Making Faces

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Which face belongs to Barack Obama?

Most people can distinguish even the world's most famous Obama doppelganger from the U.S. president.

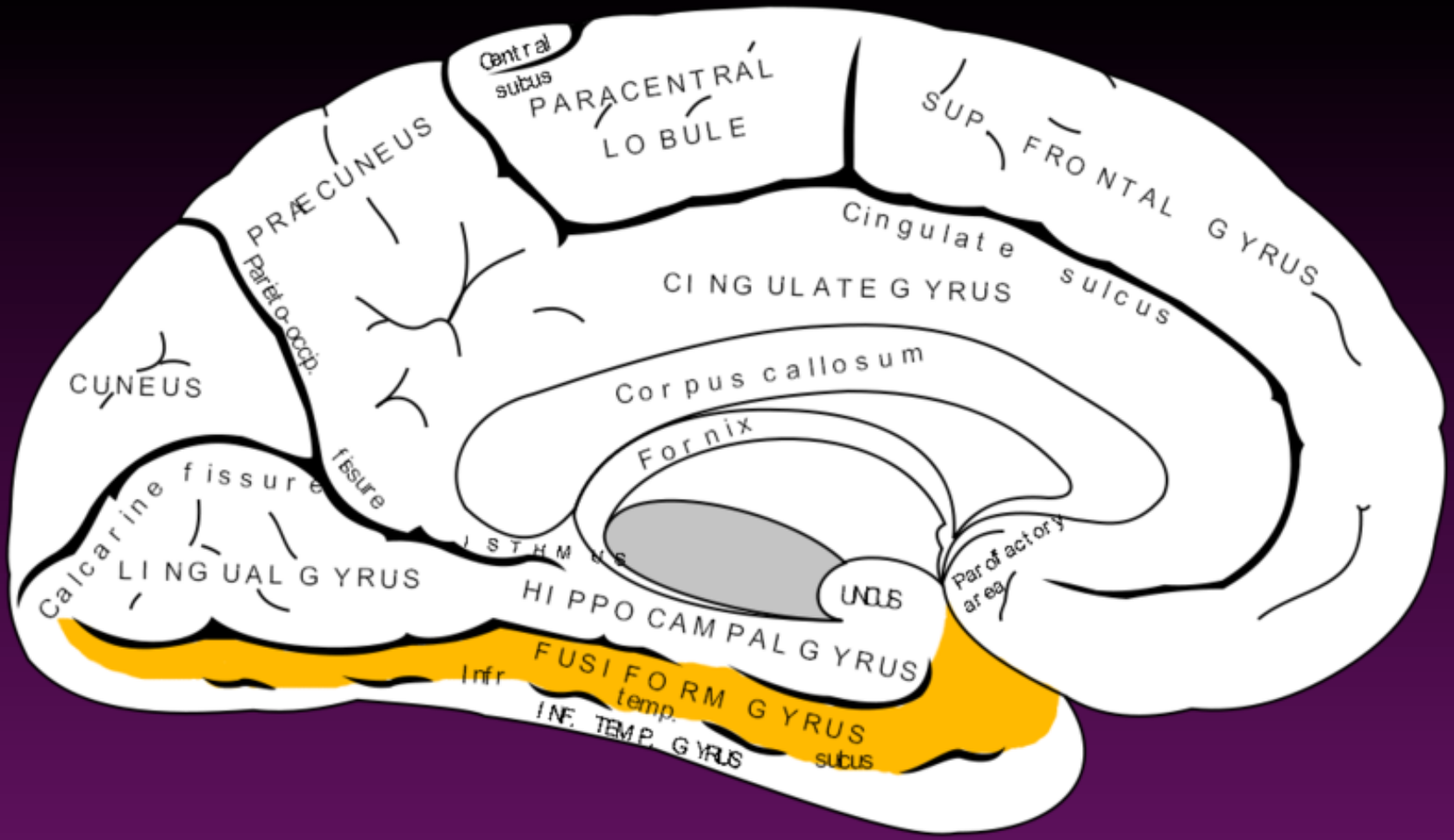
Who is this person?

Who is this person?

What mood is she in?

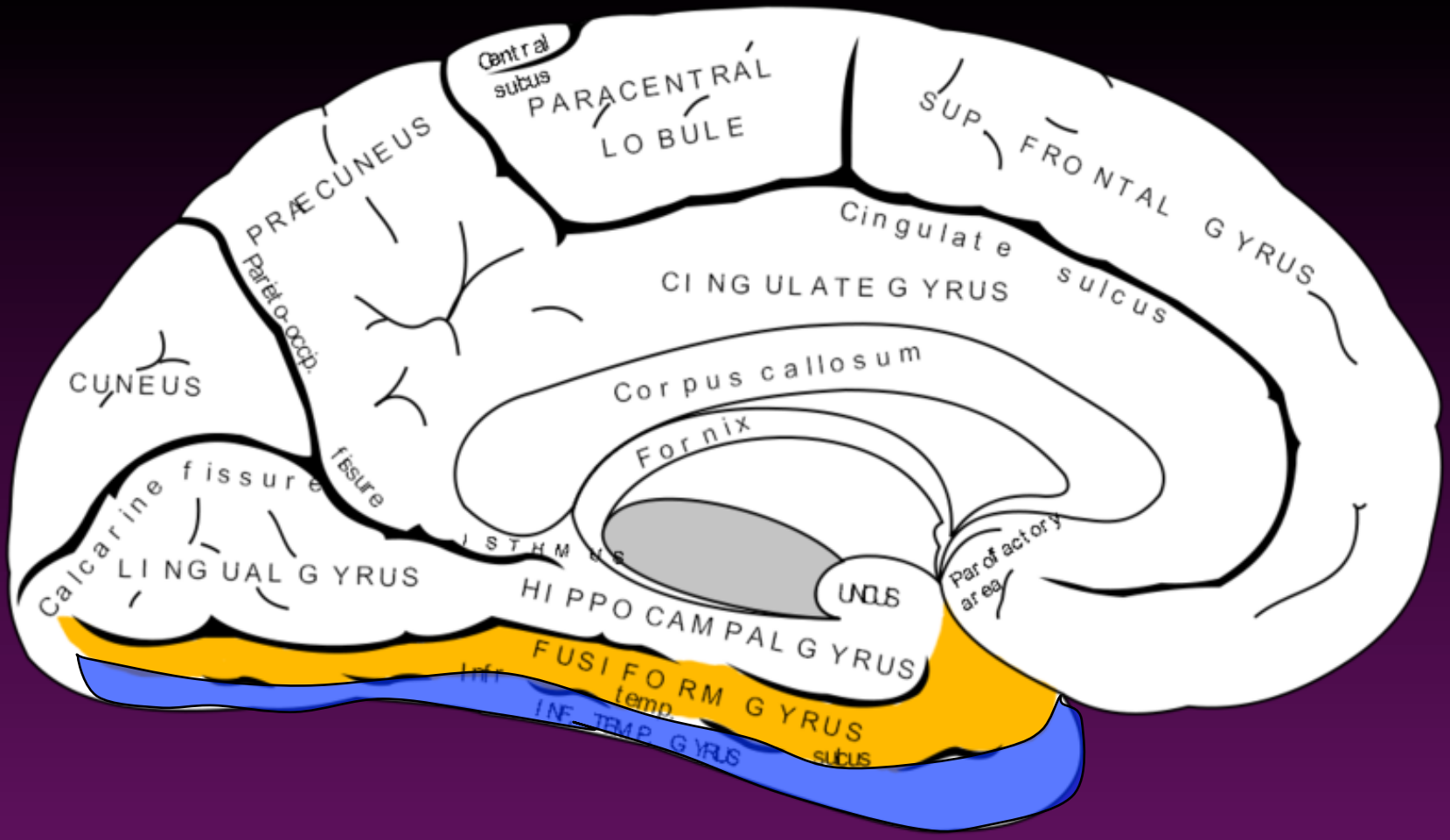
We are hard-wired to recognize faces and expressions—

even from a football field away.



The Fusiform Gyrus:

Where the brain recognizes faces



The Inferior Temporal Gyrus:

Where the brain recognizes everything else

So refined is our facial acuity that we can:

Recognize a person after 40 years…

So refined is our facial acuity that we can:

Recognize a person after 40 years…

So refined is our facial acuity that we can:

Sense when someone is lying…

So refined is our facial acuity that we can:

Tell the emotion within, when nothing is happening…

So refined is our facial acuity that we can:

See complex, human expression in a cartoon fish…

Goals of this course:

--Refine your ability to see and read faces.
--Learn the anatomy and psychology of the human face.

--Rig an anatomically correct face of a CG character.
--Animate this character.

--Use this knowledge to advance the field of
Facial Animation in CGI.

Making Faces
Part 1: The structure, anatomy and psychology of the face (four sessions)

Class 1 (Jan 10): Observing and drawing the human head

Class 2 (Jan 17): Inside out, outside in: the skull

Class 3 (Jan 24): Muscles and FACS (Facial Action Coding System)

Class 4 (Jan 31): An introduction to facial expression

Making Faces
Part 2: Constructing a CG face (four sessions)

Class 5 (Feb 28): Modeling the expressions with FACS

Class 6 (Mar 7): Rigging the face part 1

Class 7 (Mar 14): Rigging the face part 2

Class 8 (Mar 21): The tongue, speech and phonemes

Making Faces
Part 3: Animating a CG face (four sessions)

Class 9 (Mar 28): Animation part 1: doing nothing

Class 10 (Apr 4): Animation part 2: lipsynch

Class 11 (Apr 11): Animation part 3: acting with restraint

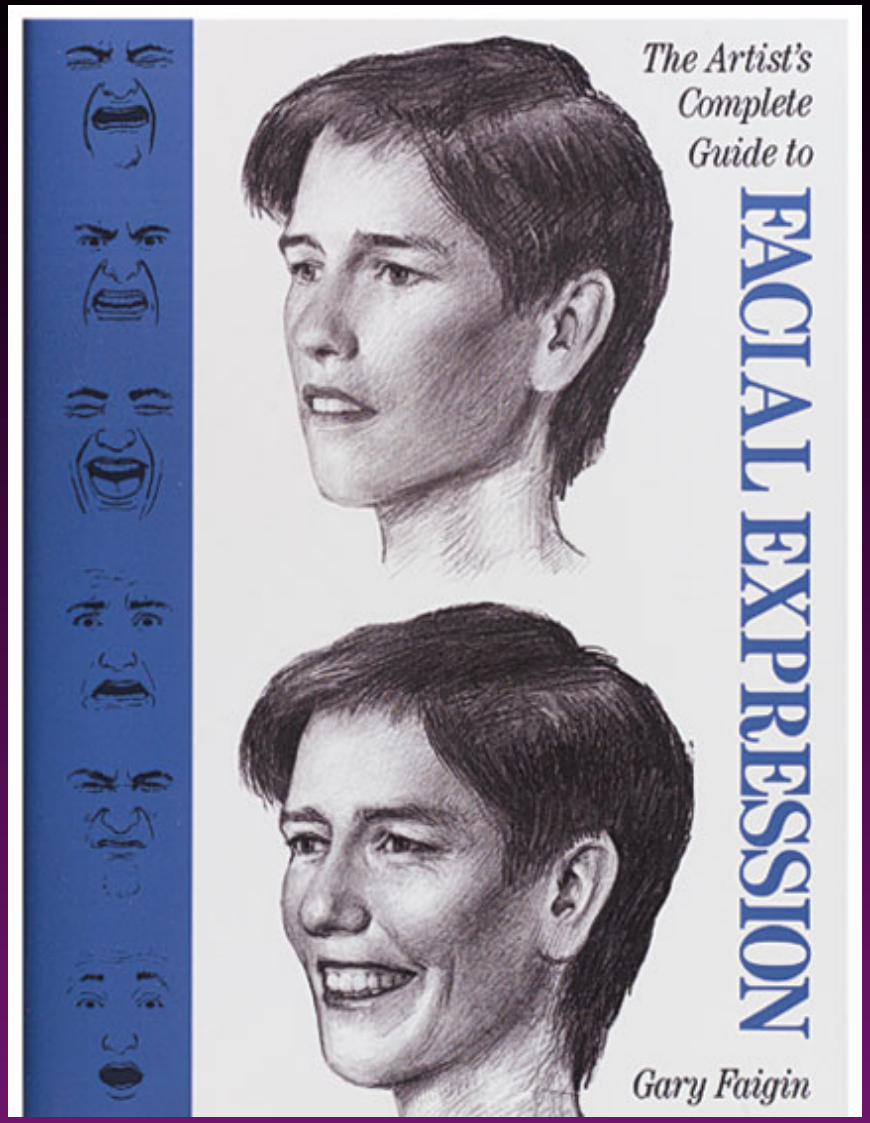
Class 12 (Apr 18): Animation part 4: going over the top

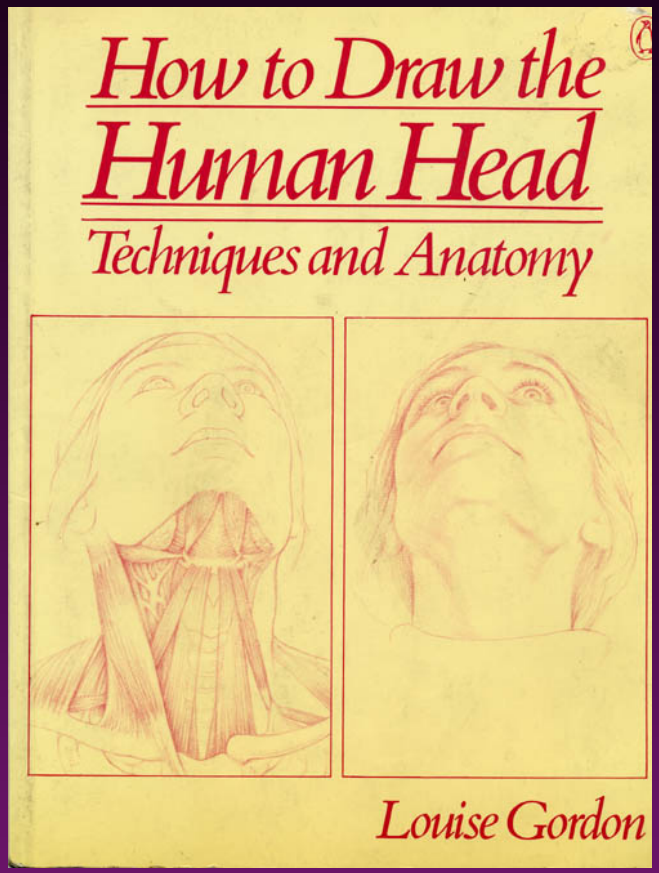
Making Faces
Part 4: Final Projects

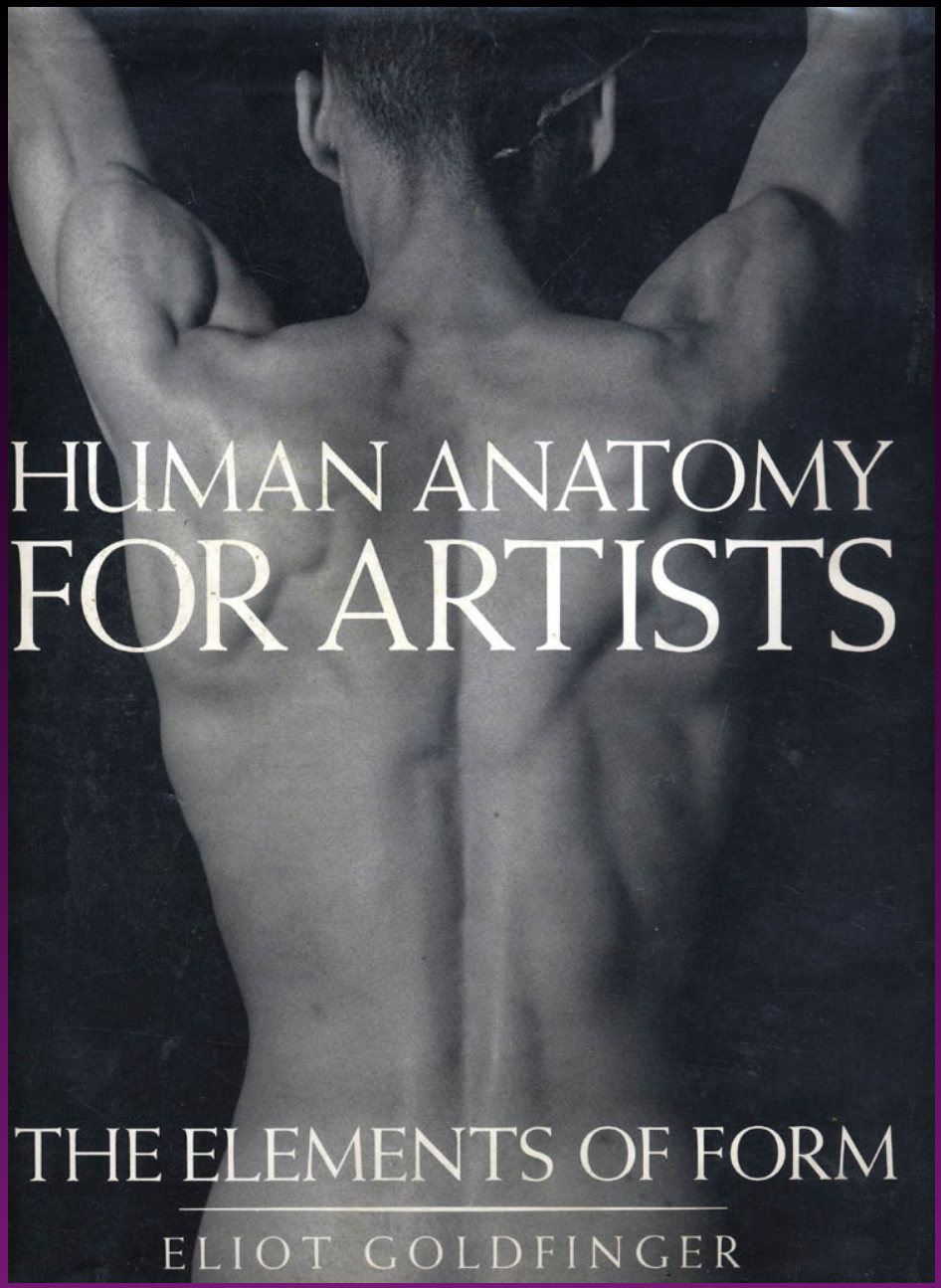
Class 13 (Friday Apr 22): Final exercise--
Animate a face doing 20 seconds of acting,
with at least 5 seconds of speech

Final Technical Component: A project on a mutually agreed upon topic that models, simulates or controls some aspect of facial animation or workflow.

Recommended Readings:


The Artist's
Complete
Guide to
FACIAL EXPRESSION
Gary Faigin


How to Draw the
Human Head
Techniques and Anatomy
Louise Gordon

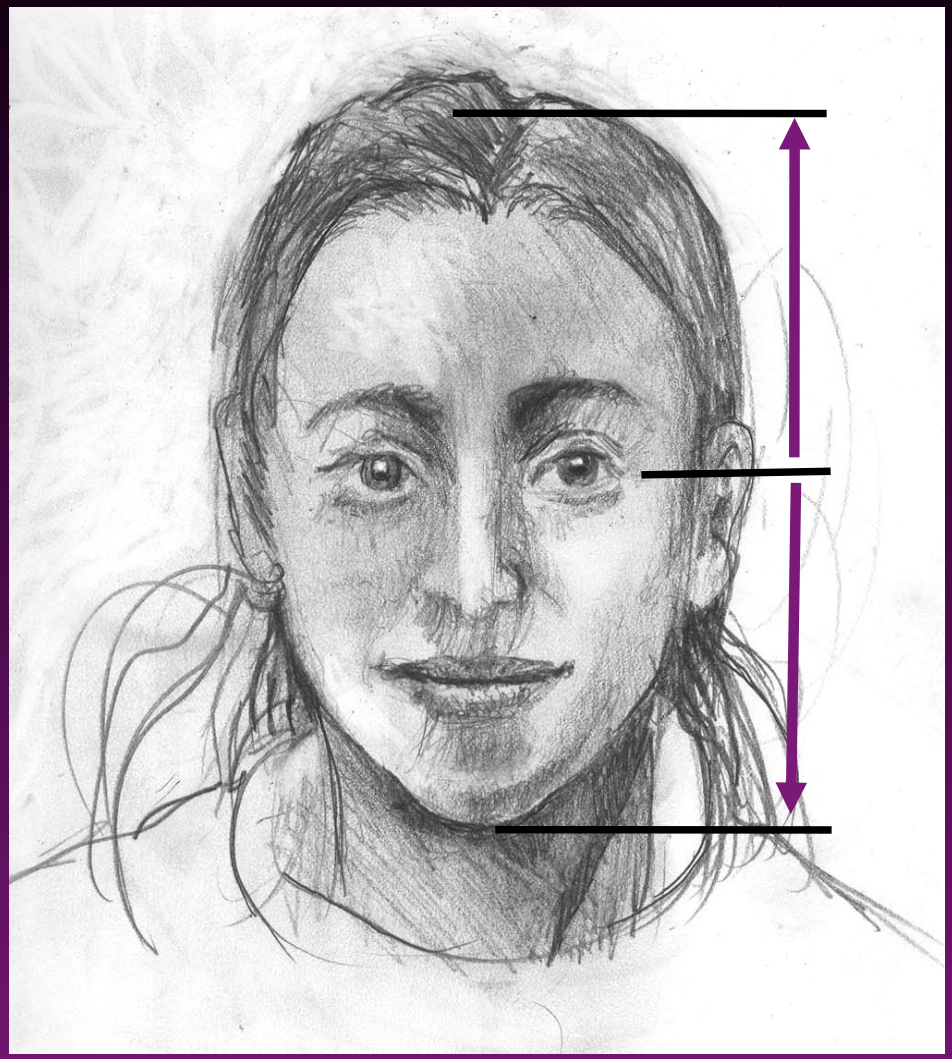

HUMAN ANATOMY
FOR ARTISTS
THE ELEMENTS OF FORM
ELIOT GOLDFINGER

Part 1:

Seeing the Face

Basic Proportions of the Human Head

The Rule of Equal Halves



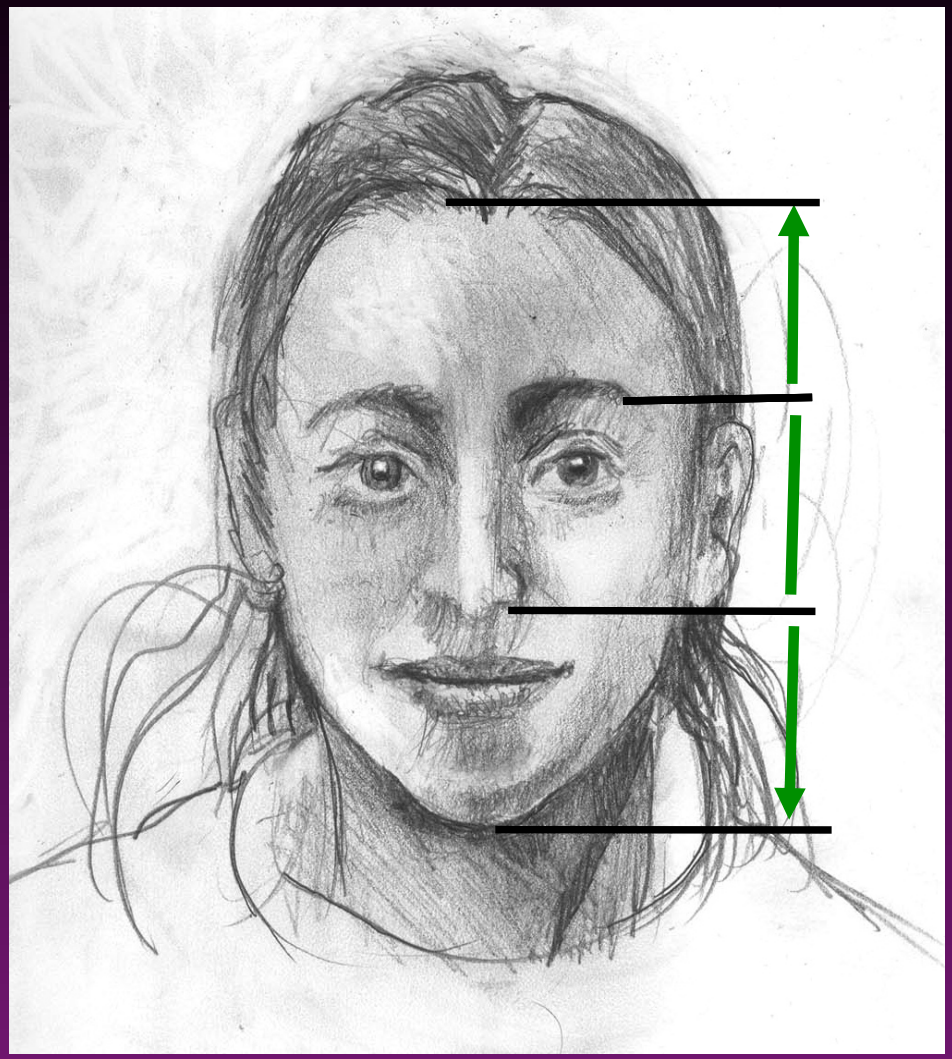
Distance from eyes to the crown

EQUALS

Distance from eyes to the chin

Basic Proportions of the Human Head

The Rule of Equal Thirds



Hairline to Brow

EQUALS

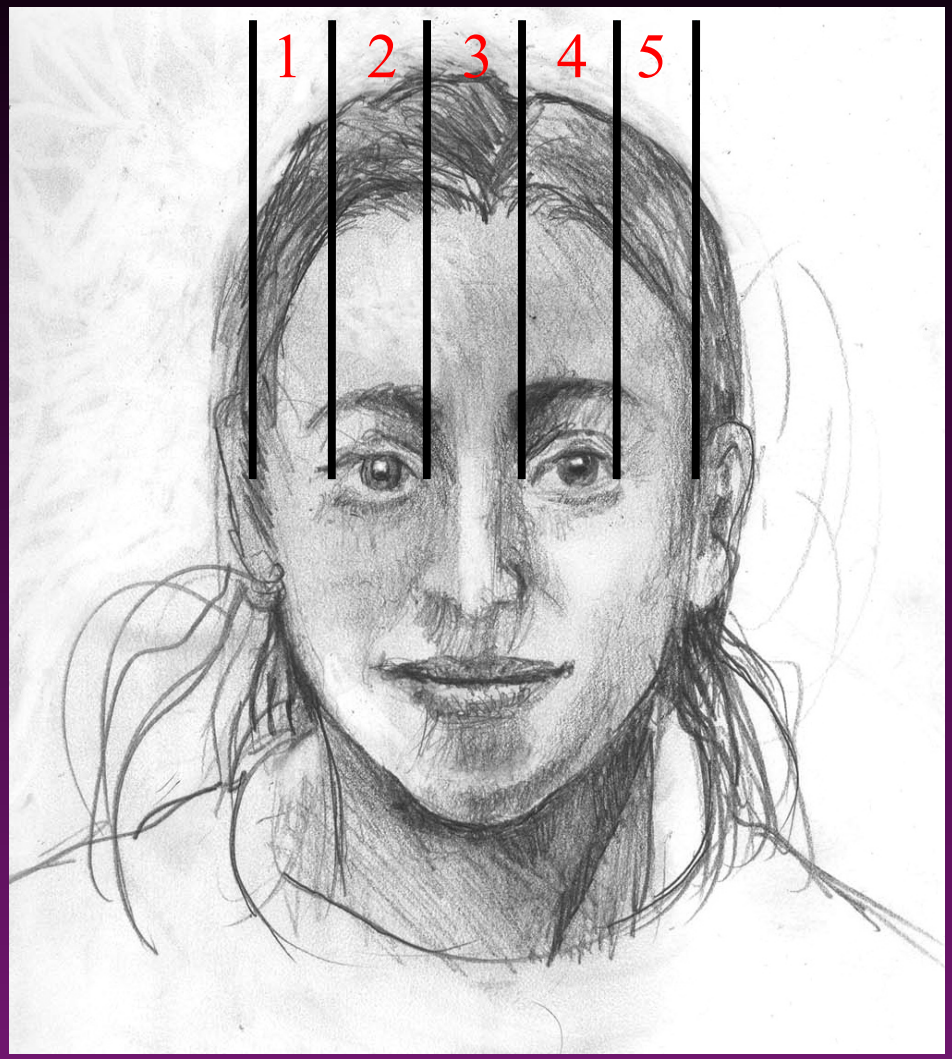
Brow to Nostrils

EQUALS

Nostrils to Chin

Basic Proportions of the Human Head

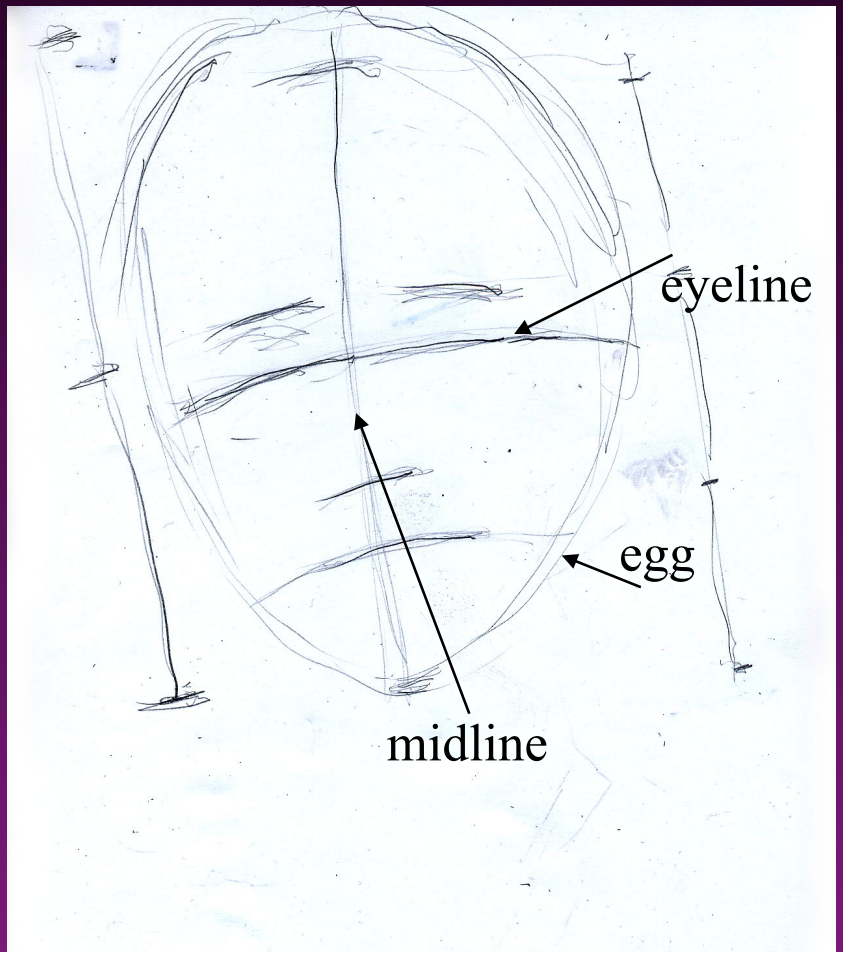
The eyes: Equal fifths

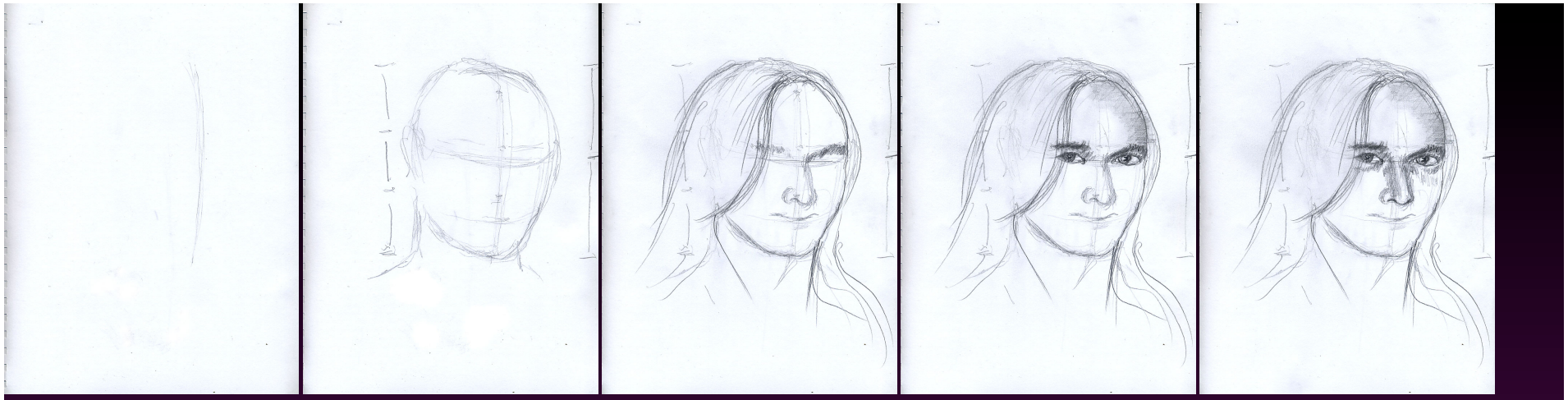


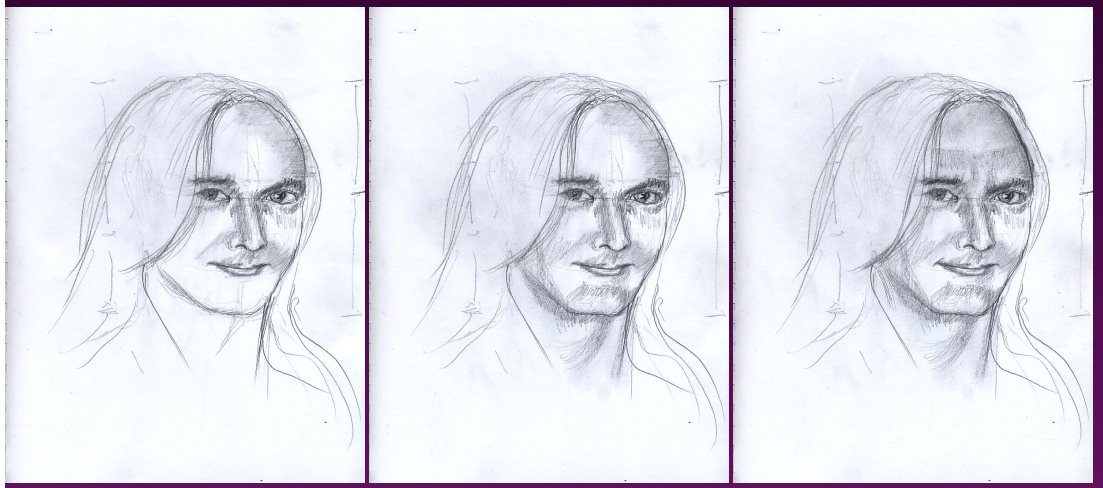
When a person faces you straight-on, his/her head is roughly five eyes wide.

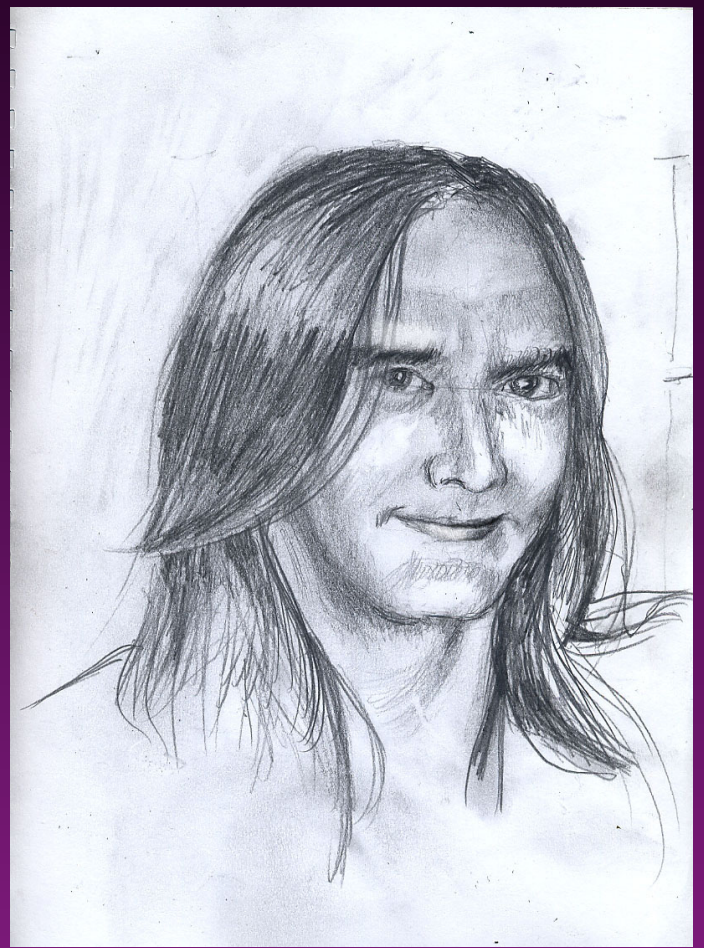
Eggs and Crosshairs:
Constructing the face from scratch

Good drawings of a face start from 3 simple drawn objects: a midline, an eyeline, and a rough outline of the head—an egg shape.

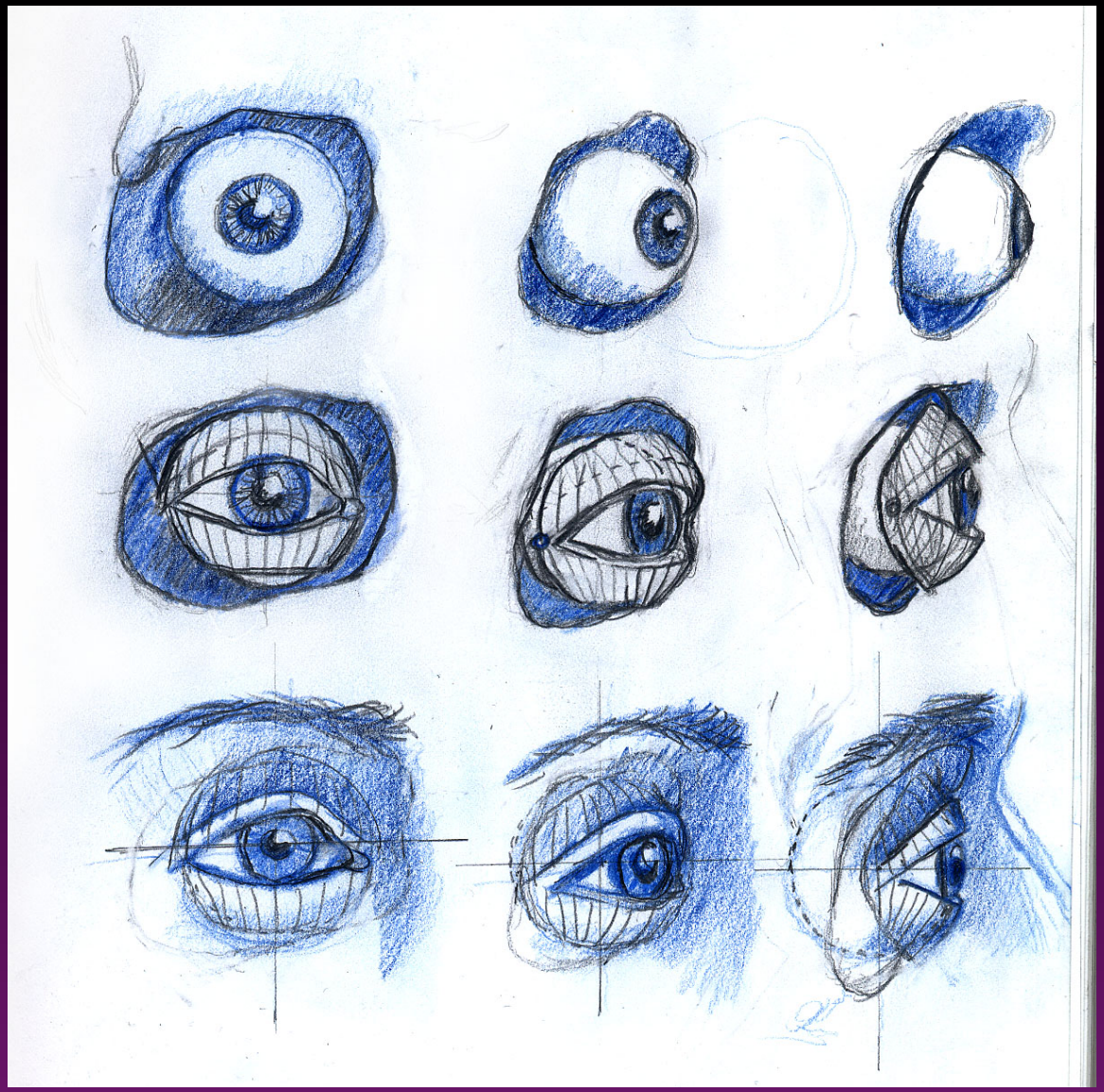








Egg -> Head

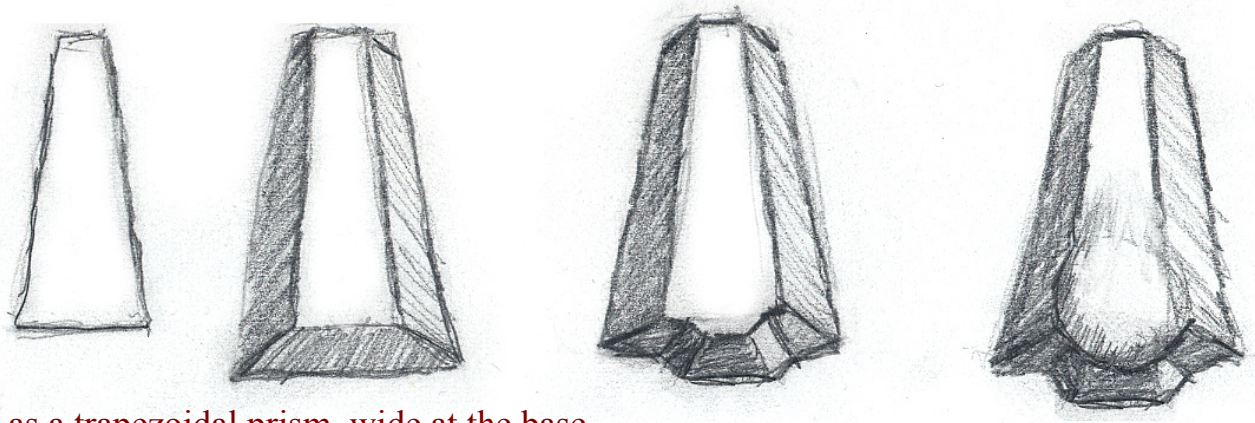


The eye is pretty much a sphere, about 26 mm in diameter. It sits on a pad of fat and muscles, embedded about halfway into the eye socket (ie. the Orbit).

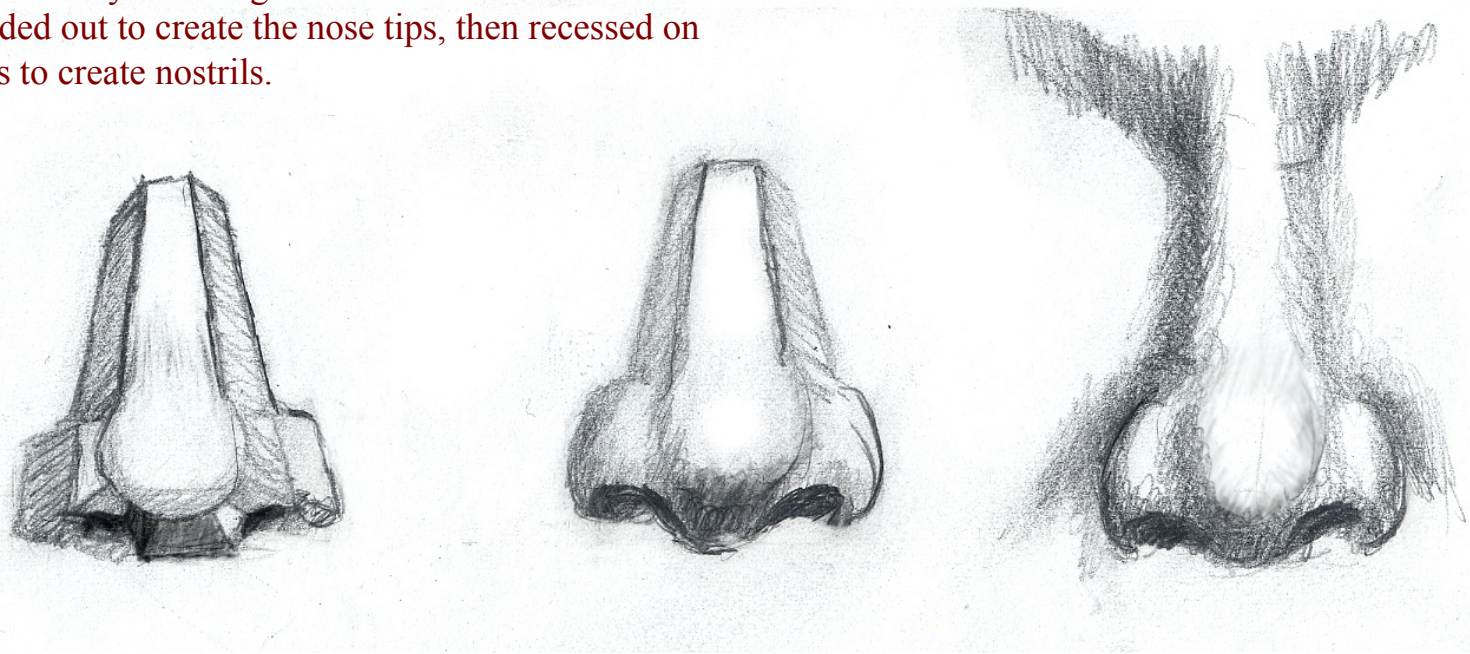
The lids of the eye form a curved surface on top of it. You can think of their structure as a bit like a knight's helmet, where the upper lid is the helmet's visor.

Visualizing the Eye

Visualizing the nose—front view

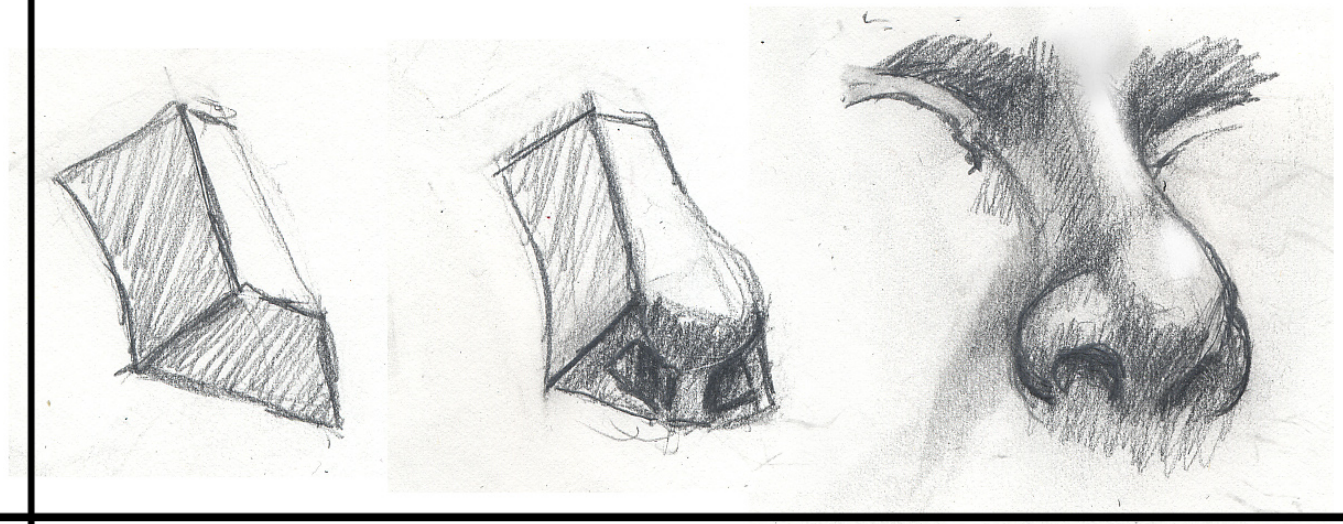


Think of the nose as a trapezoidal prism, wide at the base, narrow at its top. After you sketch in this basic polygonal shape, refine it by rounding out its features. The base gets rounded out to create the nose tips, then recessed on both sides to create nostrils.

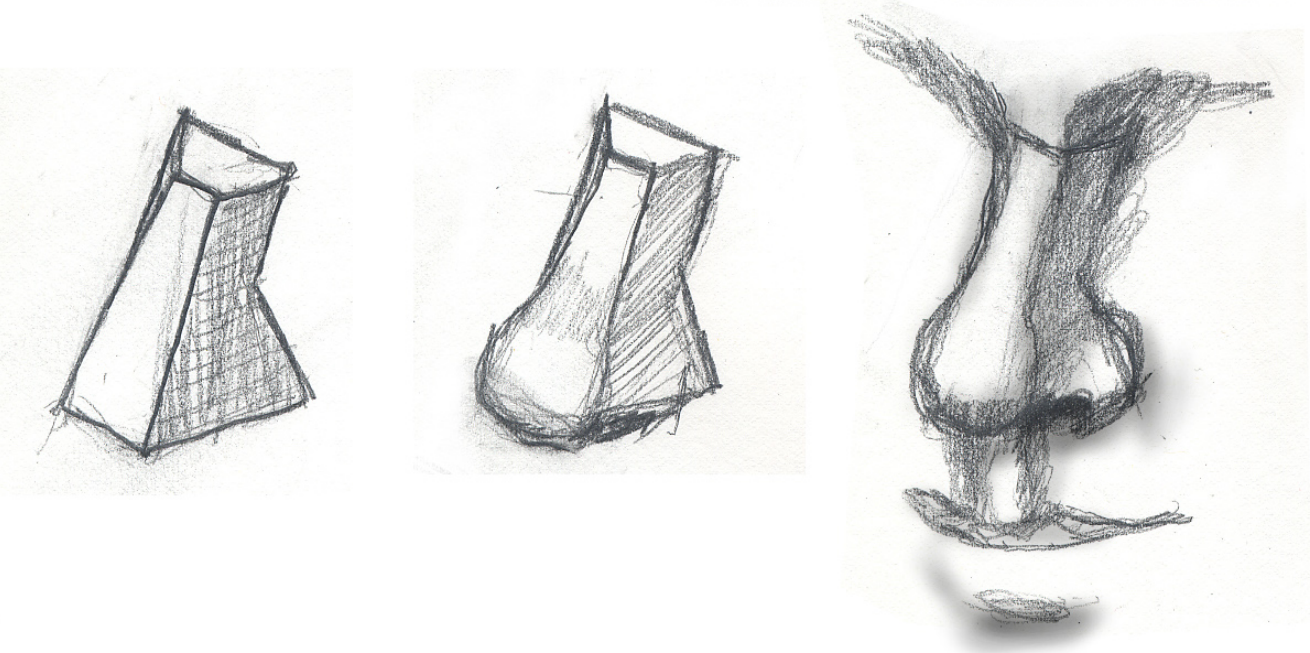


Visualizing the nose—more arbitrary views

Three-Quarter Up

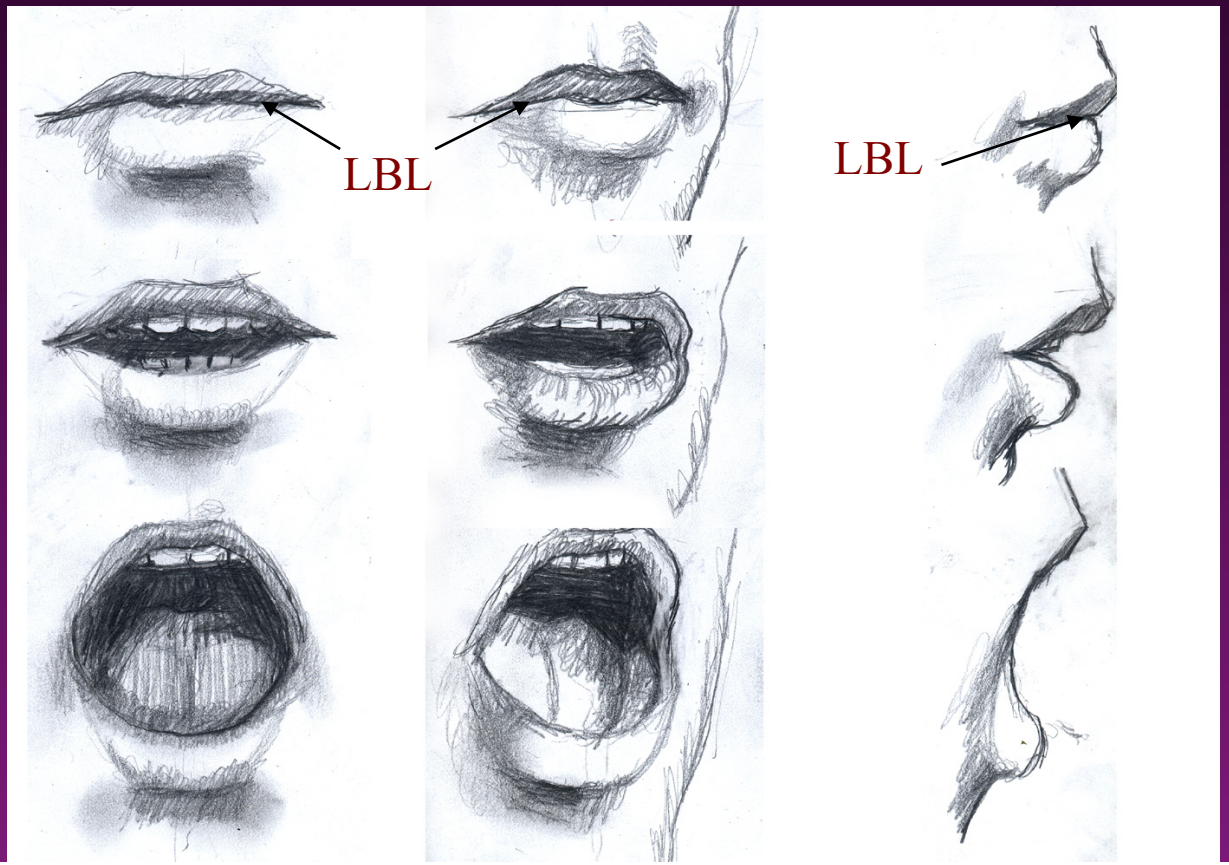


Three-Quarter Down



Visualizing the mouth…

The mouth presents a dizzying variety of shapes and sizes. Most important to get right is the "line between the lips" (LBL) when drawing a closed mouth.



Homework (for Monday Jan. 17):

1. Do two drawings of “Blockhead” (from the quicktime movie provided on this site.

2. With a mirror, draw a self-portrait.