word that means a point of view. From my perspective, there was nothing more important than the happiness and well-being of Roscoe when he was a baby. I didn't feel right unless he was content. Though he was *small*, to me he was *'big'*.



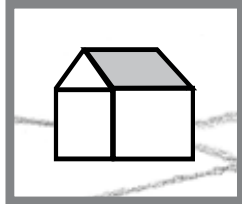
## PERSPECTIVE

### A VERY SIMPLE FIRST HOUSE to DRAW

1



Make a square



This is the first kind of house I learned to draw. Though not *'true' perspective*, it got me thinking in 'planes'-or flat areas seen at an angle. Try this: Hold up a rectangular piece of cardboard straight in front of you so it looks like this →



2



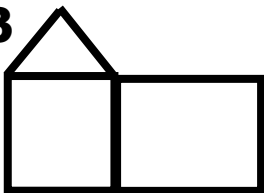
Add a triangle on top

Now tilt the cardboard at an angle, close one eye, and see if you can match the slope of the roof as it looks on the house in the smaller picture.

Now it's a PARALLELOGRAM!

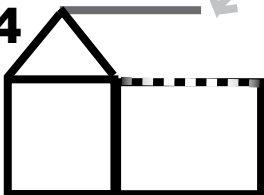


3



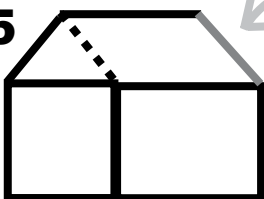
Add a rectangle

4



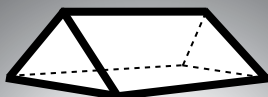
Add a line for the roof that matches the length of the dotted line on the rectangle

5



Add a line on the other side of the dotted line that matches the angle. VOILA! You did it!

*The reason I said it is not in 'true' perspective, is that a drawing in true perspective will take 'foreshortening' into account. Foreshortening is the illusion that a thing that's closer appears larger than if it's farther away, as in this photo of a foot appearing as large as a Motor home!*



When seen in **PERSPECTIVE**, the roof would look like a **TRIANGULAR PRISM!**

### New WORDS for YOU!

#### FORESHORTENING

**FORESHORTENING:** The perception of objects appearing larger when they are closer to you, compared to when they are farther away.







### The Story of Roscoe Continues:

I was so excited as Roscoe began to grow! His little skinny tail soon became puffy, which never ceased to fascinate me as it wiggled and moved. It was as long as his body! It served a dual purpose both for balance and nature's camouflage to fool an enemy so they wouldn't know which end to attack. His tail definitely had 'special effects'!



## PERSPECTIVE IS THE APPEARANCE OF DEPTH!

The farther away things are, the smaller they look. Notice I said 'LOOK' smaller, because they don't actually **get** any smaller, they just **appear** smaller. As soon as you get close to them, they seem big again. The technique of drawing in Perspective helps us figure out how make things the right size as they get farther away. If you want something to have depth, you can make it look more realistic by following a few tips. ONE POINT PERSPECTIVE is the simplest one.

## ONE POINT PERSPECTIVE!

### New WORDS for YOU!

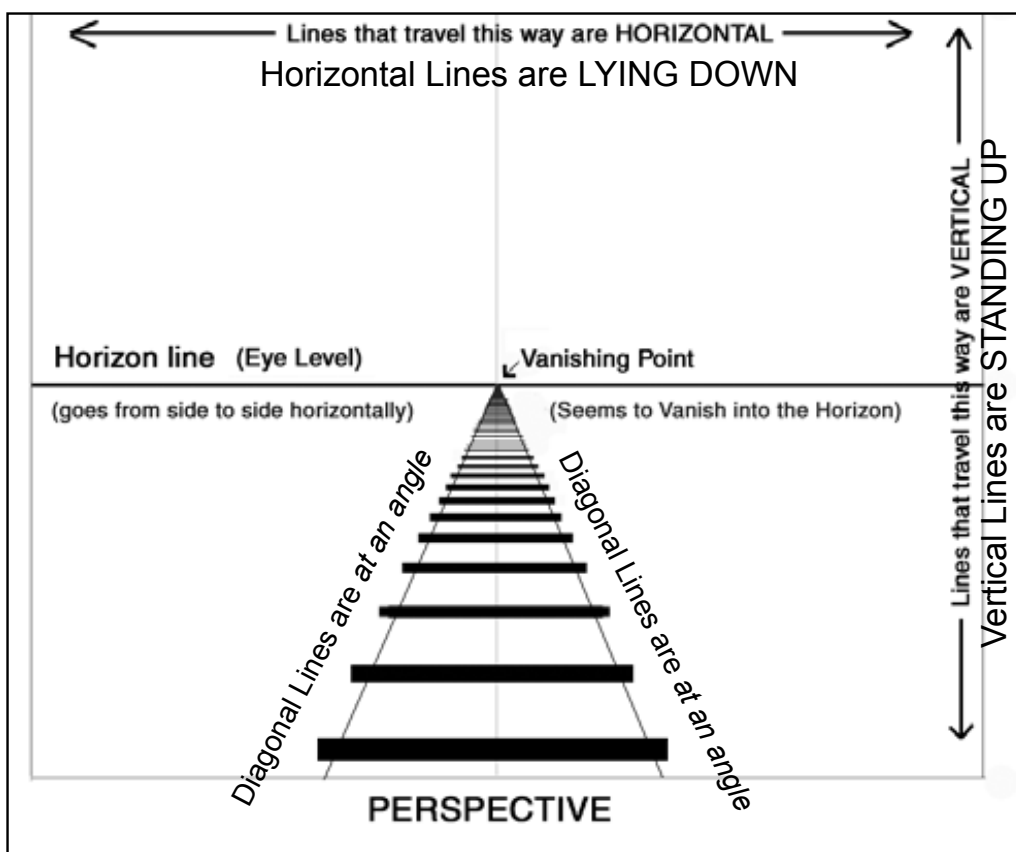
**VERTICAL line:** A line from top to bottom.

**HORIZONTAL line:**

A line from left to right.

**DIAGONAL line:** A line at an angle.

The area where the sky and the earth touch is called the **Horizon**. If you imagine a train track going straight into the distance, it might look like two **diagonal** lines that get closer and closer to each other until they meet at a single spot on the **Horizon**. The point where they appear to vanish into the distance is called the **VANISHING POINT**!



**Try it!** 1. Fold your paper twice so it will have four sections, then open it again. 2. Place a dot at the center of the page, where the creases meet. Pretend that the dot is the farthest place away from you in the distance where the earth and sky meet, called the **Horizon**. 3. Draw two straight lines coming down from that dot at an angle (**diagonally**), one on either side of the center fold on your paper. 4. Draw straight lines **HORIZONTALLY** (from side to side) across those diagonal lines, making them closer to each other as they get closer to that dot in the **horizon**.

### New WORDS for YOU!

**PERSPECTIVE** is the appearance of depth.

P E R S P E C T I V E





### The Story of Roscoe Continues:

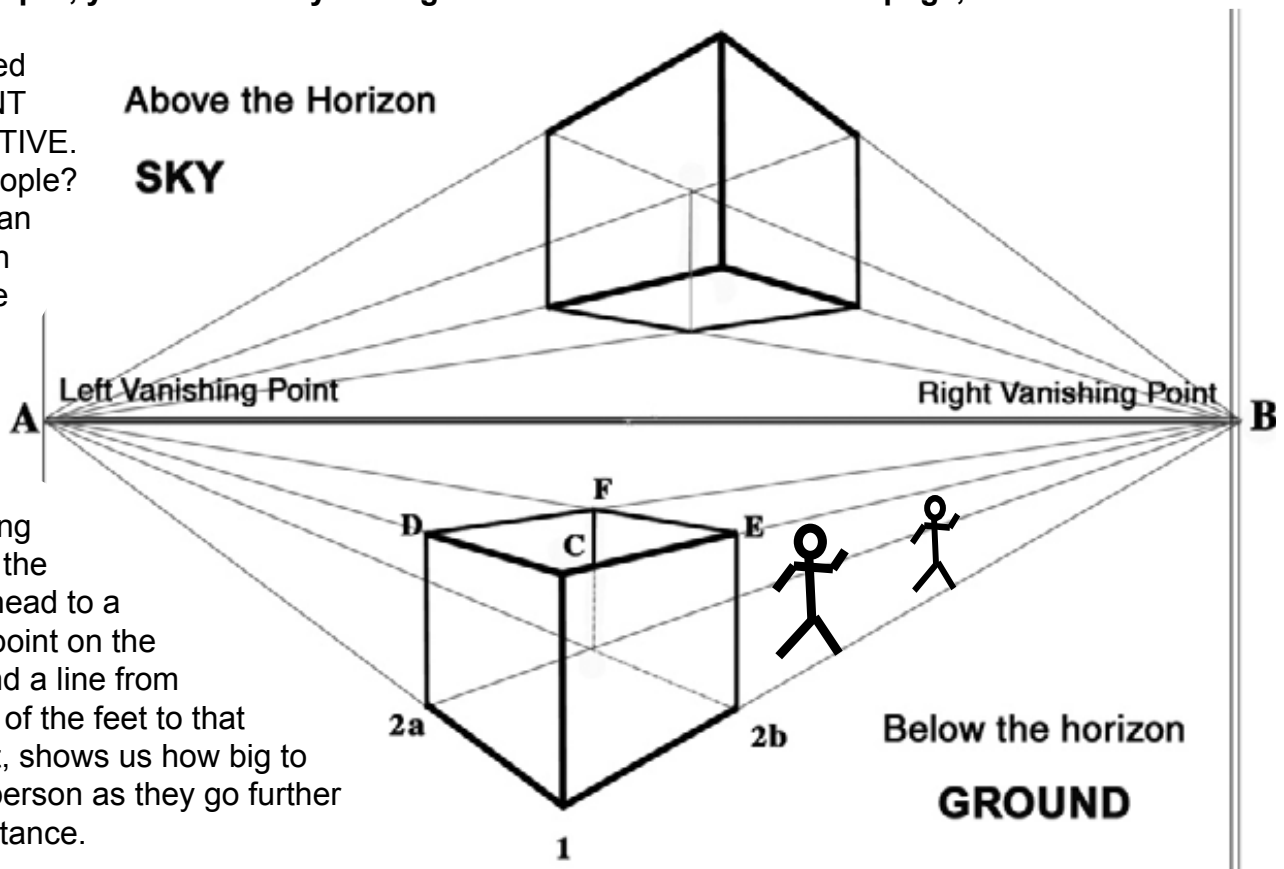
Roscoe was an expert at hide and seek. Sometimes I wouldn't know where he was, and had to search all over to find him. He was curious, and would examine *everything* - and *chew* on it, too!



## TWO POINT PERSPECTIVE SHOWS EVEN GREATER DEPTH!

When you want to draw any object (boxes, houses, cars, people, etc.) with greater accuracy and depth, you can do it by adding another 'POINT' or dot to the page, as shown below.

This is called TWO POINT PERSPECTIVE. See the people? A person can be drawn in perspective with the same method as we drew the box. Drawing a line from the top of the head to a vanishing point on the horizon, and a line from the bottom of the feet to that same point, shows us how big to make the person as they go further into the distance.



**Try it!** With a ruler, follow the diagram above and the instructions below:

1. Draw a horizon line, (from A to B)
2. Draw *diagonal* lines from A to 1, B to 1, A to 2b, B to 2a.
3. Draw three **Vertical** lines from 1 to C, 2a to D, and 2b to E
4. Draw *diagonal* lines from A to C, B to C, A to E and B to D.

This looks like a CUBE, at this point. (To make it look like a box add a Vertical line down - where the last two lines intersect at (F) to show where the inside back corner of the box is.) Now just darken the lines that are indicated and you have your box, perfectly in perspective.

Experiment making cubes of different sizes along the same lines above and below the horizon.

**You can use this technique to figure out how to make cars, people and buildings the correct size, to fit them accurately into the environment you create!**

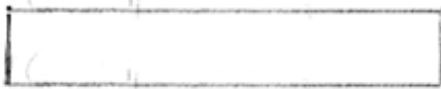
### New WORDS for YOU!

D E P T H

**DEPTH** is the appearance of being deep, or how far down something is.



## DRAW A CAR FROM THE SIDE



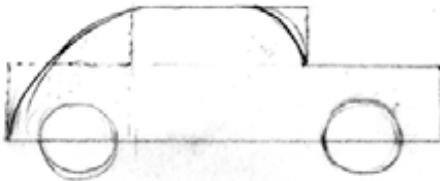
Draw a Rectangle



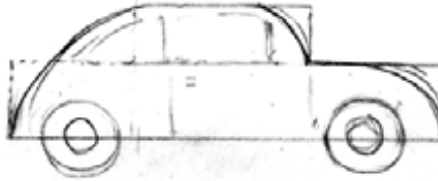
Add a smaller Rectangle on top



Add two wheels



Round out the Corners

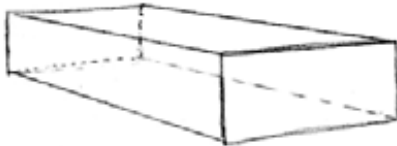


Add Details

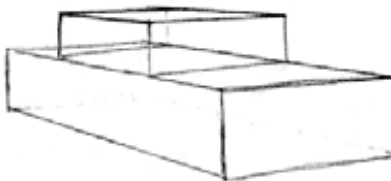


Add more details and Erase Construction Lines

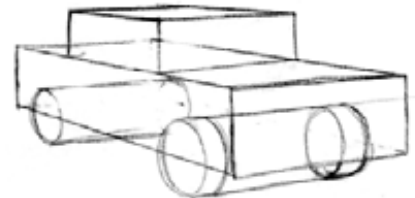
## DRAW A CAR FROM A THREE QUARTER VIEW



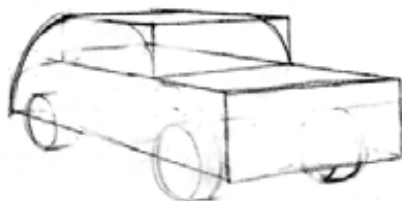
Draw a Rectangle in Perspective



Add a smaller Rectangle on top



Add two cylinders to show where the wheels go



Round out the Corners



Add Details



Add more details and Erase Construction Lines

**Try it!** 1. Draw a car from the side  
2. Draw one from 3/4 front.







### The Story of Roscoe Continues:

After the underwear incident and further discovering that Roscoe had chewed on everything that was chewable in the house, I decided that Roscoe the Rascal was getting big enough to go outside. But I was afraid that other squirrels might give him Rabies, so I called the Veterinarian to see if he could give him a Rabies shot (like we would give a cat or dog). He said, "OK, No problem." So we loaded Roscoe into a kitty carrier and went to the Vet.



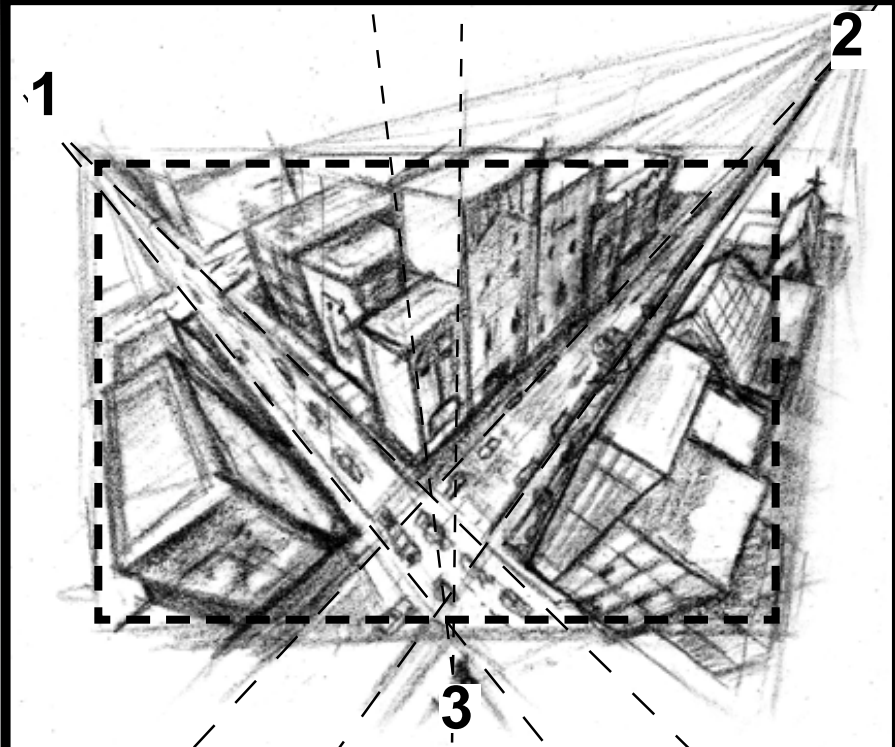
## The MAGIC of THREE POINT PERSPECTIVE - From ABOVE!

Since things appear smaller as they get farther away, it makes sense that as they get farther **BELOW** us they will look smaller, too!

To draw VERY realistic perspective, add an extra 'POINT' to represent the infinite 'vanishing point' below the surface of the ground. Give yourself extra room outside your actual picture area for the 'points. Later you can show just the part you want by cropping (shown by the dotted line).



**Try it!** Create a drawing in three point perspective!



Add an extra point for the distance below you for greater perspective!

### REVIEW of NEW WORDS for YOU!

**Horizon:** The line in the distance at our eye level from left to right that represents where sky and earth touch.

**Horizontal:** Any line parallel to the horizon, from left to right.

**Vertical:** Rising straight up or down 90° from the ground.

**Diagonal line:** A line at an angle (not vertical or horizontal)

**Vanishing point:** A point where two lines converge (come together) at the horizon or at a point far away, seeming to vanish, or disappear into the distance above, below or straight ahead as it goes away from us.

**Perspective:** The appearance of depth; going into the distance.

**Foreshortening:** The illusion of something close appearing larger than things that are farther away.





### The Story of Roscoe Continues:

The Veterinarian had never given a rabies shot to a squirrel before, so my husband wore thick leather gloves and helped to hold Roscoe steady. "What tough skin!" the Veterinarian exclaimed as he poked the needle into little Roscoe's hide. Roscoe let out a little 'squeak' and didn't like it at all! The Doctor said, "I have *never* felt such thick skin, ever!"

*NOTE: Having 'thick skin' can also mean not getting your feelings hurt easily. It helped me to be 'thick skinned' in art, when I listened to criticism from my teachers as I was learning. Though it hurt, it was a 'helpful hurt'!*



## DRAWING the BODY PROPORTIONS



Just as Roscoe learned to climb by putting one foot in front of another, we learn to draw by taking one step at a time!

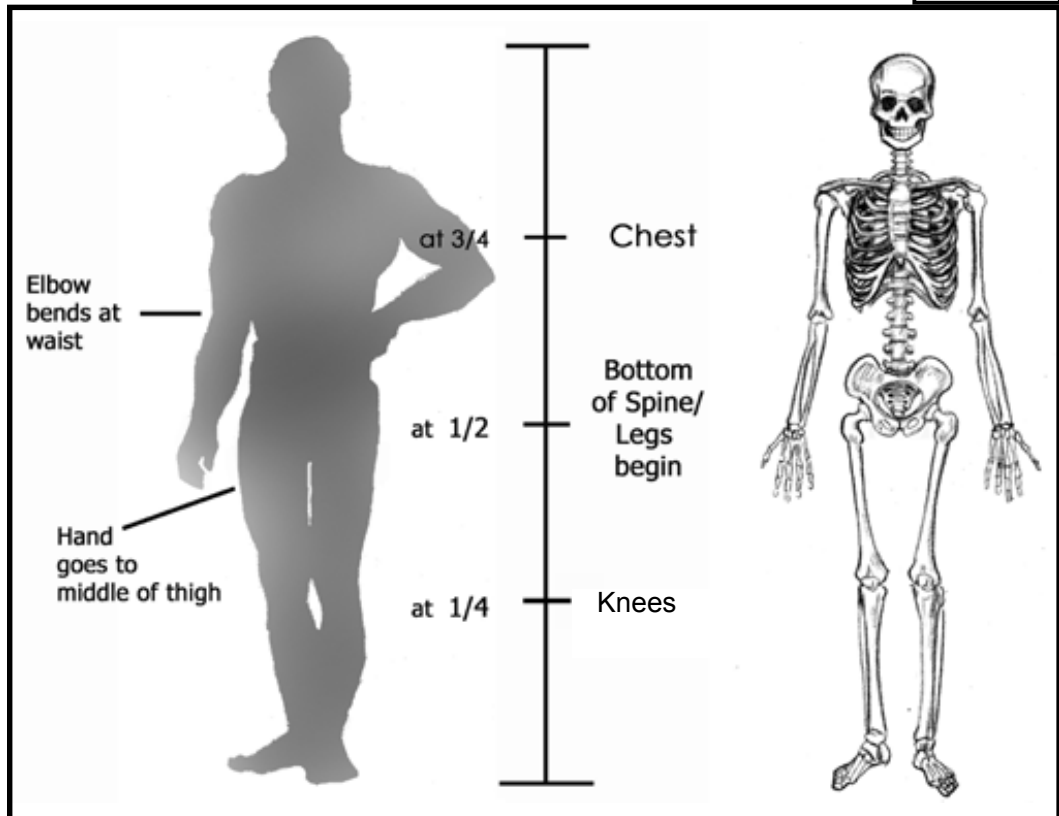
I felt so proud of my two year old son when he drew his very first 'person' ← like this. It was an accomplishment! When I was six I drew like this! →



I found that when kids draw something important to them, they make that part bigger in their pictures.

When my little brother first learned to tie his shoes, he was so proud of himself that when he would draw people, he'd draw them with HUGE SHOELACES on their feet!

There are general formulas of the average human body. On the following pages we will analyze the human form to learn the basic proportions of the figure the way it usually looks.



**Just as the frame of a house forms the structure holding it up, our skeleton forms the foundation for our physical body.**

### New WORDS for YOU!

#### PROPORTION

**Try it!** 1. Measure a length of adding machine paper the same height as you. 2. Fold it in half, then half again, then open and hold it up next to you. 3. Observe where the half-way mark is on **your** body; the 1/4 way mark, 3/4 way mark etc.

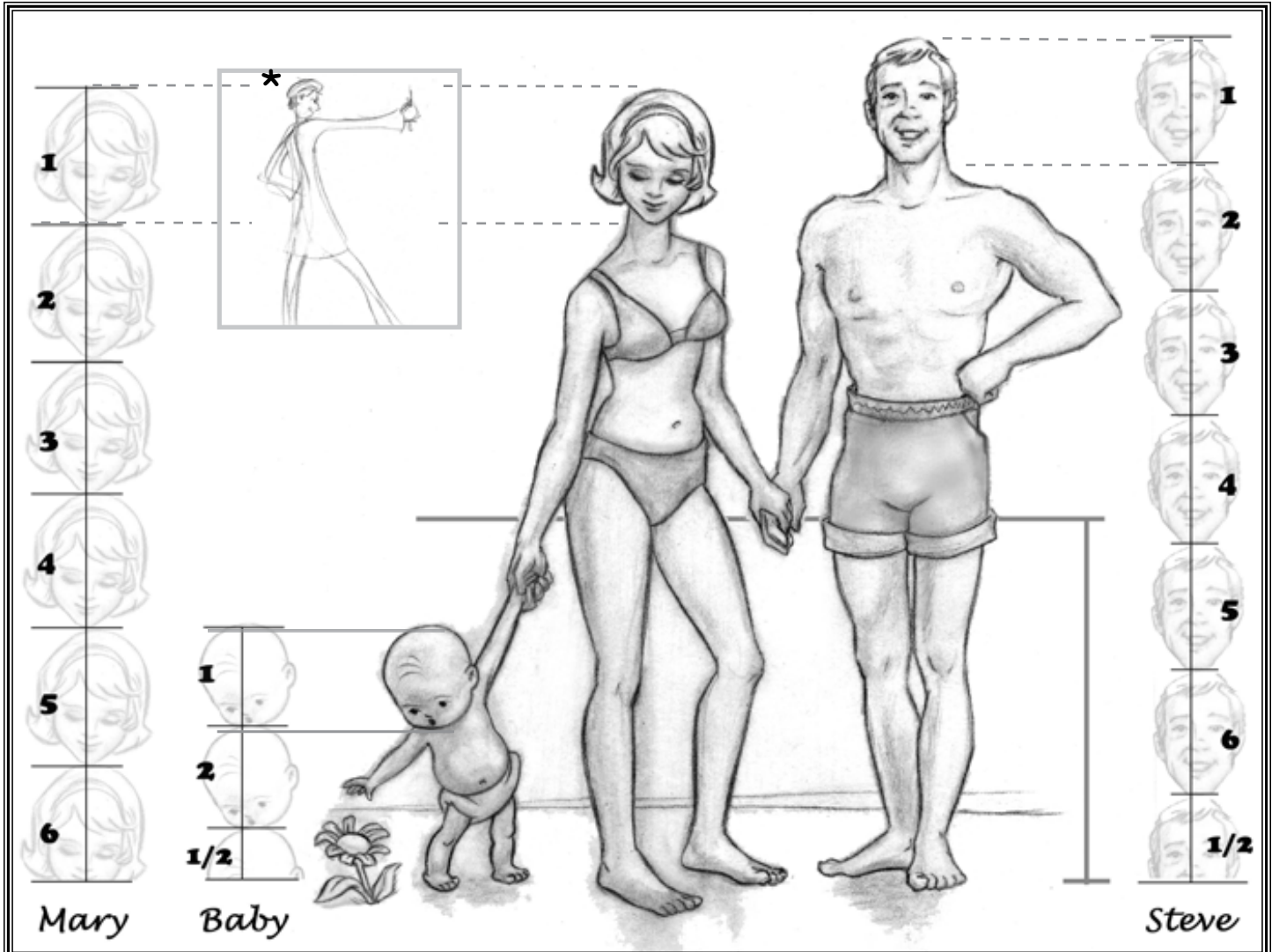
**PROPORTION** means how different parts measure in comparison to each other.



## PROPORTIONS, continued:

The halfway point on your body is usually where the spine ends, and the legs begin. Observe how your elbows bend at your waist and your hands go down to about the middle of your thigh. Many artists measure people by how many 'heads' tall they are. Using the head as a measurement, they count to see how many of the person's 'heads' it takes to get down to their feet. Holding your arm straight out with your pencil pointing up.\* Close one eye, and from far

away see how much of the pencil is needed to measure from the top of the head to the bottom of the person's chin. Hold your thumb on the pencil at that spot. Then count down, using that as a measurement to see how many 'heads' tall they are. Most adults are between 6 to 7 1/2 'heads' tall. That means that it would take that many of their size heads, one on top of another, to make their height. Women generally are a bit shorter, children are between 4 to 5 heads high and babies are even less.



In this picture Mary and Steve are 6-6 1/2 heads tall. The Baby is only 2 1/2 heads tall.

**Try it!** 1. Find a photo of someone standing up straight. 2. Using your pencil, measure from the top of their head to their chin. 3. Measure how many 'heads' tall they are.

### New WORDS for YOU!

**MEASUREMENT** is finding the size of something in comparing it to something else.

MEASUREMENT

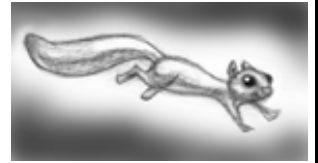




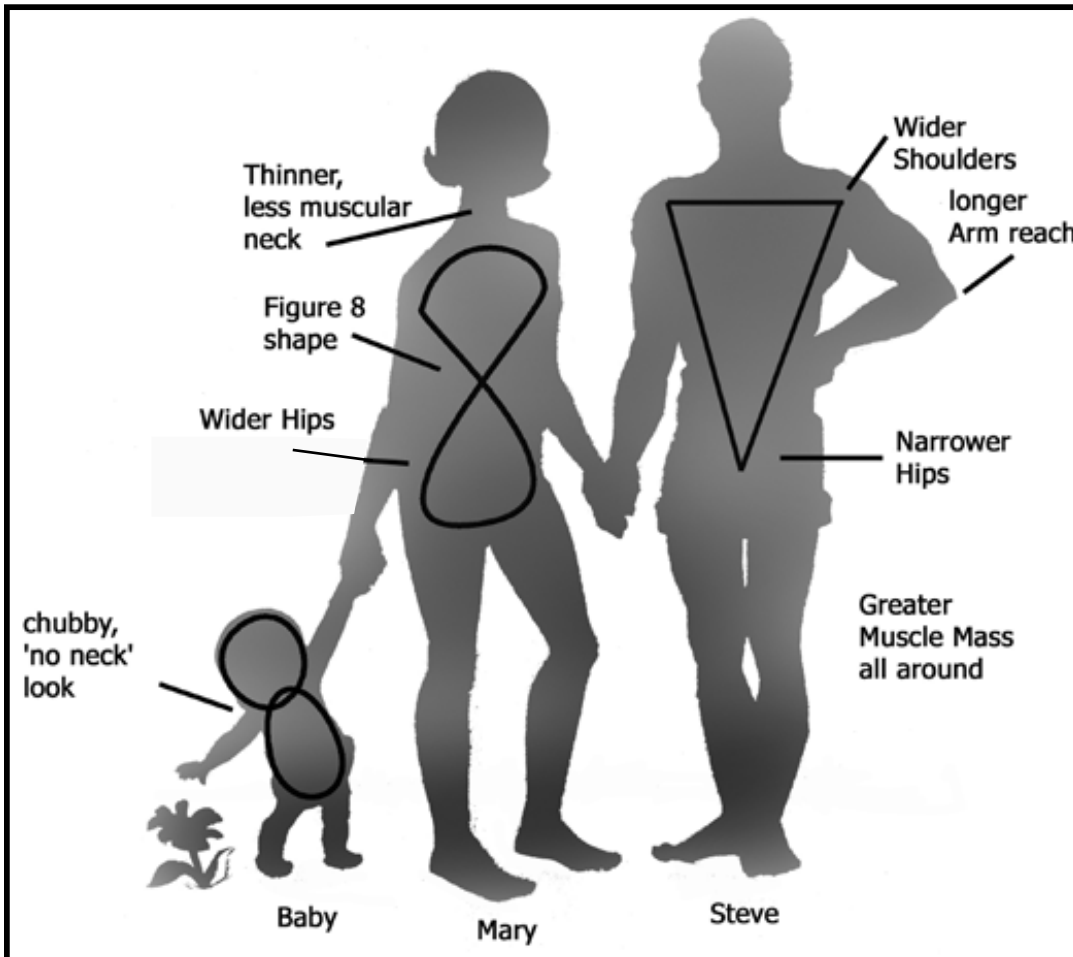


### The Story of Roscoe Continues:

Roscoe was one half body and one half tail! He moved so gracefully I wished I could watch him in slow motion! He'd be quick as a wink one moment and then perfectly still the next - but only for a second! Then he was off and running again!



## PROPORTIONS continued: MAN, WOMAN, CHILD



How do the average proportions of men and women differ?

Though each person is different, and many do not follow this general shape, a man normally has wider shoulders, with a longer arm's reach, while a woman usually has narrower shoulders and wider hips. A woman's neck may appear longer than a man's, but it is really the same, and only seems that way because she generally has a thinner neck. Another interesting difference to notice between the male and female is that even if they have the same leg length, the woman will generally be shorter, because a man has a longer

### Contrasting Men, Women and Baby Bodies

torso, while the woman generally has longer legs in proportion to him. This is only a general 'rule of thumb' - which means that it isn't true all the time, but may seem to be the case most of the time. I once heard that in the old days, some people used their thumb as a measurement when they didn't have a ruler. Sometimes I do that, even today!

**Try it!** 1. Find photos of men, women & children. Make a list of differences and similarities.

### New WORDS for YOU!

A **CONTRAST** shows the differences between things

C O N T R A S T

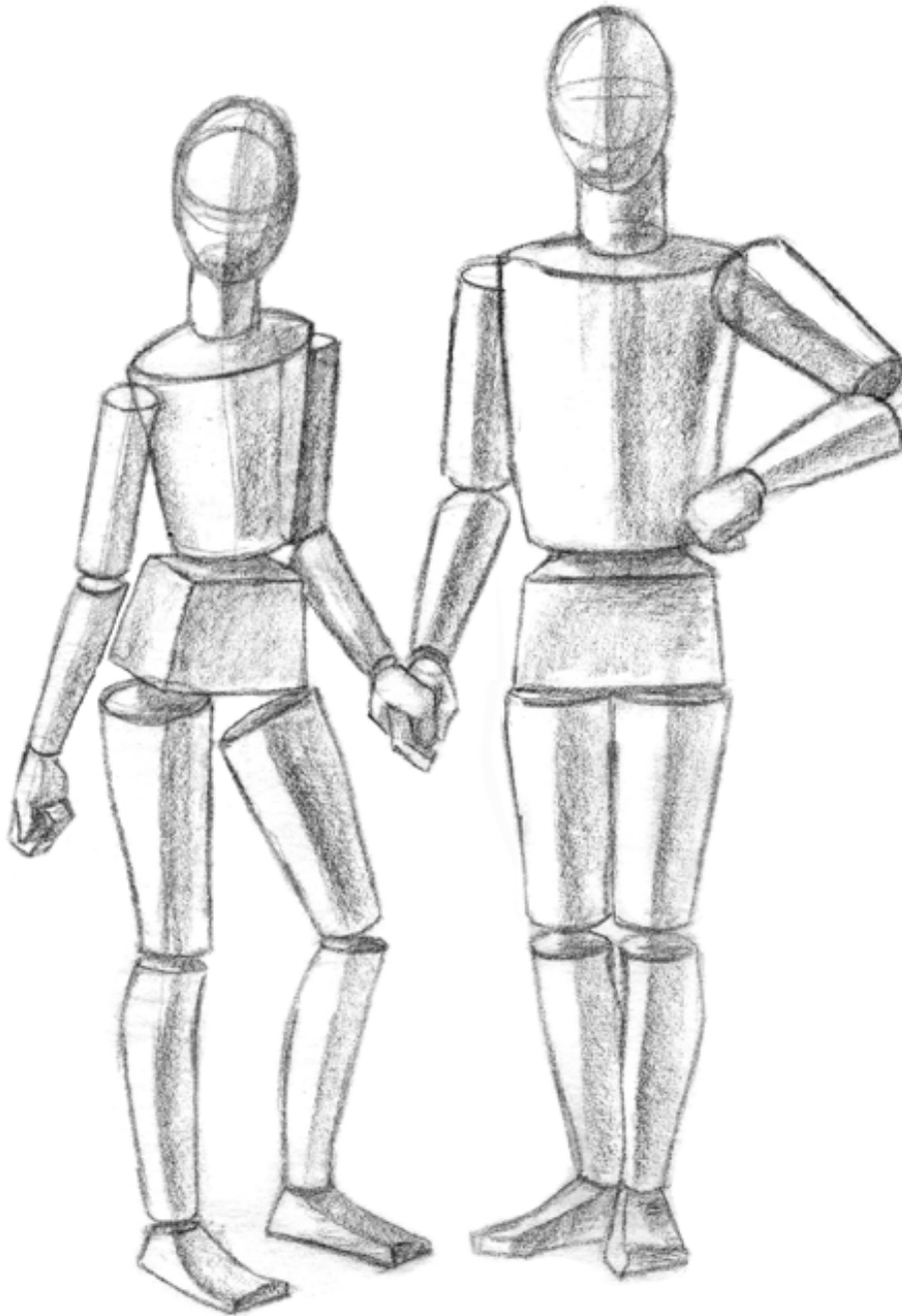




## BREAK it DOWN by ANALYZING THE FORMS

Try to imagine the body in forms that you can understand, or 'break it down' into shapes you already know, such as cylinders, cubes and spheres.

When you draw those forms, you can 'turn' them to show the correct angle that matches the angle of the parts of the body. Take a look at the picture below.



The simple mannequin figures are made of Cylinders, cubes and spheres to help us 'imagine' the body as shapes we can see three dimensionally.

They also describe the form from different angles. A cylinder can be also be simplified with just a few lines to describe the form.

See the difference between #1 and #2 below.

**#1**  
'noodle' elbow without definition



**#2**  
Cylinders define the shape

**Try it!** 1. Draw the man or woman using cylinders, cubes and spheres. 3. Copy both the noodle elbow and one using a **cylinder** shape to see the difference.

### New WORDS for YOU!

A N A L Y Z E

To **ANALYZE** is to figure out something by understanding its' parts.



# DRAWING FROM LIFE!



One Hour Drawing/Charcoal



20 Minute Drawing/Charcoal



5 Minute Drawing/Charcoal





# LIFE DRAWING:

## The Human Figure

The best way to make sense of all the forms of the human figure is to study from life, drawing a real person. Remember contour drawing from Chapter One? You will use the 'idea', or the 'intention,' of contour drawing, even when you



15 minutes with Conte Crayon

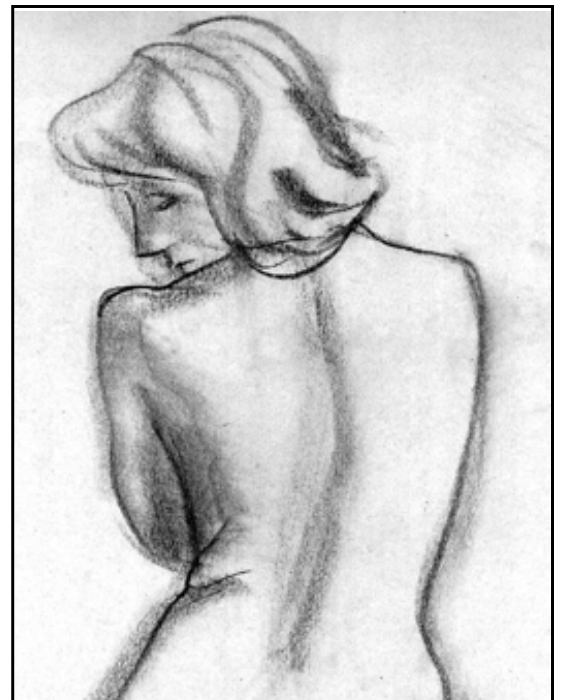
are looking at your paper. As you practice looking at an object to draw it, then look back to your paper, your eye will begin to move back and forth more and more swiftly from the paper to the thing you are drawing. You will begin to observe more and more quickly - like speed readers do with words. As you are trying to match what you see, you will find that sometimes your hand will still be moving even as your eye is going back to the subject for more information. Eye, mind and hand will begin working together in a coordinated effort.



5 minutes with Charcoal pencil

### HOW DO WE BEGIN?

First we'll study how to capture the ATTITUDE (the Gesture and main feeling of the pose). Second, we will learn to analyze and BREAKDOWN that gesture into shapes to understand the structure. Only then will we CONSOLIDATE those forms into a complete picture, where we can finish the details with confidence, knowing that we've put them in 'the right place'!



20 minutes with Charcoal

### New WORDS for YOU!

**LIFE DRAWING** is drawing a live person or animal - from LIFE!

LIFE DRAWING





### The Story of Roscoe Continues:

If I wanted to draw Roscoe I had to be FAST! The best time was when he was eating. Then maybe I'd get thirty seconds! This quick sketch was done from life in about that much time.



## Step 1: QUICK SKETCH-GESTURE DRAWING

Practicing Quick Sketch-Gesture Drawing helps us to loosen up and pay attention to the BIG PICTURE *first*, to CAPTURE what we're seeing.



What would happen if we had no skeleton? Our body would not be able to hold up! What would happen if you tried to build a house without planning, but by starting at the window curtains, or the wallpaper? The house would fall apart! The same holds true with our drawings. The most common mistake people make is to jump ahead and get into the details first, and neglect to lay the foundation. Even if you plan to spend a long time on it, you must begin with a quick sketch in order to draw it accurately from life.



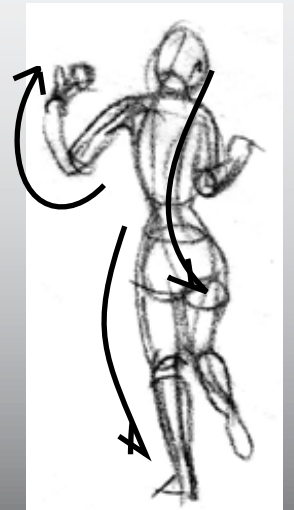
### TRY TO SEE THE WHOLE THING FIRST!

The key is in finding the essential attitude or GESTURE of the pose first, by seeing the entire image at once. On the following pages are suggestions on how to capture the gesture and rhythm of a pose, and then observations about the body and tips to help you see what you're looking at!



### FEEL THE WAY IT FEELS!

Look at the drawings here. See how the main attitude of the body is quickly put down without regard to details. When we studied contour drawing we learned to 'feel' as though our pencil was touching the object we were drawing. In drawing the gesture of a pose, we 'feel' the way the body is leaning, stretching, pulling or thrusting, to get the emphasis on the *movement* of the figure.



### New WORDS for YOU!

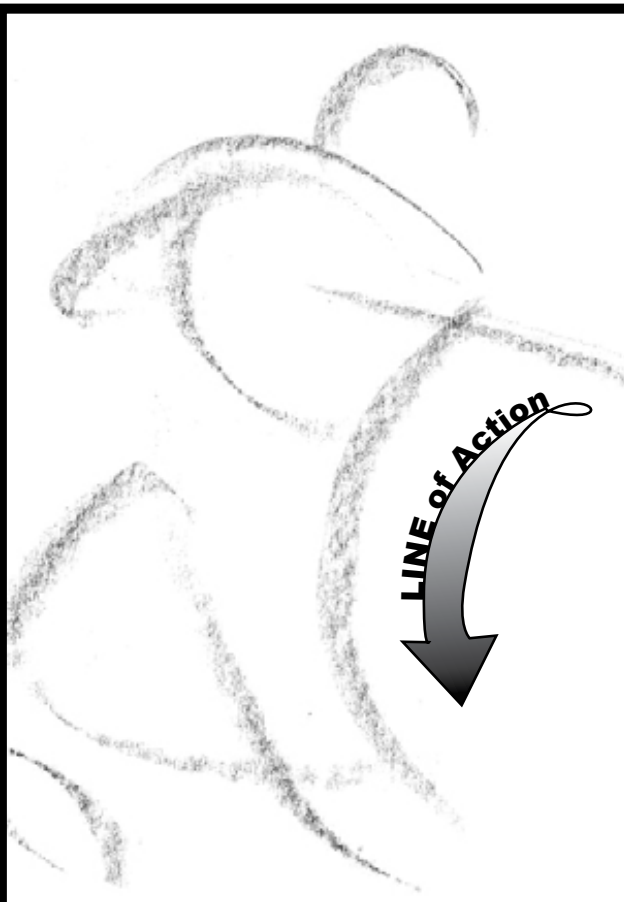
G E S T U R E

The **GESTURE** is the motion that expresses an attitude or action.





# Find the LINE OF ACTION!



Begin with the main thrust of the pose. This should take no more than ten or twenty seconds.



This quick sketch was done with charcoal in two minutes.

**WARMING UP:** All artists need to 'warm up' to get in 'the flow' of their best work. Quick sketch action poses are the most fun to warm up with. Give yourself a time limit of between thirty seconds to two minutes at most, to lay out the main action in broad strokes. Jump right in! Don't lollygag! Have a sense of urgency. Be in the 'NOW'. It helps to use the side of a short crayon or piece of charcoal to force yourself to ignore details and concentrate on the main thrust of the pose.

## Try it!

**Materials Needed:** Paper & Pencil, charcoal, conte crayon or china marker

1. Find an action pose (from photo or life). Find the essential gesture of the pose. Sometimes the curve of the spine or back reveals the angle of movement, called the 'LINE OF ACTION'.
2. Quickly indicate a simple ball shape for the head.
3. Then the angle of the shoulders, arms and legs in order of importance to the action.
4. Add a quick oval to indicate the rib cage. Continue adding greater structure and detail till your time is up. Practice 10- 15 'one minute' drawings to warm up. Then (if you have more time) practice a few 5 minute drawings, then 15 minutes, etc., up to a full half hour or more on a more stationary pose. If you're taking turns posing with other students, make sure you keep long poses simple (no arms up in the air, or leaning over with one leg in the air, etc. Those kind should be reserved for short action poses under 5 minutes).

## New WORDS for YOU!

LINE OF ACTION

The **LINE OF ACTION** is the essential direction or attitude of a figure; the angle of movement.



# Follow the LINE OF ACTION!

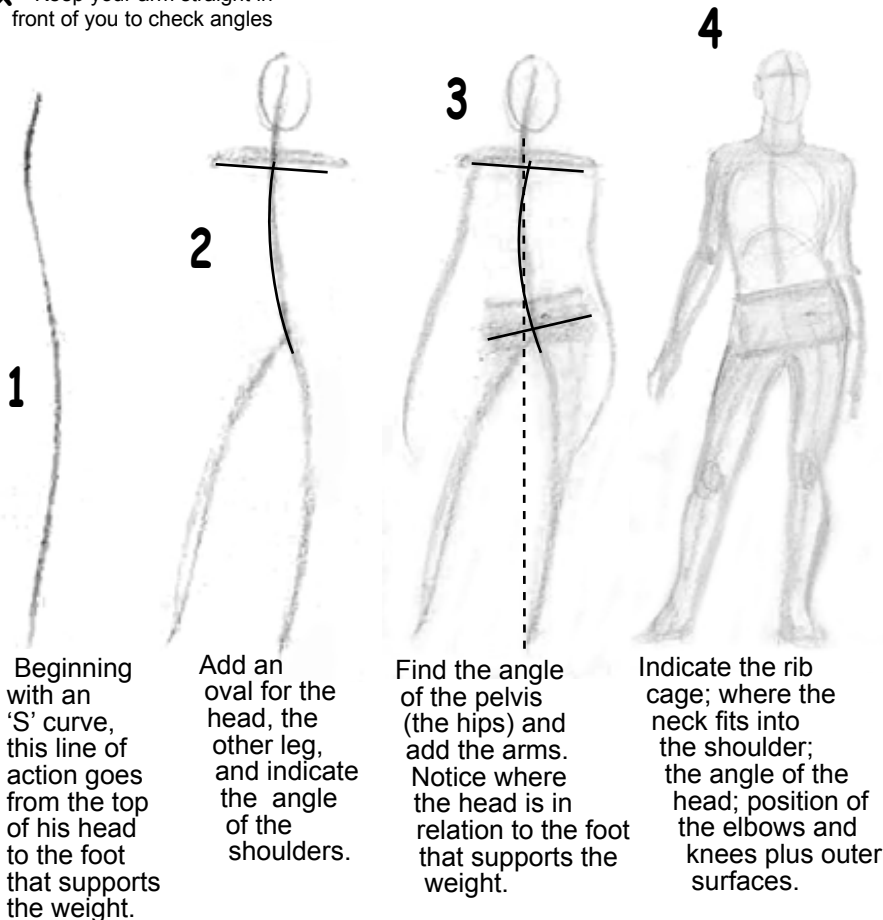
In our effort to capture the *Gesture* of a pose, look for the main thrust of the pose or the '**LINE OF ACTION**' as it is sometimes called. The **initial** (*first or beginning*) line you draw should encompass (*include*) the essential attitude. In drawing (1) below, it is seen as a simple 'S' Curve, following the direction of the spine. Study the pose first. With your pencil in hand, hold your arm straight out in front of you to check the angles of the body.\* Then lay down the first line, where the energy seems to be directed (in this case from the top of his head to the leg that is supporting most of the weight). Next indicate the angles of the head, shoulders, hips and finally arms, elbows and knees), and only then add details.



\* Keep your arm straight in front of you to check angles

Keep your arm  
Straight out in front  
of you! \*  
Then...

Use  
your  
pencil  
to  
observe  
and match  
the angles  
of whatever  
you are drawing!



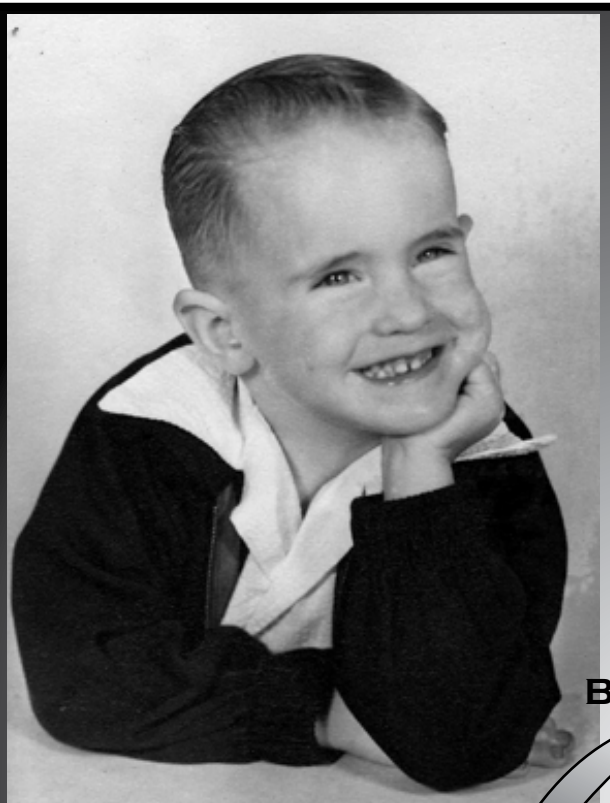
Keep working on the relationships between the shapes in order to finish the details.

## New WORDS for YOU!

I N I T I A L

**INITIAL** means: the *first* thing.  
When drawing, keep first things first!



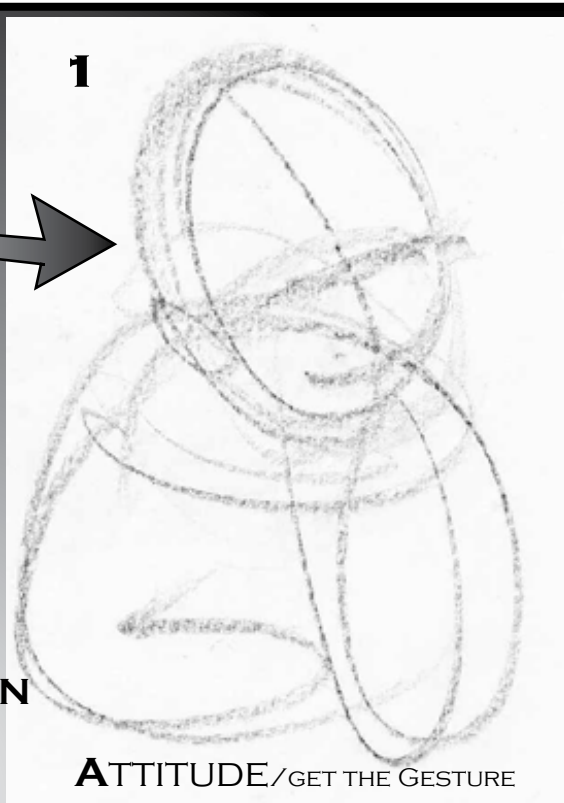


# ABC's TO BETTER DRAWING



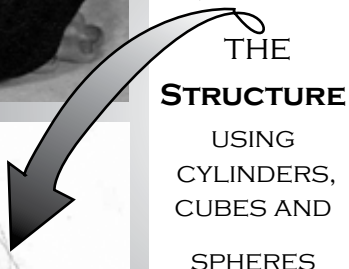
**A**

CAPTURE THE  
**ATTITUDE**  
AND GESTURE  
WITH  
FREE FLOWING  
LINES



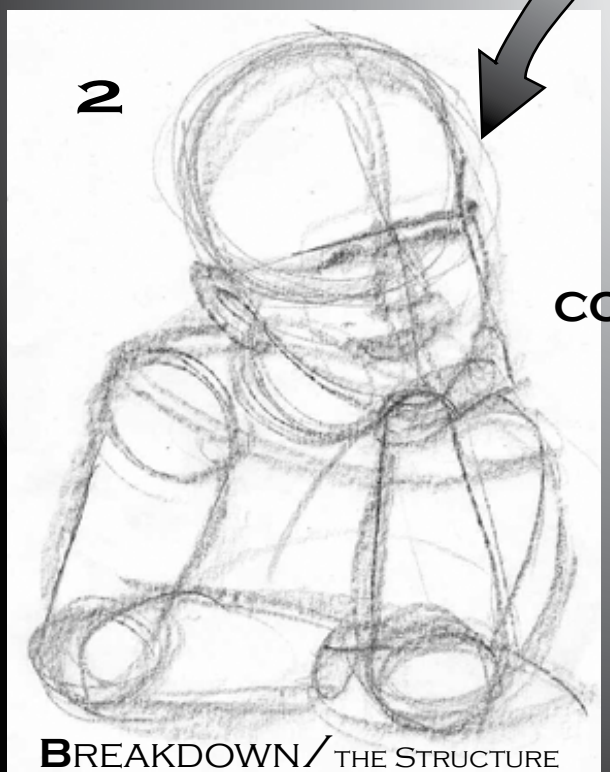
**ATTITUDE**/GET THE GESTURE

**B  
BREAKDOWN**



THE  
**STRUCTURE**

USING  
CYLINDERS,  
CUBES AND  
SPHERES

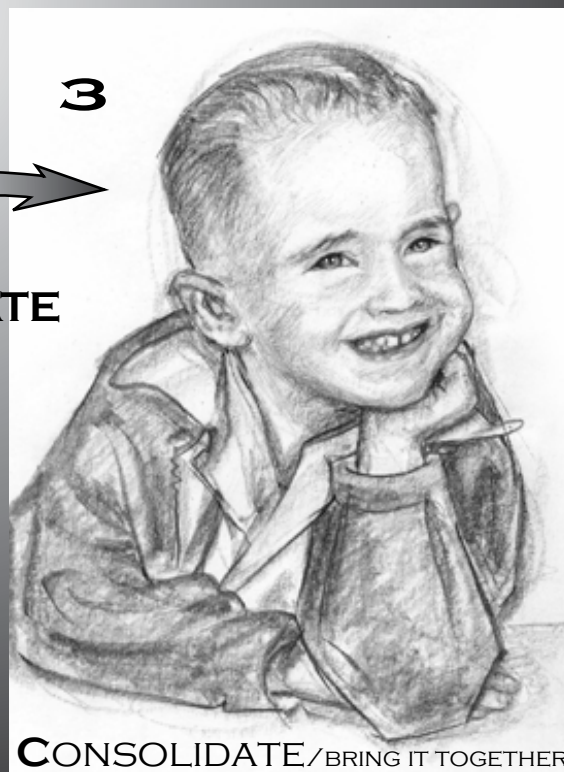


**BREAKDOWN**/THE STRUCTURE

**C**

**CONSOLIDATE**

BRING IT ALL  
TOGETHER  
BY  
CLARIFYING  
THE FORMS,  
OUTLINE  
AND  
SHADING!



**CONSOLIDATE**/BRING IT TOGETHER

**Try it!** Study the previous lessons on gesture and those on the following pages.  
Then practice drawing a person from life or from a photograph.

## New WORDS for YOU!

To **CLARIFY** means to  
'MAKE CLEAR'.

C L A R I F Y







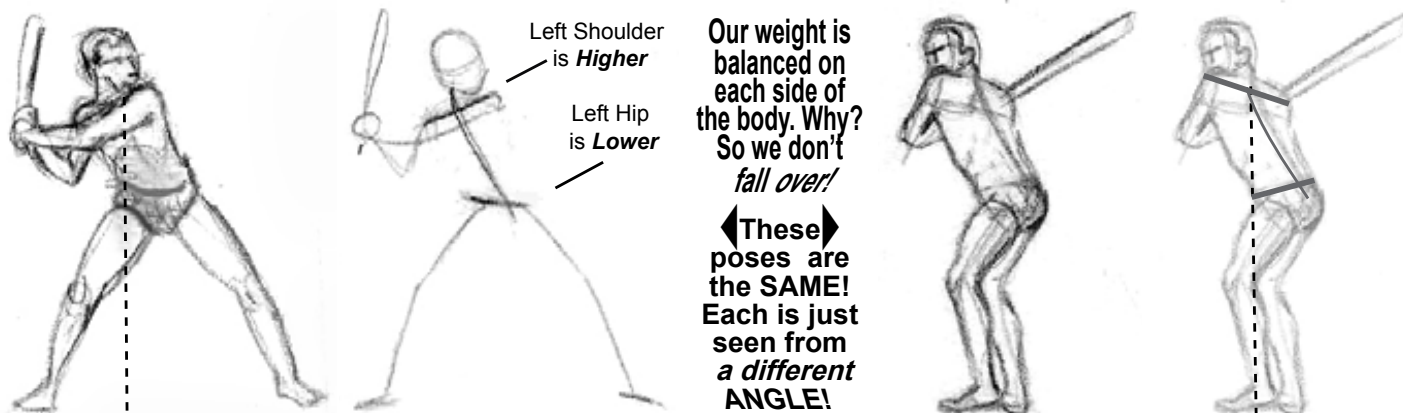
### The Story of Roscoe Continues:

Roscoe could walk right along the top of a narrow fence as easily as we walk down the sidewalk! While one end was doing the walking, his tail was 'holding up' the other end! An animal's tail is an extension of their spine and important for their *balance*.



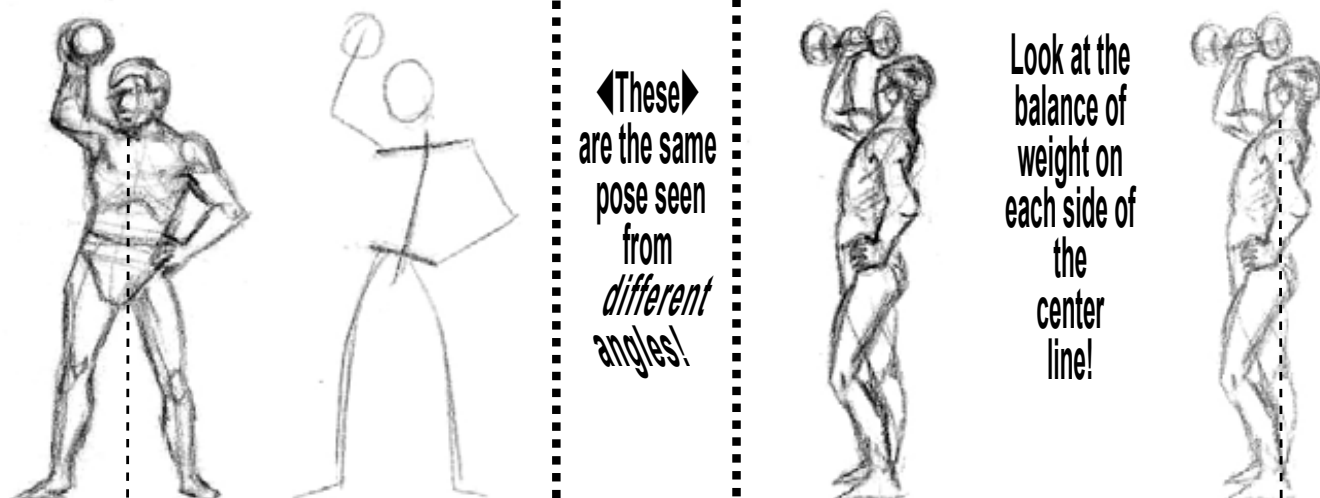
## To BALANCE: Observe *SHOULDERS* versus *HIPS*!

Here are some TIPS on how to find the structure and balance of a pose. Notice that the same shoulder and hip always lean in opposite directions from one another. When one shoulder goes up, the hip on the same side goes down. The spine twists and bends, giving us greater flexibility. Just think of all the ways you use your spine!



**COMPARE THE VIEWS!** Notice that his left shoulder is *HIGHER* in both views of the above pose. Observe how his left Hip is *LOWER* to counterbalance the action. Also see how, as he leans forward, his rear end protrudes farther behind him, to give him balance.

**CHECK THE BALANCE!** If you draw a line straight down from the nape\* of the neck (\*the base of the neck) it shows how the weight of the body is being supported and balanced on each side of the body. Otherwise we would fall over!



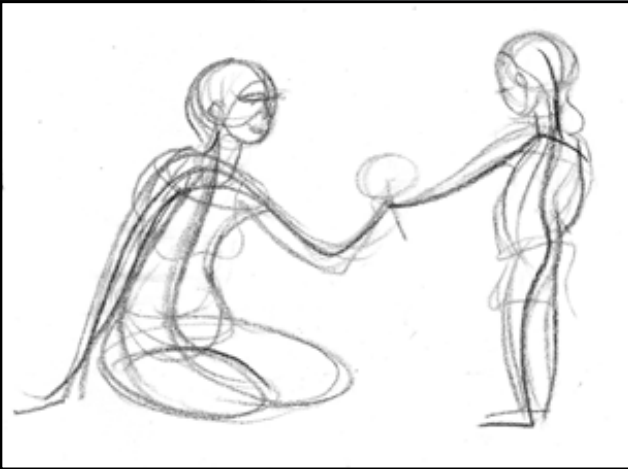
### New WORDS for YOU!

B A L A N C E

To **BALANCE** means to make the weight the same on both sides.

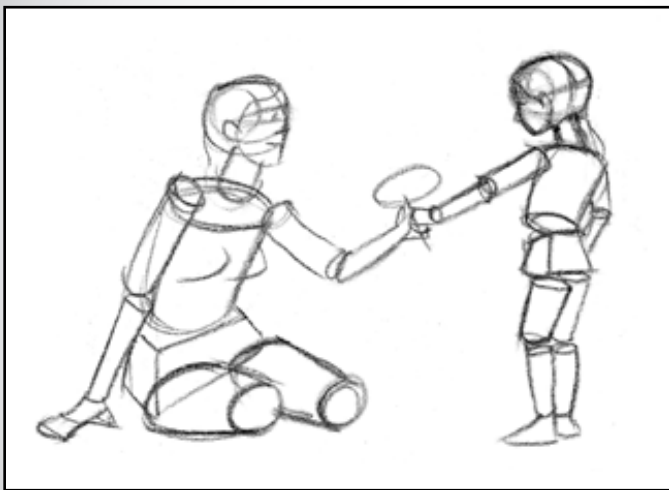






## ATTITUDE GESTURE **A**

The movement of the forms should be looked at as a whole design, to capture the flow



## BREAKDOWN STRUCTURE **B**

Analyzing the forms as a solid structure will clarify them as three dimensional objects, even in a two dimensional drawing



## CONSOLIDATE DETAILS **C**

Bringing all the elements together will round out the forms and give it 'flesh'

### New WORDS for YOU!

#### CONSOLIDATE

To **CONSOLIDATE** is to bring separate parts together.



# Notice the **Rhythm** and MOVES



Everybody has a different technique of scribbling, sketching, or putting down that first gesture on paper. But it elementally involves identifying with, and feeling as though you *ARE* that object - to understand it from the *INSIDE OUT*!

**Try it!** 1. Use a photo to sketch the gesture of an action pose. 2. Ask a friend or relative to pose for you for only two minutes.. 3. Sketch the pose to capture the gesture. 4. Try again!

## New WORDS for YOU!

R H Y T H M

**RHYTHM** is a pattern of movement in art or music.





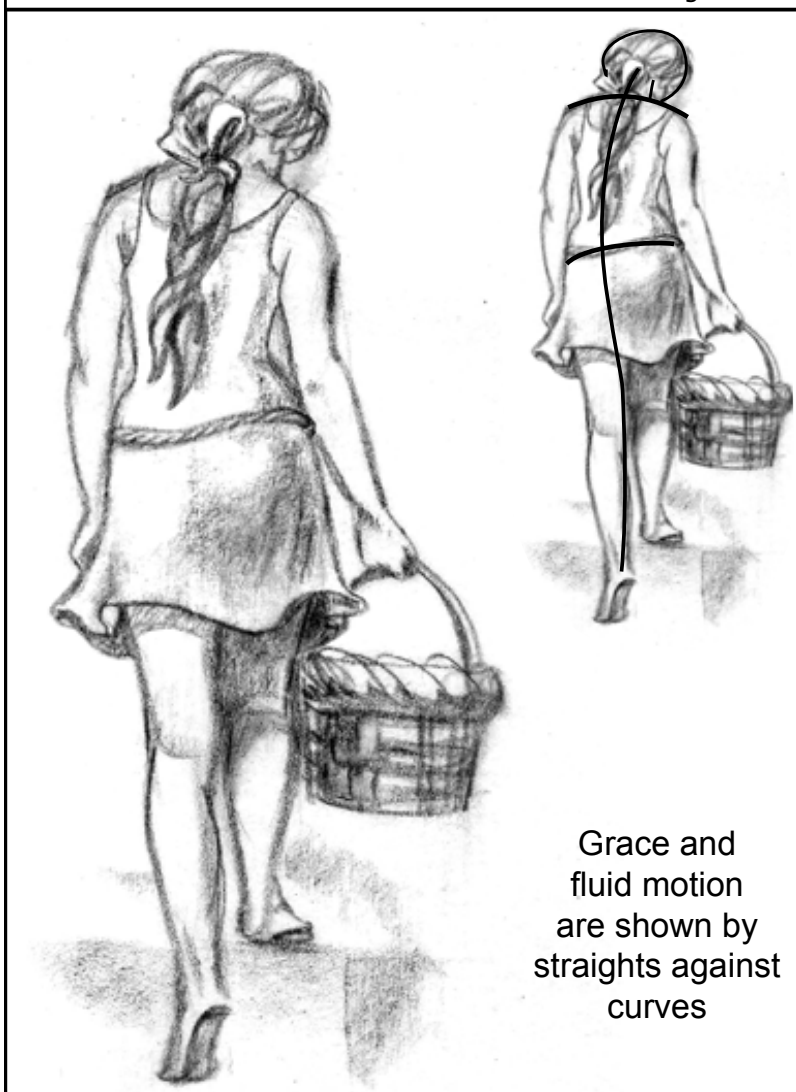
### The Story of Roscoe Continues:

After Roscoe got his Rabies shot, I found out why his skin was so thick. A squirrels' teeth and claws get so sharp, that if they were ever to get into a fight or play rough with another squirrel they might hurt each other terribly without it. Roscoe stayed away from other animals he might encounter. Make sure **you** always keep your distance from wild animals, too!

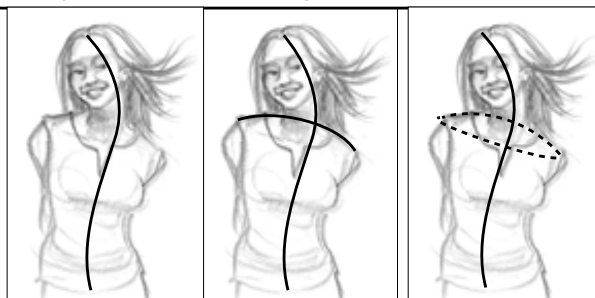


**THE NECK AND SHOULDERS:** Pay close attention to how the cylinder of the neck fits into the shoulders. In the drawing on the left below, observe how the curve of the shoulders is drawn with the neck on the other side, and how the neck fits into the ball of the head. In the drawing on the right, notice how the neck fits into the shoulders.

Notice first how the 'S' Curve marks the essential gesture in these poses, then the angle of the shoulders.



Grace and fluid motion are shown by straights against curves



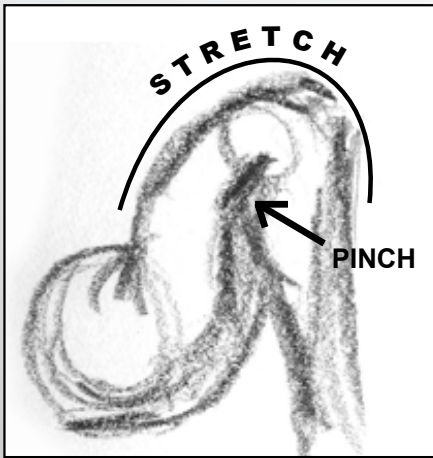
**Try it!** 1. Place tracing paper over a magazine photo or other photo of a person in action. 2. Analyze the BALANCE of the body. 3. Analyze the NECK, SHOULDER and HIP positions.

### New WORDS for YOU!

S - C U R V E

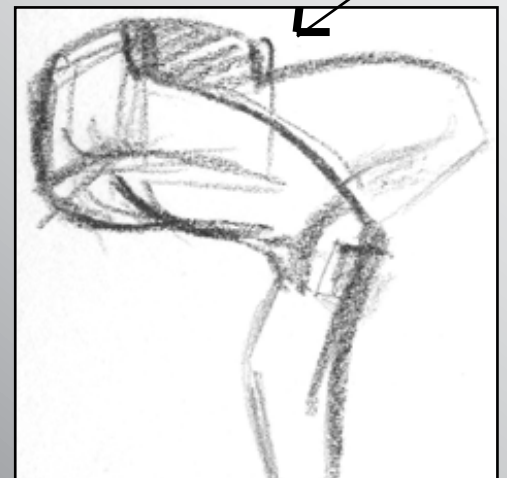
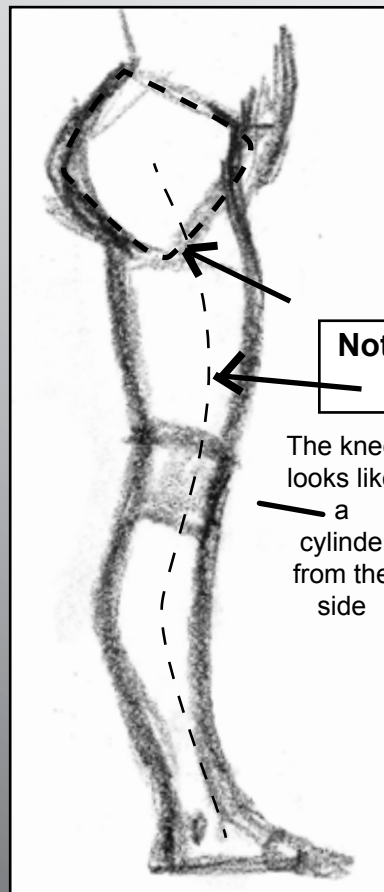
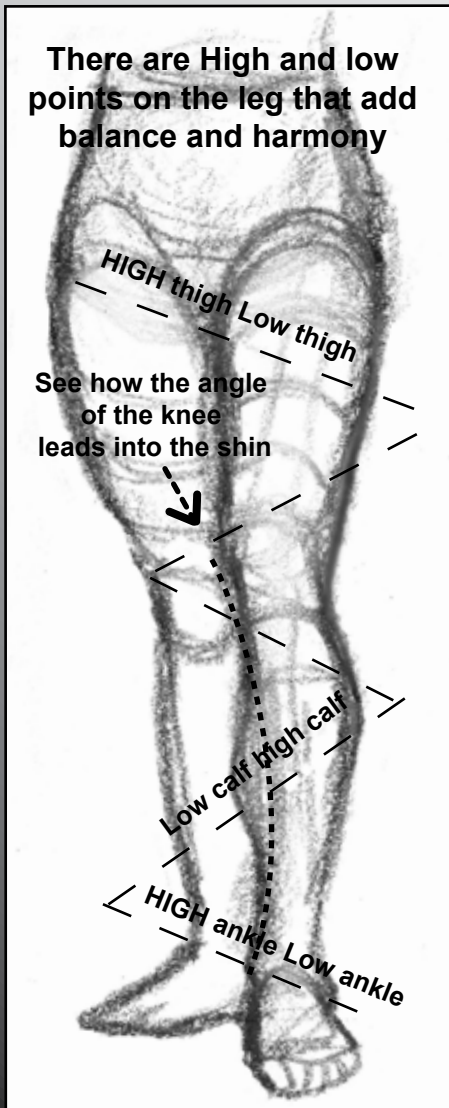
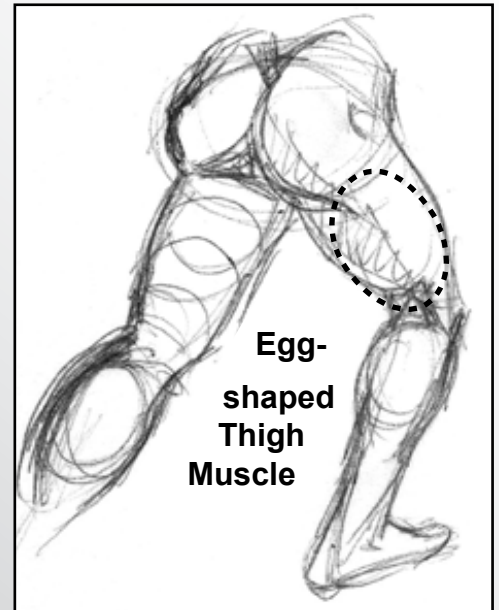
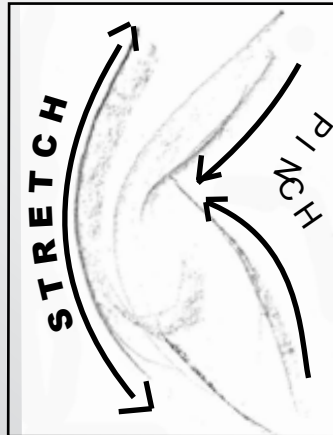
The **S-CURVE** is a curve shaped slightly like an 'S'.





**← OBSERVATIONS:**

The Human body has a range of movements that move and twist, stretch, pinch, pull, squash and stretch. Notice the rhythm, beauty and balance in how we are made.



## New WORDS for YOU!

O B S E R V E

To **OBSERVE** is to look at something carefully.



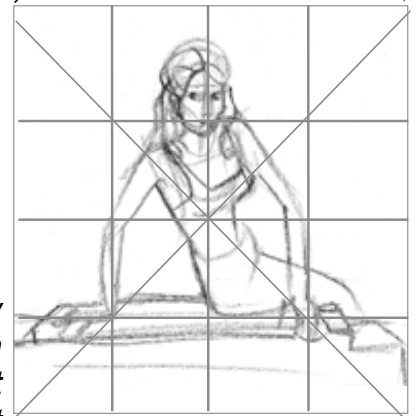


## HERE'S A PHOTO TO PRACTICE WITH!



### Some things to think of while you draw:

Be conscious of the forms in relationship to one another - the vertical and horizontal angles they line up with. Also create a diagonal in your mind, from corner to corner, as well, or using the angle of your pencil held out at arms length as a guide. As you draw, keep checking where you are in relationship to the other parts.



*Can you spot where the sketch on the right is a bit off? At first it may seem OK - but keep checking as your eye goes back and forth from the small photo to the sketch. Hint: Look at the position of HER left arm and shoulders in the small photo and then in the sketch. (her left arm is too far from her body). This is the same exercise you will do while you're drawing as your eye travels back and forth, from the object to your paper and back again, correcting as you draw.*

### New WORDS for YOU!

A **RELATIONSHIP** shows how one part is, in position to another.

#### RELATIONSHIP



# Using Tracing Paper to study the form



## There are many different techniques for observing and studying the figure.

One technique is to use tracing paper over your rough sketch, or photo, to analyze the form further and to correct your drawing. Most tracing paper has a smooth finish and is easy to erase.

When working over a photo, tape it at the bottom only, leaving the tracing paper on the top open, so you can lift the paper and flip back and forth to check accuracy.

Use a soft pencil. Have an eraser handy.

**FOLLOW THE ABC'S:** First get the **ATTITUDE** with a quick sketch gesture. Then **BREAKDOWN** the Structure, and finally **CONSOLIDATE** the forms and study the shadows. The more you actually learn to observe and understand what you see, the more you will accurately draw from memory and imagination later on, having the pictures in your head. Then you can use the same technique as you did with 'contour drawing' but tracing what is in your mind. The only difference is that now you will be looking at your paper, following the images as your mind's 'eye' sees them.

Tracing paper is also great for making changes or trying out a new idea, by working it out on the tracing paper, first, while keeping your original drawing intact.



### Try it!

1. Tape tracing paper over a photo.
2. Sketch the ABC's to practice finding the:  
**A=Attitude/Gesture,**  
**B=Breakdown/Structure,**  
**C=Consolidation/Details.**

I left this sketch unfinished, to show the transition between stages. Use a kneaded eraser to get rid of unwanted construction lines or to create highlights as you draw.

## New WORDS for YOU!

### TECHNIQUE

A **TECHNIQUE** is a way in which a certain thing is done, for example, in art, music or sports.



Study these and the other views of the head that follow.

# VIEWS of the HEAD



**3/4 View**



**3/4 Up-Shot View**



**3/4 Back View**



**Profile View**



**Back View**

## New WORDS for YOU!

P R O F I L E

A **PROFILE** is 'a view from the side'.



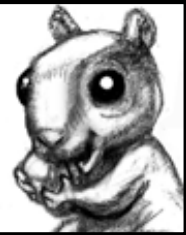




### The Story of Roscoe Continues:

Since squirrel's eyes are on the sides of their head, Roscoe could see what was coming from all directions at the same time. You couldn't surprise him! He was always quicker than I was. The only thing that kept him coming back to me was love... (Oh... and also *nuts* - *he loved walnuts best!*)

You  
can't catch  
ME!



# HEAD DRAWING

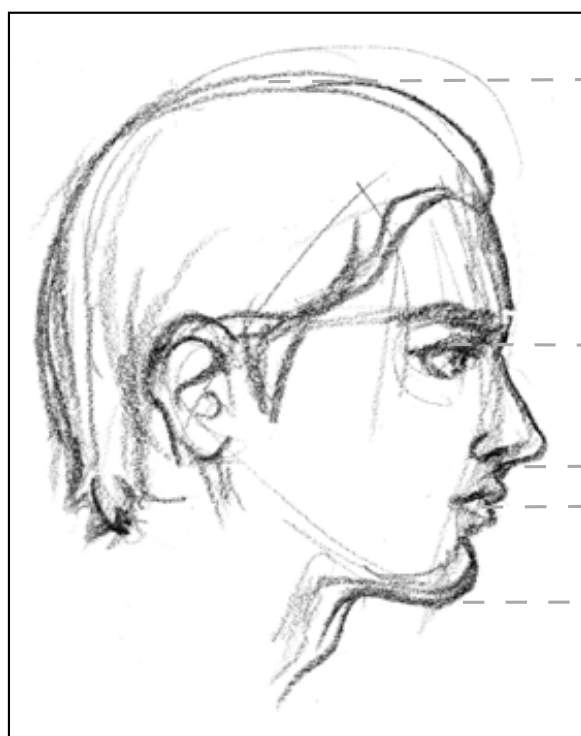
## EYES, EARS, NOSE, MOUTH:

### Where do you PUT everything?

There are several different techniques to arrive at a good head drawing. Study faces. Look at a person's head near you, and then check the drawings below, to see if the breakdown of proportions for their head is the same. As in all of life, proportions will change a bit from person to person.

That's what makes every face interesting!

The space **between** a person's eyes is usually the same **width** of one eye.

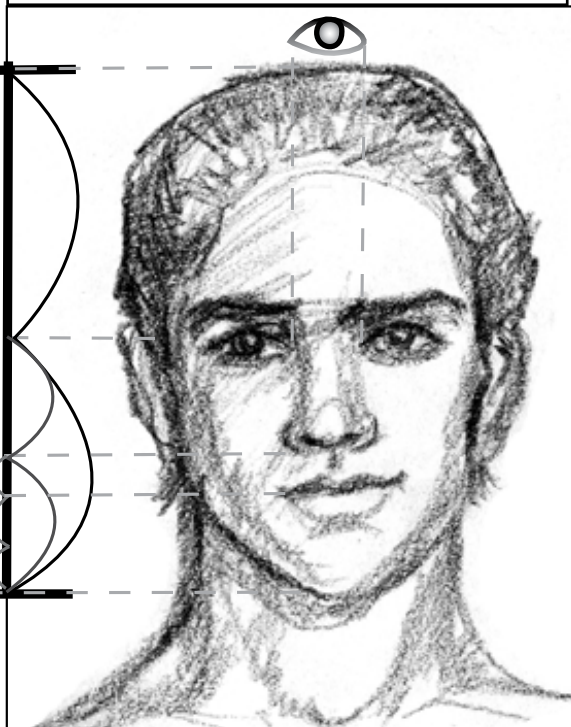


PROFILE VIEW

**EYES**  
top of ear  $\frac{1}{2}$

**Nose**  $\frac{1}{4}$

**Mouth** is  
 $\frac{1}{3}$  of the  
way from  
nose to  
chin



FRONTAL VIEW

**Try it!** 1. Place tracing paper over a magazine or other photo of a **profile** view of the head.  
2. Analyze the positions as noted above. 3. Do the same thing for a **frontal** view of the head.

### New WORDS for YOU!

**FRONTAL** means: 'from the front'.

F R O N T A L





# A SPHERE with a 'T' Makes the Head 'E-Z'



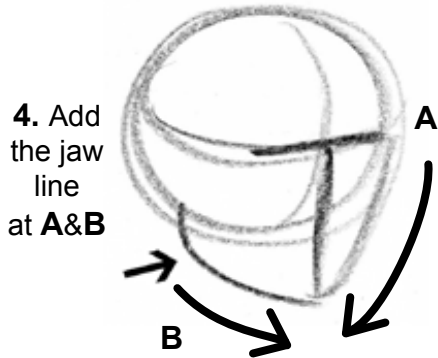
1. Draw a circle



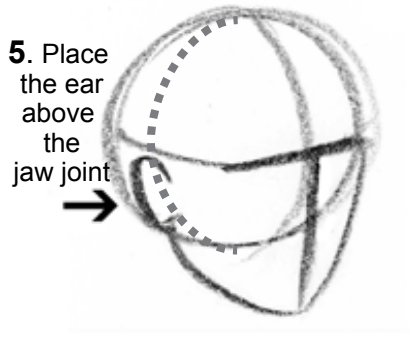
2. Add a curved line on the sphere to suggest the eye line.



3. Make a 'T' for the eyebrow and nose placement



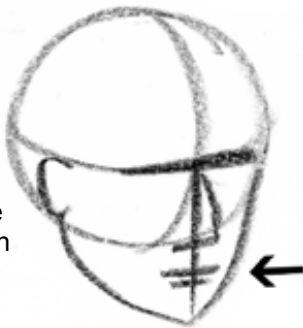
4. Add the jaw line at A&B



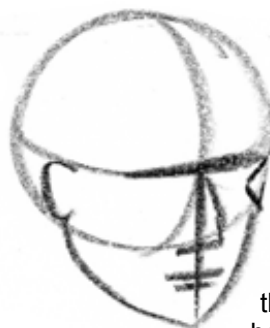
5. Place the ear above the jaw joint



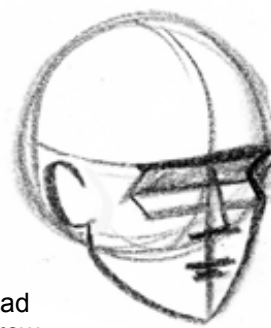
6. Place the nose halfway between eye and chin



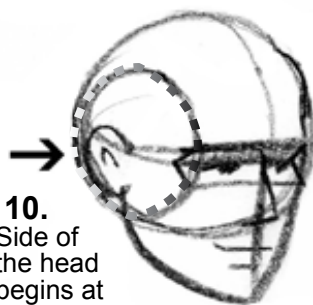
7. Place the mouth half way between the nose and chin



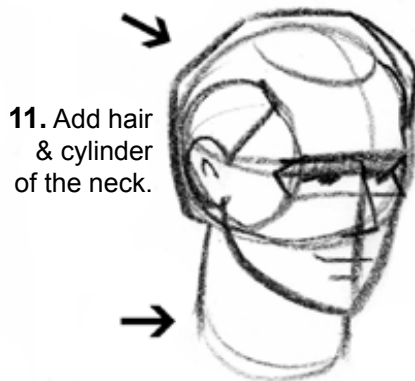
8. Make a notch on the side of the head between the eyebrow and cheekbone



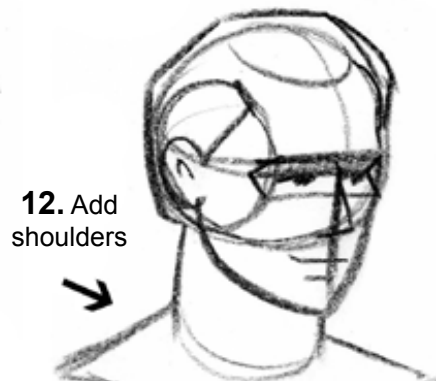
9. Add the eye ridge here



10. Side of the head begins at the eye ridge with the ear at center



11. Add hair & cylinder of the neck.



12. Add shoulders

**Try it!** Follow the instructions above to draw a head.

**New WORDS for YOU!**

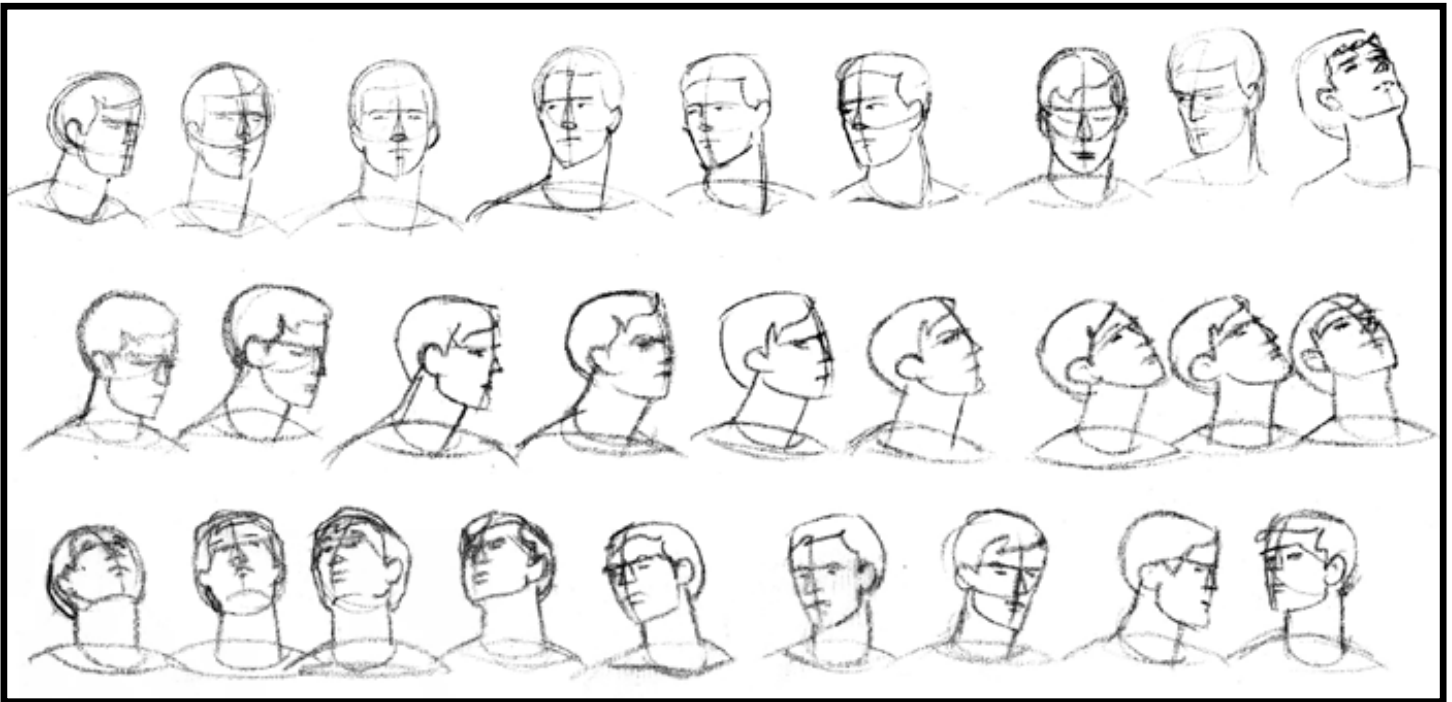
**PLACEMENT** means 'where things are put'.

P L A C E M E N T

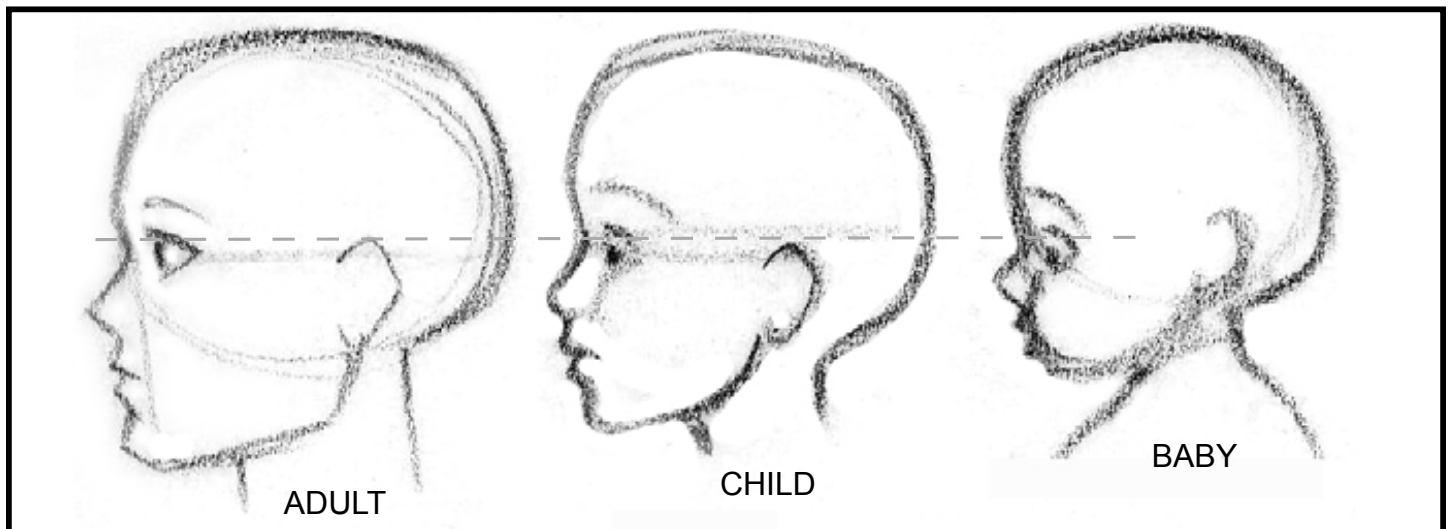


# DRAW THE HEAD FROM ANY ANGLE

You can draw the head from any angle by using the 'Sphere with a T' to indicate head direction and eye placement first, then to locate the other parts of the head.



The jaw gets larger as a person grows. To make a person appear younger, give them a smaller jaw.



A comparison between the adult, child and baby head shows the difference in eye position due to jaw size.

**Try it!** 1. Draw a head from one of the angles at the top of the page.  
2. Draw an adult, child and baby head in profile as you see above.

## New WORDS for YOU!

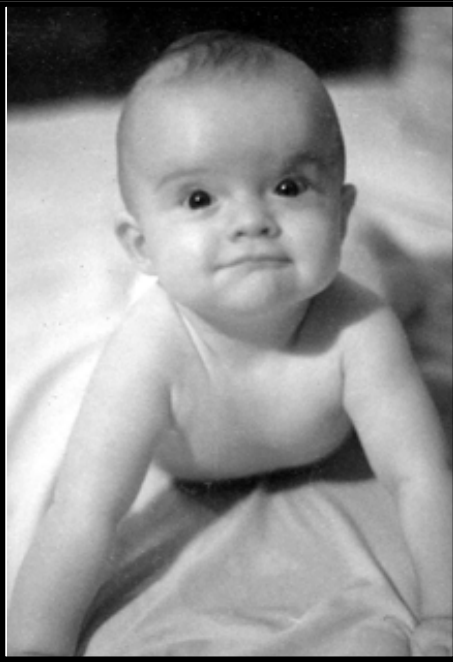
S I M P L I F Y

To **SIMPLIFY** is to make something easier to understand by taking away some of the details.

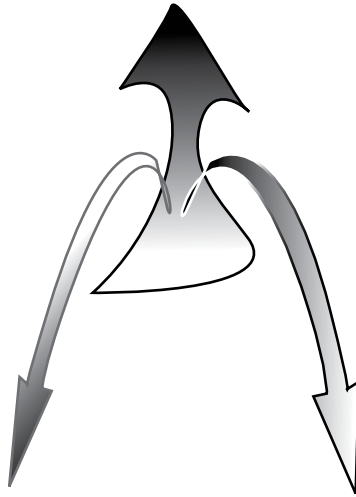


# REMEMBER YOUR A-B-C'S

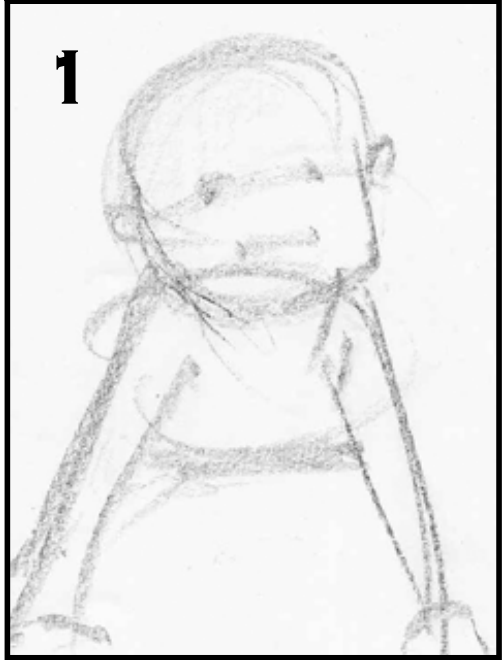
## DRAWING THE BABY!



Notice the thrust of the chest upward, and the arms pressing downward?



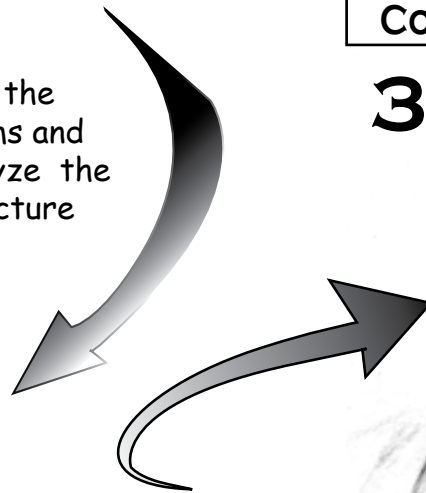
## ATTITUDE/GESTURE



## BREAKDOWN/STRUCTURE



Feel the Forms and analyze the structure



## CONSOLIDATION/DETAIL

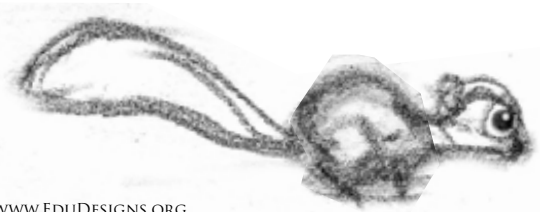


Keep working to integrate the shapes and details to one another

## New WORDS for YOU!

I N T E G R A T E

To **INTEGRATE** is to join parts together to make a bigger whole.





# Tricky Spots

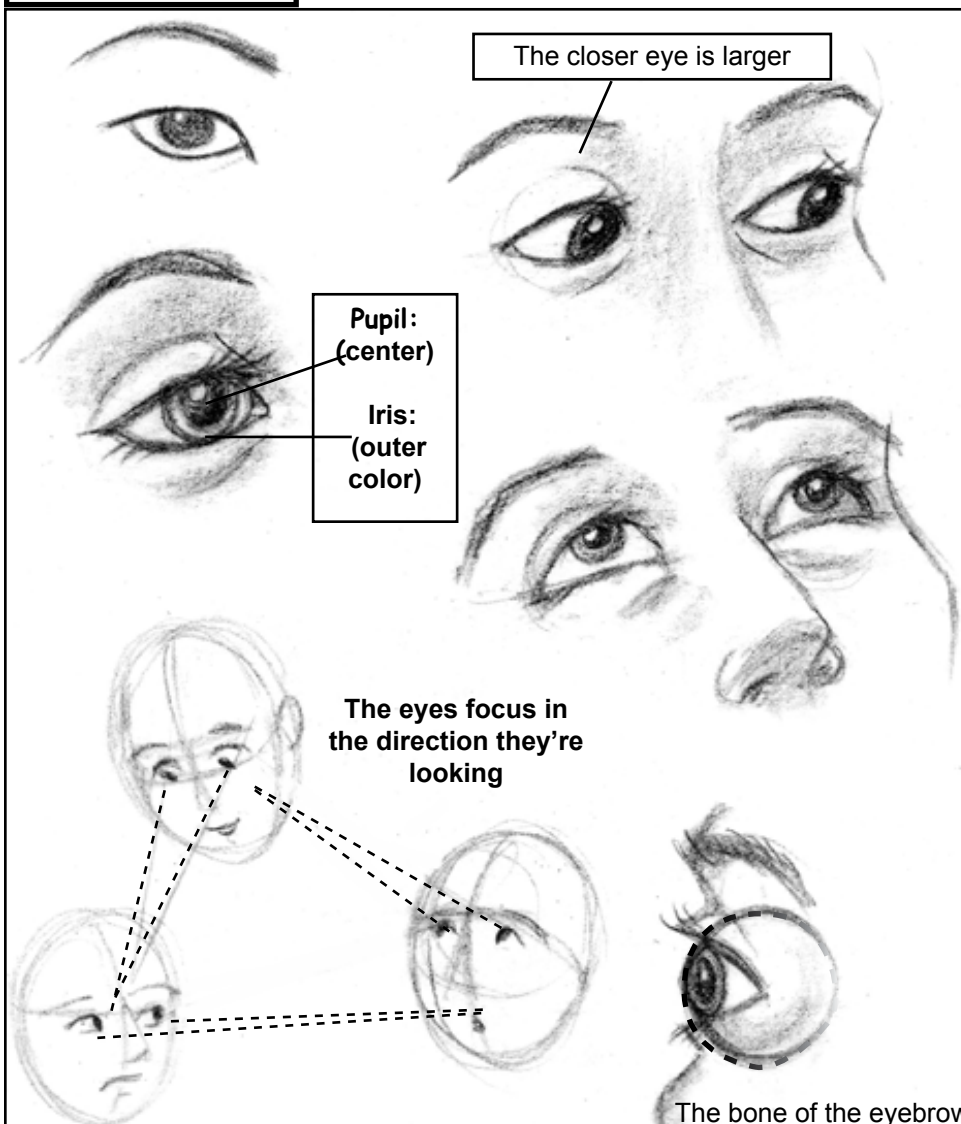


from the side

## EYES



from the front



The eye is protected within the eye socket under the 'shelf' of the eyebrow bone.

The area above and below the lids indicate the 'ball' shape of the eye.

The iris and the pupil look more like an oval as they turn away from our direction.

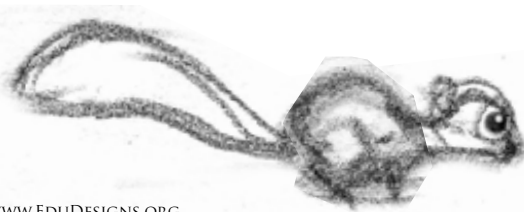
**Try it!** 1. Draw the eye from the side  
2. ... from the front. 3. ... from a 3/4 view.

The bone of the eyebrow and cheekbone protect the eyeball inside the socket.

### New WORDS for YOU!

To **INDICATE** is to point to something, or point something out.

I N D I C A T E



# the NOSE

has PERSONALITY!

Intellectual

Emotional

Physical



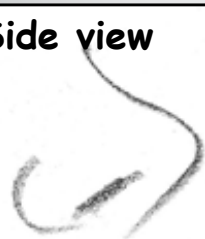
Many of the facial features on a person are based on the formations of the skull underneath. The nose is made of cartilage which attaches just below the eyebrow ridge and between the eyes. If you look at it from underneath it's like a triangle shape.

To the right  
you can see  
different noses  
from the side  
and front view

## Try it!

1. Draw a nose from the side.
2. Draw a nose from the front.

### Side view



Upturned



Down turned



Flared

### Front view



Upturned



Down turned

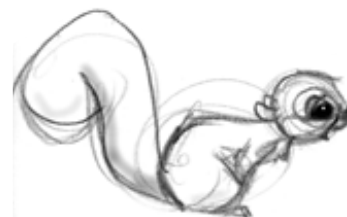


Flared

## New WORDS for YOU!

F A C I A L

**FACIAL** means 'of the face'



# EARS

from  
the  
front

and side

and  
behind



The outer ear (and nose) are made up of **CARTILAGE**. On this skull, you can see there is only a hole where the ear and nose would be. The swirling pattern that makes up the 'funnel' of our ear collects the sounds around us and directs them into that hole. Without our ears to catch them, the sounds would just pass by and we wouldn't hear them. There are many varieties in the shape of the ear. Those tricky parts can be simplified, like this



One way to Simplify the Ear

**Try it!** 1. Draw the ear from the side. 2. Draw the ear from the front. 3. Draw the ear from the back. 4. Draw a simplified version of the ear. 5. Notice the different types of ears around you!

## New WORDS for YOU!

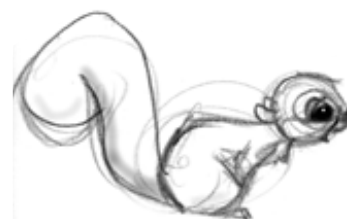
C A R T I L A G E



**CARTILAGE** is flexible connective tissue found on the ends of bones, inside the upper outer ear and in the nose.



55

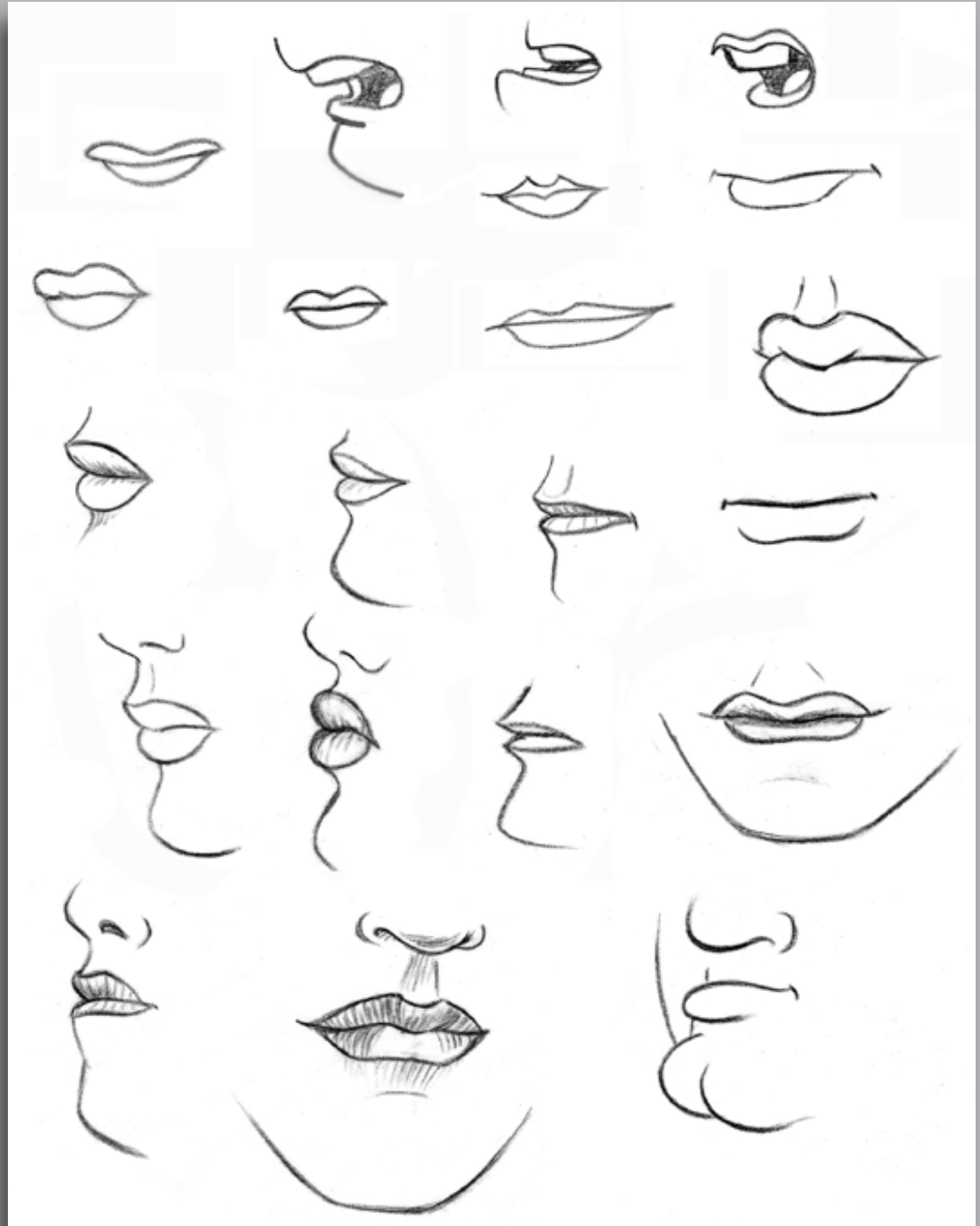
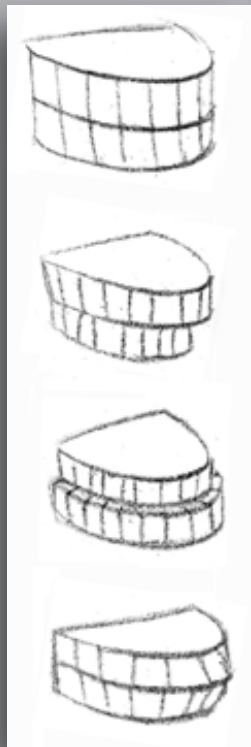




# MOUTHS



The teeth are a bit like a cylinder shape. Their position under the lips changes the shape of the face.



**Try it!** 1. Draw the mouth from the side. 2. Draw the mouth from the front. 3. See how many different lips and mouth shapes you can discover around you.

**New WORDS for YOU!**

**POSITION** means: 'where something is placed'

P O S I T I O N



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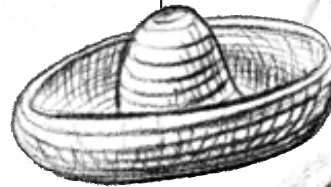


# HATS Off (and on) to YOU



One of the simplest hats to draw is the straw hat, which is just a low cylinder on top of a larger circle underneath. Whenever we draw a hat ON a person's head we need to draw the head FIRST,

and then an oval where we wish to place the hat on the head. Here are some different hats, showing how they fit on the head.



## Try it!

1. Draw a head first, then add a hat!
2. Draw a straw hat
3. Draw a baseball cap
4. Draw a cowboy hat

## New WORDS for YOU!

UNDERNEATH

UNDERNEATH means under or below something else.



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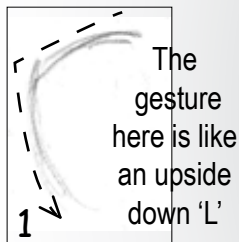
### The Story of Roscoe Continues:

Drawing Roscoe was difficult because he wouldn't stay still long enough for me to draw him! So I was delighted when my husband took photos of Roscoe. The photos stayed still for me!



## HEAD DRAWING: Photos can really help at times!

Sometimes it's the only way you can get the effect you need. A bright smile, a fleeting expression or an action or movement caught in space can't be held for more than a second. That's when having a photo to draw from can really come in handy. However, even with a photo, the same techniques apply as when doing a Quick Sketch. Establish the foundation of a drawing the same way, by getting the important gesture of your character's attitude first. Afterwards you can take your time and get into the details. First things first!

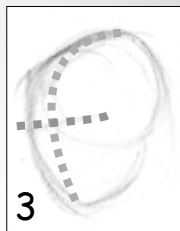


The gesture here is like an upside down 'L'

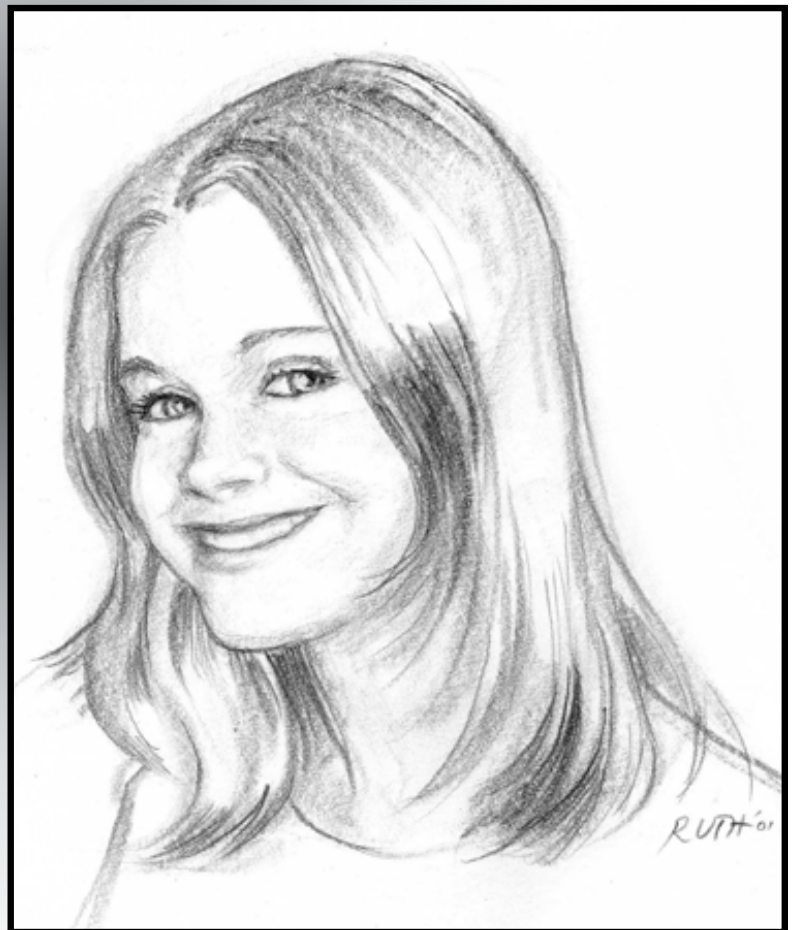


add the cranium  
▲ (the skull)...

then the center  
& eye line.. ►



...and the hairline ▲



**My daughter couldn't have kept up this smile long enough for me to draw it from life, so a photo helped. Just as when drawing from life, I always sketch the basics first, before I add the details!**

**Try it!** 1. Find a photo of someone you want to draw. 2. Use all the steps you have learned to capture the expression and attitude you see.

### New WORDS for YOU!

F O U N D A T I O N

A 'FOUNDATION' is the base something is grounded on.



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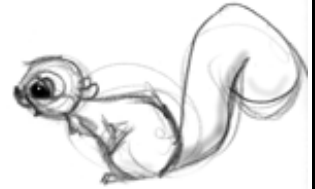






### The Story of Roscoe Continues:

Because of Roscoe's sharp claws, I always wore long pants. He would climb up my leg and dig at my pocket to get to the shelled walnuts I'd keep in there. As soon as I'd pull one out and give it to him, he'd take it, run off and later come back for another. Unless I had raised him from a baby, I would never have gotten closer than drawing a picture of him from across the yard! Be careful! Never touch a wild squirrel!

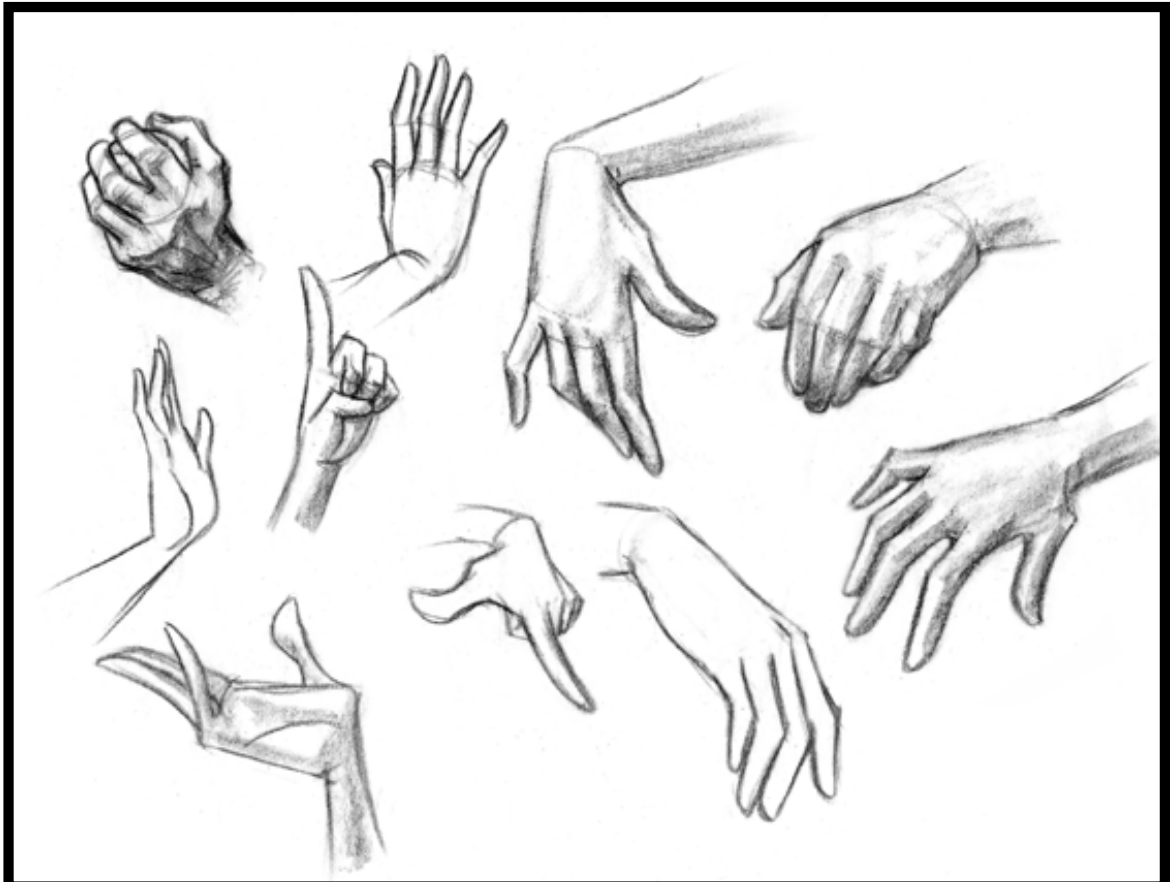


## More Tricky Spots

### HANDS, FEET and SHOES...

### THE HANDS

Hands are like faces. There are no two exactly alike. Each one reflects the personality of its owner. A slender, refined person will probably have slender, refined hands. A muscular individual will have sturdier, muscular hands. A stout person might have fatter fingers. Some folks have smooth fingers, some knobby ones, but for the purposes of simplification and study, there are general similarities that each have in common. Four fingers and one thumb, for instance, unless you were born with more or less, as sometimes happens. It's fun to study your OWN HANDS and others you see!



**Try it!** Study the hands around you. Draw one of yours!

### New WORDS for YOU!

P E R S O N A L I T Y

**PERSONALITY** is the mixture of features or traits that make up an individual.



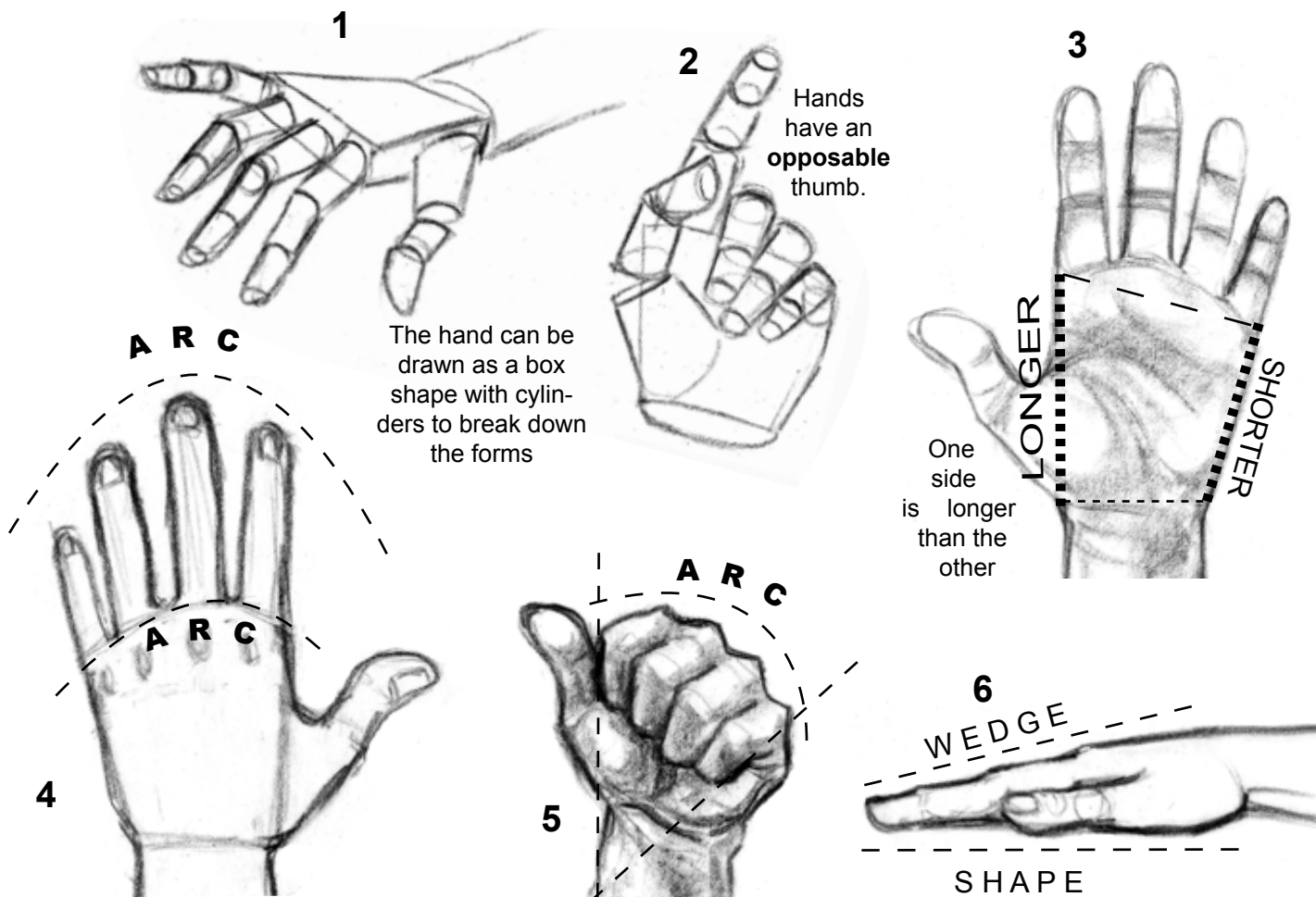
59





# THE HANDS, continued

Analyze the parts of the hand the same way we do the rest of the body, and break it down into simpler parts. Observe these things: The central part of the hand can be drawn as a box shape, with fingers as cylinders added on for joints. Keep in mind the variations in the finger lengths and bends of the knuckles that make up the character of each finger. Also, there is an 'arc' or curve of the back of the hand when it is curled into a fist (as in 5). The hand has a gesture, too, just like the body has a certain pose. Study these shapes, so you'll be able to recognize them the next time you draw them. Your own hands provide great models. The best part is that they're available to draw at all times! And they're absolutely FREE!



The fingers and knuckles are in an arc formation. When made into a fist, they 'converge' (move towards the same point) to the center of the palm.

From the side, the hand resembles a wedge shape.

**Try it!** 1. Draw the inside of your opened hand. 2. Draw your opened hand from the back. 3. Draw your hand closed in a fist. 4. Draw another pose of your hand you make up yourself.

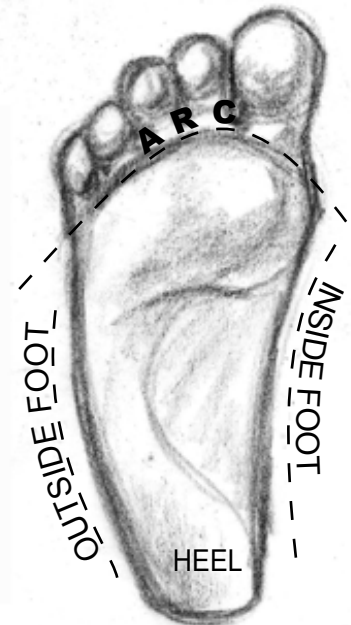
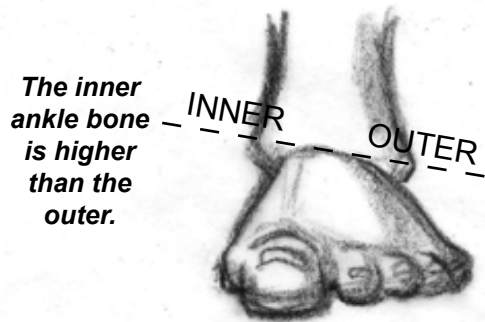
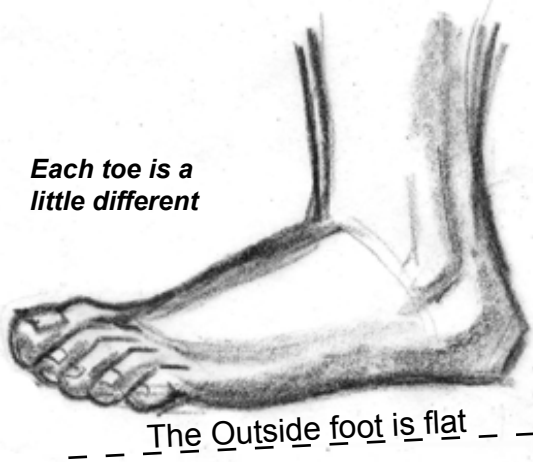
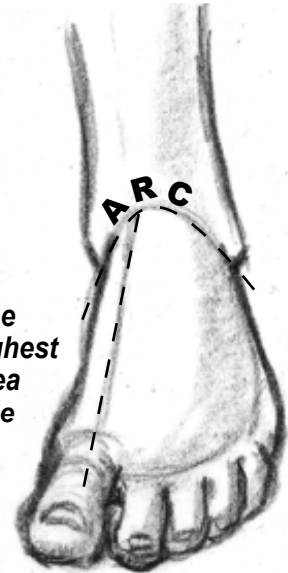
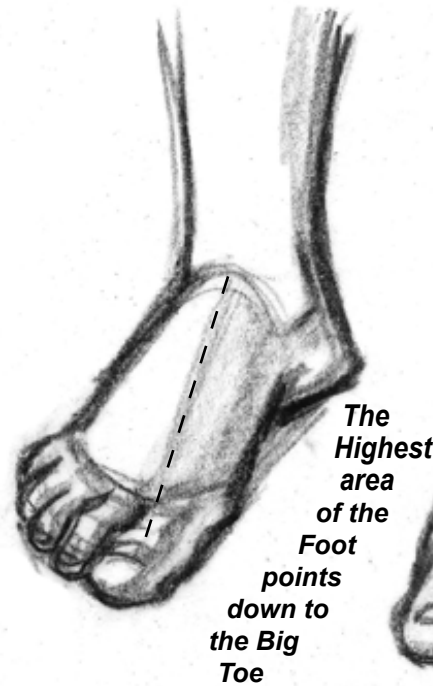
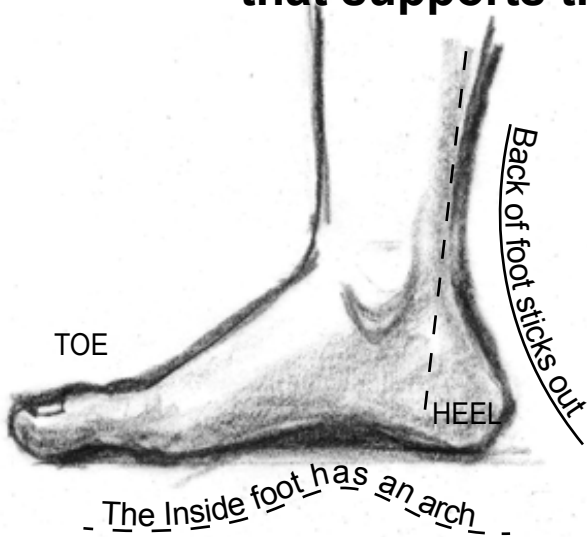
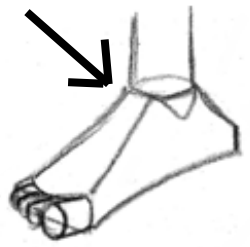
## New WORDS for YOU!

**OPPOSABLE** means it can be placed opposite something (as the *thumb* can be placed opposite the *fingers*).

O P P O S A B L E



**THE FOOT** is a triangular wedge that supports the weight of the body.



*The Bottom of the Foot*

**Try it!** 1. Draw a foot from the outside 2. Draw the foot from the inside 3. Draw the foot from the front 4. Draw the foot from the back 5. Draw the foot from the bottom

## New WORDS for YOU!

An **ARC** is part of an arch or curve.

A R C



# SHOES

The most important thing to remember about drawing anything is:  
**GET THE FORM DOWN FIRST!**



This cartoon-like foot is just an oval shaped wedge like a rounded Triangle, ready to be given socks and be a perfect cartoon shoe!

This more traditional wedge shape can be a foundation to wear a thong or slipper, sneaker or dress shoe!

Pumps -  
realistic or  
Cartoony



Always 'SEE'  
the form under  
the SHOE!

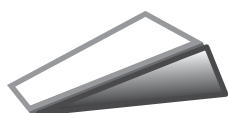
With feet, draw the triangular wedge shape first, and then develop the shoe over it! When you begin seeing things THREE DIMENSIONALLY, you will see the form under any object. Putting down the shapes on paper will be like running your hand over something and feeling it, instead of being conscious of a flat piece of paper and pencil in your hand. This is the aim of all this drawing practice. As you practice dilligently, you'll be able to see forms in your head, before they're on the paper, and be able to translate them into images that look like what you imagine!

**Try it!** 1. Draw a cartoon foot 2. Draw a fancy high heeled shoe 3. Draw a low heeled shoe

## New WORDS for YOU!

A **WEDGE** shape looks triangular in cross-section.

W E D G E







### The Story of Roscoe Continues:

When Roscoe would look for nuts that I'd keep in my pocket he'd take one and then run off! He wasn't able to say, 'thank you', but I knew Roscoe loved me, because he never went to other people for nuts! Think about your life: Do you sometimes forget say 'Thank You' to your mother?



# QUICKSKETCH: ANIMALS

Drawing animals from life is basically the same as drawing people, except most animals won't stay still when you ask them to! All you can do is sketch a little bit, and when the critter moves to another pose, begin another sketch on the same page of the new pose. As the animal moves around, it may eventually go back to the first pose, and then you can go back to drawing that one again. Switching back and forth between two or three views of your subject may seem a bit exasperating at first, but remember - your aim is not to get a fantastically finished drawing, but to get into practice capturing the gesture and movement of the animal in a few simple strokes. This is great fun, whether you're trying to draw birds in your backyard or giraffes at the zoo! The next time you **do** go to the zoo, bring a pad of paper and something to draw with. You'll enjoy yourself and learn more than you ever realized you could! Many art schools have field trips to the zoo just for this purpose.

**The drawing below was done in my backyard using this technique with only 3 birds!**



**Try it!** Draw some animals near your house! If you have a pet, Draw it!

## New WORDS for YOU!

EXASPERATING

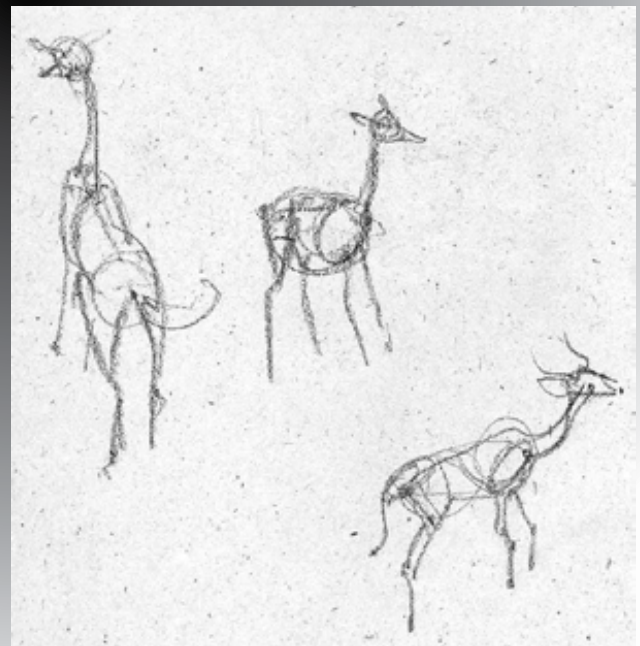
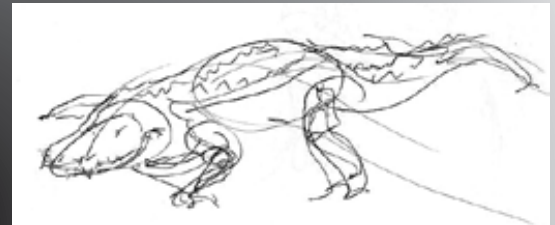
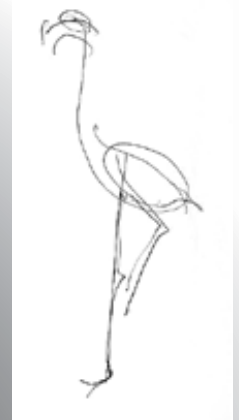
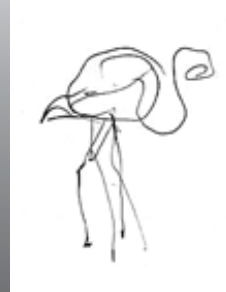
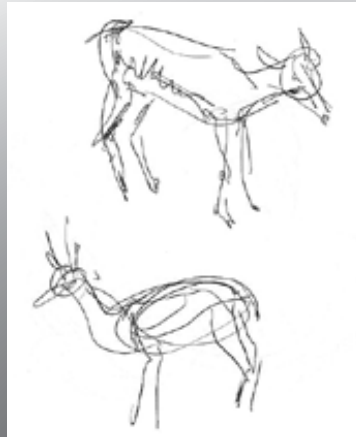
**EXASPERATING** means 'extremely annoying or frustrating'.



# QUICK SKETCH AT THE ZOO

See if you can guess which animals they are!

It's amazing to think of how much information you can get from only a few lines!



**Try it!** 1. Draw a quick sketch of an animal from a photo. 2. Draw a quick sketch of an animal from real life.



# Human Versus Animal

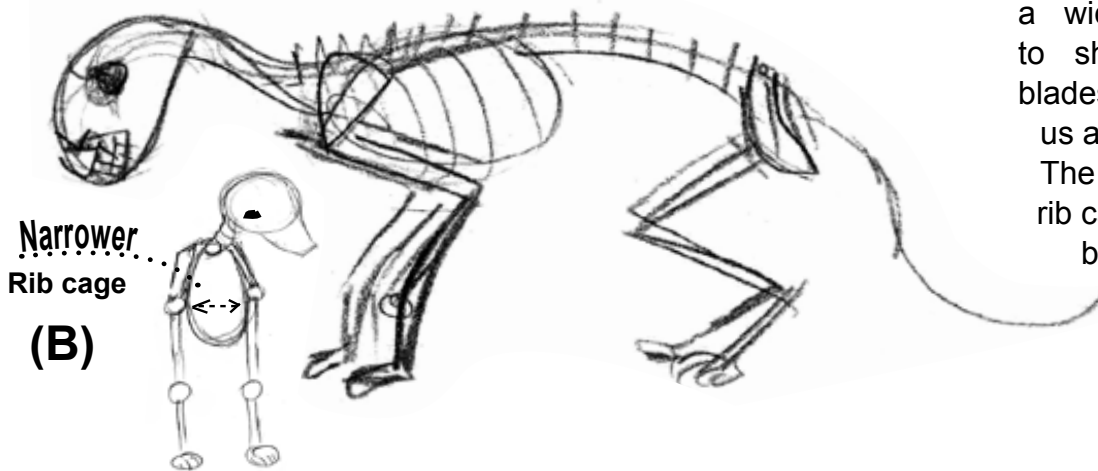
## HUMAN SKELETON



These rough sketches show how our the human skeleton corresponds to the same parts on a cats' skeleton. It is remarkable how similar they are.

The differences are in the **position of the neck**, which connects farther back on the skull of the cat, so their eyes can face forward. That is because **we walk standing up and they walk on all fours**. There is another major difference. A cat has four feet to balance on and **walks on its toes**, while all of our weight rests on only two of our feet, so we need the whole foot for balance.

## CAT SKELETON



Another is in the **shape of our rib cages**. Seen from above, the human rib cage (at A) is a wide oval, from shoulder to shoulder. Our shoulder blades are on our back, giving us a wide range of movement. The cat or dog has a narrower rib cage, (see B) with shoulder blades on its sides, and not their back as humans have, so it has less range of motion, but perfect for running on all fours!

### New WORDS for YOU!

R I B C A G E

The **RIB CAGE** is formed by the long curved bones around the chest which protect the heart and other inner organs.

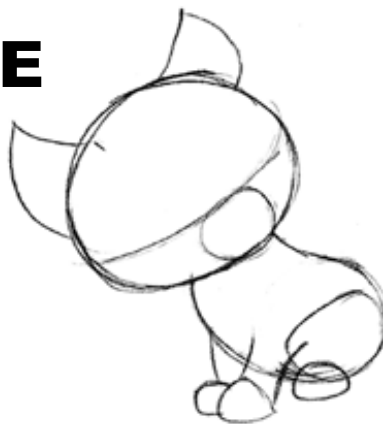


# CAT & MOUSE



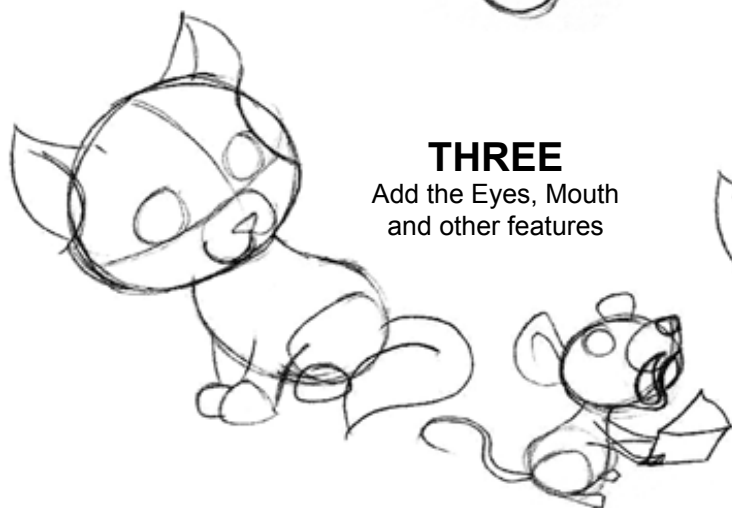
## ONE

Draw the Main  
Shapes of the Body



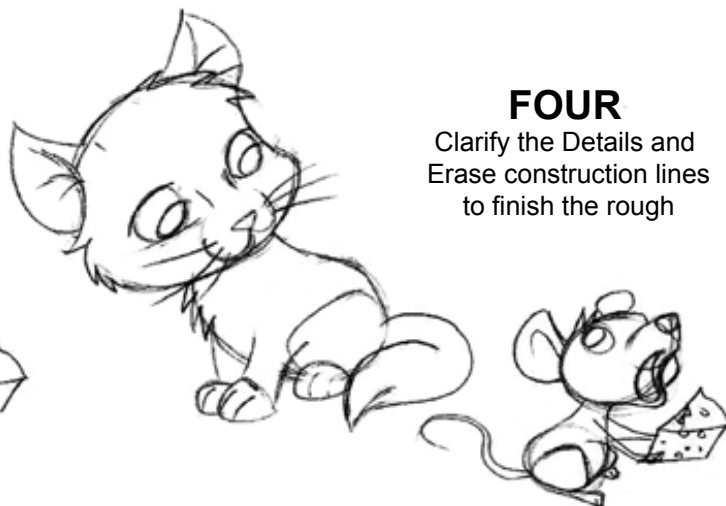
## TWO

Add the Arms, Legs,  
Ears, Nose, etc.



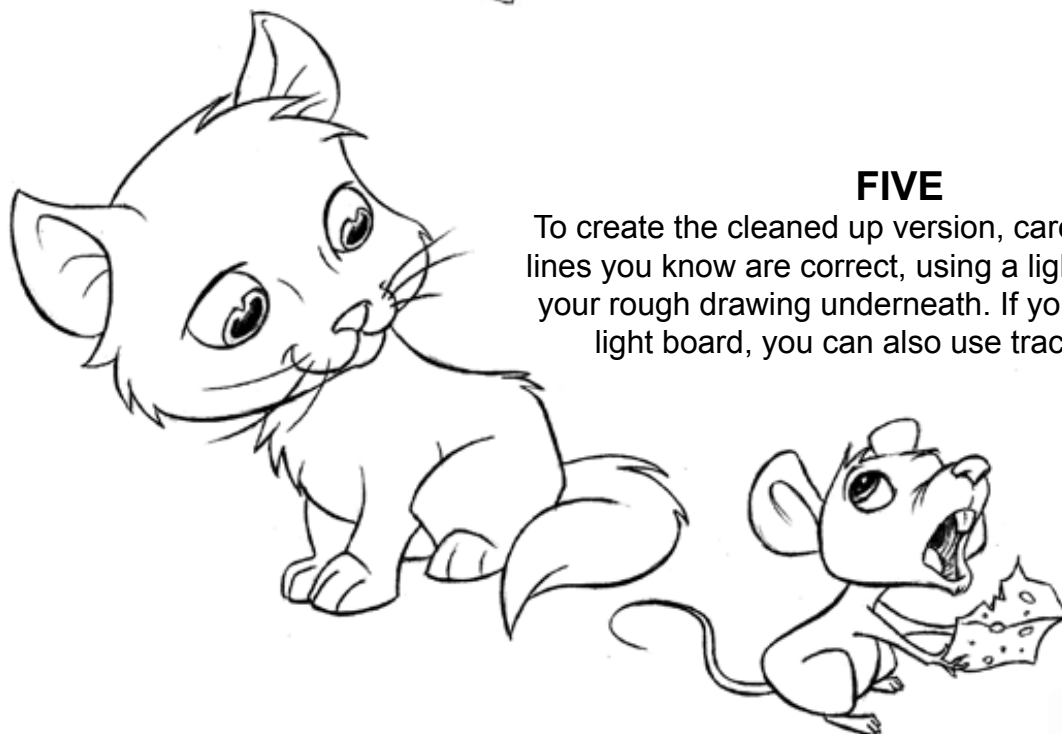
## THREE

Add the Eyes, Mouth  
and other features



## FOUR

Clarify the Details and  
Erase construction lines  
to finish the rough



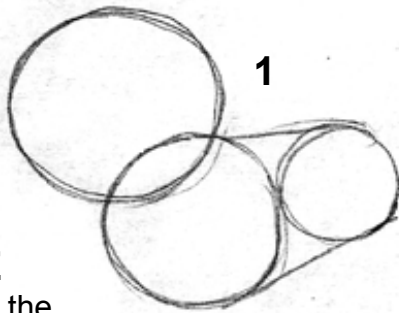
## FIVE

To create the cleaned up version, carefully trace the lines you know are correct, using a light board to see your rough drawing underneath. If you don't have a light board, you can also use tracing paper.

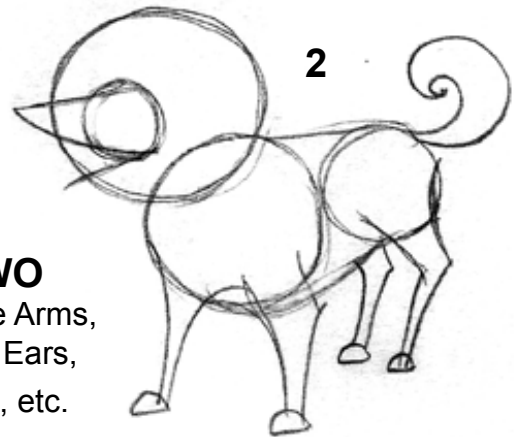




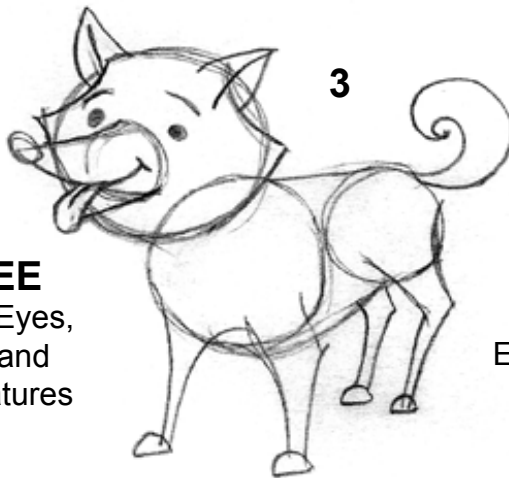
# MARENGO the DOG



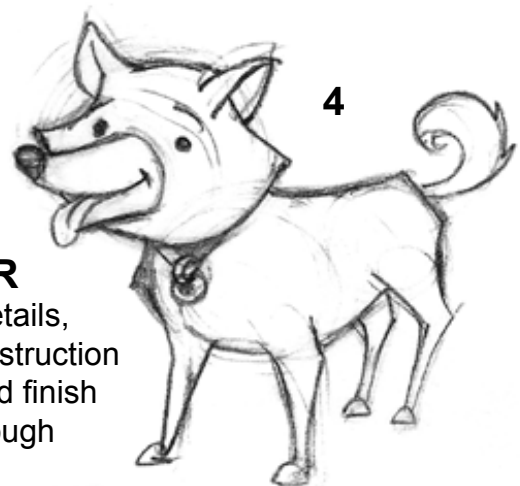
**ONE**  
Put down the  
Main Shapes of  
the Body



**TWO**  
Add the Arms,  
Legs, Ears,  
Nose, etc.



**THREE**  
Add the Eyes,  
Mouth and  
other features



**FOUR**  
Add Details,  
Erase construction  
lines, and finish  
the rough

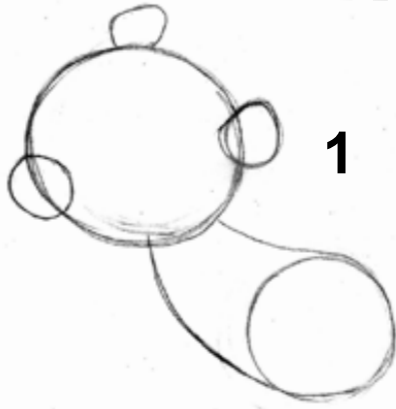


**FIVE**  
To create the  
cleaned up version:  
1- Cover your  
rough sketch  
with a piece of  
tracing paper, or use  
a light board to see  
through a new piece of  
regular paper.  
2- Carefully trace *only* the  
lines you know are correct.

**CLEANUP  
TIP:**  
Create a nice  
effect by going  
from *thin* to  
**thick** lines.  
A **thicker**  
line creates  
a feeling of  
weight.



# DRAW ROSCOE!



1

## ONE

Sketch the Main Shapes of the Body



2

## TWO

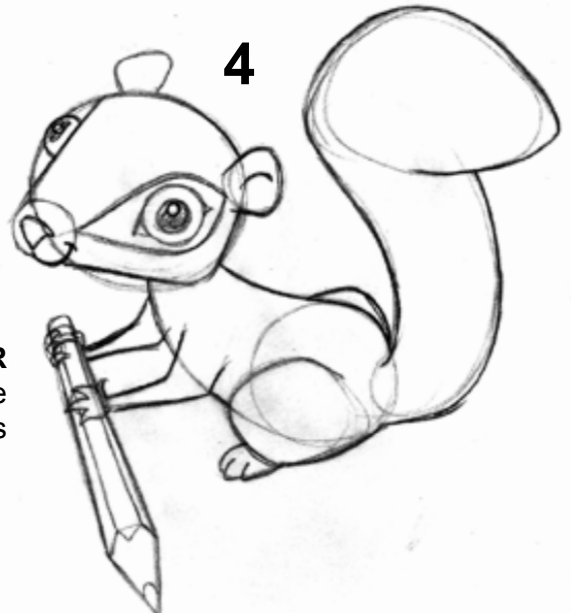
Add the Arms, Legs, Tail, Angles of Head & Eye Position.



3

## THREE

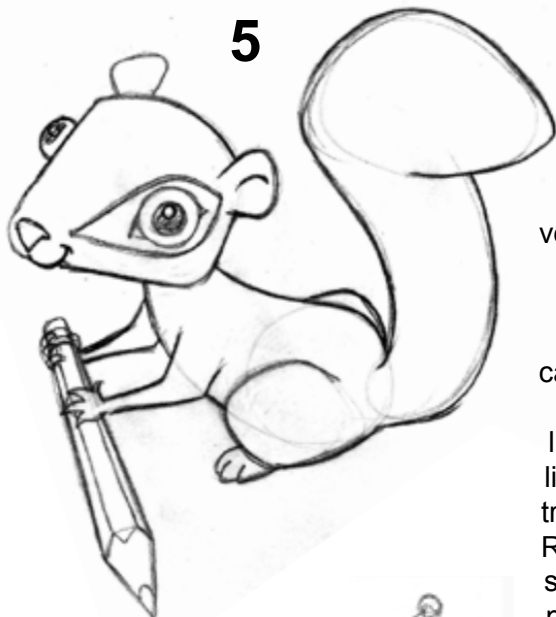
Add the Position of the Eyes, Mouth, Pencil



4

## FOUR

Clarify the Details



5

## FIVE

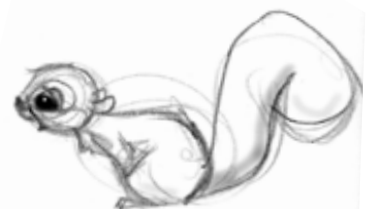
Erase construction lines to finish the rough



6

## SIX

Create the cleaned up version: Get a New piece of paper and carefully trace the correct lines using a light board or tracing paper. Remember to sharpen your pencil for the final drawing!





### The Story of Roscoe Continues:

Roscoe's head was shaped sort of like a triangle. He had the best hearing! His ears could turn in the direction of a sound without his head moving! I can't do that!



# CARTOON CHARACTERS

When you begin Cartooning, use the principles of Head and Body drawing and then **STRETCH** the proportions to exaggerate them. This can create characters with different personalities for storytelling purposes! Think of what you would like to express to the world. What do **YOU** want to say? Everyone loves a good story, so - reflect on things that have happened in your own life. One good idea is give your character a problem to solve. Can you think of some problems for your character? You are the hero of your own story who struggles to overcome obstacles and learns something in the process.



## BUFF GUY & BABY

Look at the contrast between the characters above. Cute baby types look cute because they have a *large head* and a small body. The tough guys look tough because they have a *small head* and a **large** body.

### IF THEY WERE THE SAME HEIGHT...



The tough guy has a small head in proportion to his large body and short legs. The triangular shape to his torso gives an added sense of power and strength.



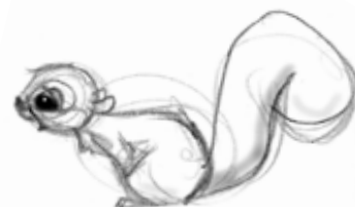
The baby has a large head in proportion to his small body. His protruding belly and wimpy arms increase his appearance of harmless cuteness.

**Try it!** 1. Draw a tough guy (human or animal) using the Proportions of small head, big body. 2. Draw a cute baby type (human or animal), with a big head and small body.

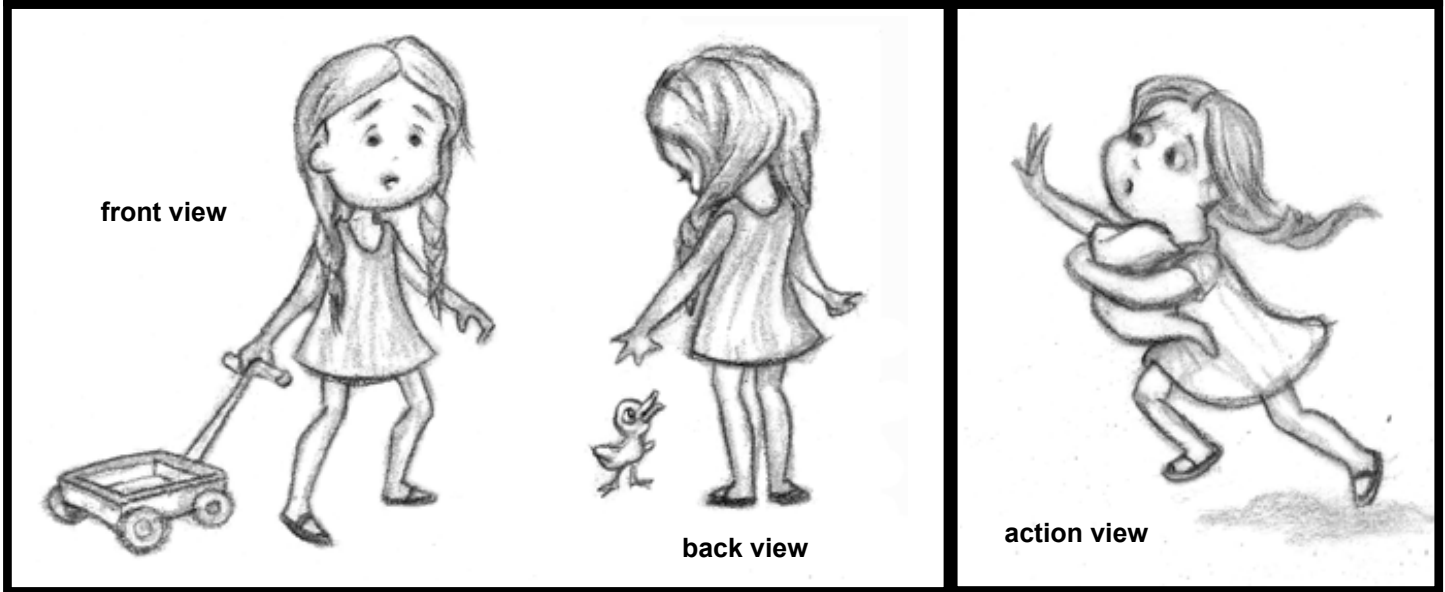
## New WORDS for YOU!

A **CHARACTER** is someone with certain qualities that distinguish them from others.

### C H A R A C T E R



# In comics or animation, you need to be able to draw the same character from many angles.



Characters, for animation or comics, need to be drawn from different angles and various poses and still look like the same character! Check the proportions of the character each time you draw them. Pay attention to size relationships between characters, too. Final character designs are called **MODELS**.

These are just a few characters to get you started. Invent some of your own, and try drawing them from different views (front, side, back).



"I need a rest!"



"I can do it!"



This 'Goofy-looking' guy is- well, goofy looking!



Tough guys (like this pirate) may have large jaws, a thick neck and a protruding lower lip.

**Try it!** 1. Think of a character 2. Draw them from front, back, and side views.

## New WORDS for YOU!

M O D E L

A **MODEL** is a design or plan to follow.







### The Story of Roscoe Continues:

Ever since I was a little girl, I always wanted a squirrel for a pet, mostly because they were so cute. I thought they were the most beautiful of all the animals! Who would have guessed I would have actually one someday? Somebody up there must have been listening!



## SANTA CLAUS

My mother was an artist. When I was a little girl I asked if she could draw Santa Claus. She did it so quickly! I was astounded! At the time it seemed like a mystery, if not a miracle! From then on, I wanted to become as good as she was at drawing. Years later in Art School, I learned she was following the exact steps I've described: 1-Roughly sketch the gesture, 2- Break down the shapes and then 3- Add details. So SIMPLE! And now that I've learned it, I'm sharing it with YOU. We need to keep practicing, so I'll describe this process again, drawing Santa Claus. You can use these steps to draw other characters, too. Once you do, you can show your friends and relatives how to draw!



1- Attitude & Gesture, including the angles of the body, head arms and legs.



2- Breakdown the structure, to solidify the sleeves, beard, hat, boots, coat and belt.



3- Consolidate the forms to clarify the details, beard, face, buckles, mittens, & hat.

**Try it!** Follow the instructions above to draw Santa Claus.

### New WORDS for YOU!

S O L I D I F Y

To **SOLIDIFY** means:  
'to make SOLID'





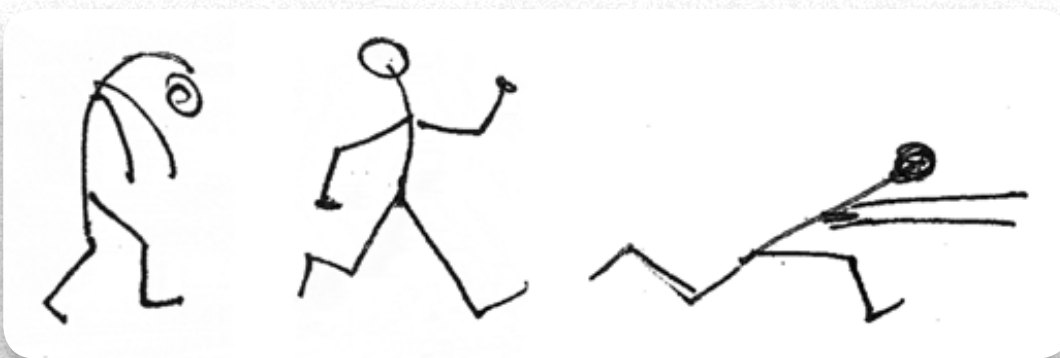
### The Story of Roscoe Continues:

I knew when Roscoe was happy by the way he would dance about and leap from branch to branch with exhilaration and abandon. But I could tell he was nervous one day when he began to chatter in shrill, sputtering chirps. I ran outside just in time to see what was the matter. He had literally 'barked up the wrong tree' and upset a crow who was chasing him back down. He thought twice about going up that tree again!



## EXPRESSING EMOTIONS

### Through **EYES** and **BODY LANGUAGE**



Start telling a story with a few simple strokes. **SKETCH** a few simple lines to express the basic **Gesture, Action and Attitude**. **THINK** of the strongest way to make the point. **EXAGGERATE** the pose if needed, to make it 'read' better. Don't get caught up in details, but get the main **FEELING** down first. It helps to remember

the word **K.I.S.S.** :

Keep  
It  
Simple,  
Student!



It doesn't take  
much to get a  
feeling across.

See how a simple  
tilt of the head and  
upturned eyebrows  
express concern  
in this mom's  
expression?

**Try it!** 1. Draw simple faces that express all the different emotions mentioned above.

### New WORDS for YOU!

To **EXAGGERATE** is making a thing appear more extreme than it actually is.

E X A G G E R A T E





**Happy**



**HAPPIER!**

## BODY LANGUAGE

PLEASE HELP!

When you get an idea for a picture and want the best way to express it, stop and think.

**1- Use Body Language** to emphasize the posture and gesture. Simple and direct attitudes communicate best.



**2- Is it unmistakable what's happening?** Does it read? Is it clear? Is it obvious? Picture it in your mind before you draw it.

**3- Is there a better way to show it?** Can you say it with your whole body? Experiment with different ways. Act it out! Be Dramatic!



**Sad**



**SADDER**

### Try it!

1. Draw a pose that expresses happiness.
2. Draw a pose that expresses sadness.
3. Draw a pose that expresses anger.



**MAD**



**MADDER**



**FURIOUS!**



What?

### New WORDS for YOU!

A T T I T U D E

An **ATTITUDE** is a position of the body, or manner of carrying oneself



# TEST your POSE

## ...through SILHOUETTES

**Q.** What is the best way to show an action or emotion?

**A.** Create a silhouette to test it!

The two drawings of the mad scientist on the right are in the **SAME** pose, only from **DIFFERENT ANGLES**.

How can we decide which one **best expresses** what he is saying?

First take a look at them →

Now see their silhouettes, below them.

The **silhouette** is the **outline** of their form with the center shaded in with a solid color (like the shadow of an image on a window shade).

**Which pose is more effective?**

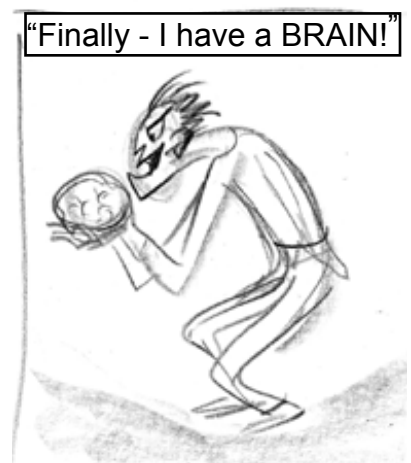
In **A** the action is 'covered up' by his body.

In **B** the action is obvious. The best poses are easy to 'read' and understand. Always ask yourself,

**"What will it look like in silhouette?"**



**A**



**B**



**ALWAYS TRY TO IMAGINE YOUR POSE IN SILHOUETTE. REMEMBER: IF YOU CAN SEE IT IN THE DARK - IT WILL BE CLEAR IN THE LIGHT**

**Try it!** 1. Draw an action pose. Now trace the silhouette with tracing paper and fill it in to see if it shows clearly what you were trying to say. If not, try another angle of the same pose.

### New WORDS for YOU!

A **SILHOUETTE** is an outline of something filled with solid color.

S I L H O U E T T E





# CARTOONS/JOKES!

Something's Fishy © by Ruth Elliott, 2001



WHOOOPS, by Ruth Elliott



*"I'm Sorry, Sir, but you're an illegal Alien..."*

I thought of these jokes after something sounded funny in real life! The next time you hear something that might make a cute cartoon - write it down! If you have time, illustrate it with your own characters. You don't have even have to be a 'great artist'. Just do your best to capture the idea. Everyone loves cartoons! Jokes help us laugh at ourselves, and can sometimes give us insight at the same time. One author wrote stories about people he knew in real life. He didn't want to embarrass them publicly, so he made each person into an animal. He could show their foolishness and teach lessons in human behavior through his stories. Many fairy tales are written that way. Sometimes it's easier to see the truth in someone else.

USE YOUR IMAGINATION, by Ruth Elliott



**What can you do besides watching TV? LOTS!**

You can: Walk, exercise, clean, help someone, learn something new, play with a friend or a pet, do games like jump rope, hopscotch, hide & go seek, read a book to yourself or someone else, learn to cook, sew, paint, write a story, a letter, climb a tree, dig a hole outside, draw a picture, learn an instrument, sing or write a song, study nature, do arts & crafts, learn a joke, teach a person something.

**Try it!** Think of something funny someone said or did and make your own comic out of it. Give it a title and sign your name to it!



# CARTOONS/JOKES, Continued

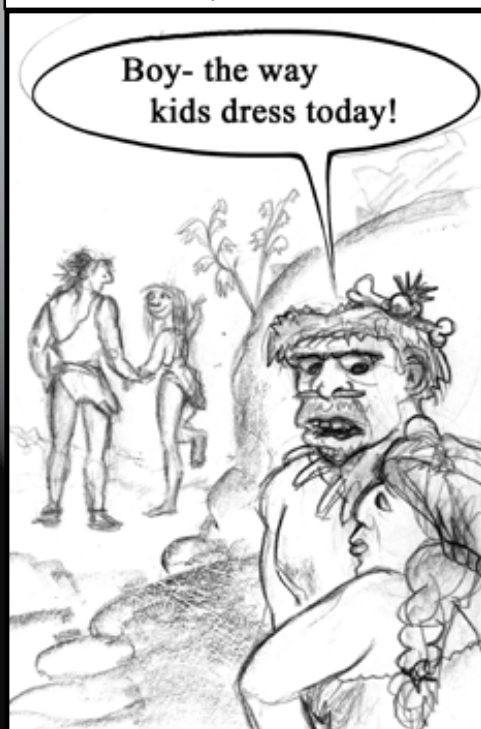
Dogs Rule © by Ruth Elliott, 2001



Why you Shouldn't Lie, EVER! © by Ruth Elliott, 2001



ALWAYS © by Ruth Elliott, 2001



YOU SAID IT! © by Ruth Elliott, 2001



# CAPTURE A CHARACTER in CARICATURE!

A 'caricature' is a drawing of someone that exaggerates certain features and simplifies others, in order to make the person recognizable and yet also add something comical.

'Imagining' is having a picture in your head first, before you put it down on paper. Even when you just start drawing and *don't* imagine first - just to see what comes out - what generally

happens is that after you begin a few lines, it will remind you of something else you have seen, and NOW you **do** have a picture in your mind! So it really **does** start there, after all.

Once you have that clear mental image, you just need to 'trace' what's in your mind - first as a quick sketch (as we did in the section on **DRAWING FROM**

**LIFE**) - and then to break it down into shapes, form, and detail - as we've learned. With practice you will be able to draw anything you can imagine.



*This is a Caricature of ME by friend Jim Van Der Kyle, author of 'A Caricaturist's Handbook'!*



*I created this Caricature of Lincoln, by exaggerating his distinctive features to make them instantly recognizable, yet humorous.*



*In case you can't tell, this is a Caricature of one of my favorite TV Talk Show hosts!*

**Try it!** Picture someone in your mind, or draw from a photo of a favorite celebrity. Exaggerate their features to create a caricature.







### The Story of Roscoe Continues:

How many squirrels does it take to eat the seeds from 150 Pinecones? If you don't remember, look for the other "Story of Roscoe Continues" on page 24!



## DRAWING WITH LINES CREATES INTERESTING PICTURES!

When I was around eight, I tried to copy a dollar bill exactly, thinking I could spend it when I was done drawing it. Then my mother looked over my shoulder and told me that it was called counterfeiting, which is against the law! That discouraged me quite a bit, but I thought that perhaps the government might need people who can draw really well to make the real dollar bills. I could show my dollar bill to them, and all my hard work wouldn't be wasted. So I worked a little longer on it, but after about an hour, I looked at it and realized it wasn't exact enough to get me a job with the government, and not good enough to fool the lady at the candy store, so I gave up on the idea of drawing dollar bills for a living.

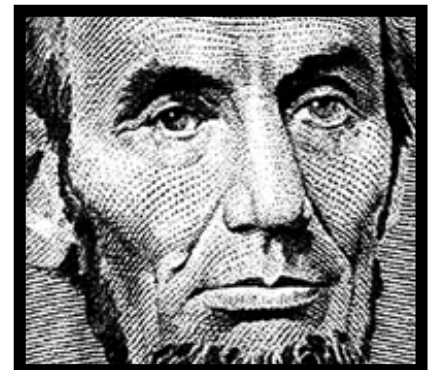


Years later I was inspired by the rich engravings on our currency to do a picture that would incorporate the same feeling of an engraving, except using only pen and ink. I realized how long it takes to really do a good job, and tried to think of a saying that would be worthy of all that hard work. I didn't want to encourage anyone to break the law, so I decided to spend my effort drawing the saying, **The Golden Rule**, drawing lightly in pencil first, and then using pen and ink over it. After the ink was completely dry I erased the pencil.



**Engravings**, like those on our paper currency (money) show a magnificent example of the rich variety and detail using **line only**. They are made by carving or etching onto a metal plate, filling the lines with ink, wiping off the excess, and then using a printing press to press the ink onto the paper. ----->>>

**Try it!** Invent your own dollar bill, for a pretend 'country', named after you. Put your own picture in the middle of it and add your name, as the president. Make it as fancy as you like!







### The Story of Roscoe Continues:

Even though Roscoe's life was a bit 'bumpy' in the beginning, it got better and better. The acorn is the symbol of STRENGTH! Maybe Roscoe was so strong because he ate so many of them! He could jump from limb to limb without fear, and even hang by one foot as he reached for something far away. I'm so happy he got to live!



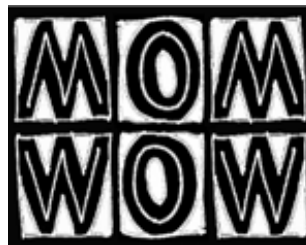
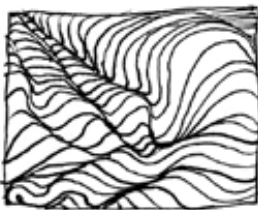
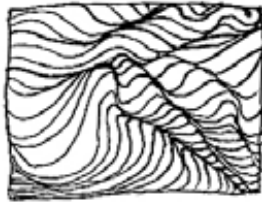
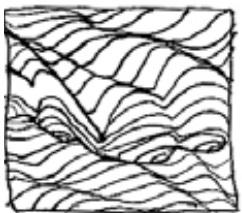
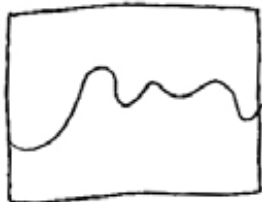
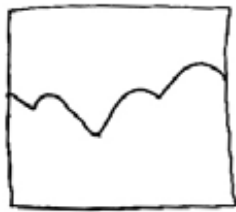
# LINE, LINE, LINE!

## SPECIAL LINE EFFECTS!

**Traveling can be a bumpy experience! Learn how you can draw a bumpy surface - on a FLAT piece of paper! It's another optical illusion!**

Putting lines next to each other can give a textured look, as though the paper has a sculptured surface. Start out by drawing a box. Make one wavy line across, Then right below it, draw another, going the same direction as the line above it. Try to imitate the same kind of line, making it similar, but don't worry about being exact. Keep adding more lines, close to the last one you just drew. Go with the 'flow' of the other one, but let it wander just a little bit off course - till you have a whole bunch of lines that

create a mini-landscape that looks like hills, flowing hair or waves on the sea. You can experiment with different lines, sharp points, jagged or rounded edges, dots or circles, and create different texture maps. Have fun and see what you can think of! These are all experiments to increase your imagination, as you learn to make your pencil obey you.



You can use pencil or pen and ink to design fancy letters, too! Did you know 'MOM' upside down spells 'WOW'? Hand-made cards are SPECIAL! Surprise your MOM with a card!



*I drew this Christmas Card with pen and ink at 16 years old for my mom.*

**Try it!** Draw a box, add a squiggly line, and make your own bumpy landscape.



# LINES DESCRIBE SURFACES!

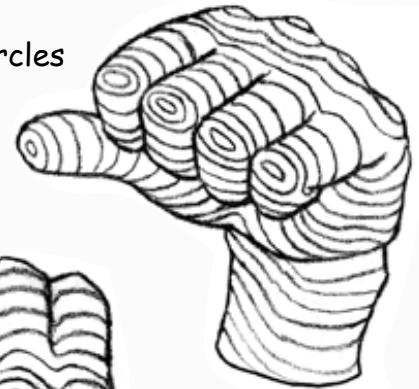
Map makers use lines on topographical maps to describe the elevations of land surfaces. You can see how it works by making a 'map' out of the surface of your hand with a washable marker

**IMPORTANT! Ask your Parent or Teacher First!**

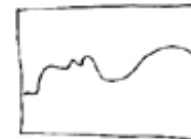
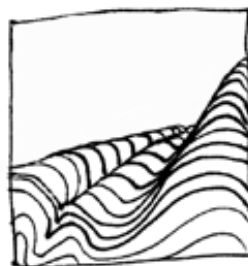
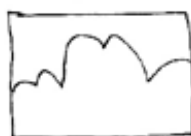
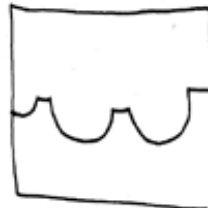
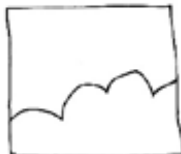
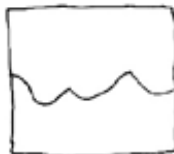
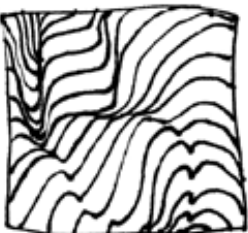
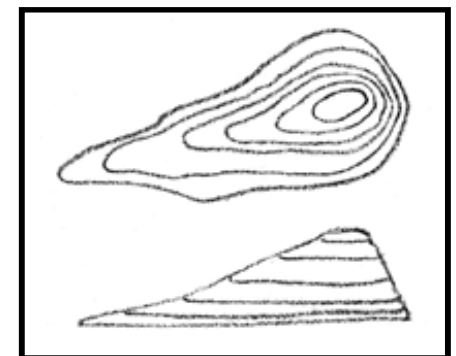
**USE ONLY WASHABLE MARKERS FOR THIS!**

Draw a circle on the highest point of each knuckle. Add concentric circles around each original circle, then stop where they touch each other.

Add lines over the rest of your hand, if you wish, as shown in the illustration. After you are done you can see the effect of lines describing the surfaces, as you look at your hand from different angles. Just for fun, try to draw what you see afterwards, and don't forget to wash your hands before you eat!



Real 'Topographical' maps indicate a certain distance between each line. So a hill that is higher on one side than another would show the lines closer to each other on the high side and farther apart on the lower side.



## Try it!

Here are some more boxes with lines to start from. Follow along below the line with one almost like it. Keep on 'echoing' the same line below that line, and it will look like a landscape!

Here's how a hill might look on a map from above, plus a view of the same hill from the ground.



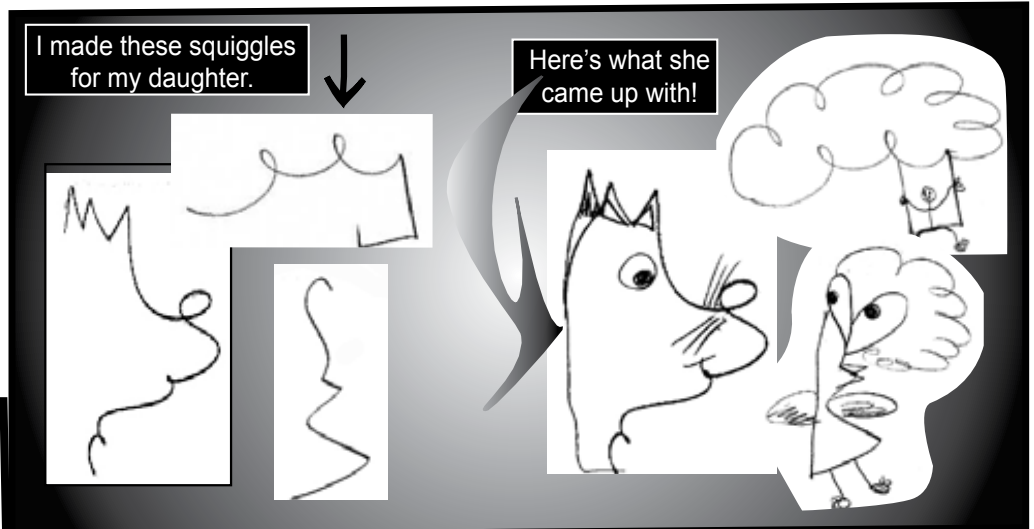
Leonardo Da Vinci's advice to aspiring artists was, "Draw everyday". Study the world around you and you'll NEVER be BORED. Even a 'SQUIGGLE' can turn into something wonderful! Sometimes I would just let my pencil wiggle and scribble without planning or thinking about it first, just to see what would happen.

## SQUIGGLES:

It's a game you can do anywhere, like this:

1- On a pad of paper, one person draws a 'squiggle'- any wiggly, straight, curvy, bent or scribbly kind of line you want. 2- Now it's the other person's job to make it look like something: Person, animal, or thing.

**Try it!** Find someone else to draw with. Take turns making and interpreting squiggles!



## I DID THESE DOODLES WHILE...



## DOODLES:

You can also make squiggles all by yourself. That's called **DOODLING!** I love to doodle while I'm on the telephone. I just start by letting my pencil do whatever it feels like doing, and suddenly it looks like something to me. Then one thing will lead to another as I play around with the lines. While I'm talking and listening, my drawings will even take on the feeling of the conversation. If I'm happy, friendly, sad, tired, angry or just plain bored, it will show in my doodles.

On the left are some doodles I did while on the phone.

**Try it!** Keep a pad of paper and a pencil handy. Pick up a pencil and start doodling. It doesn't have to make sense, just let it come out! **You'll be amazed at how your imagination can get going!**

## New WORDS for YOU!

S C R I B B L E



to **SCRIBBLE** means to draw something hurriedly, without care







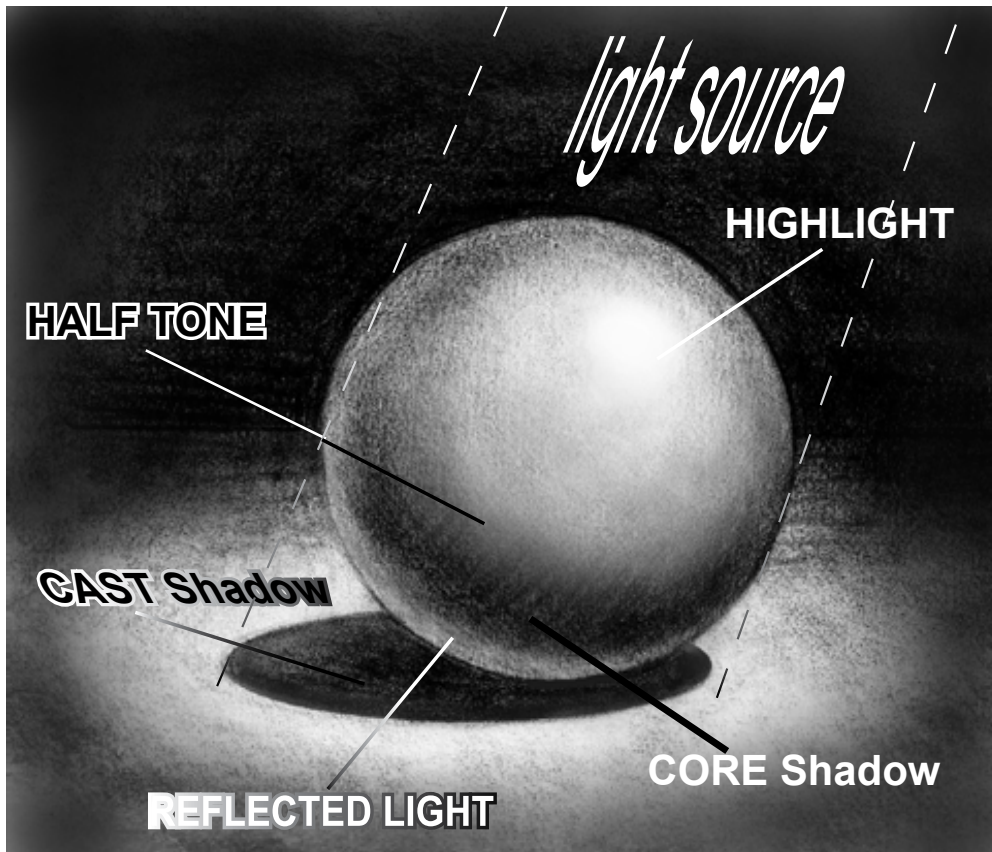
### The Story of Roscoe Continues

Roscoe was definitely a Day Person! Up at the crack of dawn and asleep as soon as it was dark. And never a dull moment in between. After he was allowed to go outside I soon realized I had nothing to fear in the way of his ability to take care of himself outdoors. He could hide so well I'd think he had disappeared, and then he'd climb through our kitchen window and take an avocado from the fruit bowl! The next I'd see he was up a tree with it! Here's a High Contrast shot of Roscoe!



## LIGHT AND SHADOWS

*Rays of light travel in straight lines, appearing dimmer the farther they radiate from their source.*



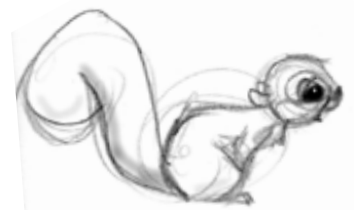
←--- On this picture to the left, do you see the shadow cast by the object on the opposite side of the light source? It's called the **CAST Shadow**. The brightest point of light on the surface of the object is called the **HIGHLIGHT**. The darkest part on the object itself is called the **CORE Shadow**. Between the Highlight and the Core is the **HALF TONE**. Between the core shadow and the cast shadow is light that is reflected from the surface the object is sitting on. This is called the **REFLECTED LIGHT**.

**Try it!** 1. Illuminate (light) an object under a single bright light (try to eliminate any other light sources, if possible). Find an angle to draw from that shows all the different shadows clearly. 2. Draw what you see, keeping in mind the names of the various shadows, to identify them. 3. When you are done, cover your drawing with plastic or tracing paper and label the shadows by their proper names. (Notice that each surface will reflect light differently. A shiny object will yield a different result than a matte (or non-shiny) object. Observe the differences!

### New WORDS for YOU!

R A D I A T E

to **RADIATE** means to send out rays or waves (as, "the sun **radiates** heat")







### The Story of Roscoe Continues:

When Roscoe began staying outside at night instead of coming home, I went through anxiety like the mom of a teenager whose child has just gotten his driver's license and is out for a ride. I was so worried he wouldn't find enough to eat, or get eaten by another animal, that every night I would leave a peanut butter sandwich outside the window for him to find in the morning. As I opened the window one night to put the sandwich down, an Opossum Mother and her babies were sitting there, waiting for it! Since Roscoe wasn't the one who got it, he must have been managing quite fine to find other things to eat, so I finally relaxed. But I didn't stop leaving that peanut butter sandwich on the fence at night. I had made a new friend!



## DRAWING From NATURE

Nature is a constant source of inspiration to artists. Look at the sunset and imagine if YOU had to paint a new one of those every day. Now, THAT's true magnificence!

It is said that, "IMITATION IS THE SINCEREST FORM OF FLATTERY!"

As we admire and imitate the beauty we see, it becomes part of us.

Thank Goodness copying nature is NOT against the law! In fact, it's encouraged. When we were babies we learned to talk by copying words we heard from others. Some folks enjoy nature more than anything else and specialize in landscapes. Each one of us can bring something beautiful into the world.

If you see beauty in what another person draws, try it too! Yours will come out a bit differently and have your own personality. And - you'll learn something in the process!



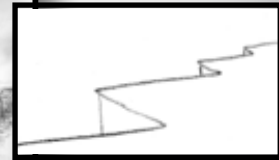
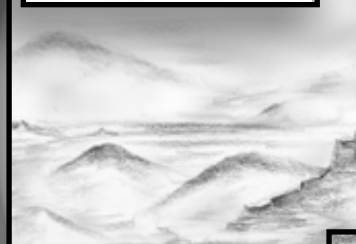
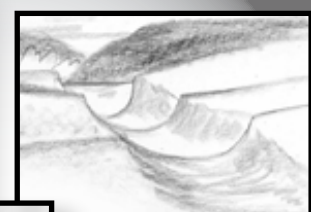
*I discovered beautiful patterns of light against dark, and dark against light in my own back yard!*

### DISTANCE

Overlapping lines create shapes.

Overlapping shapes create

**SPACE!**

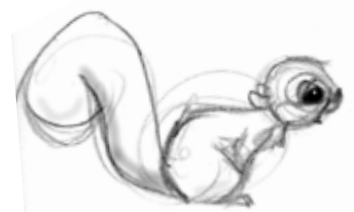
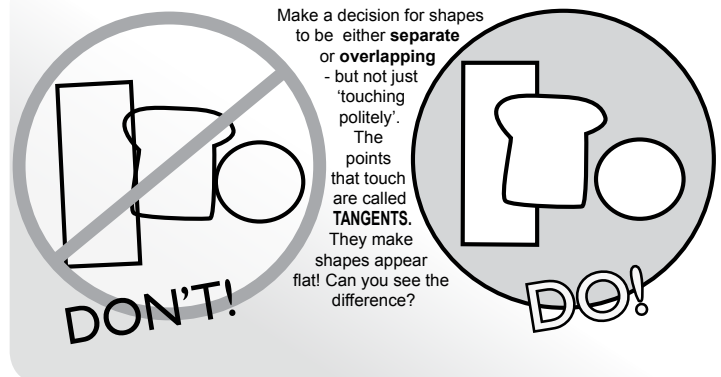


Be conscious of Shapes - **AVOID TANGENTS**: (LINES that Touch)

## New WORDS for YOU!

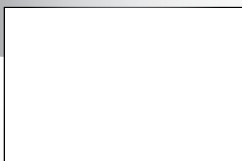
**LANDSCAPE** A **LANDSCAPE** represents a view of natural scenery.

**Try it!** Observe nature nearby. Draw something with a combination of light and dark values and overlapping shapes. Make sure to avoid tangents!

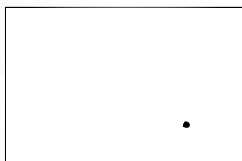


# THE FOCAL POINT

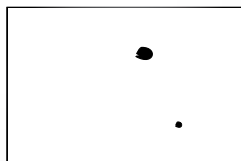
What grabs your attention is the **FOCAL POINT**: what your eye is led to focus on.



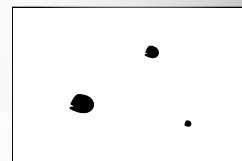
When you see a blank page, the eye just sees the whole thing, without a specific focus.



If a single dot appears on the page, your eye is drawn right to it!



If you see this page for the first time, you would notice the bigger dot first, then the smaller.



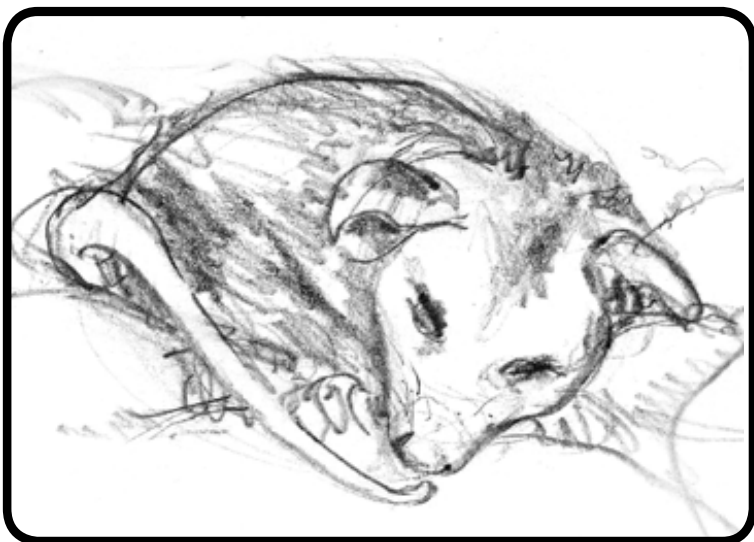
Seeing this page for the first time, you'd notice the biggest dot first, then the next largest, and finally the smallest.

## Distribution of space on the page

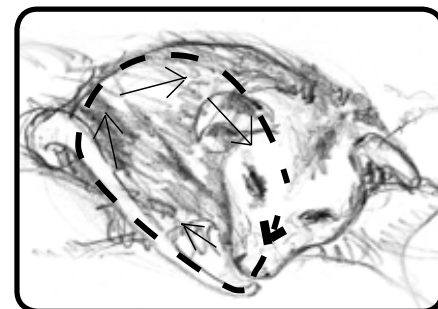


**SYMMETRICAL** (equal) distribution of space can be solid and stable, but **BORING!**

The same lines, just moved over a bit are **MUCH MORE INTERESTING!!!**



The image below has no clear focal point to concentrate on. Your eye just wanders and doesn't know where to stop.



### FOCAL POINT

Usually our attention is drawn to one area at first, called the **focal point** (a point to focus on) which leads our eye to another part of the image. When I look at the baby opossum I sketched above, I see first his face, then his nose. Then the tip of his tail takes me right up to his back where it goes round in a circle back to his face again.

**Try it!** Look at a photo, drawing or picture and see how it attracts your eye to first look at one part, then at another. Compare notes with a friend or fellow student to see what they noticed first.

### New WORDS for YOU!

**FOCAL POINT**

The **FOCAL POINT** is the area that draws our attention, or focus, towards it.





# Clouds

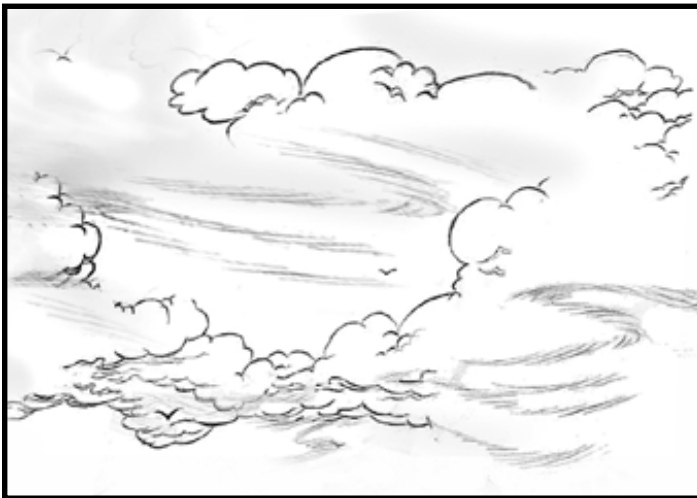
Using a combination of curves and sweeping swirls creates a sky with personality! Clouds come in all shapes and sizes, from big puffy, happy clouds to dreary, dark, ominous ones. Think of which ones to use for your stories!



# PLANTS

Have you noticed that when something is growing it doesn't stay the same? It changes!

**Plants GROW!** They give so much life to a drawing. If variety is the spice of life, Plants have it. Once you start looking at all the different types of leaves and plants there are, you'll be amazed! See how many kinds you can find right on the street where you live. Whenever you draw plants, draw in the same direction the plants grow. Begin a leaf from the stem, out to the leaf tip. When you get the right 'feel', you'll begin to feel like you've become the plants you're 'growing' on your page!



**The use of various trees, plants and ground creates interest in your drawings. Their sweeping rhythms are like visual music to our eyes!**



**Dark Background to Light Foreground**  
In this picture your eye is drawn from the left front to the right, lead by the angle of the hill.



**Light Background to Dark Foreground**  
Here the dark tree in the front captures your interest first, and then leads your eye into the distance on the left.



**An upsidown reflection in the water draws you in to the background.** Simple or complicated, there is infinite variety in nature to explore artistically.

## New WORDS for YOU!

### FOREGROUND

THE **FOREGROUND** is the area in front, closest to you, the viewer.





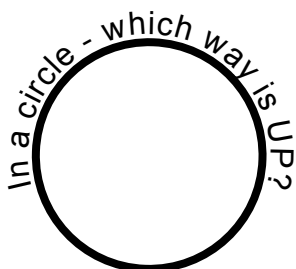
## The Story of Roscoe Continues:

Roscoe was composed of bright eyes, fluffy tail, sinew and muscle (and one part jumping bean)! He was the most charming little rascal I'd ever met. He wanted to investigate everything the world was composed of. Maybe that's why they use the phrase, 'to squirrel your way' into something.

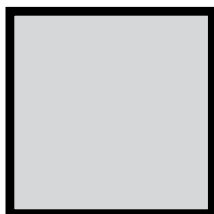


## SPACE / COMPOSITION / VALUE

**Composition** is "what a thing is made up of." We arrange and compose our art in a space. Any shape can 'frame' a space—A circle, oval, square or rectangle, for instance. **GOOD** Composition is an intelligent balance of space, shapes, rhythm and values inside the frame, that create a harmonious image we call beauty.



A circle is a 'frame', too.



The square is stable, a symbol for solidity.

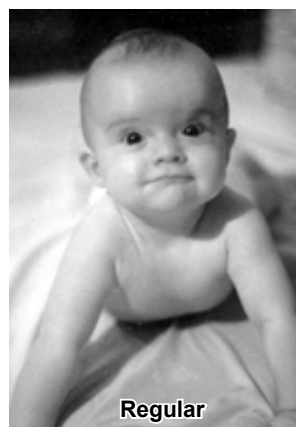


The horizontal rectangle works well for landscapes, action, close ups and many other uses. Some say the "Golden Rectangle", has the most appealing proportions. We learn about that on page 23



The vertical rectangle has a limited perspective, but is good for portraits.

## HIGH CONTRAST



Regular



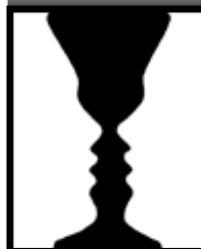
High-Contrast

**A High Contrast** image is one where all mid-tones (greys) are eliminated, leaving only extremes of Black and White. See the example to the left. An extreme point of view, seeing either all good or all bad, is sometimes called black and white thinking.

**Try it!** 1. Choose a frame to create an image inside of.  
2. Draw one image with strong light and dark.  
3 Draw another one with shaded values of grey in it.

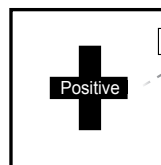
Art is as much what you leave out, as it is what you put in.

## Positive / Negative Shapes



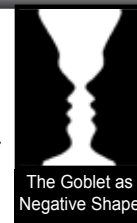
This black object (the positive shape) looks like a goblet - but

**WAIT!** If you look at the goblet as negative shape,



Positive

Negative



The Goblet as Negative Shape

Be CONSCIOUS of **POSITIVE** and **NEGATIVE** shapes when you create any picture!

Be conscious of

**VALUES**: LIGHTNESS and DARKNESS

## VALUE

Values deal with

**LIGHTNESS** and **DARKNESS**

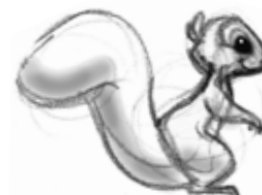
If you squint your eyes slightly, you can see the **LIGHT** and **DARK** as shapes in your drawings. Make sure there is an interesting and pleasing balance between them.



## New WORDS for YOU!

**VALUE** means more than what a thing is worth. In Art it describes something's lightness or darkness.

V A L U E





Be conscious of the  
**CAMERA ANGLE** : What Will they **SEE?**

# CAMERA ANGLES

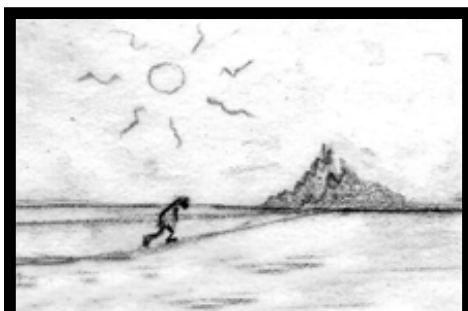
The eye doesn't travel - in a - smooth motion, - but generally in a series of short - jerks across the - page or - what-ever - we are looking at, - as we - 'collect' the data we see.

You can direct a person's eye to look at certain areas of a page, to draw them into the story. **Emphasize**

what is most important, and minimize what is not. Plan your shots to put your audience where they can see the action **best**. Here are some classic CAMERA ANGLES to use in planning for the most dramatic effect!

**An artist's aim is to lead the eye in the direction WE want them to look: Where the ACTION is!**

There are different rhythms to direct the eye with, like these:



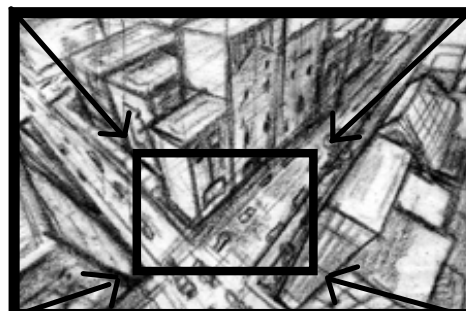
## LONG SHOT

It lets us view the 'big Picture' to establish the environment. Very useful as an opening shot.



## BIRD'S EYE VIEW

Also good as an establishing shot, it feels like what you'd see if you were a bird, doesn't it?



## TRUCKING IN

When the camera starts moving closer or farther away, it is called 'trucking'. In this shot the camera will 'truck in' to get closer (see the arrows?). We could also go the other way, and 'truck out' to see the big picture. If they do it really fast it's called a 'ZOOM'!



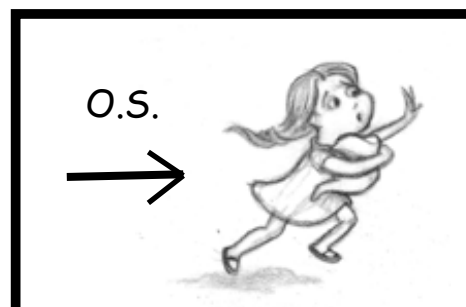
## OVER THE SHOULDER SHOT

It lets the audience feel a little closer, as though we're eavesdropping. Notice the dramatic shadow on the boy? He looks pretty scared.



## EXTREME CLOSE-UP

This gives you a very intimate personal sense of being *in on the action!*  
From the point of view of the boy being looked at it looks like this guy is really mad now!



## FULL SHOT

If the character is full size, it's a 'Full Shot'. In this scene she runs off stage to the right. (O.S. stands for 'Off Stage'). We could also 'pan' (or move) the background behind her.

## New WORDS for YOU!

E M P H A S I Z E

To **EMPHASIZE** means to stress something; to give it importance, or '*emphasis*'.



Be conscious of the

## CAMERA ANGLE , continued :What Will they *FEEL*?



### WORM'S EYE VIEW

It does make you feel rather like a worm, doesn't it? That's why they call it a 'Worm's-eye view'!



### UP SHOT

You're looking up! The distorted perspective makes you feel small and identify with Roscoe. The words, "ENTERS SC." means 'enters scene', showing the boy enters here.



### DOWN SHOT

The down shot is when - you guessed it - the camera is pointing down at the subject!

## YOU Can Tell A STORY!

### Q. WHY STORIES?

*A. They make us think, feel and see the world in a different way.*

### Q. Where can you get an idea?

*A. Most stories are about someone with a problem, and how they solve it. If YOU'VE had a problem at one time or other, then YOU have a story to tell! And remember: YOU are the Hero of your story, so if you don't like what's happening now, you can do something to change it for the better. Just think what an interesting story it will make! Remember: the 'Good Guys' win in the end. Make sure you are **one** of them!*

### How will your Hero solve the problem? *That's your story.*

*Every story needs to have a point, too. What is the reason for it?*

*Will it make the world a better place? Educate, or inspire others? Make your story worth reading!*

**Ask yourself these questions:** *What has hurt you? What makes you laugh? What about the world do you wish was different? If those things make you **feel** something, it can make others feel too. Especially when you illustrate it.*

See an example of one of my little stories "**All The Turns Are Taken**" on YouTube: [https://youtu.be/tJ\\_Mjuj1CLA](https://youtu.be/tJ_Mjuj1CLA)



### MEDIUM SHOT

This shows a medium view. Not too close, not too far away - it's 'MEDIUM'! (This is called a "LIVE ACTION" shot, as well, since it is real life and not a drawing)

### Try it! Draw a character from three different camera angles:

1. a LONG SHOT (From far away)
2. a CLOSE UP, and
3. From another angle (you choose).

## New WORDS for YOU!

S H O T

A **SHOT** is a view of something.



## HOW TO PLAN A STORY:

1. **Chose your THEME.** Every good story has to have a main **idea** that runs through it. As you develop it, the focus should always come back to that theme.

### EXAMPLES of Themes:

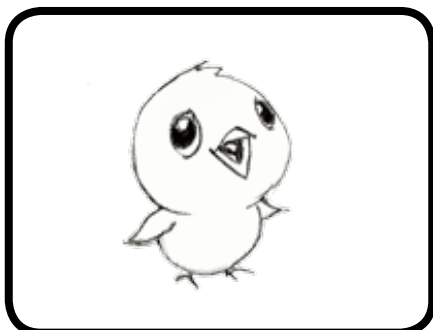
- Love (or something) Lost and Regained
- A struggle to overcome poverty, injustice or cruelty
- A foolish Mistake, or bad choice and the result.
- A Compassionate person's sacrifice to help another
- A Misunderstanding and how it is resolved
- A character in a difficult situation, or a person with a problem

2. **Make an OUTLINE of the storyline (Setup, Problems, Outcome)**

**Try it!** Think of a basic theme, like, 'A character in a difficult situation, or a person with a problem'. Think of something in YOUR life you know was hard. Write an outline.

## Interested in making your story into a cartoon?

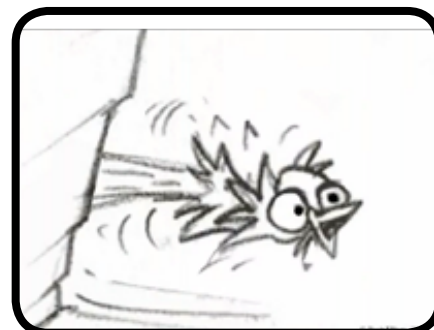
After writing your story, you create a 'Storyboard', which is something like a roughly drawn comic strip. Here's the storyboard I created for my story, "**All the Turns are Taken**" (See it on YouTube):  
(Number each picture or 'SCENE' that has a different action or background.)



1- (Baby Chick): "Peep-Peep-peep!"



2- (Dad): "Here you go little one!"



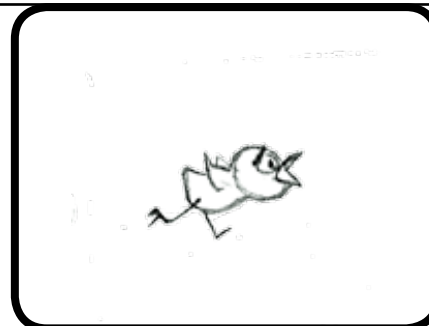
3- (Older Chicken): "Huh?!"



4-(Mean Chick): "Outa my WAY, kid!"



5- ...knocks baby chick away from food

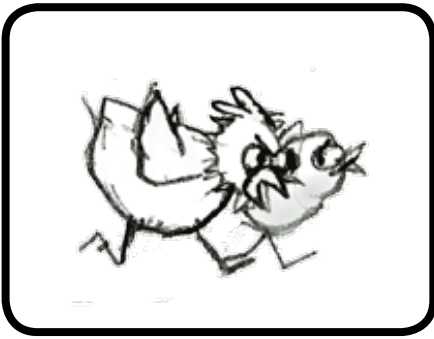


6-(BabyChick comes back): "Peep-peep!"

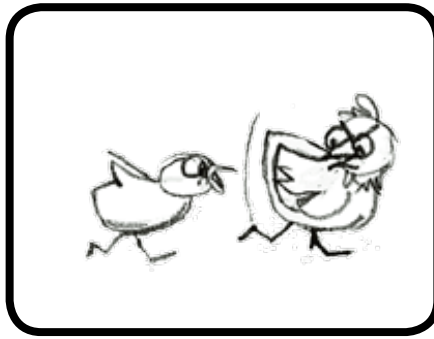




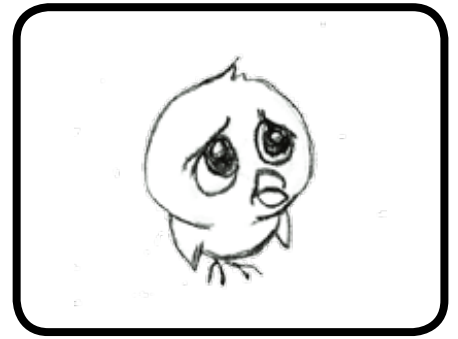
**“All the Turns are Taken”, Continued:**



**7-**(Mean Chick): “It’s not your TURN yet!”



**8-**(Mean Chick) “Be PATIENT!”



**9-**(Baby Chick exhales sadly)



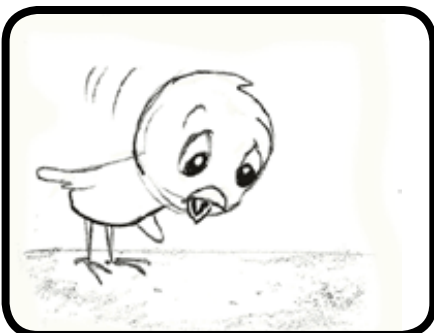
**10-**(Older Chickens eating)



**11-**(Older Chickens leave after eating)



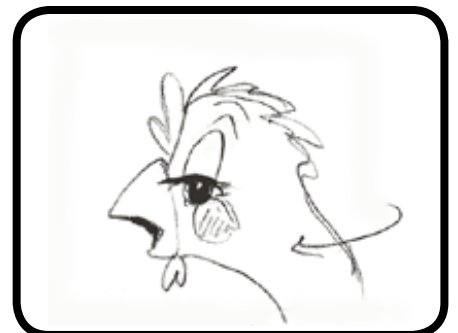
**12-**(BabyChick): “NOW? Now is it my turn?”



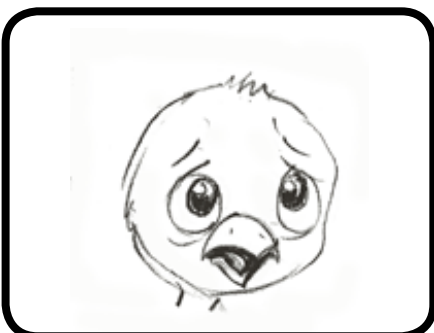
**13-**(Looks at food gone): “Huh?”



**14-**(Baby Chick): “Where’s MY turn?”



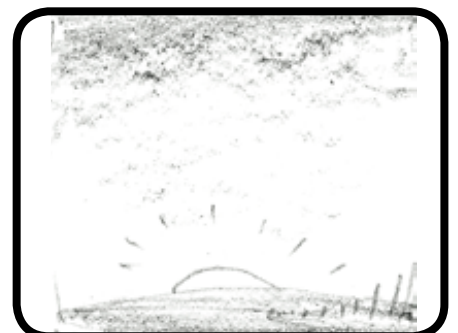
**15-**(OlderChick): “All the turns are taken.  
You’ll have to wait until tomorrow.”



**16-**(Baby): “But that’s what they told me yesterday!”

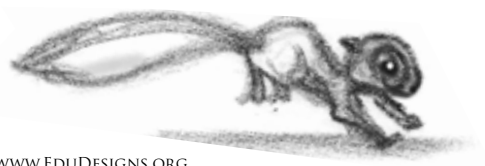


**17-**(fade to black)

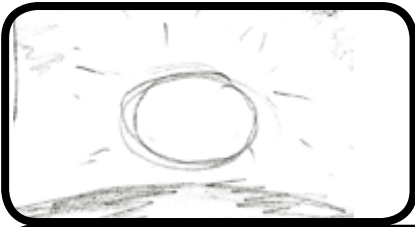


**18-**(Sunrise; sounds of chickens)

*(Continued next page)*



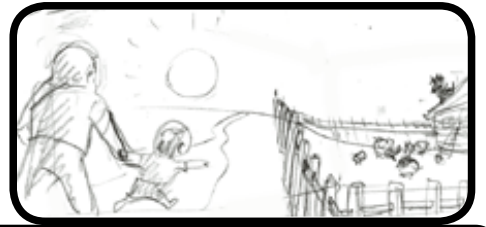




**19-**(Sun rises)



**20-**(Dad) "Let's go feed the chickens!"



**21-**(More sounds of Chickens)



**22-** (Boy): "I want one, Daddy!"



**23-**(Dad's voice) "Which ONE?"



**24-** (Boy's Voice): "Uh..."



**25-** (Boy): "Uh..."



**26-**(Boy sees older chickens fight)



**27-**(older chickens peck each other)



**28-** (Boy's Voice): "...Uh..."



**29-** (ZOOM in to baby) Boy says, "THAT one!"



**30-** (Narrator): "THAT little chick got to be part of the family..."



**31-**(Narrator): "And eat of the family's food..."



**32-** "...All he wanted."



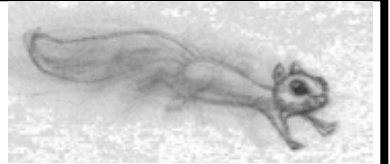
**33-**(Narrator): "As far as the other chickens went, well...They ended up as MOST chickens do!"





### The Story of Roscoe Continues:

What Roscoe lacked in size he made up for in agility and *SPEED!*  
You could say he had an 'animated' personality! What a joy it was for me to see how much fun he had, just being alive each day!

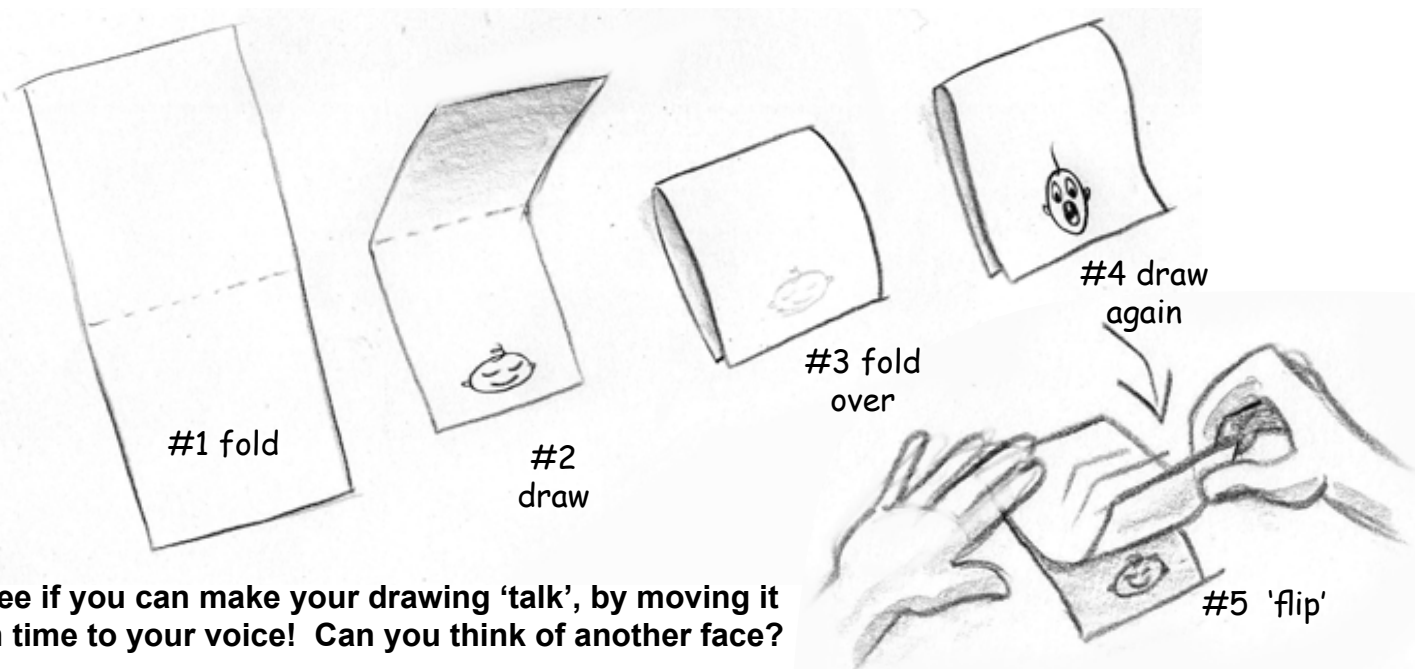


# ANIMATION - a REAL Illusion!

## HOW TO MAKE A FLIP BOOK (ANIMATION)

ANIMATION is the art of making single, still pictures appear to 'move' by presenting them to the eye one after another in quick succession, giving the appearance of 'life'. It's an illusion, but it really works! You can demonstrate it to yourself by making a FLIP PAGE.

- #1- FOLD a long strip of paper in half with the fold at the top and the open part at the bottom (a sheet of typing paper cut in half the long way works great for this).
- #2- DRAW a simple face with eyes and mouth closed (near the bottom half of the paper).
- #3 FOLD the top half over what you drew. If the paper is thin you should be able to see a faint image of what you drew through the top paper.
- #4-DRAW (in the same place on the top paper) another face with it's eyes and mouth open this time, hair a little different, etc.
- #5 FLIP between the top and bottom halves of the paper to see the movement! Use one hand to hold the closed end in place while you 'flip' the bottom open half with the other.



See if you can make your drawing 'talk', by moving it in time to your voice! Can you think of another face?

**Try it!** Follow the instructions above to create a FLIP PAGE. Make it 'TALK'!

### New WORDS for YOU!

A N I M A T I O N

**ANIMATION** is 'making something alive'. In Cartoon animation the illusion is created by putting one picture after another rapidly to show movement.



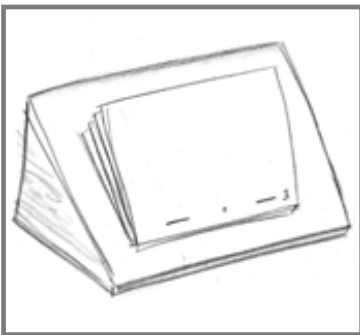
## MAKING A FLIP BOOK-Advanced Instructions for Serious Students!

When making a flip book the process is exactly the same as the 'flip page' in the previous lesson, except you start at the bottom of a blank pad of paper, and keep adding more drawings on top of the last one. When you're done, flip them from the bottom first to the top to see the action. There are different styles of animating. The type of animation you do to make a flip book is called **STRAIGHT AHEAD ANIMATION**,

### ANIMATION Techniques

because you keep going straight ahead drawing one picture after another. This type of animation can produce surprisingly fun results and creates things you didn't expect! The only limitation of **Straight Ahead Animation** is that if you want to control the timing (so the character will arrive at a certain point at a certain time, or interact with other characters or props), the drawings may not all fit properly. This is where it is useful to animate on separate pages so you can rearrange them in the order you want.

**POSE-TO-POSE Animation.** is a technique that works well in planning the main actions (called '**EXTREMES**') first, using separate pages usually held together by holed paper on a peg strip. This helps to express ideas with greater clarity as you plan and think ahead. More pages can be added to 'break down' the poses and create 'inbetweens' in order to fill in the movement from pose to pose. (Note: In planning actions, remember to number your drawings, so you keep them in order - Otherwise, if the whole pile falls on the floor, you'll have a difficult time putting it back in order!). The best procedure is usually to combine both **Pose-to-Pose and Straight Ahead animation**. First use **pose to pose** animation to lay out the broad path of action indicating the main attitudes on just a few extreme poses. Next do any inbetweens that are necessary for smooth motion. Then go back, using **straight ahead** animation to work on things that are secondary, like hair, gestures, clothing, etc. This is especially useful in animating a character's face, where an expression will change from frame to frame, and not be an exact, or 'straight inbetween'.



**A Simple Lightboard** is a florescent 'undercabinet light' which you can purchase at your local hardware store. You'll have a way to rearrange the order of your papers, trace parts that you need from other drawings, animate the correct sizes, etc. It's a useful all around tool for many art projects as well as animation. The first ten years of my work in animation were done on a circular rotating animation disc I made out of wood, glass and dowels. I eventually donated it to the animation department at a local High School. Somebody is probably still using it. You don't need to be rich to animate!

**If** you're serious about learning animation, and are ready to really 'get into it', you may wish to get (or make) a 'Lightboard'. It's a piece of glass or plastic propped up at an angle with a light underneath and a 'peg strip' made from wood, metal or plastic to hold your papers in place. Professional animation paper with precut peg holes is quite expensive, but you can save money by using regular three-hole (unlined) paper. You can also make your own peg strip by using half inch long pegs or dowels the same size as the holes in your paper; and gluing them into place onto your light board. For a light underneath, the least expensive

### New WORDS for YOU!

E X T R E M E S

**EXTREMES** in animation are the key poses that express the main actions.





# HOW TO PUT LIFE INTO A CHARACTER

Art that has 'Life' is based on good drawing skills. The better you are at drawing, the more convincing your work will be. Characters will have more of a three dimensional 'feel' as you pay attention to weight, mass (solidity) and balance. Be direct and clear in your drawings. Avoid being over-involved and fussy and you won't be misinterpreted. Keep your characters simple - especially if you have to draw them over and over again!

In drawing your characters for animation remember The three A's:

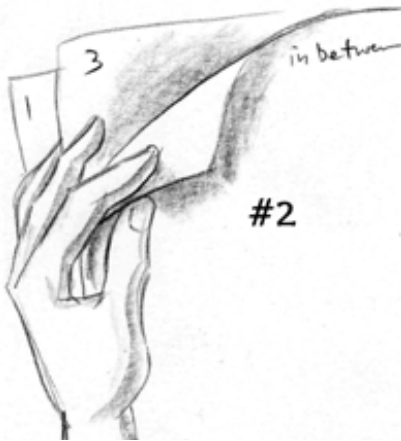
## ATTITUDE, ACTING, and ANIMATION

**ATTITUDE:** The characters' attitude of body reveals what is inside their heart. Happy, sad, confident, scared, bored, angry, whimsical. It's all there. Make sure it's in your drawing at the start.

**ACTING:** Animators are actors with their pencils. Let those feelings COME OUT!

**ANIMATION:** Use the principles of animation we mention here to imbue 'life' into your characters - whether you are animating or just drawing! And, Most of all, HAVE FUN!

### LEARN TO "FLIP" 'INBETWEENS'



To make an 'inbetween' drawing, place the drawings on your light table in this order: First the #1 drawing, then the #3 drawing. Now Place #2 on top. #2 will be your 'inbetween' drawing. You flip the pages this way: Holding the top one with your index finger and thumb, and the middle drawing with your middle and ring finger (see the illustration), you ALTERNATE between looking at the bottom (#1) page, looking at the TOP (#2) page and then the MIDDLE (#3) page, to see where to draw on #2. After practicing for a while it will become a very natural way of flipping, and the only real way you can see 'where you're going' and draw at the same time. Tricky -but worth the practice! Leave the light **off** under your drawings till you get the 'hang' of flipping like this. Use two extremes of a ball dropping, or hammer hitting, or something to practice with, so you can feel the proper direction of movement while you're 'flipping'.

## ANTICIPATION

Anticipation is an action that prepares the audience for what will happen next. Picture a golfer making his back-swing before he hits the ball; the pitcher winding up before he pitches; the archer who pulls back the bow before he shoots the arrow; or the bowler who swings the ball back before he swings the ball forward. When you are animating your poses, always have in mind (1) HOW you will get to where you are going, (2) WHERE you're going (3) at the same time you're aware of where you are NOW! It takes some Practice!



### New WORDS for YOU!

A N T I C I P A T I O N

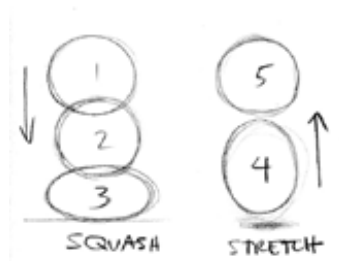
**ANTICIPATION** is the act of looking forward to something.

In Animation, it's an action that precedes (comes before) another action.



## SQUASH AND STRETCH

Keep the volumes the same, but change the shape to indicate that it is being pulled, stretched or squashed to give it 'weight'. Picture a ball, and how it will 'squash' or compress when it hits the floor, and then stretch as it takes off. Imagine how a flour sack, if dropped, will 'squash' and flatten out on the bottom, for instance. This shows weight.



## EXAGGERATION

Exaggeration makes a point obvious. Keep the action **BOLD** and **SWEEPING**! People don't want to be bored or confused about what is happening. If they have to think too hard they'll stop paying attention! Make it clear! You can always pull back if it's too extreme, but if the action is stiff and tight, it's no fun to look at.

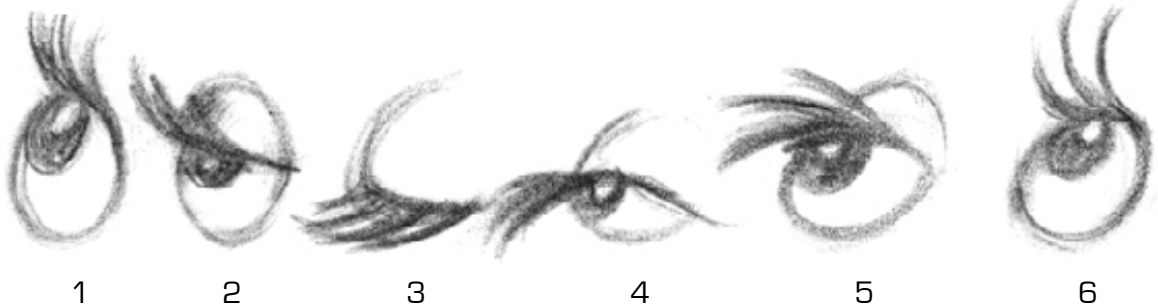
## Tips on ARCS for Realistic Animation

In traditional animation, either the 'assistant animator' (or the animator him/or/herself) will draw a 'breakdown' drawing between the extreme poses to make a smooth transition from one extreme pose to the next. The Breakdown has been called the 'Secret of Animation'. In most cases the parts of the character move naturally in an 'arc' formation. Arcs can be in a semi-circular, S-shape, or figure 8 form. Without 'arcs', the movements will look robot-like and stiff. We must keep in mind that the body has joints that swivel and rotate through space, to capture the right 'flow' of movement.



## KEEP AN EYE ON IT!

In animating the figure in motion, remember that



In closing the Eye the lashes can bend to show fluidity of motion and resistance to air Pressure. This is 'full' animation and would probably only be used in a close up. Most of the time a simpler eye blink cycle could be made using only 1,2, 3 and back to 1 again.

anything loose, or dangly (jewelry, coat tails, etc.) will move at a different speed from the main body. The body itself doesn't move *all at the same time*, as in Hair, fat, etc. The loose flesh (big belly, cheeks, etc.) will 'drag' and move at a slower rate than the skeleton. Check out Roscoe's Tail!

**Try it!** Create an eye blink cycle with 3 parts: open, half open, and closed eye.

## New WORDS for YOU!

SQUASH & STRETCH

**SQUASH & STRETCH** is the technique of exaggerating the forms from frame to frame to give the appearance of flexibility.



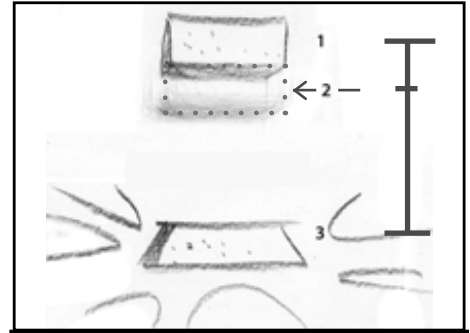
# TIMING

Timing is very important in animation. A brick that falls moves faster than a feather floating gently in the breeze. A quick action takes only a few frames of film. A slow action takes more. The animator has to figure out how many drawings it will take to do an action. If film moves at 24 frames per second, and an action takes one second, it will use 24 frames of film. Normally it is good enough to use one drawing for every two frames of film, or 12 drawings (each repeated twice) for every second. They say this animation is done 'on twos'. This is fine for most actions. Occasionally though, a movement will be so complicated or quick, like someone running fast on a

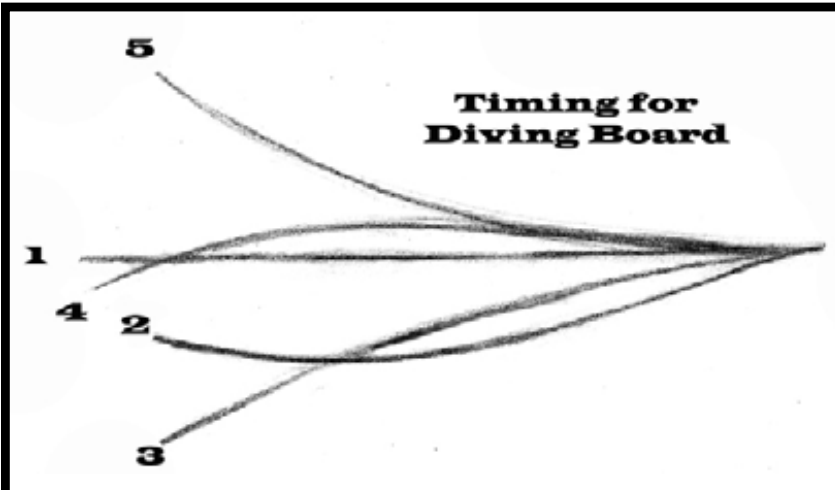
panning (moving) background, for instance, that you will need one drawing for each frame in order to 'read' properly on screen. If one drawing is made for each frame, they say it is done 'on ones' or one drawing per frame. Where the drawings are placed will affect the action, too. If a safe falls out a window it will hit the ground hard. To do this, make drawings closer in the beginning of the fall, then farther apart to have a faster impact at the end.

In contrast, if you are making a feather land gently, you will need many inbetweens to make it land softly. A stopwatch is very helpful for figuring out the number of frames it will take to make something happen, and to plan the action with the right feel when it occurs. When you're counting seconds, you can also say the words 'ONE THOUSAND' after each number to make it take a second to say each number. For instance say, "**One**-one thousand, **two**-one thousand, **three** one-thousand", etc. Act out

**NOTE:** An 'in between' doesn't have to be exactly *in between*!



On the chart for these 3 drawings: For the Brick to drop a short distance, only one drawing would be needed (at #2) in between the first one and hitting the floor. Special effects can also be added on impact. (SPLAT!)



In this example of timing for a Diving Board, look at the numbers in order to see the bend and sway as it might react to someone jumping off before a dive.

the action while you are saying it to see how many seconds it takes to do something just to estimate the timing.

## SECONDARY ACTION

Occasionally you may need to animate two or more actions at the same time. For instance, someone shaking their head and turning to go at the same time. This must be done in stages, by animating **the main action of the body first**, (turning to go), and then going back and animating the head shaking after that. Each will require its' own inbetween charts specifying which part of the body should follow which timing.

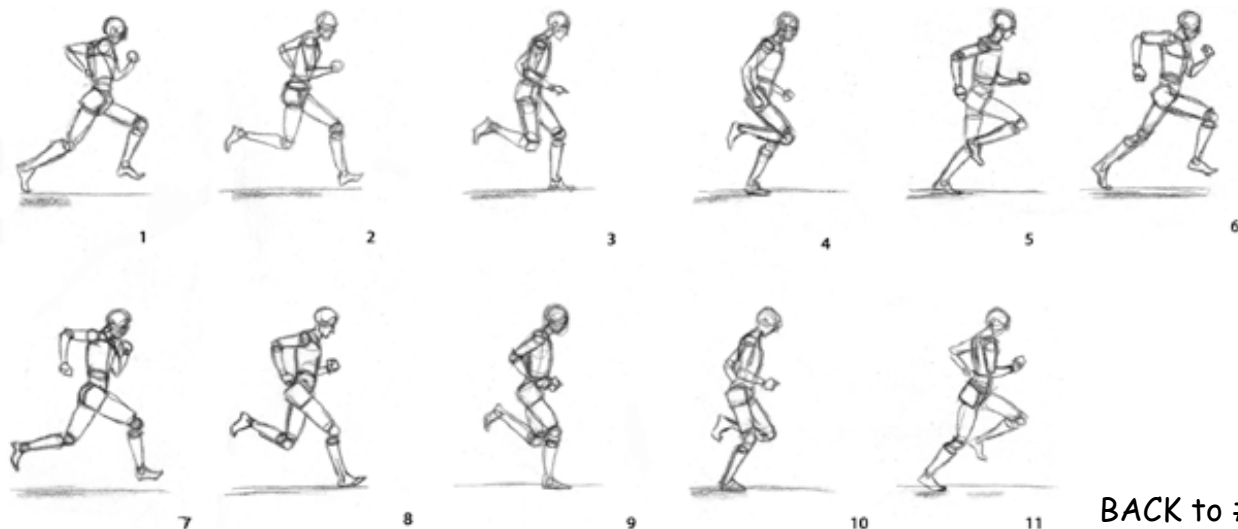
## New WORDS for YOU!

T I M I N G

**TIMING** in Animation determines *what* will happen *when*.







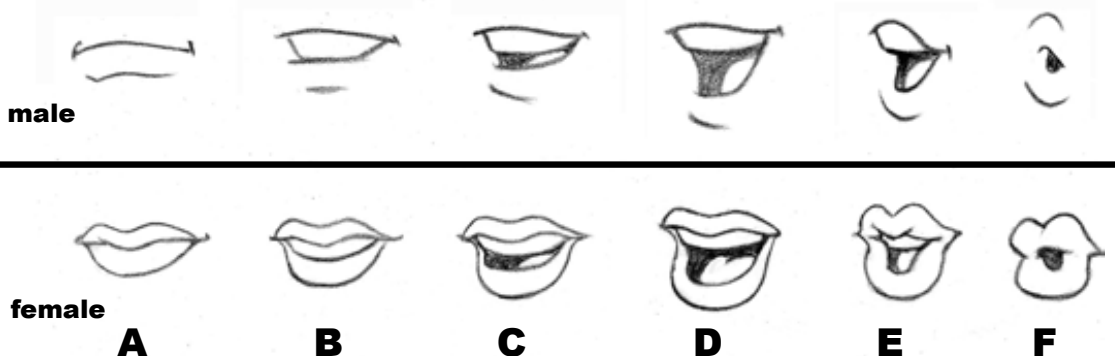
BACK to #1

## CYCLES / Limited Animation

Sometimes we can use 'cycles' in animation over and over again to save time. This RUN CYCLE begins at #1, and after 11 goes back to the #1 position again. If you run your eye across the page it almost looks like he **IS** running! The background could be moving behind him as he runs 'in place', as though he were on a treadmill. When the background moves it's called a PAN. A walk is similar to a run, with less lifting of the legs and arms, and less leaning forward. Observe that when a LEG moves FORWARD, the ARM on the same side of the body goes BACK. Otherwise we'd walk like Frankenstein!

Besides walk cycles, there are other ways to save time in animation. Many cycles exist - of wheels turning, eyes blinking, lights going off and on, etc. Mouths can be left off the face, and then put on a separate 'level', so they can use a series of mouths without having to draw the rest of the face over and over each time.

### MOUTH SHAPES FOR DIALOGUE (TALKING) IN ANIMATION.



Separating parts that move, from areas that stay still is called **LIMITED ANIMATION**. Any part of the body can be drawn separately (mouth, eyes, arms, legs) to make it easier to animate just that part and make a 'held' (or still) drawing of the parts that won't be moving.

**Try it!** Make a Flip Book! Starting **at the BOTTOM** of a pad of paper, Make one drawing on top of another until you have finished the number of drawings you need to make the movements you wish. It takes a long time, so don't try to make each drawing too 'fancy'. Just work roughly and draw the main movements. Later you can go back and add refinements.

## New WORDS for YOU!

D I A L O G U E

**DIALOGUE** is the spoken word

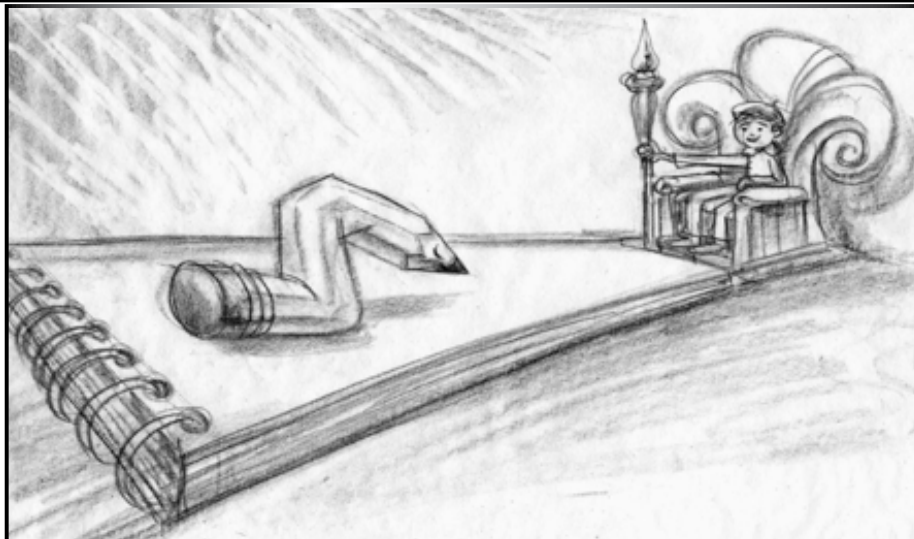


# FINAL WORDS OF BEGINNING

**TRUE ART** must come from the Heart AND the Mind!  
Art that is true, real and sincere will touch you. If you can make people  
**FEEL** something when they look at your art, then **YOU'VE SUCCEEDED!**

When you no longer need to fight with your pencil - and it begins to obey you, you feel fantastic! The only problem is that you have to learn to obey it **FIRST**, before it will obey **YOU**.

There's an old saying that goes:



Making your pencil obey...

It seems:

***"The hurrier I go, the behinder I get!"***

When I try too hard to have fun I miss the joy that is right there all along and rush right past it. When I can slow down though, I stumble upon that magic moment when everything is in harmony, and

the drawing almost draws itself! That is the point all artists are aiming for, and hoping to be able to come back to again and again. It's that moment when it feels as if the 'eternal now' has arrived, and time stands still; when nothing else exists or matters but the experience of creating something beautiful.

## **"HE WHO WOULD RULE, MUST FIRST LEARN TO SERVE".**

Find what your pencil is capable of and how to control it. To learn what your pencil and hands are capable of, you need to try new things, make mistakes, and **keep** trying until your hand remembers how to do it, and you know what caused certain things.

One of my teachers used to say, *"You have to get the BAD drawings out, first!"* Another said, *'Experience is something you get just after you needed it!'* There's no way around it. By going *through* the motions, we learn best, and our hands remember. Thankfully, we can also learn a lot from **OTHER** people's experiences, too.

One thing that helped me is to practice drawing **as slowly as I need to** at first, to get control. And eventually my hand begins to know what to do.

Then your only challenge will be knowing when to stop — because it'll be so much fun you won't want to! Most likely though, something will interrupt you before the fun is over, and you will have to go back to 'real life: To chores, or homework, or time to go to bed. Until your next opportunity to draw, that is!

Keep at it and you'll get better and better.

As Winston Churchill once said,  
**"Never, Never, Never give up!"**







## The Story of Roscoe Continues:

After Roscoe was ready to climb his first tree outdoors, he went half way up the trunk, stopped and turned to me, as if to say, "AREN'T YOU COMING?"

I was afraid I might never see him again, but he went exploring and came right back!

Though he lived outside after that, he stayed in my heart forever.



Roscoe's journey into the big world outdoors had just begun!  
Since art is a journey that will never end, I ask you to keep drawing too!  
As Roscoe said, "Aren't you coming?"





# SEE WHAT YOU'RE LOOKING AT!

Acclaimed Disney animator Ollie Johnston said:

**"You've got all the stuff  
you need to learn in there!"**

## SEE What You're LOOKING AT

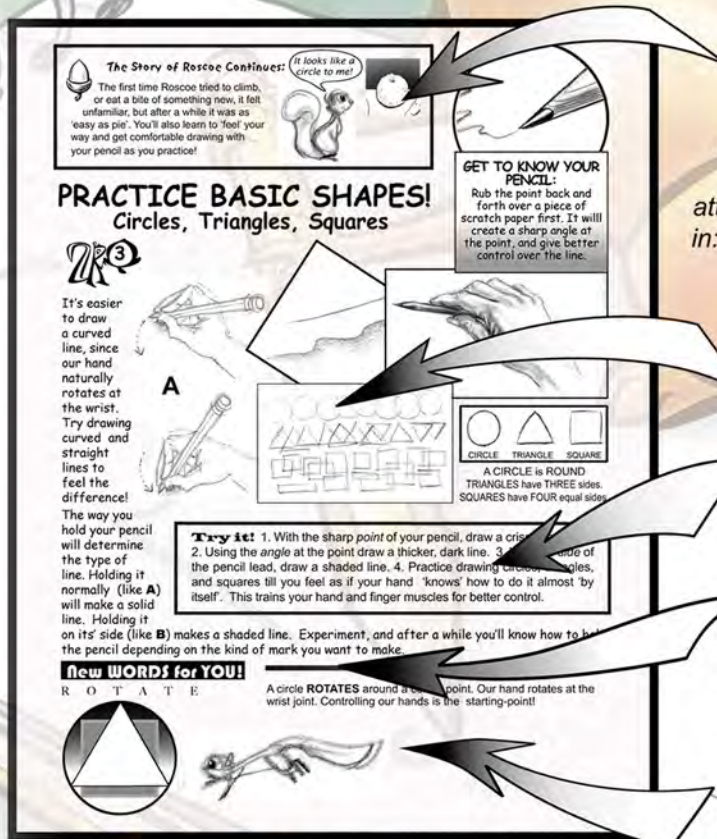
includes a wealth of ideas for the beginner  
or advanced student to draw from.

Research shows the powerful connection between  
the Study of Art and the understanding of  
Spatial Reasoning in Mathematics.

## ALL YOU NEED TO ADD IS YOU!



**Emmy Award Winning Animation  
Artist and founder of EDU DESIGNS  
Ruth Elliott, shares the secrets to  
drawing anything you see or  
imagine, through the eyes of  
Roscoe the Squirrel.**



The chapter headings in  
**SEE WHAT YOU'RE LOOKING AT**,  
feature interesting facts and  
anecdotes from the life of Roscoe  
the squirrel to grab student's  
attention and motivate their learning  
in: "The Story of Roscoe Continues"

**Hands-on Lessons** combining  
**Geometry and Art for  
High-Interest Fun!**

The **Try it!** section gives  
the student an opportunity for  
Independent practice in each  
lesson!

### NEW WORDS FOR YOU!

Provides definitions to new words  
to increase understanding of the  
concepts and boost student's  
vocabulary!

### ANIMATION in ACTION!

The bottom of every page is part of  
an **animated sequence** to show  
movement: When 'flipped' from the back of the book to the front,  
a man is seen running across the page, as Roscoe the squirrel scampers along!

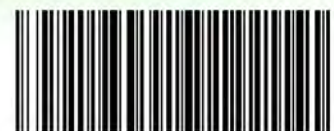
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