VISUAL LANGUAGE III
Visual Perceptual Processing.

Visual perceptual processing is a set of skills we use to gather visual information from the environment and integrate it with our other senses. This is done while incorporating all the integrated information with other things, such as past experiences, motivation and development, so that we can derive understanding and meaning from what we are experiencing. This process allows the development of schemes to derive meaning from what we see.

Visual perceptual processing is very important, but especially so when learning. Without visual perceptual processing, you would not be able to accurately learn to read, give or get directions, copy from the board or from a book, visualize objects or past experiences, remember things visually, have good eye-and coordination, integrate visual information with our other senses to do things like ride a bike, play ball, or hear a sound and be able to visually recognize where it is coming from (like an ambulance), just to name a few.

Visual perceptual processing can be broken into three components - visual spatial skills, visual analysis skills and visual integration skills. Just like anything else that is broken into components, these skills work together or build upon each other to help you function.

I. VISUAL SPATIAL SKILLS

These are the skills we use to understand directional concepts to organize our visual space. This is how we visually project our body coordinates out into the world.

For example: When you say, “It is over to the left,” the “to the left” has no meaning unless it has a point of reference. So actually, you are really saying to the left of where YOU are. If you don’t know where your body is, it is hard to know where things are in relation to you. Visual spatial skills require observing an object, then accurately reporting its relationship in space relative to your own self.

A. Laterality

Laterality is an internal self-awareness of two body sides and knowing they are different. It requires good balance, vestibular function and an awareness of a body midline (an invisible line that divides your body in half).

FACT: During a study at the Southern California College of Optometry, 73.8% of children already determined to have a learning disability failed tests used to assess laterality and directionality. Laterality eventually evolves into directionality.

A person must understand laterality on their person before it can be applied in space. This means if you do not know the two sides of your body (left and right), how can you know what to call the two sides of the room? We always learn how to judge where things are by first learning how to relate it to ourselves.

When you start applying left and right concepts to your external visual space, you are beginning to learn directionality.

B. Directionality

Directionality incorporates up, down, ahead, behind, and any combination thereof into the equation. It also means projecting these directions including left and right out into space. Again, a person must understand these concepts as they relate to themselves before they can apply them to other things.
Directionality is very important in decoding letters. If you don't have this concept down, learning to read can be very confusing. For example, the letters “b,” “d,” “p,” and “q,” all look like the same symbol if you do not have any concept of orientation.

**FACT:** Research has shown that children who still have reversal problems after age 8 will likely have problems developing good reading skills.

**C. Bilateral Integration**

Bilateral integration is another visual spatial skill that is important. This is the ability to effectively use both sides of the body separately (like typing) and/or simultaneously (like riding a bicycle).

Very young children will use only one side at a time until they learn this skill. This is a normal part of development. However, if a child is still exhibiting this behavior after third grade, this may signify a problem with visual spatial skills. Watch a young child draw or color. Crayons on the left stay on the left and are manipulated by the left hand and vice versa. If they want something on their right to use on the left side, they will pick up the crayon in the right hand, then pass it to their other hand rather than cross over the midline of their body.

With proper development the left and right side should begin to enhance each other’s function, for example the right hand may stabilize a piece of paper while the left hand draws. Another integration skill you can observe is moving one foot ahead of the other when walking, while at the same time swinging contralateral arms as the foot comes forward, for example the right foot and the left arm, then the left foot and right arm.

This skill cannot be developed fully unless laterality is learned well, too. If you do not have the concept of the difference between both sides of your body, it is very difficult to learn how to coordinate them.

**II. VISUAL ANALYSIS SKILLS**

Visual analysis, or visual discrimination, is used to identify, sort, organize, store and recall visually presented information. It is the ability to take in visual information remember it and apply it later.

Children with poor visual analysis skills often have trouble learning the A, B, C’s and recognizing words or simple forms even when presented repeatedly; for example, they may correctly read the word “house” in one sentence and incorrectly read “horse” two lines later. These kids tend to mistake words with similar endings or beginnings, generalize when grouping objects. They also have a hard time understanding size and magnitude, (a cup of water in a tall glass and a cup of water in a shallow bowl are not seen as equal amounts).

**A. Figure Ground:** An ability to attend to or search for a specific form or feature while simultaneously ignoring irrelevant information. Example: Looking for a specific piece of information when reading or searching for a specific tool in a toolbox full of tools.

**Example Activities:** Hidden Pictures

**B. Visual Form Recognition/Discrimination & Constancy:** The ability to discriminate differences in forms. This includes differences of size, shape, color and orientation. Recognition that visual information in a form is consistent in spite of the object, size in the back of the eye, or location.

**Example:** DOG = dog = Dog, or that a cup of water is a cup of water whether in a tall glass or shallow bowl.

**Example Activities:** Parquetry Blocks, Tetris, Cut and Assemble

**C. Visual Closure:** The ability to recognize clues presented visually that allow him or her to determine the appearance of the final product without all the details being present.

**Example:** Being able to complete a word when only part of the word is seen; recognizing what will appear in a picture before it is completed.

**Example Activities:** Connect the Dot, Missing Pieces

**D. Visual Spatial Memory:** Ability to recall the spatial location of an object or stimuli. The ability to be able to recall, identify, or reproduce a design or dominant feature of an object.

**Example:** Being able to picture a lost object; seeing a printed word and developing a mental picture to the corresponding object.

**Example Activities:** Memory Card Games

**E. Visual Sequential Memory:** Ability to view and then recall a sequence of numbers, letters or objects in the order they were originally presented.
Example: Recall a phone number 205-9786 vs. 205-9687, or in spelling “their” vs. “thier”
Example Activities: Electronic ‘Simon Says’ or other Sequence Replication Activity

F. Visualization: Ability to recall a previously viewed image or object and mentally manipulate the image from various aspects.
Example: Seeing a flattened box and being able to mentally reconstruct it and picture the dimensions to decide if the object you want to put in the box will fit.
Example Activities: Pegboard, Tangoes, Shape Replication

G. Visual Speed & Span of Perception: The rate and amount at which information is being handled in visual processing.
Example: Quickly and efficiently copying an assignment off the chalkboard with only a few glances vs. needing to glance at the chalkboard after every one to two words or bits of information is copied.
Example Activities: Speed Stackers

Automaticity:
Once all of these skills are developed, it is important for them to become automatic so they take up less brain power to use. Just like learning to drive a car with a manual transmission. At first, it takes a lot of brain power to get your feet to move the right way and for you to time it with what your hand does with the stick shift. Not only are you learning a new skill, but you also have to make sure you pay attention to the road and steer accordingly. Once you get the hang of it, the ability to shift gears became automatic and you can devote that brain power to eating a Big Mac and talking on the cell phone along with everything else (not recommended, by the way). In order to have efficient visual information processing skills, you have to learn the skills well to the point where they become easy. Automaticity is key in efficient learning.

III. VISUAL INTEGRATION SKILLS
This processing ability allows you to integrate information with your other senses or with other visual information.

A. Visual-Visual Integration
Visual-visual integration is what happens when several visual skills integrate together. If you looked at a new word and then matched it with an image in your mind to help better recall what the word means, this would be an example of visual-visual integration. So, for example, if you looked at the word “Siamese,” and you saw a picture of that type of cat in your mind, you would be integrating visual input with visualization.

B. Visual-Motor Integration
Visual motor integration (VMI) consists of coordinating visual perceptual skills together with gross-motor movement and fine-motor movement. It is the ability to integrate visual input with motor output. This is how individuals plan, execute and monitor motor tasks, such as threading a needle, tying shoe laces, catching or hitting a ball. It is also essential in academic performance. This is commonly referred to as Eye-Hand Coordination.

In the example below, we can look at how you are coordinating your vision with how you move your pencil. Basically, are you visually guiding your pencil to accurately represent what you see.
Look at the picture below:
Children with known learning disabilities have a high prevalence of VMI deficiencies. In one study, out of 51 LD elementary students, 85% of them were correctly identified as being learning disabled by finding problems in this area. VMI problems affect IQ scores, suggesting that perceptual and cognitive skills necessary for good VMI are generalized. VMI also correlates well with math skills, especially in the lower grades from kindergarten to second grade!

Children with poor VMI skills have a difficult time on written assignments and tests, erase excessively, show poor penmanship, and do not do well when copying down information. These same children often seem to perform better when answering aloud and can verbalize that they know the material they are being tested on, but seem to test poorly on that same material when writing is required. Not a good thing when you are taking standardized tests.

Exercises in the Visual Language program aims to efficiently and effectively develop a number of these Visual Perceptual Processing skills. Simple, early exercises like ‘Connect-the-dots’ not only introduces the student to the most fundamental marks of a visual vocabulary and aspects of motor control, but also begins to develop skills of Bilateral Integration, Visual Closure, Visual Sequential Memory.

Our later exercises--like grid-drawings for example--not only continue to expand on fundamental marks and increasingly fine motor control, but also continue the development of visual perceptual skills in more complex combinations such as (but not limited to) Visual Closure, Visual Spatial Memory, Visualization, Visual Form Recognition/Discrimination & Constancy, and Visual-Motor Integration (Eye-Hand Coordination).
VISUAL LANGUAGE
9th GRADE
SUMMARY

“Learning to design is learning to see, an adventure that gets more and more captivating the further you go.” - Oliver Reichenstein

Visual Language III is a strategic sequencing of educational visual arts exercises designed to develop visual literacy and communication skills in the most effective and efficient manner possible. Echoing the same rational sequence of skill building exercises from the celebrated Waichulis curriculum (designed for the International Ani Art Academies) Visual Language III seeks to develop visual literacy and communication skills that will allow students to successfully interact and contribute to a global environment that is increasingly dependent on visual stimuli.

“Visual arts education is now understood as critical and necessary for success in a world that is making a paradigm shift to a global model requiring higher order thinking, creativity, problem-solving, and flexibility. Even Benjamin Bloom’s Taxonomy of Learning Domains – a standard model for the classification of intellectual behaviors related to learning – has been revised and restructured to make “Creating” the top of the hierarchy. The taxonomy now reflects not only the arts, in particular, but also a relevance to 21st century work. Visual arts learning includes all three of Bloom’s domains of educational activities leading to higher order thinking.” - Darien Public Schools Art Department, Connecticut.
VISUAL LANGUAGE III (9-12)

OBJECTIVES

• Acquisition of media skills and processes necessary for life-long artistic learning and application.
• Development of adaptable/transferable fine motor control and hand-eye coordination.
• Development of the ability to depict, analyze and interpret the world in visual form.
• Development of creative and communication skills so as to successfully express ideas through artistically proficient products.
• Identification and exploration of the scientific and psychological aspects of the art experience.
• Development of problem-solving and critical-thinking skills.
• Strengthening of creative thinking and inventiveness.
• Development of a deeper understanding of human behavior, motivation, diversity, culture, and history. Intended to augment that creative experience with focused practice so as to achieve the aforementioned objectives. (Please feel free to send any suggestions or feedback to aaawaichulis@gmail.com. Through constructive feedback and input we hope to continue to improve on this early framework.)

STANDARDS

National Arts Standards
1.a, 1.b, 1.c, 1.d, 2.b, 2.c, 2.e, 3.d

High School Common Core Math Standards
CCSS.MATH.CONTENT.HSG.CO.A.1
CCSS.MATH.CONTENT.HSG.CO.A.4
CCSS.MATH.CONTENT.HSG.C.A.4
CCSS.MATH.CONTENT.HSG.GMD.B.4
CCSS.MATH.CONTENT.HSG.MG.A.1
CCSS.MATH.CONTENT.HSG.MG.A.3

High School Common Core English Standards
CCSS.ELA-LITERACY.CCRA.R.7
CCSS.ELA-LITERACY.CCRA.SL.2
CCSS.ELA-LITERACY.CCRA.L.6
CCSS.ELA-LITERACY.SL.9-10.1.C
CCSS.ELA-LITERACY.SL.11-12.6

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SPECIAL NOTE

This sequential framework that is Visual Language I, II, and III should be viewed as an organic system that can be altered and/or augmented to fit the specific needs of the classroom. With this in mind, it is highly recommended that the Visual Language III exercises be assigned in the order that they are presented so as to maximize development.

Additionally, these exercises are not meant to displace any popular pre-existing art projects that provide a fun creative experience for many, many students. The sequential framework provided here is
VISUAL LANGUAGE III (9-12)

MATERIALS

The materials for the Visual Language III exercises can be determined by classroom availability and the individual wishes of the teacher. Exercises may be carried out with plain paper, graphite pencil, crayon, marker, colored pencil, watercolor, acrylic, and construction paper of various colors. Additionally, some exercises may require glue, scissors and additional objects like paper plates. Please see individual exercise sheets for any specific materials required.

BASIC STRATEGY

The Visual Language III exercises echoes the same visual element chronology as Anthony Waichulis' Language of Drawing and Language of Painting programs. The general sequence is as follows: DOT, LINE, SHAPE, VALUE, and COLOR. You may see COLOR and VALUE trade order from Kindergarten to third grade as some concepts essential to VALUE and COLOR are more complex and thus are not addressed until the latter.

Visual Language III combines current day art projects found in most 9-12 classrooms and infuses them with the LoD/LoP general sequence of development. This strategy aims to successfully balance familiarity and tradition with focused practice and

STEPS:

See attached documentation.
“Learning to design is learning to see, an adventure that gets more and more captivating the further you go.”

Oliver Reichenstein

The Visual Language program is a strategic sequencing of visual arts exercises designed to develop visual literacy and communication skills in the most effective and efficient manner possible. Echoing the same rational sequence of skill building from the celebrated Waichulis curricula, The Visual Language system seeks to develop visual literacy and communication skills that will allow students to successfully interact and contribute to a global environment that is increasingly dependent on visual stimuli.

Each grade repeats the same journey connecting dots with line, configuring lines into both shapes and values, marries value to shape to yield form, and then ignites each element with the magnificent contributions of color. Repetition is a key component for this learning model however great care was taken to embed it into a myriad of various arenas. For example, the earliest exercises in these K-12 adaptations place the same focus on dot-line repetition that is found in the successful Waichulis curricula--however--this repetitions is hidden in a number of matching challenges, connect-the-dot projects, guiding tracings and puzzles. Additionally, this variety presents significant opportunities for collateral contributions to other areas of study.

Visual Language I, II and III follows a theoretically sound process and rational sequence that is inherent to most successful educational systems. It is highly recommended that while teachers may customize the content of the individual sections, the overall hierarchy of development should remain intact. (Dot-Line-Shape-Value-Color-Form.)

Cover sheet will divide key sections for easy navigation and planning. Additional cover sheets for particular exercises may be added to help teachers understand why a certain project may be beneficial.

In addition, exercise sheets will contain a program version or “depth-route” indicator that will rate a particular exercise’s impact for better planning based on available classroom hours. While each grade follows the same sequential pattern of the Dot, Line, Shape, Value, Color, Form – worksheets will now contain a depth code of A, B, or C: “A” representing a course with minimal hours to invest, “B” representing intermediate, and “C” representing a robust course. This way teachers can effectively and efficiently strategize with a clear and quick reference based on their time.

‘Strengthening indicators’ can also be found on certain assignment pages. These indicators will suggest potential exercises within the overall curriculum (if applicable) that will allow a student to try their hand at an early activity that may better prepare the student for the marked challenge. (For example – on a particularly challenging grade 4 Line assignment sheet you may see a strengthening exercise recommendation for a Grade 3 exercise, Line section, Page 7.)
ART ELEMENTS

DOT

LINE

SHAPE

VALUE

COLOR

SHAPE + VALUE/ COLOR = FORM

COLOR CHANGE WITH VALUE

COLOR CHANGE WITH CHROMA
DOT/LINE

SHAPE

VALUE

COLOR

FORM
Lines can be straight or curved. They are often defined by their relative direction (horizontal, parallel, perpendicular, diagonal). Lines can be configured to produce patterns, shapes, as well as values.

**Line as Pattern**
- (open)

**Line as Shape**
- (closed)

**Line as Value**
- (configurations to communicate lightness or darkness)
The ability to apply a confident line is one of the most basic skills required for successful draftsmanship. Unfortunately, many first approach the line or lines in a very unconfident, and “scratchy” manner. Applying line in this way may work for some tasks, but in most endeavors – such line will produce problematic effects. To develop confident line we can start by attempting to successfully connect dots of varying distance.
Line Exercises

dot¹
/dæt/
noun
1. a small mark indicating a point in space.

line¹
/laɪn/
noun
1. a line in motion.
PLACE A SERIES OF DOTS ON A LARGER PIECE OF PAPER TO REALLY TEST YOUR SKILLS WITH STRAIGHT LINES.
PLACE A SERIES OF DOTS ON A LARGER PIECE OF PAPER TO REALLY TEST YOUR SKILLS WITH STRAIGHT LINES.
Good practice habits come from knowing what needs work. The Line Wheel Exercise is designed to identify which line directions need practice. Start with a large circle (you can trace a paper plate or other similar sized circular object for this). Next, place a dot at the center of the circle. Then, without using a ruler or turning the paper, draw a series of straight lines from the center dot to the outer circle line. The drawing will start to look like a spoked wheel. When you have filled the circle with lines you may notice that some lines are straight and some are wavy. The wavy lines are the line directions that you need to practice.
A drafting compass (or pair of dividers) is a technical instrument that can be used for inscribing circles or arcs. As dividers, they can also be used as tools to measure distances, in particular on maps. Compasses can be used for mathematics, drafting, navigation, and other purposes. Compasses are usually made of metal or plastic, and consist of two parts connected by a hinge which can be adjusted to allow the changing of the radius of the circle drawn. Typically one part has a spike at its end, and the other part— a pencil, or sometimes a pen.
Line Exercises

Large Line Diagnostic Wheel

GOOD!

THESE NEED PRACTICE!!!
PRACTICE WHICHEVER LINE DIRECTION WAS THE “WAVIEST” ON THE WHEEL

(Practice Example)
PRACTICE WHICHEVER LINE DIRECTION WAS THE “WAVIEST” ON THE WHEEL

THEN TRY THE WHEEL AGAIN TO SEE IF YOU ARE GETTING BETTER
The curved Line

A curved line is a line that deviates from straightness in a smooth, continuous fashion.
A curved line is a line that deviates from straightness in a smooth, continuous fashion.
A curved line is a line that deviates from straightness in a smooth, continuous fashion.
The curved Line

A curved line is a line that deviates from straightness in a smooth, continuous fashion.
Straight and Curved Line Movement Drills

1


2


3


4

Curves 9th Grade
The curved Line

Straight and Curved Line Movement Drills

1

2

3

4

Curves 9th Grade
DOT/LINE
SHAPE
VALUE
COLOR
FORM
Shape Replication Exercises

Shape 9th Grade
Shape Replication Exercises

[Images of shapes to replicate]
Shape Replication Exercises

[Diagram of shapes to replicate]
Shape Replication Exercises
Shape Replication Exercises
Shape Replication Exercises
Shape Replication Exercises

Teacher Transparency

Shape 9th Grade
Another fun line exercise is Blind Contour Drawing. Contour is another way of saying “outline”. Blind Contour Drawing exercises the way your eyes and hands work together. Look at a subject, and without lifting your pencil from the paper, try to draw the outline. DO NOT LOOK AT THE DRAWING UNTIL YOU ARE FINISHED!!!

Blind Contour drawings can look VERY funny. However, if you practice you will be surprised at how good you can get!
A very common subject for a Blind Contour Drawing is your hand. Look at your hand and without looking at the drawing or lifting your pencil off the paper, draw an outline of your hand.

GIVE IT A TRY:
Gesture drawing is a very quick form of drawing that uses a “wandering” line (a continuous line created with a drawing tool that rarely leaves the surface of the paper.) Imagine that you are describing an object with your hands as you talk to someone – those hand gestures (the ones that describe the most basic visual “parts” that you feel are most important) are very like the marks you make when Gesture drawing. The marks can wander and flow but should ultimately be deliberate. While Gesture drawing can be used for any type of subject – it is most often used for figure or “life drawing”. In addition, Gesture drawing is a great way to “warm up” before a drawing session.

**GESTURE DRAWING EXAMPLES:**
The “wandering” or “roaming” line exercise:

With a light touch, try to fill the entire sheet with random “wandering” or “roaming” line that does not develop into a recognizable pattern. Imagine a tiny fly roaming around in the air and leaving a trail of where it has flown.
The “wandering” or “roaming” line exercise:

Try **NOT** to repeat the same line or shape pattern. Instead try to keep it as random as possible.

Make every effort to keep the line path as random as possible!
The “wandering” or “roaming” line exercise:

As lightly as possible, try to fill the entire sheet with random “wandering” or “roaming” line that does not develop into a recognizable pattern. Imagine a tiny fly roaming around in the air and leaving a trail of where it has flown.

The “wandering” or “roaming” line exercise can be done in just about any medium – however we recommend starting with either pen or pencil.

Jackson Pollock (1912 – 1956) was an influential American painter and a major figure in the abstract expressionist movement. He was well known for his unique style of drip painting. If you study some of his work you may see some similarity to the wandering or roaming line gesture exercises.

Number 14 (Gray), 1948 by Jackson Pollock
The “wandering” or “roaming” line exercise:
When you have a good feeling for creating free roaming line, use it to quickly capture the essentials of objects or people in the classroom. Try to keep each Gesture drawing to under 1 minute.

**EXAMPLES:**

- Hand
- Figures/People
- Ribbon
- Tree
- Apple
- Flowers
- Bottles and Fruit (Still Life)
When you have a good feeling for creating free Roaming Line, use it to quickly capture the essentials of objects or people in the classroom. Try to keep your Gesture drawing under 1 minute!
You can begin to add shape elements or outlines to your roaming line gesture drawings to start to get something a little more recognizable. Here are some gesture drawings with shapes/outlines added:

These examples still have some roaming or wandering line but they also contain some outlines and shapes. Experiment with adding some shapes and outlines to your roaming line Gesture Drawings and see what you come up with. Again, try to keep your Gesture drawing under 1 minute!
Experiment with adding some shapes and outlines to your roaming line Gesture Drawings and see what you come up with. Again, try to keep your Gesture drawing under 1 minute!
You should know that learning to draw is not only a matter of developing fine motor skills, but actually learning how to see. For many, it is a surprise to learn that the way in which we see the world is not truly the way that it is. Our vision does not operate just like a camera – rather, what we see is a biological construct that is subject to many neurobiological and psychological influences. To better understand this, take a moment to examine the following illustrations that demonstrate how our perception may differ from reality:

You may be surprised to learn that both red bars are the same length.

Are the gray lines parallel? Check with a ruler to see.

Which side of the bar in the center is darker? Would you believe that both are the same?

What these illustrations demonstrate is that everything we see is based on context. However, this does not mean that we cannot capture a representation of the world with reasonable accuracy. We just need to use some devices to bridge the actual states of the observable world with our perceptions of it. You may not realize it, but you have done this already in some of your earlier exercises. Let’s look at some of these devices and consider which ones you have used and which ones you have yet to try.
The employ of specific devices will decrease our chances for certain distortions. What is meant by distortion?

**distort**

*verb* | *di-ˈstort*

: to change the natural, normal, or original shape, appearance, or sound of (something) in a way that is usually not attractive or pleasing

: to change (something) so that it is no longer true or accurate

Again, we can help to minimize distortions during the replication of a subject if we incorporate some devices to measure the physical world and temper some of our subjective perceptions.
One of the easiest ways to make sure that you are not distorting your drawing is to take some very general measurements at the start that will act as a guide for you. This is called a **visual survey**.

The most common initial measurements of a visual survey include the greatest height and width of a subject. With just those two measurements you can build a temporary boundary box by which you can more effectively maintain size, shape, and proportional development. This idea should seem familiar as you have been using boundary boxes with your Shape Replication exercises for some time. You may have noticed that the later Shape Replication exercises that did not have boundary boxes were more difficult than those that did. It is not that the shapes were necessarily more complicated (increasing the challenge), but that the bridging (the boundary box) was removed. This lack of a common bridging device leaves our eye slightly less governed and far more prone to distortions.

Measure the greatest length and width of your subject. (All measurements should be done from the same distance and perspective to avoid distortions.)

We can then draw a guide shape (square, rectangle etc..) that the subject should fit into. This is sometimes called an “envelope” as the drawing fits into the guide shape like a letter into an envelope.*

* Be sure to keep your guide shape or “envelope” light so that it can be easily erased later on.
You can make your bridging device (boundary box, envelope, space box, etc...) more helpful by adding additional guidelines. You can add center lines, diagonals, or anything else that you feel can improve your ability to judge and measure.

For example, if your subject is four inches wide then we know that the center would be at two inches. We can then observe what parts of the subject are in this center area and make sure those same parts are in the centerline region of our drawing.

You can add light guidelines to grow your visual survey to more accurately compare your subject and drawing.

You can add as many guidelines as you like so long as the guides do not become too confusing. If your drawings become very accurate, you should try and use fewer guidelines to continue to train your eye!

Remember to keep all boundary guidelines very light so that they will not adversely affect your artwork and can be removed easily.
OK – so now we are aware of a few measuring devices and how we can use them. But what if we are drawing from an actual object or “drawing from life” as some might say instead of something flat like a picture or photo? We can not just lay a ruler or a grid on the object, can we?

Another great question! Well yes – you can measure something with a ruler or even set up a grid made of wire in front of an object or scene. However, when “drawing from life”, many opt to use an envelope or boundary box with measurements made via the visual survey. Let’s take a look at some ways they do this.

The first method is known as COMPARATIVE MEASUREMENT. Comparative Measurement is exactly what it sounds like. It is a process of using one key measurement and comparing other lengths or widths with that key measurement to reduce proportional distortion in your drawing development.

For example: if we were to take the approximate height of A, we may then discover (with a little investigation) that the two letters b are about twice the height of A. So if A was approximately 2 inches high then the stacked letters b would be about 4 inches high. We compared one measurement with another to find a relationship. With this information we could then draw this Ab graphic with a greater probability for accurate representation.
To get accurate measurements for comparison, you need to make sure that each measurement is made the same way—from the same place. To do this, artists will sit in one fixed position and hold a measuring tool (pencil, brush, etc..) with their arm outstretched straight and their elbow locked.
COMPARATIVE MEASUREMENT

To make sure that all measurements are reliable, you will also want to measure with one eye closed. Measuring with different eyes may give you different measurements. To test this – hold out your thumb at something in the distance. Now take turns using your left then your right eye to look at your thumb. Do you see how your thumb seems to move against the background? We can eliminate some of the problems with this by always measuring with the same eye.

The first measurement and comparisons are usually the overall height or width of a subject. The relationships between these two dimensions should be carefully considered before recording. Once you feel pretty confident about the measurement(s) you can use the height/width ratio to build a boundary box or the start of an envelope.

While sitting or standing up straight from a fixed position, hold out a measuring tool with your arm outstretched and elbow locked. Align the top of your measuring tool with the top of your subject and move your hand to the bottom of the tool so that it aligns with the bottom of your subject.

There! You now have a rough first measurement for overall height. You can now measure the width for comparison.
Again, be sure that all measurements are taken from the same place, with your arm in the same position (even though your hand may rotate) and with the same eye.

You can now generate your guide shape or “envelope” from your basic height and width measurements. You can also add additional lines like center lines if you feel that they may help.

With a basic relationship between overall height and width garnered, we can establish a boundary box or envelope that reflects this relationship.
COMPARATIVE MEASUREMENT

So now that we have a general boundary box or envelope, we can continue to measure the subject for other useful relationships. For example:

1. The overall width of the vase is the same as:
2. The base of the design to the lower lip of the vase top.
3. It is the same distance as the top (ends) of the vase's central graphic to the vase's base.
4. Approximately half of the width of the overall vase is close to the height of the upper cylindrical portion of the vase.
5. Approximately half of the width of the overall vase is close to the distance from vase center to outer handle edge.

With comparative measurement you can compare ANY two measurements from your subject to uncover new relationships or confirm earlier ones. Let's say you have a basic envelope or boundary box established for the vase shown above. The next step would often be to add additional guide-lines that are comprised of two measurement comparisons.

Take you time and investigate throughly!
COMPARATIVE MEASUREMENT

Here are two exercises for you in comparative measurement. See how many measurement relationships you can find in this drawing from French painter and lithographer Charles Bargue:

Next, find an object in the room you are in and visually study it. From your location, and with only a pencil or other simple measuring device, see how many measurement relationships you can find.
Envelopes

While the boundary boxes tend to limit the artist to only 4 sides, the envelope allows the artist to use more complex polygons to plan out the boundaries of single subjects or even multiple subjects that are not encompassed well by square or rectangle. Just like the boundary or space box, the envelope will police the overall size and proportion of the subject. Study the examples below to better understand how envelopes should establish a rudimentary shape that the subject(s) may fit in a snug fashion – just like an envelope.

This envelope is not well done because it crops out too much from the pile of mushrooms, and the envelope does not accurately describe the overall shape of the mushroom pile.

This envelope is well done because it tightly crops the mushrooms without cutting out too much information. It does not have extra white space inside the envelope.

This is a poor envelope because it leaves too much white space. It does not crop tightly enough.

Be sure to keep the lines of the envelope extremely light just as with the earlier mentioned boundary boxes and guidelines.
Envelopes

Try to add envelopes around each of these drawings. Make an effort to use as few lines as possible in order to maintain a simple envelope. It is OK if a tiny piece of a subject peeks out of the envelope as long as the majority of all structures are contained within. Good envelopes should not use any curved lines.
Another successful system of measurement is the Sight-Size system. This system employs more constraints than the Comparative Measurement system, but can deliver great accuracy.

The *Sight-Size* method is a common drawing or painting approach that allows the artist to capture an accurate representation of a subject within a one-to-one scale ratio between source subject and the artist's destination surface. From a pre-determined viewing location, or 'viewpoint', comparisons and contrasts are made. Common viewpoints within sight-size or sight size variant systems are 5 to 10 feet from the easel or destination surface.

Common tools for effective employ of the sight size system would be a string, long stick (like a mahl stick), tape, or plumb bob.

Alignment of source subject and destination surface is vital to a sight-size system. Therefore, the distance from the easel to the subject will determine the size that your subject will appear on your surface. Here's an example of two varying distances from easel to subject, while maintaining a 5 foot viewpoint.

Here we see a subject aligned with the drawing surface (*indicated in red*). The easel and destination drawing surface is placed in extremely close proximity to the subject. The set viewpoint seen here is 5 feet back from the easel. Notice how large, or close to life size the image is set to appear on the drawing surface.

Now we see that same alignment and 5 foot viewpoint but with the easel set quite a distance back from the subject. Notice how much smaller the image will be. The size at which the subject is observed in relation to viewpoint and drawing surface is the size the drawn subject will appear.

With your easel orientation and viewpoint established, you can begin to measure your subject. Be careful to make sure that your easel and viewpoint do not
move throughout this process. These factors need to remain fixed for accurate translation. It is very common to mark your viewpoint and easel position with tape on the floor. It should also be mentioned that the position of your head should not vary. Make an effort to change viewing directions with your eyes, not your head. Lastly, moving forward, it should be noted that measurements are far more accurate when made with just one eye. Close your left or right eye to make measurements. However, make sure you always close the same eye with your head in the same position right from the start to ensure the most accurate measurements for this process.

Initial large or ‘macro’ measurements such as a subject’s overall height are usually established first. It is here that you may use something as simple as a lengthy string or mahl stick to establish these marks. With your shoulders straight, extend your arms out holding the string or stick horizontally. Lock your arms in place so that this reach can be repeated consistently. Holding the string or stick steady, straight, and taut, orient it so that you can see it resting atop your subject. Follow the length of the stick/string to see where it corresponds on the drawing surface. Fixate on that spot on the drawing surface, step forward, and place a light mark accordingly.

Repeat the same steps to establish the bottom of the subject. This is only as successful as your ability to maintain a fixed viewpoint, head height and orientation, and locked arm and shoulder orientation. It is always helpful to confirm your mark by re-measuring afterwards.

Once your height is confirmed you can make the initial marks a bit more substantial by augmenting them into confident but light lines. With this height established you can use your plumb bob to find an approximate center of the mass of your subject. You can also take note of the center line’s interaction with key features of your subject. These interactions may be used later to determine or confirm subsequent lines, angles, or measurements.

When this generic “I beam” of height and approximate center line established, one can then return to the string or stick, identify and measure (usually from thumb to thumb) the greatest width of your subject. Follow this major width’s location along the same path parallel to your height lines to approximate the location (along the center line) of this major width.

With this schematic established you can continue to gather measurements with your string, stick or plumb line. Feel free to estimate and approximate lines and angles once you feel enough measurements are available and you can proceed into value confidently in your early cartoon or schematic.
Red Lines: Determined by aligning with a measuring tool (stick, string) held outward with arms locked, and shoulders straight from a pre-determined viewpoint.

Blue Line: Plumb line approximately indicated on the drawing surface with the aid of a plumb bob.

Green Lines: Greatest width of the observed subject’s mass. This is determined placing your thumbs at locations on your measuring device where it seems to intersect with the contour of the subject at the subject's apparent width.

Purple Line: The center line location where the greatest width occurs. This can be determined by following a horizontal path from subject to drawing parallel to the initial lines that determined height.

Yellow Lines: Indicators measured using the plumb line to find key subject markers.
Another Grid Option:

Grids are a great way to capture incredibly accurate line drawings quickly!

There have been a number of great artists throughout history that have used different types of grids to draw subjects accurately from life. Grids made of wire or string were arranged into a frame that was then placed in front of the artist's chosen subject. Just like our gridded drawings, the artist would then draw into a matching target grid on his or her drawing surface. As mentioned earlier, if the subject's outlines in the target grid match the outer edges of the subject as seen through the source grid – the drawing should have developed accurately.
1. ASPECT RATIO: Make sure the aspect ratio of your source grid and your target grid match. An Aspect ratio is, very simply, the ratio of the proportional relationship between height and width.

To ensure that your aspect ratio is maintained for altering size from source to target, you can use your knowledge of fractions. If math is not your thing, you can use a ruler to find a diagonal alignment.

For a math solution to determine an applicable size – factor your width and height to the lowest common denominator and you will have your aspect ratio. Then to calculate a new size, multiply or divide the numerator and the denominator equally.

For example, if you have a painting that is 18''x24'’, then you factor 18/24 to its lowest common denominator to understand the ratio. Dividing 18/24 by 6, you get 3/4, or a 3:4 aspect ratio. If you have a 20''x30'' painting, or 20/30 = 10, which equals 2/3, then you have a 2:3 aspect ratio. Your image will fit into any other 2:3 size area.
2. PROPORTIONAL CELLS: Make sure that the cells of your grid are magnified or shrunk by the same factor as the overall image.

For the grid to maintain an accurate relationship between a source image and target area, all of the proportions have to be the same. Therefore, we need to look at the chosen size of your source and target. Let’s say you chose to increase your target by a factor of 5 and all of your grid squares on your source are 1”x1”. This would mean that the squares for your target grid would be 5”x5” (1x5=5). If your original squares were 1/2” x 1/2” then an increase by a factor of 5 would be a grid made of 2 1/2” squares. (1/2”x5=2 1/2”).
Now you might be thinking to yourself: “The boundary box, space box, envelope and grid all sound fine – but once I have them established, how (or what) should I measure?”

That is an excellent question. Starting with the most robust device, the grid, all you need to measure are the distance along the grid lines from intersection of cell (row and column) to subject boundary intersection. This way you can populate the lines of the grid with dots to be connected by line. This should be very familiar to you as you should already have completed the Origin Destination line exercises and diagnostic wheel.

Each cell of the grid is like the boundary box of a small Shape Replication exercise. Just measure along the box to find a particular boundary line intersects the boundary box and indicate it on your target grid.

Distances can be measured from cell intersection to boundary incidence. Dots accurately placed at boundary intersections will establish a quick and accurate dotted contour path to follow.
Try your hand at copying one or all of these drawings. Larger examples are provided on sheets labeled “Bargue Plates”. Bargue Plates are part of a French 19th century drawing course created by Jean-Leon Gerome and Charles Bargue. The course was one of the first drawing curricula ever created for the equivalent of high school students to improve their draftsmanship and visual literacy. Bargue Plates teach students proportion, value, and other essential drawing skills, and are used by contemporary artists to increase their visual literacy. Many of the lessons found in these plates are used by contemporary artists in their work. In fact, even abstract artists such as Pablo Picasso studied Bargue Plates.

You may use any method of measurement you like!**

** One of the drawings will contain a grid version in the event you would like to try that particular device. NOTE: Reproduce the grid perfectly (and lightly) before proceeding with the drawing.
Bargue Plate Walkthrough

The following is an excerpt from the Free Lesson Plan "Bargue Plate". Written by Mandy Hallenius (www.mandyhallenius.com)

BACKGROUND INFORMATION

Bargue Plates are part of a French 19th century drawing course created by Jean-Leon Gerome and Charles Bargue.

The course was one of the first drawing curricula ever created for the equivalent of high school students to improve their draftsmanship and visual literacy.

Bargue Plates teach students proportion, value, and other essential drawing skills, and are used by contemporary artists to increase their visual literacy. Many of the lessons found in these plates are used by contemporary artists in their work.

In fact, even abstract artists such as Pablo Picasso studied Bargue Plates.

SUMMARY

In this lesson, students will increase their visual literacy by applying a drawing process, learning new techniques for identifying and correcting drawing errors, and practicing their hand-eye coordination.

MATERIALS

- Bargue Plates
- Drawing Paper
- Pencil
- Kneaded Erasers
- Masking Tape
- Measuring Tool (Ruler, pencil, etc..)
Bargue Plate Walkthrough

More information can be found at: www.davinciinitiative.org

**STEP 1**

Tape the Bargue Plate next to a clean piece of drawing paper on a drawing board or desktop.

**STEP 2**

Make a boundary or space box on your original Bargue Plate, and then draw the exact same box on your drawing paper. Measure the distances between sides to make sure they are the same.

**STEP 3**

Add any appropriate guidelines that you like. Here a plumb line was established as a guide for a true vertical. In art, plumb lines are undeviating vertical lines used as a reference when determining alignment.

**STEP 4**

Draw an envelope around the image on your original Bargue Plate, and then draw the same envelope on your drawing paper.
Bargue Plate Walkthrough

Here you will see the use of the follow–through lines which are guidelines extensions of certain lines so that angles and intersections can be more closely compared or examined.

**STEP 5**

Extend lines on the original Bargue Plate so that they become follow-through lines.

Above: Identify the shorter line. Below: Extend the line until it reaches the boundary box. Transfer this follow-through line to your drawing paper.

**STEP 6**

Make more follow-through lines. It is important to extend the smaller lines every time. This way you can discover patterns and repetitions in the way lines is used by the original artist.

**STEP 7**

Once you have extended several lines and found their patterns, it is ok to erase back the part of the line that you do not need. Continue placing lines until all of the lines from the original plate are placed on your drawing paper.
Bargue Plate Walkthrough

STEP 8

Continue to refine the drawing until your copy is as close to the original as possible.
VISUAL LANGUAGE I, II, III

DOT/LINE
SHAPE
VALUE
COLOR
FORM
Value – Relative lightness or darkness.

Lightness refers to the perceived intensity of light reflected off an object while brightness describes the perceived intensity of an actual light source. Darkness is the relative absence of visible light.
Shown here is a typical value scale. A value scale is a simple chart that illustrates a sequence of values arranged in even steps. Values towards the lighter range are referred to as “high-key values”. Values in the middle of the scale are often referred to as “middle-key values” while darker values are “low-key values”.

The values scale shown is made from solid, continuous value application as opposed to values generated by line orientation. The steps were applied by inks of various values. See if you can replicate these continuous value steps evenly in the boxes below with your choice of material.
Like Shape, Value can be represented by the configuration of lines, continuous dynamic line application, line weight, or a combination of all these factors. Below are a series of line configurations that can be used to effectively represent value. These few examples are by no means exhaustive. Seemingly countless configurations can be used to communicate value. Give some of these line patterns a try for yourself and see if you can come up with a few patterns of your own on the right.
A Gradation is a scale or a series of successive changes, stages, or degrees. In fact, the value scales that we have been doing are, in fact, a type of gradation. Each step in the scale is an even jump from one value to the next. If we make the jumps smaller then it becomes a smoother gradation. If the jumps become greater then the gradation is more abrupt. You can describe many different types of form and texture based upon the type of value gradation.

It is important to remember that everything we see around us is defined by light. As light interacts with an object it reveals a collection of values that allows us to perceive its three-dimensional quality known as form. Understanding how light reveals the world around us will allow us to communicate to the world in a way that others will understand. Artists ask themselves a number of important questions about light when they begin to draw or paint.

**How do the values they perceive relate to each other?**
**How are the values they observe changing?**
**Are there slow and smooth transitions from light to dark or fast and abrupt jumps?**

Thinking about these questions will help you form a good plan for how to draw or paint something.
Value 9th Grade

Can you notice how the different rates of gradation describe different forms? While the shape of the square is unchanging, the value gradations at the top seem to describe something block-like or cube-like while the smoother transition of value appears to be describing something cylindrical.
GRADATIONS

Since we have already done quite a few value scales that have some larger jumps, let’s see if we can make a smooth gradation that has much smaller and more subtle changes.

Do you think you can copy the gradation from the left rectangle into the right?
**VALUE GRADATIONS**

How about these???

**HINT:** Try to think about the pressure you are using to apply value. Controlling your pressure can go a far way when controlling the gradation.
DOT/LINE
SHAPE
VALUE
COLOR
FORM
Basic Color

WARM COLORS

COOL COLORS

PRIMARY COLORS
RED * YELLOW * BLUE

SECONDARY COLORS
GREEN * ORANGE * PURPLE

INTERMEDIATE COLORS
RED ORANGE * RED PURPLE
BLUE PURPLE * BLUE GREEN
YELLOW GREEN * YELLOW ORANGE

ANALOGOUS COLORS
3-5 Neighbor Colors on
the Color Wheel

COMPLEMENTARY COLORS
Opposites on
the Color Wheel

SHADES = COLOR + BLACK

TINTS = COLOR + WHITE

TONES = COLOR + VALUE
Hue is a specific area of the color spectrum that we classify as red, green, blue, etc. The 12 general “colors” that we have organized around our basic color wheel can be referred to as hues.

Value is lightness or darkness. We have mixed colors with black or white in past exercises to alter the value of the color (tints and shades). You can also change the value of any color by mixing it with any other color of a different value.

The Chroma is how pure or intense the color is. If the Chroma is low then the color will appear more gray. If the chroma is high the color will appear very intense (less gray). Do not confuse chroma with value as you can make a color more gray without making it darker or lighter. We will experiment with that later. You can affect the chroma of any color by mixing it with any other color. In almost every case the Chroma of a color will lower when the color is mixed with another.
Basic Color

Here is an example of tints and shades in a chart configuration. The base colors lie in the middle as you can probably tell they have the highest chroma.

As each tint (up) or shade (down) evolves from the base color you can see a drop in chroma.

While the value scale seems to be aligned with the evolution of tints and shades – the value are not truly aligned with the scale. If we were to remove the hue and chroma factors we can see that the value scale is not accurately aligned. We tend to perceive certain colors as lighter or darker due to the particular way we perceive colors.

In addition, some colors in their purest form (highest chroma) will have wildly varying values. For example a cadmium yellow right from the tube will be much lighter than ultramarine blue. With this in mind you can see how the base colors set an uneven value alignment right from the get go.

Pick three colors that you have available to you (in any medium) and with just black and white see if you can create a 9-step tint/shade sequence of your chosen colors in the manner seen above. Just as with the value scales – do your best to keep even steps (in value and chroma!)
DOT/LINE
SHAPE
VALUE
COLOR
FORM
FORM

Everything we see around us is defined by light. As light interacts with an object it reveals a collection of values that allow us to perceive its three-dimensional quality known as form. Our ability to understand the basics of how light reveals the world around us will allow us to capture believable representations of anything we choose.

Light (Value) can turn flat (2D) shapes into 3-D FORMS

When we begin to bring together the elements of line, shape, value, and color, we begin to unlock strong representations of the observable world. We will use lines to establish the shapes of value/color patterns that will give rise to form. It is like fitting puzzle pieces together. Two particular value/color shapes will lock together and give rise to something new.
The simplest manner to begin to capture form is the interlocking of just two shapes of contrasting values. A good example of this is the “Notan.” Introduced to American art by Arthur Wesley Dow (1857 – 1922), among whose students was Georgia O’Keeffe, “notan” is said to be Japanese word for the interaction between dark and light. In 1899 Dow published a book, Composition: A Series of Exercises in Art Structure for the Use of Students and Teacher, that presented design as founded on three principle: line, color, and notan (notan meaning the massing of dark and light areas in a composition.

Dow, Composition pl. X, “Notan”
FORM

For example, here are a number of flat two-dimensional shapes. They do not necessarily give a strong illusion of form, but if the shapes are oriented in a particular way, they can begin to successfully represent three-dimensional volume.
Look what begins to happen to one of the Bargue Plate linear constructs we were discussing earlier when we begin to add a constructing value to specific areas. Do you see how it begins to become more three-dimensional?

Let's try to create this same effect with different shapes of contrasting value. You can either try another one of the Bargue Plates which you can find in this program OR you can do something original. Additionally, while you may want to stick with graphite or charcoal for the Bargue Plate, you might want to consider using any other available media.
FORM

Here is a few examples of notans in which the separation of values occurs at the point where light and dark would tend to separate. You can do any subject you like in any manner you like – just keep your design separation in sync with the light dark separation that promote a three-dimensional image:

If you like you can replace one of the values with a collage texture or pattern. It will create a similar effect!
The 4 style self-portrait allows the artist to explore different artistic styles and media. Students can look to their favorite artists for inspiration. Artists can also experiment with different media in each section. For instance they could try pen and ink, pastel, acrylics, and collage.

1. Choose a self-portrait image. Print the photo at the same size as your working surface.
2. Make a grid over the photo.

3. Grid (lightly) your working surface to match the grid on your photo.
3. Following the grid, draw a light outline of your image.

Divide your outline drawing into four parts.
5. Use a different style or media in each of the sections.

For instance, you may want to use pen and ink in one section and acrylics in another.

The goal is to have a cohesive, finished project despite using different approaches in each section, and plan accordingly before starting.
“Found object” artwork originates from the French objet trouvé, describing art created from undisguised, but often modified, objects or products that are not normally considered art, often because they already have a non-art function. Pablo Picasso first publicly utilized the idea when he pasted a printed image of chair caning onto his painting titled Still Life with Chair Caning (1912). Marcel Duchamp is thought to have perfected the concept several years later when he made a series of “found object” pieces called “ready-mades”, consisting of completely unaltered everyday objects selected by Duchamp and designated as art. The most famous example is Fountain (1917), a standard urinal purchased from a hardware store and displayed on a pedestal, resting on its side.

Found objects derive their identity as art from the designation placed upon them by the artist and from the social history that comes with the object. However, as an art form, found objects tend to include the artist’s output—at the very least an idea about it, i.e. the artist’s designation of the object as art—which is nearly always reinforced with a title. There is usually some degree of modification of the found object, although not always to the extent that it cannot be recognized, as is the case with ready-mades. Recent critical theory, however, would argue that the mere designation and relocation of any object, ready-mades included, constitutes a modification of the object because it changes our perception of its utility, its lifespan, or its status.

Bull’s Head (Tête de taureau), found object artwork by Pablo Picasso, 1942. Bull’s Head is a found object created in 1942 from the seat and handlebars of a bicycle. It is described as Picasso’s most famous discovery, a simple yet “astonishingly complete” metamorphosis.
Our challenge for you is to search out some objects in nature that can be represented in such a way that they represent something else in nature. The limitations of what can be used may be up to your teacher, but we would recommend the inclusion of tape, glue, string, or other binding device to hold objects together when necessary.

Here is an example of Leah Waichulis’ natural found object work titled “Butterfly”.

The goal is to use found objects from nature to create an object found in nature. For instance, you can use twigs and leaves to create a bird. The project can be a sculpture or collage.

**STEPS:**

1. Decide on a theme for your project.
2. Gather various natural materials that would work for your project.
3. Experiment with different arrangements of the objects.
4. When you find a composition that you like, use wire, string, and/or glue to join the pieces together.
LANDSCAPE

Draw or paint a landscape using: lines, shapes, values (tints and shades), color (complementary colors).

“Landscape with an Aqueduct” by Théodore Gericault

**BONUS:** Use complementary colors.
Portraiture

Draw or paint a portrait using: lines, shapes, values (tints and shades), color.

“The Flower Girl” by Charles Cromwell Ingham

**BONUS:** Use analogous colors.
STILL LIFE

Draw or paint a still life using: lines, shapes, values (tints and shades), color, gradations.

“Still Life with a Skull and a Writing Quill” by Pieter Claesz

**BONUS:** Use hatching or cross-hatching.
ANIMAL

Draw or paint an animal using: lines, shapes, values (tints and shades), color, gradations.

“Two Spaniels in a Landscape” by Condradyn Cunaeus

**BONUS:** Use hatching or cross-hatching and analogous colors.