VISUAL LANGUAGE
11th 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

**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

www.davinciinitiative.org
# 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
DRY MEDIA MATERIALS

Dry Media Materials used with the Waichulis Curriculum Language of Drawing

DRAWING PAPER

We recommend paper specifically made for charcoal or pastel. It should have a tooth, or ‘surface texture’, that is capable of holding a fair amount of compressed charcoal and pencil grade pastel. A paper that is too smooth will allow much of the charcoal or pastel to fall away; a surface that is too coarse may wear down the materials far too quickly. Test your chosen paper by applying some black charcoal and white pastel to it, and see how well they adhere. You will notice from the examples shown on the DVD that we do not use a pure white paper. To accommodate both black and white equally, we recommend a mid-value paper. This will allow you to demonstrate a noticeable, full range of both black and white. We also highly recommend using a blue-based paper as it is most analogous to the average blue-based grays produced by the mixing of black charcoal and white pastel.

CHARCOAL PENCIL

Choose the softest compressed charcoal pencil you can find. We start with the softest pencil available for a number of reasons. First, the softest charcoal will give you the greatest range of value. Generally, hard pencils will not get as dark as the soft ones. Harder charcoals do play a part in our procedure, but not until later stages. Second, the softer materials provide a much better challenge for developing ‘pressure control’, thereby maximizing the effectiveness of your earliest exercises. Third, by beginning each drawing with the softest charcoal and the lightest touch, we reduce the risk of damaging the drawing surface. Most people have experienced the frustration of trying to remove a heavy mark or line that was just not right; it refuses to erase or leaves an indentation of where it was originally. Proper control with our soft pencil will greatly reduce the chance of that problem occurring.
**WHITE PASTEL PENCIL**

For all the same reasons as the charcoal above, choose the softest white pastel pencil available. However, you will find that most white pastel pencils seem somewhat similar in their softness.

**SHARPENING TOOLS**

How to best keep points on pencils is a choice we leave up to the individual. Some people like to carefully sharpen with a razor and sandpaper, while many others are inseparable from their electric sharpeners. Each method has pros and cons, so use whatever means serves you best.

**PENCIL EXTENDERS**

While not required, pencil extenders can be quite useful when your pencils become too small for you to control effectively. Be sure to check that the extenders you find fit the pencils you chose, as all extenders do not fit all pencils.

**KNEADED ERASER**

The kneaded eraser is our eraser of choice. To use, first be sure that it is clean and not filled with excess charcoal, pencil, or other debris. If it is, knead it like dough, until it appears clean. Proceed to dab up the undesired mark by pressing and lifting the eraser off the paper. Do not rub! Rubbing may adversely affect the tooth of the paper. When the eraser begins to look dirty again, knead until clean. Repeat this process until your mark is completely removed.

**DRAWING BOARD/EASEL**

We recommend working at the easel with your paper clipped to a drawing board. Working on a flat surface presents some problems you should be aware of. For example, many people have a tendency to support their weight on their arms and hands when working on a flat surface. Heat and moisture can build up as your hands press or rest on the paper, thereby damaging the surface. In addition, this position can interfere with the ability to control pressure effectively. Drawing flat may also cause minor perspective distortions in your work. If you do not have access to an easel, leaning a drawing board at an angle (approximately 45 degrees) against something may alleviate some of these issues. If you choose to hold your drawing board when you draw, be mindful that excess charcoal is not falling onto your lap.

Materials 11th Grade
Our journey into the Language of Painting program begins with an examination of the tools we will need to get started. Today it is quite easy to be overwhelmed by the immense array of painting materials available. Art stores and catalogs are rife with a seemingly unending variety of paints, brushes, mediums, surfaces, varnishes, and assorted painting paraphernalia. However, navigating this vast ocean of possibilities can be made easier if we view it through a simple framework. We will need to determine our media, the process and tools that will deliver it, and the surface that will receive it.

In this first chapter of the Language of Painting series, we will present information and recommendations regarding initial materials according to the requirements of our program. By taking time to consider the properties of your materials, you can take your first steps towards ensuring your creative efforts are successful, economical, and ultimately very enjoyable.

The Language of Painting program was designed primarily for the use of Oil paint. While the exercises can be easily adapted to other media, our use of oil paint as the primary painting medium throughout will be the initial governing factor in our material recommendations. With our media determined, we will look to the surface that will receive it.

In addition to media choice, we should carefully consider our intended painting process. For example, a process involving bold applications of thick paint would lend itself to a toothed surface that is capable of accepting such applications. In contrast, a more conservative application of paint would most likely find a smoother surface far more welcoming.

**CANVAS**

Even with the consideration of media and process, our available options are still quite substantial. Canvas is by far the most widely used surface foundation for Oil painting. It is an extremely heavy-duty, plain-woven fabric that is typically stretched across a wooden frame or adhered to a support panel. It is then prepared with an appropriate primer designed to accept intended media. Canvas can be made from cotton, linen or other synthetic materials and is commonly available in two basic types: plain and duck.
The threads in duck canvas are more tightly woven. The term duck comes from the Dutch word for cloth, doek. In the United States, canvas is classified in two ways: by weight (ounces per square yard) and by a graded number system. The numbers run in reverse of the weight so a number 10 canvas is lighter than number 4. Each canvas material has pros and cons. The strength of the weave, the texture of the fabric, availability, and affordability are all variables that should be carefully weighed.

**PANEL**

Another very popular painting surface option is the Panel. This family of supports also includes a wide selection including, but not limited to: Masonite, Plywood, Particleboard, Medium Density Fiberboard (MDF), and Illustration board. Each of these materials also requires an appropriate primer designed to accept intended media. Just as with the canvas, each panel material has its pros and cons. The strength and weight of the panel, the texture of its surface, availability, and affordability are all variables should be carefully weighed.

Certain panel materials can be prone to warpage and splitting. However, this can be avoided or minimized with proper priming and/or careful preparation. On the positive side, panels are often more affordable to acquire and prime as opposed to canvas. In addition, panels are arguably more durable, easier to store, and transport. This, along with the fact that the rigid panel dynamic is far more akin to the dynamic experienced within our drawing program, makes the panel our recommended support.

Our specific panel of choice is Masonite. You should note that the name “Masonite” is a brand name for “compact hardboard”. It is strong, lightweight, and available in two forms: Tempered and Untempered.

While both are commonly used by painters today, the tempered version was initially unsuitable for effective priming as the process of tempering involved immersing the panels into tanks of linseed oil for hardening. This process would leave an oily residue that caused adhesion problems for priming agents. Today this process has drastically changed and only a very small amount of oil is applied with a roll coater and then baked. Most of this oil is flashed off when the boards are baked at temperatures approaching 400 degrees F. This current process of oil “tempering” does not leave an oil residue on the panel and thus leaves the door open for effective priming procedures.

In addition to Masonite, many of our artists also use canvas board or canvas panels for a good number of their early exercises. These panels are often inexpensive.
They are composed of primed cotton canvas mounted to a rigid support. Since these canvas panels come pre-primed, they will often require little or no preparation prior to use. This is quite convenient for an enthusiastic artist. The trade off is that due to the thin nature of the Canvas board’s support and inexpensive priming, they can seldom be used more than once or twice for repetitive Language of Painting exercises. Carefully primed Masonite panels (primed in the manner we will introduce) will generate panels that can be used over and over again until the ground begins to deteriorate.

It is important to also note that there are many other supports that can be experimented with. Papers, metals, and other materials have been giving rise to countless brilliant painting endeavors for many years. As with every material option you are faced with throughout the Language of Painting program, we encourage as much research and experimentation as possible.

Before moving forward with surface preparation, let’s establish a few key terms regarding painting surfaces:

A SUPPORT is the actual surface or backing material that is being used for a painting surface. This can be Canvas, Panel, Paper, etc.

The GROUND is a prepared surface that is primed to accept a particular media. It creates an absorbent surface on which paints will properly bind. In addition, the ground helps to separate mildly acidic oils from the support, and allows the painting to retain its brilliance of color. Grounds are usually white, enabling light to reflect from the surface.

The TOOTH is the degree of surface roughness. Often, surfaces with greater tooth can hold more material than lesser-toothed surfaces.

Let’s take a look at the differences between the support and ground for our painting surfaces of choice.

Here is an unprimed, Untempered Masonite – our support – and the primed surface – our ground.

Now – an unprimed canvas support next to a primed canvas ground.

During the application of a ground to your support, you can manipulate the degree of surface tooth that results. Again, it is important to consider how you intend to apply media during your painting process to determine ideal tooth. Our particular painting process does NOT use a liberal amount of paint and therefore a medium to low tooth would be most advisable.

Before the use of modern acrylic priming materials, painters primed both flexible and rigid supports with what is called “Gesso”. It is a mix of an animal glue binder (usually rabbit-skin glue), chalk, and white pigment. Such traditional ground preparations are still used today, however modern day acrylic polymer gessoes have become far more common due to their versatility, ease of use, rapid drying, and flexibility.
**MAHL STICK**

Mahl Sticks are poles of varied lengths often approximately three feet long. This tool is used to support and steady your hand when drawing details. In addition, it prevents you from accidentally leaning against your artwork. To use, hold the stick end in your non-drawing/painting hand and, crossing the stick in front of your drawing/painting area, rest the stick on the edge of your easel. You can then balance your drawing hand against the stick in front of you.

**TAPE AND VARIED CLIPS**

Tape and Varied Clips are utilized throughout the program to secure drawing surfaces to drawing boards, orient model sheets and other reference near your drawing area, and for other similar tasks. Be careful not to adhere tape or use clips on the image area of your drawing surface. Your intended drawing area should always remain clean and free of adverse marks.

**JOURNAL**

Another invaluable tool is the journal. We find that the artist’s journal can act as a vital mechanism to bring focus to your creative direction. While a great deal of this training program centers on building technical skills, we believe that the artists’ true potential is realized by an equal emphasis on the development of creative concepts. From jotting down simple ideas, to quick sketches, studies, or notes, the contents of the journal are completely up to the individual. It is often these very pages that slowly reveal a personal visual vocabulary which will eventually define a unique voice.

**BRUSHES AND STUMPS**

Brushes, Stumps, Tortillions and other blending materials: While there are many highly useful blending tools available to the artist, the Ani Art Academies Core training program makes very little or no reference to them within the main exercises. All of these materials may be explored early on, but it is highly recommended that such exploration is done within controlled exercises like the gradation blocks or even pressure scales. This exploration of additional blending materials should not substitute for any exercise or step within the program, rather it should be done as a supplementary endeavor. Again, be sure to experiment with any tools extensively and understand the effects of their use thoroughly before use in any artistic effort.

**DIVIDERS AND RULERS**

Dividers and Rulers are tools used for measuring throughout the program. It is advised to keep these tools nearby while immersed in the program as we place a great amount of emphasis on accuracy.
IF YOU HAVE COMPLETED:

- ORIGIN DESTINATION EXERCISE
- SHAPE REPLICATION EXERCISE
- PRESSURE SCALES EXERCISE
- GRADATION BLOCKS EXERCISE

PLEASE SKIP TO THE GRADATION PATTERNS EXERCISE FOUND ON PAGE 66.
VISUAL LANGUAGE I, II, III

DOT/LINE
SHAPE
VALUE
COLOR
FORM
FIRST MARKS

ORIGIN DESTINATION LINE EXERCISE

First Marks introduction taken from the Waichulis Curriculum Language of Drawing

Goal: Introduction to dot, line, and their confident use.

Materials: Paper, Charcoal Pencil, Kneaded Eraser, Sharpener, Easel, Tape

What you need to know:

Our program begins with the introduction of a few very basic marks. These initial, simple strokes will become the first pieces of a vast visual vocabulary. We will begin with the compressed charcoal pencil. Again, make sure you are using the softest grade charcoal possible. The sharpener should be utilized as needed.

Often at this point we are asked: “How should I hold the pencil?”. The obvious answer is whichever way offers you the greatest amount of control for the task at hand. However, that determination will probably require a little experimentation on your part.

The manner in which you grip the pencil will have an effect on your range of motion with that tool. Generally, if you hold the pencil near the point, as most people do when writing, you may have the tendency to use a more narrow range of motion. Holding the pencil in a more relaxed manner, further from the point, may promote a wider, broader range of motion. While both approaches will serve a useful purpose, large sweeping strokes may be more fluid with a wide range or looser grip, while shorter strokes may fare better for a narrow or tighter range.

The first two types of marks that we will explore are the dot and the line. The dot is simply a tiny round mark that represents a point in space. The line is a continuous mark that moves along a fixed direction. Both marks appear quite simple, but they are the basic building blocks that will be used to construct a vast world of visual information.

Many beginning artists start to draw with a quite common unconfident scratching or searching line as seen on the next page. This particular stroke method often demonstrates a great deal of uncertainty. Artists using this type of line work will often attempt to refine it by adding additional layers over the initial line with increasing pressure.
This method leaves us with lines that are adversely committed to the paper’s surface, removing much of our ability to alter or develop in later stages. Rather, a light pressure, confident approach to line work will leave you a great deal of freedom for easy correction and consequent development. The type of line that serves us best at this stage should be very deliberate from start to finish.

Our very first exercise will train you to execute just such a line. It is an exercise referred to as the Origin Destination Line Exercise. We begin by establishing a start, or origin dot and a finish, or destination dot. Proceed to then connect the dots with one confident straight line.

**DIRECTIONS:**

**STEP 1**

The first step in any drawing endeavor is to make sure our paper’s surface is clean and free of any imperfections. Any marring or damage can cause a wide array of problems as we move forward. If your paper has two sides of varying tooth, begin with the smoother side. We will use both sides of our paper, but a heavier tooth can often become a distraction at the onset of a new exercise. It is also a good idea to have your instructor (if applicable) check your easel and paper orientation to alleviate any last minute problems or oversights.

**STEP 2**

Begin the Origin Destination line exercise by establishing a grouping of dots that will act as ‘starts’ and ‘finishes’ for each line. Try to make the dots somewhat random so that the distances between the origins and destinations are varied.
STEP 3

With your dots in place, visualize the line you intend to make. Sometimes it is very helpful to even take a few practice strokes when visualizing, much like a golfer would in preparation for a swing. When you feel most confident, connect with the paper and execute the line. Be sure to use the lightest pressure you possibly can.

This exercise is not to be limited to line work in any one direction. As you continue on, be sure to execute the lines in multiple directions as shown on the right. The more versatility you have in creating confident lines, the more freedom you will enjoy throughout your drawing process.

ASSIGNMENT

Repeat the Origin Destination exercise until at least 2-3 full sheets of paper are filled (front and back). Maximize your space to get as much practice as possible. If applicable, your Instructor can guide you on how to make the most of your paper’s work area.

Each sheet of paper should be at least 20 x 20 inches. Be sure to use both sides. Many types of drawing paper that we use for charcoal will have two different sides: A smoother side and a rougher one. While these varying surfaces are designed to accommodate a wide variety of materials, it is good for you to work on both sides with the same material. Your experience adapting to the changing surfaces will enhance your versatility and ultimately increase your overall freedom within the drawing process.
dot¹
/dät/
noun
1. a small mark indicating a point in space.

line¹
/līn/
noun
1. a line in motion.
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.

You can also try using a drafting compass to establish your guiding circle!
The Curved Line

Curves 11th Grade
DOT/LINE
SHAPE
VALUE
COLOR
FORM
SHAPE REPLICATION

Shape Replication introduction taken from the Waichulis Curriculum
Language of Drawing

**Goal:** Use confident line to develop accurate shape.

**Materials:** Paper, Charcoal Pencil, Kneaded Eraser, Sharpener, Easel, Ruler, Tape, Shape Replication Models

**What you need to know:**
So far we have covered two of the most basic marks to be made – the dot and the line. While developing the ability to generate deliberate confident lines, we have uncovered a new element – shape. The addition of shape to our growing visual language adds a wealth of possibility to what we can communicate. Let’s take a quick look at how we can sketch out a vast array of shapes with a few simple line combinations. Notice how the lines are executed very confidently in a variety of directions. This is one of the reasons it was so important to vary direction during the Origin Destination Line exercise.

*Let’s take a moment to view some finished drawings and uncover the collection of lines and shapes that defined those drawings in their earliest stages.*
SHAPE REPLICATION

The groundwork for achieving the technical precision seen here lies in the assured use of dot, line and shape. Our next skill building exercise teaches you how to use confident line to develop accurate shape.

DIRECTIONS:

STEP 1

Gather the first set of Shape Replication models from your student manual. Mount the model sheets onto your drawing board to the left of your predetermined drawing area. The models are on a clear surface so we can use them as a corrective overlay later on to check your results. For now you can adhere a piece of drawing paper to the back to give them an opaque surface to rest on.

Make sure to have your instructor check your alignment of the model sheet to your drawing area (if applicable).

STEP 2

Using your ruler, lay out squares that align with the outer boundary boxes that house the shape models as seen in the example on the left. Remember to keep all of your line work, including these outer boundary boxes very light. The Shape models are illustrated darkly for purposes of clarity, but make an effort to get in the habit of using light pressure for all early line and shape work. Again, have your instructor check your boundary boxes before moving on (if applicable).
STEP 3

After your boundary boxes are established, replicate the shapes you observe as accurately as possible. Remember to visualize the line before you connect with the paper. Try and see the shape where you intend to illustrate it and then confidently make your marks. Don’t forget to keep your pressure light.

STEP 4

When you are finished, lift your clear Shape model sheet from the paper it is attached to and place it over your drawing. You should be able to see any inconsistencies immediately. If your initial lines were applied with adequately light pressure, you should be able to lift out errors with a kneaded eraser to make corrections.

As you progress with the series of Shape models, they will become increasingly complex. At this time you may choose to make use of a measuring device like the dividers. You can measure where certain shapes intersect with the boundary box and indicate it accordingly as a reference point.
SHAPE REPLICATION

The last few shape models are not housed by the square boundary box. This removal of a static reference shape will force you to adapt and seek out an alternative source for relative measurement. The dividers may prove very useful here.

Another aspect worth noting is that the later models in the series incorporate curved lines. Early Shape models consist of strictly angular lines and rectilinear shapes, but now we are faced with curved lines and curvilinear shapes. However, our approach does not change. Our early recording of these curved elements will still be drawn with straight, confident, angular line. In later layers, we will refine curved contours within the drawing process, but for now you can abbreviate the curves as seen in the example shown.

ASSIGNMENT

Continue with the Shape Replication exercise by copying the entire series included in the student manual. Repeat those you feel necessary until you are as accurate as possible. If applicable, follow your instructors guidance in regards to repeating any that he or she feels is beneficial to your development.

You may increase the challenge of this particular exercise by layering shape replication model sheets or sizing up your drawings of the Shape models while maintaining accurate proportion. Be sure to ask your instructor for more information on increasing the challenge in this manner.

Shape 11th Grade
Shape Replication Exercises

Shape 11th Grade
Shape Replication Exercises

Shape 11th Grade
Shape Replication Exercises

Shape 11th Grade
Shape Replication Exercises

Teacher Transparency

Shape 11th Grade
Shape Replication Exercises
Bargue Plates
Shape Replication Exercises
Bargue Plates

Bargue 11th Grade
Shape Replication Exercises
Bargue Plates
Shape Replication Exercises
Bargue Plates
DOT/LINE
SHAPE
VALUE
COLOR
FORM
Goal: Understanding the concept of value, pressure, and their confident use.


What you need to know:

We have now explored several basic elements within our program. We have connected simple dots with confident lines and configured a variety of lines into a wide array of shapes. Now, we will endeavor to uncover a new element by using line in a completely different way. By grouping certain linear strokes together we can form areas of relative lights or darks known as values, the level of light or dark can be controlled by the proximity of these strokes to each other, the pressure on the material applying the strokes, or any combination of the two. Lines placed closer together create a darker area as opposed to the lines spaced farther apart.

However, values do not need to be comprised of many separate linear strokes. Value can be applied with a singular continuous flow of static or dynamic pressure.

While lines and pressure can define value, pressure can also dictate the value of any individual mark. With pressure playing such an influential role on the marks we make, our next exercise will examine how we may best master it. One of the most valuable and challenging steps within this training program is The Pressure Scale exercise. The goal of this exercise is to develop control of, and sensitivity to, your drawing tools by performing seamless gradations of value in one continuous motion.

DIRECTIONS:

Using your softest charcoal pencil, execute a value scale from dark (at the top) to light (at the bottom) by means of pressure control. Beginning with maximum pressure to deliver the darkest dark, use a back and forth motion as you move down the page, reducing pressure as you go until your pencil leaves almost no mark. Your scale should be about 1" wide and 2 to 2.5" long. Be sure to follow all the rules listed below:
RULES TO FOLLOW:

1. Execute scale in a ceaseless motion from dark to light:

Carry out each pressure scale in a continuous motion. Once you begin the gradation, keep moving. Do not stop or linger in any one place. Continue your forward motion until the scale is completed.

2. Do not lift your pencil from the drawing surface until the scale is finished:

Once started, do not lift your pencil from the paper until the scale is finished. In your efforts to use lighter and lighter pressure, you may feel, or hear, yourself lifting the pencil away from the paper. This is quite normal, and with a little practice, eventually overcome.

3. Do not reverse direction or go back and fix any mistakes:

Initially you will probably notice a good deal of jumps, breaks, or skips in your scale gradations. You may be tempted to stop or change direction and fix these errors. Do not. Continue forward and move on to the next scale. With practice, you will find that these ‘errors’ occur with less frequency as your pressure control develops. Continuing on in spite of your mistakes will also help you to develop confidence in your drawing ability.

4. Maintain an even speed:

Early on you may find that tempo will vary. Your tempo may start fast and slow near the finish. Try to keep your pace even and let your pressure determine the values.

TROUBLESHOOTING

One of the reasons that this exercise is such a valuable training tool is that it offers an incredible amount of insight into your existing drawing dynamic. Let’s look at some of the problems encountered within the Pressure Scale exercise and see what they reveal about your approach.
Capping

By far, one of the most common initial issues, ‘capping’, occurs when there is a sudden jump from the initial heaviest pressure at the start of the scale. Instead of a gradual evolution of value changes, the scale appears to have a heavy cap at the top. Remember that even small changes in pressure will yield noticeable results in your application of value. Concentrate on even, continuous, subtle adjustments right from the start of each scale and you should alleviate this problem.

Tornado

The second most common problem is the ‘tornado’. Many people that have performed the pressure scale exercise are surprised to see how they associate ‘lighter pressure’ with ‘shorter strokes’. They are not the same thing. If anything, a constricting range of motion might actually promote a heavier pressure. This tornado effect illustrates another major factor that may be interfering with overall control when drawing. Consciously strive to keep your scales uniform and you should be able to overcome this effect.

Jumps

Big jumps within the pressure scale are usually quite obvious. They occur when values are skipped over, or omitted, from your gradation. The values that are missing, that lead to these jumps, may also be eluding you during your drawing process. Full value ranges allow us to add a wealth of dimension to our drawings. Eliminating the big jumps in your pressure scales ensures that you can produce a full range of values when you draw.

Stagnancy

Stagnant, or unchanging values within the pressure scale are another sign of our inability to demonstrate a full range of pressure with the drawing tool. Make sure that you are starting with the heaviest mark, finishing with the lightest, and moving through a full range of pressures in between. Not being able to execute a full value range within the pressure scale exercise illustrates that we are probably missing out on invaluable tools during our drawing procedure.
Lifting usually occurs toward the lightest pressure ranges of the scale; areas of disconnected lines and spaces signal the lift. You can address this problem by executing lengthy scales of the lightest pressure values you can, ensuring your pencil remains on the paper. Don’t worry about values being stagnant when addressing a lifting problem, instead, focus on the pencil staying in contact with the paper.

Working to alleviate all your pressure scale problems will greatly enhance your control during the drawing process. We depend on the many of the benefits garnered from the pressure scale exercise and know that you will too.

ASSIGNMENT

Continue to perform this stage of the Pressure Scale exercise until at least 2-3 full sheets of paper are filled (front and back). Maximize your space to get as much practice as possible. If applicable, your instructor can guide you on how to make the most of your paper’s work area.

Each of these early scales should be approximately 1” wide and range from 1 1/2 to 2 1/2” in length.

Remember that each sheet of paper should be at least 20x20”. Be sure to use both sides of your paper.
**Goal:** To adapt to new dynamics within the pressure scale exercise.

**Materials:** Paper, White Pastel Pencil, Kneaded Eraser, Sharpener, Ruler, Easel, Tape.

**What you need to know:**

We are now introducing the White Pastel Pencil to the Pressure Scales 1 exercise. To maximize our ability to adapt we will not only incorporate this new drawing tool, we will also change the overall direction from the previous pressure scale. For this stage, begin the scale with the lightest pressure and finish with the greatest as illustrated here.

When executing these first scales with the white pastel, take note of the characteristics that differ from the charcoal. Notice how the pastel reacts differently to your pressure and drawing surface. A strong familiarity with the behavior of each of your drawing tools will allow you to make more informed decisions during your drawing procedure.

Should you find a great amount of difficulty adjusting to the new material and the change in direction simultaneously, return to the earlier pressure scale direction until you become used to the dynamics of the pastel.

**DIRECTIONS:**

Using the White Charcoal Pencil, perform the Pressure Scale 1 exercise in reverse, from lightest pressure to heaviest pressure. Remember to follow all the same rules; to recap:

1. **Execute scale in a ceaseless motion from dark to light.**
2. **Do not lift your pencil from the drawing surface until the scale is finished.**
3. **Do not reverse direction or go back and fix any mistakes.**
4. **Maintain an even speed.**

**ASSIGNMENT**

Continue to perform this stage of the Pressure Scale exercise until at least 2-3 full sheets of paper are filled (front and back). Maximize your space to get as much practice as possible. If applicable, your instructor can guide you on how to make the most of your paper’s work area.

Each of these early scales should be approximately 1” wide and range from 1 1/2 to 2 1/2” in length. Remember that each sheet of paper should be at least 20x20”. Be sure to use both sides of your paper.
**Goal:** Confident execution of seamless gradations within a full value range.

**Materials:** Paper, White Pastel Pencil, Kneaded Eraser, Sharpener, Ruler, Easel, Tape.

**What you need to know:**

Now that we have experienced the dynamics of both the black charcoal and the white pastel we can combine them into the first phase of the Full Pressure Value Scale exercise. All of the main parameters from the previous pressure scale exercises are still in effect.

**STEP 1**

Begin with the basic charcoal pressure scale. Again, the size of this segment of the scale should be comparable to your earlier scale exercises.

**STEP 2**

When the charcoal portion of the scale is complete, allow yourself approximately 1/2” of space from the end of the charcoal taper and begin the white pastel pressure scale (Pressure Scale 2) as illustrated here. Remember that the white pastel pressure scale reverses direction from the charcoal.

**STEP 3**

As the white portion of the full scale is finished you should notice that you now have an entire value scale from dark black to the mid ground of your mid value paper to bright white. The entire scale should be approximately 1 inch wide and anywhere from 4 to 5 1/2” in length.

**ASSIGNMENT**

Continue to perform this phase of the Full Pressure Scale exercise until at least 2-3 full sheets of paper are filled (front and back). Maximize your space to get as much practice as possible. If applicable, your instructor can guide you on how to make the most of your paper’s work area. Remember that each sheet of paper should be at least 20x20”. Be sure to use both sides of your paper.
What you need to know:
The second phase of the Full Pressure Scale exercise continues to utilize a full range of value but introduces a guide that will narrow the focus of our application. This guide will prompt us to apply pressure more deliberately and apply value more confidently.

Goal: To further narrow the focus of the pressure scale to yield additional value control.


Directions:

STEP 1
Use a ruler to draw a 1x5” rectangle in the top left corner of your drawing surface.

STEP 2
Once this initial rectangle is established, divide it into five 1x1” squares by adding four horizontal lines at 1” intervals. This is the layout for our 5 step Value Scale Guide. If applicable, do not hesitate to speak with your instructor should you require any assistance with this step.

STEP 3
Using your charcoal pencil, proceed to evenly fill in the top square of the value scale guide with the darkest value you can achieve. Altering the direction of your strokes will tend to yield a more even application.

STEP 4
Our next step will be to apply our lightest value in the square at the bottom of the value scale with our white pastel. By applying the darkest and lightest values first, we establish reference points by which to judge the remaining values needed for the guide. This practice of establishing reference or ‘anchor’ values first foreshadows an effective drawing strategy to be covered later on.
**STEP 5**

With the center square left blank, the second and fourth squares are applied as half-steps between the darkest and lightest values and the center square as illustrated. This portion of the value scale actually provides a good experience in judging relative value. Be sure your instructor checks your value estimations for the second and fourth square before moving forward.

**STEP 6**

Now that the value scale is established, we will use it as a guide to focus our pressure scales. To the immediate right of the value scale, begin to execute a Full Pressure Scale. From the charcoal start at the top, the pressure scale’s value transitions or ‘gradations’ should align with the value scales roughly at the midway point of each square as shown. All of the parameters from the previous Pressure Scale exercises are still in effect.

**STEP 7**

Use 1 value scale as a guide for no more than 5 pressure scales. Once five pressure scales are aligned to one value scale you must create another value scale guide. This keeps your value scale guide from becoming too distant from your outermost pressure scales and also incorporates a repetition of precision line work and value estimation.

**ASSIGNMENT**

Continue to perform this phase of the Pressure Scale exercise until at least 2-3 full sheets of paper are filled (front and back). Maximize your space to get as much practice as possible. If applicable, your instructor can guide you on how to make the most of your paper’s work area. Make every effort to align each Full Pressure Scale exercise to the value scale guide. Use 1 value scale guide for no more than 5 pressure scales. Remember that each sheet of paper should be at least 20x20". Be sure to use both sides of your paper.
GRADATIONS

Our visual vocabulary continues to grow as we move forward with dots, lines, shapes, values and now rudimentary color in tow. We will now endeavor to bring all of these elements together with a series of controlled interactions known as Gradation Blocks.

Everything we see around us is defined by light. As light interacts with an object it reveals a collection of visual elements that allow us to perceive its three-dimensional quality. This quality, as defined by light, is 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.

Even at the earliest stages of our painting endeavors, our artists are considering how the many shapes, values and colors observed interact with each other. How do these elements relate to one another? How are the values and colors they observe changing in space? Are there slow and gradual transitions within these elements? -- or fast and abrupt jumps? A simple analysis of these observed elements can effectively reveal just how we can capture the forms that they define. It’s all in what you are looking for...

Let’s take a look at how different gradation ranges and rates of value and color can describe different aspects of form...

In the Trompe L’oeil painting titled “Paradise” by Anthony Waichulis, we see a varied array of value and color gradations describing a wide range of forms. Let’s take a look at the value/color evolution at the bottom of one of the subjects. Notice the somewhat abrupt transition in both color and value and consider what these transitions communicate. We understand this as the bottom of the subject meeting with the surface that it is resting on.

Compare this to the gradual shift from light to dark on the subject to the right. This specific transition communicates a slow, turning form. It is a far less abrupt change between contrasting values and colors is thus communicated accordingly. The manner in which these color and value transitions were recorded successfully describes the multitude of forms that define each subject throughout the work...
In Justin Balliet’s work, “There in the Silence”, we again see a multitude of varying gradations of color and value. Transitions are everywhere. Notice the fast transition that describes the contour of the subject. Compare that with the extremely gradual transition that defines the subtle turn of the arm. Again, different rates of change within visual elements will describe different aspects of form.

In the painting “Pears” by Timothy Jahn we can again observe an array of descriptive transitions. We can immediately notice the quick transition at the pear’s contour. In this short distance we can observe a fast jump in both value and color--a fast rate of change. In contrast, we can find a gradual, slower rate of change successfully describing the form of the subject to the right. Though careful observation and analysis we can understand how different value and color transitions may describe any visual aspect of our world and allow us to effectively communicate it.
Gradation Block exercise taken from the Waichulis Curriculum Language of Drawing

YOU MAY CHOOSE TO DRAW OR PAINT (SEE PAGE 49) THE FOLLOWING EXERCISE. REFER TO THE PAGE 52 FOR ASSIGNMENTS INSTRUCTIONS.

Goal: Replicate value gradations with specific value ranges and rates of change.

Materials: Paper, Charcoal Pencil, White Pastel Pencil, Kneaded Eraser, Sharpener, Ruler, Easel, Tape, Gradation Block Model Sheets

What you need to know:

Our first exercise to introduce the successful merging of black and white is the Gradation Block Exercise. Here we will explore our ability to replicate value gradations with specific value ranges and rates of change.

DIRECTIONS:

STEP 1

Choose one of the Gradation Block Models provided. Align the model sheet directly next to your drawing surface. If applicable, make sure your instructor checks your Model Sheet placement before moving forward.

STEP 2

Establish a 4x4" square that will house the gradation. Keeping the gradation within a predetermined shape prepares you for the way we will carefully add value to later line drawings. Remember to use your softest pencil and lightest pressure for all initial line work, even in these exercises.

STEP 3

Take a minute to study the ‘value range and rate of change’ of your chosen Gradation Block Model. How light or dark are the values within the Model? Is it a fast or slow transition from light to dark? How light or dark will the values of the gradation...
**STEP 4**

You can now establish any reference lines that may indicate a major value shift or separation. Shown here by the line labeled ‘A’, this line will serve to indicate a major light and shadow divide. Take special note of this line during this exercise as this labeled boundary will also serve to illustrate the way we use ‘anticipation’ to create some very successful gradations.

**STEP 5**

In the same manner that we begin to add value within any drawing endeavor, carefully mass in the darkest value with our softest Charcoal Pencil. Values must be built up carefully to avoid any adverse effects to the paper’s surface. Using very heavy pressure right off the bat will potentially burnish or flatten down a good deal of the paper’s tooth or surface texture. It is this tooth that allows us to build up multiple layers of charcoal if needed. In some cases, when we know that an area will truly be the darkest dark, we may use heavy pressure right from the start and establish it rather quickly, but for the purposes of these early exercises, we would like to leave you with the most room for change and this means preserving our paper’s tooth as much as possible.

As we continue to add more value and slowly increase pressure, our strokes continuously change direction. These variations will keep our values developing evenly and help to facilitate to a polished finish. As you will see, no blending tools, other than the pencils themselves, will be used to achieve our rendered result. Varied stroke direction and careful pressure control are all you really need to produce a pristine finish.

**STEP 6**

A key element for our successful merge of light and dark in this manner is anticipation. Our shadow value is intentionally tapered past the shadow line (still seen by the letter A). The tapering of charcoal will mix with the addition of white pastel to create our basic gradation. In this approach, slower, more gradual gradations, will have a longer tapering of early shadow values, while faster rate of change gradations may start shorter. Remember, a crucial component for tapered application is pressure control.
**STEP 7**

Now add the white pastel. Just like the charcoal, care is taken to build up the white slowly with a pressure that is not too heavy. Once again, this careful application minimizes damage to the tooth of the paper and gives us much more room to add subsequent layers. Do not forget to continue to vary the direction of your strokes for an even application.

**STEP 8**

Carefully taper the white down into the previously added charcoal. Take note of how the white pastel feels as it begins to mix with the charcoal. Reduce pressure near the shadow line and taper a slight bit past. Again, longer tapers in both directions will yield a slower gradation and vice-versa.

**STEP 9**

Start to alternate between the black charcoal and the white pastel. With each application, taper less and less until the major light and dark separation occurs at our predetermined shadow line.

**STEP 10**

Constantly correct the gradation’s jumps, skips or inconsistent patches of value with each alternating layer. Continued practice with controlling your pressure will make developing the gradation evenly much easier.

**STEP 11**

The level of ‘finish’ you are able to achieve will increase with your experience. It is important to note that the majority of our refinement layers are done with light pressure and large strokes. This is not a task to rush. Patient passes over your drawing with light pressure is an effective way to ensure a smooth final surface texture. With each gradation exercise you complete you will become more familiar with the feel of the layering material and find yourself adapting your pressure to control it more successfully.

The finished result is a successful gradation of light to dark that aligns with the Gradation Block model chosen at the beginning of the exercise.

REFER TO THE PAGE 52 FOR ASSIGNMENTS INSTRUCTIONS.
Goal: Understand how value gradations define form.

Materials: full basic palette, 16x20” exercise panel, a minimum of 2 filbert bristle brushes: sizes 4, 6 or 8. Any synthetic or sable brushes. Rounds, flats, or brights may be used if you prefer. Medium of choice, palette knife, paper towels, ruler, pencil, kneaded eraser. Gradation Block model sheets.

In preparation for the Gradation Block exercise, you may want to consider starting your palette with just black and white. To experiment with a color palette, please refer to the extra gradation block practice found on page 64.

DIRECTIONS:

STEP 1

Mount the model sheets onto your painting surface as close to your pre-determined painting area as possible. You can use a piece of low-tac tape or low pressure clip to carefully mount the model sheet. Make sure that your manner of mounting does not adversely affect your painting surface. Do not place any adhesive material on paint that is not thoroughly dry as it may damage paint film upon removal.
**STEP 2**

Next, establish a 4x4” graphite or charcoal square that will house the gradation. Keeping the gradation within a predetermined shape prepares you for the way we will carefully add value and color to later line drawings. Now take a minute to study the ‘value/color range and rate of change’ of your chosen Gradation Block model. How light or dark are the values within the model? Is it a fast or slow transition from light to dark? How light or dark will the values of the gradation block be? Considering these questions at the start will move you one step closer to confident execution of the exercise. You may establish any reference lines that may indicate a major value shift if deemed necessary.

**STEP 3**

With a clean Bristle brush and a conservative paint load, begin to lay in your initial dark values or colors in the appropriate section of the Gradation Block’s housing square. We will almost always begin with our dark range as it will reflect the basic procedure we will use for our main painting procedure.

As recommended previously, vary your brush strokes to promote an even application. Take care to maintain the shape of the scale by observing the rectangle’s boundaries.

**STEP 4**

Using light pressure, taper the dark towards the area where light will be later applied. Remember to extend the initial taper beyond the observed reference range in anticipation of the white to be subsequently added.
STEP 5

With your initial dark application and taper established you can begin to add your light. With a new bristle brush, establish your lightest region in the appropriate target area of the Gradation Block’s housing square. Just as with the initial dark application, taper the white as you approach the dark. You will notice that longer upstrokes will expand the area of paint that is mixing together. Use a ‘stroke length and pressure combination’ to carefully build a gradation of white into the dark.

STEP 6

Remember that it is important to be aware that the brush will pick up quite a bit of the paint or value relative to the area in which it was last used. From time to time it is extremely advantageous to wipe off your paintbrush to either continue blending, mixing, OR before you draw more clean paint from the palette. Be mindful of the paper towel icon on the work screen. It is illuminated each time a brush is wiped off.

Continue to develop the white into the previously established dark values. Notice the variations in pressure and stroke direction in the example shown.

As with the Pressure Scale exercise, you may return to your dark brush to help model, clean, edit or reinforce the darker range of the gradation as seen here.

STEP 7

When you feel that the gradation is as even as possible with the bristle brush—proceed to use your synthetic brush to further ‘clean’ the gradation. The synthetic brush will not move the paint as aggressively as the bristle and is ideal for subtle changes and refining efforts. Keep your synthetic brush clean by wiping often. Again, remember not to be too aggressive with the paper towel or you may cause damage to the brush.

Continue to develop the scale until the target gradation range, rate of change, and surface finish is achieved.
You may choose to draw or paint the following assignment. Copy at least one of the included Gradation Blocks. Be patient and make every effort to make each gradation as 'clean' as possible. You may increase the challenge of this particular exercise by increasing the size of the Gradation Block while maintaining the value range and rate of change seen within the appropriate Gradation Block model. If applicable, be sure to ask your instructor for more information on increasing the challenge in this manner.

NOTE:
If you seek additional practice, you may try your hand at the colored Gradation Blocks found on page 64.
DOT/LINE
SHAPE
VALUE
COLOR
FORM
Basic Color

ANALOGOUS COLORS
3-5 Neighbor Colors on the Color Wheel

COMPLEMENTARY COLORS
Opposites on the Color Wheel

ANALOGOUS COLORS
3-5 Neighbor Colors on the Color Wheel

SHADES = COLOR + BLACK

TINTS = COLOR + WHITE

TONES = COLOR + VALUE

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

SHADES = COLOR + BLACK

TINTS = COLOR + WHITE

TONES = COLOR + VALUE
Up to this point we have explored and/or reviewed several basic visual elements that will help develop a solid foundation for a Language of Painting. With a strong focus on the dynamics of paint application, we have connected simple dots with confident lines, configured lines into a wide array of shapes, and applied contrasting pigments in concert with varied pressures to yield seamless gradations of value. However, the previous chapter incorporated a new element that many find to be one of the most powerful tools for the creative endeavor – **color**.

The Painted Pressure Scale chapter, had us grow our palette from the sparse black and white that we have started with to include three colors: Red, Yellow and Blue. It is our hope that your experience generated a good number of questions from this inaugural color use. With this chapter we will take some first steps towards answering those questions. We will also revisit some of the color concepts you may already hold and introduce you to some of the more advanced methods for identifying, using and understanding this brilliant aspect of the artist’s salvo.

On any initial investigation into color we are faced with a robust vocabulary of terms and concepts that may leave us somewhat confused. Like the many other aspects of our curriculum, we make a strong effort to simplify all of this. We will endeavor to make use of what you may have learned in the past and offer options for you to integrate color in the manner you wish into your creative process efficiently and effectively.

The world of color is seemingly quite vast. There have been many brilliant individuals that have studied the phenomena over the centuries in an effort to understand how we experience color. Many different systems of organizing the visible spectrum of colors have unlocked much about the phenomena. These systems of organization, or models, have ranged from the extremely simple, to what may appear to some, to be infinitely complex. However, amidst all of the systems of color organization to date, one of the simplest diagrams most familiar to the vast majority is the Color Wheel. This two dimensional arrangement of colors has long been the introductory tool of anyone seeking an understanding of basic color. In essence, a Color Wheel is an abstract illustrative organization of color hues around a circle that intends to reveal relationships between different colors and/or groups of colors.

To begin to explore what this system of color organization has to offer we should first establish a few basic terms that will help us effectively navigate our journey. First, let’s establish a definition for Color.

**Color** is a property or phenomenon of light that may be described in terms of three attributes or ‘dimensions’: Hue, Value and Chroma. By understanding these attributes, we can understand more about the nature of color, identify colors more accurately, and communicate the phenomenon far more effectively.
Let's take a look at these color defining attributes:

The **HUE** is a specific visible wavelength of the electromagnetic spectrum. While each hue has a very specific wavelength, the names of hues are used in a very general manner. Hues are Red, Orange, Yellow, Green, Blue, etc...

In order to more accurately identify or communicate colors beyond these general names, we will have to incorporate additional attributes – **Value** and **Chroma**.

**Value**, as we have defined previously, is relative lightness or darkness. With the attribute of value added to hue, we can now take another step towards being more specific describing or communicating color. Instead of ‘red’, we can now say something as general as ‘light red’ or ‘dark red’, and while still very subjective, it moves us one step closer to being more specific. The color swatch shown has remained the same hue (blue) while only its value is being altered.

**Chroma** is the perceived intensity of a specific color. It is the manner in which the color appears to differ from a gray of the same value. Associated terms like ‘Saturation’ or ‘Intensity’ may be used to sometimes refer to Chroma in an extremely general way.

In the example shown we can see the difference between the two swatches that share the same hue and value, but differ in Chroma. When we remove all of the Chroma from both examples we can more easily see that they are the same value.

This allows us to introduce another term that you may hear throughout the program: **ACHROMATIC**. This term is used to define something that is without color or what many understand as strictly black and white.

As we raise the Chroma equally in both swatches we can now more easily see that they are both of the same Hue, Value, and Chroma.

The swatches are of one color, or **MONOCHROMATIC**. This is another term we may see or hear frequently throughout our discussions regarding color. Understand that with these three dimensions of color you can be as descriptive as you like. If we ask several people to imagine the color ‘green’, they may envision vastly different colors.

If we add value and alter our description to include ‘dark’ as in ‘dark green’, the colors imagined will most likely grow more similar. Now, if we make a reference to Chroma in that statement by saying, a dull, dark green – the colors imagined will grow even more similar.

However, somewhat vague references to degrees of Hue, Value and Chroma in this manner are still quite subjective and can lead to many inaccuracies and misunderstandings. You can incorporate far more accurate color models like the Munsell color system. The Munsell system is a color space model that also specifies colors based on three color dimensions: Hue, Value, and Chroma – however, Munsell’s system is based on rigorous color experimentation, granting it a firm scientific basis. Due to its accurate scientific nature, Munsell’s system has outlasted its contemporary color models. Every perceivable color can be described with specific notations of Hue, Value and Chroma to provide a much more invested understanding of color.
A few additional terms can be more easily understood by returning to our initial Color Wheel model.

ANALOGOUS COLORS are groups of colors that are adjacent to each other on the color wheel.

COMPLEMENTARY COLORS are pairs of colors that are of “opposite” hue in some color model. In theory, two colors are called complementary if, when mixed in the proper proportion, they produce a neutral color (grey or black).

Let’s look a little closer at this familiar wheel, which is actually known as the RYB model Color Wheel. It is based on a model developed by Johannes Itten, a Swiss expressionist painter, designer, teacher, writer and theorist. This particular wheel contains not only an outer circle of hues, but an inner hexagon that helps to explain some of the color relationships. The RYB model contains a historical set of primary colors. It is a model primarily used in art and art education, particularly painting. This particular model predates modern scientific color theory.

Looking to this RYB model, we can see the three PRIMARY COLORS revealed: RED, YELLOW, AND BLUE. These three colors are equidistant from each other on the wheel. However there are many colors that are equidistant from each other on this particular wheel. What makes these three unique in some way? What makes the Primary colors in this model unique is that they cannot be made in any practical manner from mixing other colors. Instead, the Primary colors are the source components of other colors.

Using the Primary Red, Yellow, and Blue found in this model we will be able to mix the gamut of additional colors that are found within this model’s wheel. As we view the full color wheel model we can see that the center triangle within the central hexagon contains all three primary colors. Each point of the central triangle points to one of the primaries on the outer color circle. Looking back to the pressure scale exercise you can now understand why we chose Red, Yellow, and Blue as the first colors with which to populate the palette.
But how do we get to the other colors from the Primaries?
By combining different Primaries together.

If we combine two primaries from this model we will reveal a second tier of colors that are known as **SECONDARY COLORS**. The Secondary colors that are created from mixtures of Primary colors and are: **GREEN, ORANGE, AND PURPLE**. Initially, you may notice that these Secondary colors are slightly more ‘dull’ than the Primaries. They seem to have a little less Chroma than the higher tier Primaries.

It is important to understand that every time you mix any two colors together you will experience a drop in Chroma. The severity of the drop in Chroma will depend on the colors that are combined. In addition, the more colors that are mixed together, the greater the decrease in intensity observed.

**MIXING RED AND YELLOW WILL YIELD ORANGE.**

**COMBINING RED AND BLUE WILL CREATE PURPLE.**

**AND THE COMBINATION OF YELLOW AND BLUE – GREEN.**

Returning to the entire Color Wheel we can see that the outer section of the inner hexagon is populated with the three Secondary Colors of this RYB model. Along the base of each outer hexagon Secondary triangles are the two component Primaries that generate it. As with the inner Primary triangle, the points of the outer Secondary triangles point to the Secondary colors along the outer circle.

The next tier is yielded from the combination of one Secondary and one Primary color. This combination will reveal a group of colors known as **INTERMEDIATES**. This group of 6 Intermediate colors consists of Yellow-Orange, Red-Orange, Red-Purple, Blue-Purple, Blue-Green, and Yellow-Green. The names of each color reveal the Intermediate’s combined components. The intermediates can be located on this model between each outer point of the inner Hexagon within the outer Color circle.

What lies beyond these colors as understood via the RYB color model? A series of increasingly neutralized (lower Chroma) colors referred to as **TERTIARIES, QUATERNARIES, AND NEUTRALS**. We can see lower Chroma Tertiaries swatches being formed by combining two Secondary colors. Beyond this will be a series of increasing lower Chroma colors that approach a family of greys. Mixing Complimentary or ‘opposite’ colors from this model will allow you to approach low Chroma colors and neutrals very quickly as shown.
Let’s review this familiar RYB model of color without the circle and hexagon and look at it in as a pattern of circular swatches to include a representation of Tertiary colors and Neutrals.

Remember that this model and manner of looking at color is an extremely simplified way to explore basic color. It is the manner in which color is most often understood. While this RYB model predates modern day color science, there are some extremely robust models, or systems of organization, for defining extremely accurate color. We strongly encourage you to research the potential of these color systems to see how they can contribute to your understanding of color and the impact it can offer to your work.

The Munsell color system

Take your mastery of color to the next level with Albert Munsell's simple and scientific approach.

At the beginning of the 20th century, painter and color scientist Albert Munsell decided to tackle what he saw as two significant problems with the way artists conceptualized, used and described color: the vagueness and imprecision of color descriptions ("bright red", "cool green", etc), and the inaccurate modeling of color space via the traditional flat color wheel. He created a 3-dimensional model that accurately represents color space in nature, and also provides a simple notation system for accurately describing any visible color.
Hue, Value and Chroma

Every visible color has three attributes, simply defined as:

**Hue**: the "name" of the color, such as red, blue, yellow, green, etc.

**Value**: the lightness or darkness of the color

**Chroma**: the intensity of the color

There are more precise scientific definitions of these terms, of course, but these suffice for an introduction. *Every color* can be precisely described as a combination of these three attributes.

Furthermore, the three attributes of hue, value and chroma can be used to map every color into the 3-dimensional color space shown above. Value is shown on the vertical axis (black on the bottom, grays in the middle, white on top); chroma extends outward from the grayscale (or "neutral") core; and hue is the color’s position on the outer ring.

One of Munsell’s great achievements was creating a color space model and a color atlas where steps in every direction are the same size, so colors can be related to each other by hue, by value or by chroma independently.

He also created a base-10 system for naming colors, using five primary hues (red, yellow, green, blue and purple) and five secondary, or intermediate, hues (yellow-red, green-yellow, blue-green, purple-blue, and red-purple), and subdividing each hue into 10 steps. Value also goes from 0 (pure black) to 10 (pure white), and chroma starts at 0 for...
There are more precise scientific definitions of these terms, of course, but these suffice for an introduction. Every color can be precisely described as a combination of these three attributes.

Furthermore, the three attributes of hue, value and chroma can be used to map every color into the 3-dimensional color space shown above. Value is shown on the vertical axis (black on the bottom, grays in the middle, white on top); chroma extends outward from the grayscale (or "neutral") core; and hue is the color's position on the outer ring.

One of Munsell's great achievements was creating a color space model and a color atlas where steps in every direction are the same size, so colors can be related to each other by hue, by value or by chroma independently.

He also created a base-10 system for naming colors, using five primary hues (red, yellow, green, blue and purple) and five secondary, or intermediate, hues (yellow-red, green-yellow, blue-green, purple-blue, and red-purple), and subdividing each hue into 10 steps. Value also goes from 0 (pure black) to 10 (pure white), and chroma starts at 0 for gray or neutral, and increases as it moves away from the neutral core. There is no theoretical outer limit to chroma, but it depends on the pigments available for paint and other materials.

**Naming colors**

Rather than color names like "dark red" or "cool green", a Munsell color name describes its hue, value and chroma, in that order. This is an example of the breakdown of the color "10R 7/6," which is a slightly orange red of light value and medium chroma:

![10R 7/6: a sample Munsell color](image)

While a color name like "dark red" is open to interpretation - indeed, it's extremely unlikely that any two people would imagine the same exact color from a description like that - a color name like "10R 7/6" is both precise and descriptive. “10R” is the hue, meaning a red which leans toward orange rather than purple; 7 is the value, which is two steps above middle gray; 6 is the chroma, which is relatively strong in nature.

(As it happens, 10R 7/6 is a color similar to the ruddy areas of caucasian skin, such as knuckles and flushed cheeks.)
Using Munsell

Using the Munsell system for color offers some advantages over other color models and vocabularies:

1. Colors can be specified simply and accurately.
2. Colors can be communicated with no misunderstandings.
3. Colors can be measured and reproduced with confidence.
4. Color comprehension can be greatly enhanced by understanding and controlling the separate attributes of hue, value and chroma.

The Munsell system is sometimes misunderstood to be a painting method; it is not. It is a color ordering and notation system that is designed to be simple, clear, and accurate, and to be used by artists, though it is also used in the sciences and engineering.

The Munsell Color company, a division of the X-Rite Corporation, manufactures Munsell products such as the Munsell Book of Color, an atlas of color chips, spectrophotometers for measuring color, and related materials for teaching, learning and using Munsell. Visit the Munsell Color company website at:

http://munsell.com

To learn more

Visit The Classical Lab to learn more about using the Munsell color system in painting and the fine arts.

http://classicallab.com

Steve Linberg
CTO
The Classical Lab, LLC
steve@classicallab.com
If you seek to practice with color, you may try your hand at these colored Gradation Blocks.
DOT/LINE
SHAPE
VALUE
COLOR
FORM
Let’s take a moment to review many of the concepts and skill building exercises we have explored thus far. With color and value added to our salvo, a challenging series of gradations exercises put our developing paint control and basic color comprehension to the test. The Gradation Block series foreshadowed the merging of shape, value and color to yield a powerful element: Form.

The next step in The Ani Art Academies’ Language of Painting program builds upon the challenge of the Gradation Block exercise by combining it with the earlier challenges of Shape Replication. As experienced in the Language of Drawing, The Gradation Pattern exercise challenges the artist to replicate a collection of interlocking shapes populated with varying gradations to yield patterns of form.

The Language of Painting takes this exercise one step further by incorporating color. This new variable will take your developing skill sets far beyond the achromatic challenges faced in the Language of Drawing.

---

**GRADATION PATTERNS — DRAWING**

Gradation Patterns exercise taken from the Waichulis Curriculum Language of Drawing

**YOU MAY CHOOSE TO DRAW OR PAINT (SEE PAGE 69) THE FOLLOWING EXERCISE. REFER TO THE PAGE 75 FOR ASSIGNMENTS INSTRUCTIONS.**

**Goal:** The successful marriage of shape and value

**Materials:** Paper, Charcoal Pencil, White Pastel Pencil, Kneaded Eraser, Sharpener, Ruler, Easel, Tape, Ruler, Gradation Pattern Model

**What you need to know:**

This exercise increases the difficulty of our last exercise, the Gradation Block. Instead of the simple squares of the Gradation Block, we add in the earlier challenge of Shape Replication. Before you is a collection of interlocking shapes populated by value gradations. These various shapes and values band together to yield forms that will ultimately allow us to capture the world we see.
**DIRECTIONS:**

**STEP 1**

The Gradation Pattern exercise contains a series of Gradation Pattern Models of increasing difficulty. Choose a provided Model and align it next to your drawing surface. If applicable, make sure your instructor checks your Model Sheet placement before moving forward.

![Gradation Pattern Models](image)

**STEP 2**

As with both the Shape Replication and the Gradation Block Exercises, establish an outer boundary block. For this particular challenge we will be starting with a 5x4" rectangle. Again, as performed in earlier exercises, you can add any reference lines to signal major changes in value.

![Gradation Block Exercise](image)

**STEP 3**

Begin to apply value in the same manner as the initial Gradation Block Exercise. You may notice that some of the dark values contain subtle hints of light as in the example above. We approach such scenarios by continuing to establish our simplified pattern of dark and adding the subtle light values later in subsequent layers.

Be mindful of the pressure you apply and its impact on the tooth of the paper. Remember to vary your stroke direction to ensure an even application of value.

![Gradation Block Exercise](image)
STEP 4

Just as in the Gradation Block exercise, taper your initial dark values past boundary lines in anticipation of the addition of white. Remember that slower, more gradual gradations will have a longer tapering of early shadow values, while faster gradations may start shorter. In this example you will notice that the top dark edge is tapered further than the bottom as its gradation is more gradual.

STEP 5

After initial dark values and tapers are established, the white pastel is added. Once again, care is taken to build up the white slowly with a pressure that is not too heavy. Strokes remain varied to ensure an even application. Continue to develop values in the same manner as the Gradation Block exercise.

STEP 6

Here you can see the earlier mentioned subtle values within the dark area being added. Pay close attention to every value transition throughout the Gradation Pattern exercise. Your efforts to capture these subtle values will greatly enhance your ability to illustrate believable form.

STEP 7

Continue to refine your Gradation Pattern model drawing. Remember to maintain your value range and rates of change throughout.

STEP 8

When finished, feel free to carefully use your kneaded eraser to dab up any excess charcoal or pastel outside of your boundary box to keep your exercise neat and presentable.
Gradation Patterns exercise taken from the Waichulis Curriculum Language of Painting

YOU MAY CHOOSE TO DRAW (SEE PAGE 66) OR PAINT THE FOLLOWING EXERCISE. REFER TO THE PAGE 75 FOR ASSIGNMENTS INSTRUCTIONS.

Goal: Understand how value gradations define form.

Materials: full basic palette, 16x20" exercise panel, a minimum of 2 filbert bristle brushes: sizes 4, 6 or 8. Any synthetic or sable brushes. Rounds, flats, or brights may be used if you prefer. Medium of choice, palette knife, paper towels, ruler, pencil, kneaded eraser, Gradation Patterns model sheets.

DIRECTIONS:

**STEP 1**

Mount the model sheets onto your painting surface as close to your pre-determined painting area as possible. You can use a piece of low-tac tape or low pressure clip to carefully mount the model sheet.

Make sure that your manner of mounting does not adversely affect your painting surface. Do not place any adhesive material on paint that is not thoroughly dry as it may damage paint film upon removal.

If your brush count is low, take care to remove as much color as possible from an active brush before switching color. Color contamination will adversely affect the results of this exercise.

**STEP 2**

To begin, establish a 5x4" graphite or charcoal square that will house the Gradation Pattern. Take a minute to study the shapes and value/color ranges and rates of change of your Gradation Pattern model. You may establish any shape or gradation boundary lines deemed necessary. Keep these initial lines as light as absolutely possible.
**STEP 3**

With a clean Bristle brush and a conservative paint load, begin to lay in your initial values or colors in the appropriate section of the Gradation Pattern’s housing rectangle. We will almost always begin with our dark range as it continues to reflect our standard drawing and painting process. Brushstrokes can be varied to promote an even application. While we have started with the basic ‘airplane’ brushstroke dynamic, you will notice that some scrubbing will be used to spread out paint more efficiently from time to time. Do not be afraid to experiment with different brushstrokes in an effort to better manipulate the paint. Take care to maintain the accurate shapes of the Pattern model.

**STEP 4**

Using light pressure, taper the dark to towards the area where light will be later applied. Remember to extend the initial taper beyond the observed reference range in anticipation of the light to be subsequently added. The experiences of the earlier Gradation Block exercise should offer you some guidance as to the ideal length of application tapers.

**STEP 5**

With your initial dark application and taper established you can begin to add your light. With a new bristle brush, establish your lightest region in the appropriate target area of the Gradation Pattern’s housing rectangle. Just as with the initial dark application, taper the light as you approach the dark. Remember that longer strokes will expand the area of paint that is mixing together. Use a stroke length and pressure combination to carefully develop the desired gradation. As we have mentioned in previous exercises---it is appropriate to make a great deal of mistakes here. Strokes that are too long, pressures that are too light or too heavy, etc... are all aspects of a painting dynamic that are best experienced rather than explained.
Remember that it is important to be aware that the brush will pick up quite a bit of paint from the area in which it was last used. From time to time it is extremely advantageous to wipe off your paintbrush to either continue blending, mixing, OR before you draw more clean paint from the palette.

Be mindful of the paper towel icon on the work screen. It is illuminated each time a brush is wiped off. Be sure to wipe the brush in the direction that moves away from the ferrule. The more debris that is lodged in the brush--the more contaminants that will wind up on your painting surface.

**STEP 6**

Continue to develop the light into the previously established dark values. Notice the variations in pressure and stroke direction in the example shown.

You may return to your dark range brushes to help model, clean, edit or reinforce the darker range of the gradations as seen here.

**STEP 7**

When you feel that the gradation is as even as possible with the bristle brush – proceed to use your synthetic brush to further ‘clean’ the gradation. The synthetic brush will not move the paint as aggressively as the bristle and is ideal for subtle changes and refining efforts. Keep your synthetic brush clean by wiping often. Again, remember not to be too aggressive with the paper towel or you may cause damage to the brush.

Continue to develop the Gradation Pattern until the target shapes, gradation ranges, rates of change, and surface finish is achieved.
The color Gradation Patterns are handled in the same manner as the previous achromatic ones. However, we recommend taking a moment to analyze the Gradation Pattern model reference carefully.

Our overall strategy remains the same regardless of the incorporation of color: apply the key component anchors in their respective areas and taper each in the appropriate direction. We will start as we have been with the dark and slowly develop toward the light.

It may be advisable to add a few more brushes to your available salvo as the use of color will require additional brushes to minimize color contamination. Even with additional brushes, be sure to wipe excess paint from brushes as often as necessary. Notice how often certain brushes are wiped off throughout the color Gradation Pattern evolution.

Here we see the artist use a Mahl stick as an edge guide. This practice will help to ensure very straight and sharp lines when necessary.

You will often find that Chroma levels will alter as does the value of a form. Chroma will generally raise as it nears light and lower as it nears shadow.

It is important to understand that white will almost always lower the Chroma of a color as well. Therefore, it is important to consider this effect before adding white in an effort to lighten color.
As you continue to utilize more color with each exercise, you may begin to notice some obvious differences between paints. The characteristics of the paint can be as varied as the colors themselves. From opacity, to pigment strength, to drying time, the unique characteristics of each paint should be considered when formulating an approach or strategy for your process. Let’s look at a few of the characteristics that you may have encountered up to this point.

There are several colors that you may have noticed do not seem to yield a consistent opaque film in the first layer regardless of how much you apply.

Occasionally an artist may tend to add another color to a thinner paint to build some body to it. While this can definitely increase opacity, the actual mixture can adversely affect the Hue, Value, and Chroma of the color you are trying to develop.

Thin colors can be developed into an opaque film if you are patient. Subsequent layers added to already dry applications can easily increase opacity (figure 1). Be aware that there will still be changes to the properties of the color as you move from the appearance of the initial transparent application BUT you will maintain the Chroma of the color applied.

Some artists will add an analogous, more opaque color to a thin one for initial applications and will then add one of more subsequent layers of the pure thin color over the initial application when dry. This may work in many circumstances to yield the desired opacity while maintaining a high Chroma finish.

First layer mixtures can also be beneficial in an effort to coordinate your drying times. You may have noticed that some colors take far longer than others to begin to cure, or dry. Some colors like Alizarin Crimson and Ultramarine blue may still be wet to the touch for days while some Umbers may seem dry in just a few short hours. Some artists have been known to combine some paints to normalize drying times, but again, you must understand the impact to the properties of the color itself and anticipate accordingly. These are all factors to be considered at the onset of an endeavor.

One very peculiar behavior of oil paint that you may have noticed is the change in appearance that seems to take place when a paint film is curing (figure 2). The paint may appear to lighten significantly, resulting in a chalky surface—or become blotchy with some areas appearing more matte than others.
This is often far more evident in darker colors. This effect is due to the oil in the paint being drawn in to the absorbent surface that you are painting on.

This effect is almost always eradicated when the painting is varnished so do not be alarmed if a drying painting begins to appear this way. However, when sinking occurs on a painting that is still in progress, certain steps have to be taken to ensure it does not interfere with your process.

Let’s look at the color Gradation Pattern exercise shown here. Evidence of the oil sinking is quite evident (figure 3). Some areas of the red spherical form ended up drying faster than anticipated while the Gradation Pattern was developing so a few areas were left a bit spottier then desired. If brushwork would have resumed in the curing area we would have seen more paint being pulled off then added. This removal of curing films would have destroyed much of the gradations we were aiming to establish. If you notice this happening when painting, stop working on the drying area and wait for the layer to completely dry before continuing.

To remedy an already dry inconsistent paint surface due to erroneous paint removal or to prep a dry inconveniently toothed area for another paint layer you can carefully sand the paint surface to a desired smoothness.

Make every effort to use only very high grit sandpaper to avoid scratching the previous paint layer. If you only have access to sandpaper under 800 grit, you can rub two pieces of sandpaper together to minimize some of the abrasive material.

To sand the surface, first verify that the surface is completely dry to the touch.

Next, with extremely light pressure and a gentle circular motion, begin to sand the target area. If the area seems to pull or be pliable in any way immediately stop as the paint film is not yet dry. Wait another 24 to 48 hours before any reattempt to sand.

If you notice the paint film becoming scratched you should stop and acquire less abrasive sandpaper. If the paint is thoroughly dry it should smooth out evenly. Smooth the area down to a desired finish and then gently wipe with a clean low lint or lint-free paper towel.

More often than not, no sanding is required. However, in order to make second layer corrections or augments to this Gradation Pattern we will have to address the influence of the sunken paint. The sinking in alters color and value in such a way that subsequent decisions based on what is currently observable would lead to a great deal of consistency issues. We will need to restore the appearance of the paint before we can make decisions based on accurate information.
The process of restoring sunken paint to its original appearance is known as 'oiling out'. This process consists of applying an activating material like drying oil or a particular painting medium to a sunken paint film in an effort to restore its original appearance. While there are several different approaches to oiling out a painting, we will look to a very conservative or economical approach.

Just as with the sanding process, make sure that the area that is to be reworked is completely dry. You will see here that we first gently test the area to be worked with a light colored synthetic brush to see if there is any evidence of wet color (figure 4). If there are no signs of wet paint we check to see if it the paint film is dry to the touch. Our main area of focus is the transition of midtones into shadow on the red spherical form (figure 5). With a synthetic brush and light touch, we add an extremely conservative amount of painting medium to the target area along with the immediate surrounding areas to ensure we are making accurate value and color relationship judgments moving forward.

Add just enough medium to see the original appearance of the paint return. Do not add any more material than is absolutely necessary in an effort to be as conservative as possible. With the painting surface prepped, we can begin to add conservative amounts of paint where needed. Since the midtones-to-shadow gradation of the red spherical form is our focus, we will start there with our typical process of dark taper to light.

You will notice that second layers of paint and beyond tend to be easier to control as the medium allows the paint to flow smoother while not impeding coverage as it would in a first layer. We can also see a few other key points augmented and tidied up like the specular highlight on the red spherical form.

The second layer concludes as does the first--with the achieving of the desired finish. Know that as this new second layer dries it may again show signs of sinking. Unless you need to rework an area of the painting, this 'sinking-in' is fine and should be completely eradicated when the painting is varnished. On your own time, you may set aside one or two of your Gradation Pattern exercises to explore varnish upon.

ASSIGNMENT

You may choose to draw or paint the following exercise. Copy at least two Gradation Patterns. Be patient and make every effort to make each gradation as 'clean' as possible.
Goal: To further explore, through analysis and repetition, the manner in which light describes spherical forms.

Materials: Paper, Charcoal Pencil, White Pastel Pencil, Kneaded Eraser, Sharpener, Easel, Tape, Sphere

DIRECTIONS:

Place a sphere on a surface, and illuminate it from the top left with a primary light source. Slowly and carefully move the light from its position and see how the sphere reacts. Notice how the play of values describes this form to us.

Return your primary light source to the top, left, front so that your sphere is illuminated as shown. This primary light source orientation is a standard position we will set by which we will explore the nature of the basic forms. Maintaining a series of standard variables will allow us to focus more on the unique nature of each form.

In an effort to understand how the values we observe on this form are created, we will start with the element that is creating these values in the first place—the light. If we separated, or bisected, the sphere along the direction of the light, we would get two identical halves. Let’s refer to this light direction separation as axis line A. Placing an opposing, perpendicular axis, B, to A would create an “X” grid to help chart out how some of these values take shape, and ultimately reveal this form to us.

To ensure that our “X” grid is accurate, lines A and B should be oriented at a 90 degree angle.

If we added two additional lines parallel to B, equidistant from both B and the point at which A pierces the outer circle, we can divide the sphere into 4 sections perpendicular to the direction of light. This grid reveals a light to dark ratio of 3:1 that we will maintain as another standard to study the basic forms.

We see that the shadow shape does not follow the straight boundary line of our quadrants completely. Rather, it follows the surface of the form itself. If we create a line from the 2 points where line B pierces the outer circle and where the shadow quadrant meets line A, we can see the curved light and shadow separation.
Incidentally, the point at which the first light quadrant boundary intersects with line A appears to be the brightest point on the sphere in this particular lighting scenario.

While all of this may sound a little complicated, this analysis allows us to build a model of set variables by which to further understand the manner in which light defines the form, we can use these variables in a sphere schematic for repetition-based exercises that will develop the skill-sets to replicate these three dimensional forms at will.

**STEP 1**

For now, we will simplify the sphere’s value structure to focus on the main light dark separation similar to the Gradation Block exercise. Let’s draw a version of the sphere with just this main light and dark separation, based on what we observed and general parameters explored with the X grid. Begin with an initial angular depiction of a circle around 2 to 3 inches in diameter.

**STEP 2**

Proceed to very faintly indicate the primary light source direction, A and the opposing axis B, to plot out the location of the values that will describe the sphere. You do not need to plot out all of the quadrant lines if you can simply visualize them. However, add them if you feel it is necessary. Remember to keep them extremely light so that they can be removed very easily.

As with the other Gradation exercises indicate the main light dark separation. Remember that it is not a straight line, rather it follows the form of the Sphere, curving from the locations at which line B pierced the circle, down to the shadow quadrant boundary line.

With this layout, or schematic, of our simplified sphere, we will add value as we have in the other value gradation based exercises. As to our value range and rate of change, we will set the exercise parameters for a full value range, bright white to rich black, and a somewhat short main transition around the indicated central light/dark separation line. Rather than estimate, you can use the sphere we just examined as reference. Consider removing any remnants of the X grid as it may have adverse effects on your value application and gradation.

**STEP 3**

Proceed just as you would with the initial Gradation Block exercise. This is simply a repeat of that same exercise, slightly altered to accommodate a circular template.

Again, as our main transition will be somewhat short, it may only require a short initial taper of dark.
FORM PRIMATIVES – THE SPHERE

Begin to add your white in the area that we had identified as the brightest when viewing the sphere in this orientation. This will serve as a main light anchor similar to other value anchors you may have set in earlier exercises.

As always, vary your stroke direction to ensure an even transition. We are not overly concerned about maintaining a very pristine edge or outline at this point. In fact, we prefer to keep all our edges soft in the beginning while still maintaining a general accuracy to the overall shape. In an effort to maintain the freedom to add surrounding values or alter shape, we slightly ‘taper’ most edges. Always keep in mind that it is usually easier to sharpen an edge later than it is to soften one.

This simplified version of a sphere, based on a given set of parameters, will make up the first phase of our Sphere Build repetition exercises. Your goal here will be to accurately replicate this configuration of shapes and values consistently.

THE SPHERE — DRAWING

Goal: Introduction to Chiaroscuro. To further explore, through analysis and repetition, the manner in which light describes spherical forms.

What you need to know:

Now that we have established a simplified sphere schematic for exercise purposes, we return to our sphere model to take a deeper look at the values that reveal its form to us. It is here that we would like to introduce a new term, Chiaroscuro. An Italian word meaning light and dark, Chiaroscuro is a term used to describe a system of using contrasting lights and darks to achieve a sense of volume in modeling three-dimensional objects.

We will identify and define seven common values that describe form. These will become our seven basic values of Chiaroscuro. Becoming familiar with these values will not only offer useful insight into how we perceive form, but will also create an invaluable lexicon for referencing specific areas of your subject or drawing.

We begin with the lightest value describing the forms we observe: the Highlight. This light value is the area of strongest illumination on an object, reflecting the most light. In the orientation of our sphere model, the highlight is generated by our primary light source and occurs along the light A axis as indicated in the previous exercise. Depending on the reflective qualities of an object, highlights may appear to behave differently. Diffused highlights are reflected in a broad range of directions whereas specular highlights are more narrowly focused. We will investigate these particulars of the highlight a little later on.
The second value we will identify will be our **Middle-Tone**. This can be described as the generalized illuminated area of an object. The Middle-Tone will contain the highlight, and value variations described as Half-Tones.

Our third value is **Reflected Light**. These values can be located just about anywhere on an object and are created by light emanating from a Secondary Light Source. In our sphere model, we see the presence of Reflected light strongest in the shadow area. Light from the primary light source bounces off the sphere’s resting surface and reflects back onto the sphere; this resting surface serves as a secondary light source.

Next, as we have identified a general light area, we must also identify a general shadow area. We will refer to this area as the **Attached Shadow**. The Attached Shadow is the general area of the object that is least effected by the primary light source.

---

**FORM PRIMATIVES – THE SPHERE**

**STEP 4**

The sixth value to be identified is referred to as the **Attached Shadow Accent**. This is usually the darkest area of the attached shadow and is the area least affected by both primary and secondary light sources.

And last, the **Cast Shadow Accent** is the darkest region of the Cast Shadow. It can almost always be found nearest the area where the object casting the shadow and the receiving surface meet.

If we revisit the first phase of our Sphere Build repetition exercise, designed from our X grid schematic we see that many of our common values of **Chiaroscuro** are present. Our initial sphere exercise contains a diffused highlight and Middle-Tone. Our Attached Shadow is present. However, we will need to augment our sphere build example to give rise to the remaining values, and also, make others much more noticeable.

Just as we have added subtle light values into previous shadow areas, our addition of a subtle reflected light here brings more of our object to life through the use of **Chiaroscuro**. To get an idea of how light or how dark to make your representation of the reflected light you may reference your actual sphere model. Continuing to investigate our sphere build for more values of **Chiaroscuro**, we can now easily identity our reflected light. Our attached shadow is present and accounted for.

However, as our sphere build does not include a resting surface or other object able to receive a Cast Shadow, one cannot be included at this time. Our Attached Shadow accent, while technically presents prior to the addition of the **Reflected Light**, is now much more easily located and identified.

As our Cast Shadow cannot be represented at this time, nor can our Cast Shadow accent, both of these values will be incorporated a little later on.

This newly augmented version of the sphere will make up the second phase of the Sphere Build repetition exercises. Your goal here will be to accurately replicate the Sphere model, with these additional values of **Chiaroscuro**, consistently.
**FORM PRIMATIVES**

**THE SPHERE — PAINTING**

**YOU MAY CHOOSE TO DRAW OR PAINT THE FOLLOWING EXERCISE.**

**Goal:** Explore through analysis and repetition, the manner in which light describes spherical forms.

**Materials:** full basic palette, 16x20” exercise panel, a minimum of 2 filbert bristle brushes: sizes 4, 6 or 8. Any synthetic or sable brushes. Rounds, flats, or brights may be used if you prefer. Medium of choice, palette knife, paper towels, ruler, pencil, kneaded eraser, Sphere

**REFER TO THE “SPHERE DRAWING” FOUND ON PAGE 78 FOR INSTRUCTION ON HOW TO OBSERVE THE FORM OF A SPHERE.**

**DIRECTIONS:**

**STEP 1**

Begin with an initial angular depiction of a circle around 2 to 3 inches in diameter. You can faintly indicate the primary light source direction, A and the opposing axis B, to plot out the location of the values that will describe the sphere if you wish. However, you do not need to plot out any elements of the X-grid if you can simply visualize them. Remember to keep any schematic marks extremely light so they have as little influence on any subsequently added paint.

As with the other Gradation exercises indicate the main light dark separation. Remember that it is not a straight line, rather it follows the form of the Sphere, curving from the locations at which line B pierced the circle, down to the shadow quadrant boundary line.

**STEP 2**

With this layout, or schematic, of our simplified sphere, we will add value as we have in our other Gradation-based exercises. As to our value range and rate of change, we will set the exercise parameters for a full value range-bright white to rich black-and a somewhat short main transition around the indicated central light/dark separation line. A gradation rate equivalent to Gradation Block models 2 or 3 is acceptable. Proceed just as you would with the initial Gradation Block exercise. This is simply a repeat of that same exercise altered to accommodate a circular template.
STEP 3

Again, as our main transition will be relatively short, it may only require a short initial taper of dark. Begin to add your white in the area that we had identified as the brightest when viewing the sphere in this orientation. This will serve as a main light anchor similar to other value anchors you may have set in earlier exercises. As always, vary your stroke direction to ensure an even transition.

STEP 4

We are not overly concerned about maintaining a very pristine edge or outline at this point. In fact, we prefer to keep all our edges soft in the beginning while still maintaining a general accuracy to the overall shape. In an effort to maintain the freedom to add surrounding values or alter shape, we slightly ‘taper’ most edges. Always keep in mind that it is usually easier to sharpen an edge later than it is to soften one. This simplified version of a sphere, based on a given set of parameters will make up the first phase of our Sphere Build repetition exercises. Your goal here will be to accurately replicate this configuration of shape and value consistently.

If you are painting with color, add your pure color in the same area that you would have added pure white in the previous phase unless you plan to incorporate the optional highlight. If you wish to include a highlight you may leave an exposed area where the highlight would occur for later implementation. As always, vary your stroke direction to ensure an even transition.

STEP 5

Our initial sphere exercise contains a diffused highlight and middle tone. Our attached shadow is present. However, we will need to augment our sphere build example to give rise to the remaining values, and also, make others much more noticeable. The common values of Chiaroscuro are needed.

As always, if your brush count is low, take care to remove as much color as possible from an active brush before switching color. Color contamination will adversely affect the results of this exercise. You may also use any synthetic or sable brushes at your disposal throughout this exercise. The sizes of these brushes should be comparable to your application or bristles brushes.
STEP 6

With the Sphere build established, add the reflected light values into the shadow section as observed in the previously studied sphere model. Make the reflected light bright enough to be visible, but subtle enough to disappear when viewed while squinting. This basic squint-test separation will ensure the contrast of the overall form is maintained. In addition, the attached shadow accent should also be somewhat affected by the added reflected light—giving it a slight vertical gradation. Make an effort to incorporate this very subtle gradation without removing too much of the attached shadow accent in the process.

Your goal here will be to accurately replicate the current Sphere build model, with these additional values of Chiaroscuro—consistently.

ASSIGNMENT

You may either draw or paint the following assignment. Draw or paint at least three spheres as shown. Keep each sphere consistent in size and shape. Confident and consistent execution is key to develop strong, valuable skill sets.
FORM PRIMATIVES – THE SPHERE

YOU MAY CHOOSE TO DRAW OR PAINT THE FOLLOWING EXERCISE.

Goal: Introduction of Chiaroscuro to further explore, through analysis and repetition, the manner in which light describes spherical forms.

MATERIALS:

DRAWING: Paper, Charcoal Pencil, White Pastel Pencil, Kneaded Eraser, Sharpener, Easel, Tape, Sphere

PAINTING: full basic palette, 16x20” exercise panel, a minimum of 2 filbert bristle brushes: sizes 4, 6 or 8. Any synthetic or sable brushes. Rounds, flats, or brights may be used if you prefer. Medium of choice, palette knife, paper towels, ruler, pencil, kneaded eraser, Sphere

We have thus far, through observation, analysis, and repetition, explored a good deal regarding the nature of the sphere and how we perceive it. We will now replicate this geometric solid, with all values and color, in its environment.

Align your subject with your drawing or painting surface. Once you are aligned, you can use general estimations, alignment tools or comparative methods to determine many of your initial measurements.

We now have the opportunity to add in the final remaining values of Chiaroscuro to our drawing. Just as the environment surrounding the sphere contains a Cast Shadow and Cast Shadow accent, so will our finished drawing.

We should take a minute to point out that the shape of the Cast Shadow is very important to describing the form itself. The Cast Shadow from a sphere in this orientation will take on the shape of an ellipse. An ellipse is a geometric figure resembling an elongated circle. It is essentially a closed curve in the form of a symmetrical oval. Here we can see how the sphere intercepts light from the primary light source as it travels toward the surface of the table. It generates an elongated, elliptical shadow. We will explore the nature of the ellipse in greater detail later on.

In preparation for the Sphere Life exercise, you will need a Sphere. Again, the color of the sphere is up to the individual but it is highly recommended to use colors that are achievable with your basic palette’s gamut. If you are drawing or painting achromatically, using a white sphere as a model would be best.

As always, if you are painting and your brush count is low, take care to remove as much color as possible from an active brush before switching color. Color contamination will adversely affect the results of this exercise. You may also use any synthetic or sable brushes at your disposal throughout this exercise. The sizes of these brushes should be comparable to your application or bristles brushes.
You can feel free to mask off a smaller area of the 16x20" panel with tape for your study to keep your composition's edges neat and clean.

To complete this phase of the Sphere Build chapter, draw or paint one Sphere with a surrounding environment as illustrated. Before beginning, carefully study how each shape, value and color work together to communicate the form of the sphere.

One particular item of note regarding the sphere we have chosen for this exercise is that a Hue shift is now added amidst the Sphere's many transitions. You will notice that the blue middle-tone near the highlight leans greener as the middle-tone near the shadow leans more towards a blue-purple. This additional shift will allow the artist to face transitions in Hue, Value AND Chroma.

Keep your drawing or painting as true to the actual size, value, and color structure of your available sphere model. Make every effort to replicate the observable shapes and values as accurately as you can.

ASSIGNMENT

To complete this phase of the Sphere Build chapter, paint or draw one Sphere with surrounding environment as illustrated. Be sure to align your subject with your painting surface prior to start. Carefully study your sphere model at the onset. Make every effort to replicate the observable shapes, values and colors of your subject as accurately as possible.
We will conclude the study of each individual Form with a project referred to as a Final Form Cumulative Painting. This exercise will not require you to draw from an idealized Sphere model, but rather will require you to replicate spherical objects.

Proceed to select one or more spherical objects and arrange them into a single composition. Make every effort to have your subjects interact with one another and their environment. Be sure to challenge yourself by using subjects with multiple textures or surface variations. This project can be executed from either 2D or 3D reference models.

An important aspect to explore before proceeding with your painting is how the communication of your subject’s form influences, and is influenced by, its surface features. When your subjects have been selected and your arrangement complete, take a moment to carefully study any textures or surface variations. Remember that the values and colors that communicate the surface features, like texture, will be greatly influenced by their location on the object and will in turn—influence the form. For example, looking at this image of a sphere bearing a pattern on its surface, the design element located in the Middle-Tone is far lighter than the design element found in the Attached shadow. In addition the colors of each pattern element lower in Chroma as they move away from the light source. Surface features that deviate from these value and color relationships to the form may cause your subject to lose dimension and appear flatter (figure 1).

In preparation for the Sphere Final Cumulative exercise, you will need one or more spherical models arranged into a single composition. You can execute this work on any size panel you choose as these cumulative exercises often result in beautiful finished works. With your subjects selected, choose the size that you feel is most appropriate.

Here are several examples of painted spherical objects. Notice that some of these spherical objects do not confirm to the idealized solid sphere models that have been explored in the build chapters thus far. This presents a wonderful challenge for the individual to adapt the previously studied models in an effort to capture a new spherical configuration of value and color. Try to choose subjects that will present new and exciting challenges.
Anthony Waichulis  
**Recess (DETAIL)**  
8x10 Oil on Masonite

Shanicia Richardson  
**Poisoned Apples (DETAIL)**  
18x12 Charcoal and Pastel on Paper

Brandon D. Drake  
**Baseball (DETAIL)**  
5x7 Oil on Masonite

Lynne Garlick  
**Received with Love (DETAIL)**  
13.5x20 Charcoal and Pastel on Paper

Anthony Waichulis  
**Summer (DETAIL)**  
5x7 Oil on Masonite

Tim Reynolds  
**Scrambled Eggs and Bangers (DETAIL)**  
Charcoal and Pastel on Paper
Brush sizes and styles can be determined by size and process. Do not be afraid to deviate from our general ‘brush-use wheel’ to increase material control at any point throughout your painting process. Unless otherwise stated for specific training purposes, remember that as long as you understand the dynamics of your application tools, you are free to use what you wish in an effort to complete the challenge at hand.

Remember that you can almost always make more effective decisions if you establish a few key anchors at the onset of a work. If you use your palette knife to mix a color on your palette—know that after achieving the desired color you may place the knife’s excess paint directly onto the appropriate area on your painting surface. This practice helps you to be a bit more economical with your paint supply. The paint can then be dispersed with the appropriate brush.

Again, values and colors that communicate the surface features will be greatly influenced by their location on the object and will in turn—influence the form. Deviation from this relationship may cause your subject to lose dimension and appear flatter.

ASSIGNMENT

To complete this section of the training series, arrange and execute a color painting or drawing containing one or more spherical subjects in a basic environment. Make an effort to utilize subjects that have texture or surface variations. Be sure to develop some interaction between the subjects and their environment when arranging the composition. Keep your painting or drawing as true to the actual size, value, and color structure of your available reference. Make every effort to replicate your subjects as accurately as you can.
Goal: To further explore, through analysis and repetition, the manner in which light describes cylindrical forms.

Materials: Paper, Charcoal Pencil, White Pastel Pencil, Kneaded Eraser, Sharpener, Easel, Tape, Cylinder, Ruler

Shown here are two cylinders placed underneath a controlled light source. They are illuminated from the top left, front, by a primary light source just as the Sphere was. Again, we are attempting to maintain a series of standard variables that will allow us to focus more on the unique nature of each form.

In studying the Cylinder initially you may notice that it is a slightly more complex form than the sphere in certain regards. While it is quite similar in its curvilinear nature, the shape of the cylinder will seem to change as its orientation varies, thus introducing elements of perspective.

Perspective, in regards to Visual art, is a process of representing the spatial relation of objects as they might appear to the eye. For example, whereas the sphere’s shape would remain a circle regardless of its orientation in space, a cylinder’s shape will appear to change as does its orientation. Notice how the overall shape of the upright cylinder in the central image differs from the overall shape of the cylinder on its side.

However, there are many very familiar elements to this form. Note how the form of the cylinder’s central shaft is described by a value structure that is extremely similar to those presented in the Gradation Block exercise. Many of the new elements we encounter will echo concepts and elements previously introduced.

As we built a schematic for a repetitive sphere exercise, we will use a central axis to divide the cylinder and connect the centers of the circular bases. These bases appear elongated due to our perspective, and are observed as ellipses. You will remember that we introduced the concept of the elongated circle, or ‘ellipse’ when investigating the cast shadow of a sphere. What you will notice here is that the ellipse shape will change based on the orientation of the cylinder.

As we investigate the cylinder shaft’s relation to the ellipses we discover the central axis that divides the cylinder, and connects the central points of the bases, will occur perpendicular to the longest, or major, axis of the ellipse.
This is similar to the X grid we used for the sphere schematic. Regardless of orientation, the central axis of the cylinder and the long axis of the ellipse will always meet at a 90 degree angle. No matter how complex the perspective may become, this relationship of central body and base axis will remain intact.

Notice how the overall shape of the cylinder changes as the orientation is altered. Carefully observe how the values work to describe the form of this solid. While we are just beginning to investigate this form, many of its attributes may again seem very familiar.

DIRECTIONS:

Let’s begin, as we did with the sphere by simplifying the entire form. In fact, let’s lose the bases all together and just tackle the more familiar central, curvilinear component.

With our light source in the home or top, left, front position, we can see that light grades in different directions, with different ranges, and at different rates as determined by the form itself.

To establish a schematic for this form, we will re-incorporate the central axis line to bisect the cylinder shaft. Adding two parallel lines equidistant from the main axis and the outer edge will divide the form into four quadrants. With this division we can again verify our 3:1 light to shadow ratio.

While observing this particular form in this orientation and lighting scenario, we can see that the brightest value occurs at the first quadrant boundary line and the main light/shadow separation occurs at the last quadrant boundary line.

To make our exploration of this form even more simple, we will first just focus on the main horizontal light to dark gradation. Again, this may seem extremely familiar as it is essentially just another Gradation Block exercise.

**STEP 1**

Begin by establishing a 4x3" rectangle that will house the gradation.

Just as we have established reference lines to indicate major light and dark separations in previous gradation exercises we will establish a schematic grid to follow. We will divide our rectangle into quadrants as with our sphere schematic. Our far left quadrant boundary will act as our highlight anchor and the far right as our main light and dark separation line.
**STEP 2**

With a general schematic established, begin to add value as we have in the other value gradation-based exercises. As to our value range and rate of change, we will set the exercise parameters for a full value range, bright white to rich black, and a somewhat short main transition at the indicated central light/dark separation line. Rather than estimate, you can use the upright cylinder we previously examined as a reference source.

Consider removing any remnants of the schematic grid as it may have adverse effects on your value application and gradation.

**STEP 3**

Proceed just as you would with the initial Gradation Block exercise. This is simply a repeat of that same exercise, only now rotated to emulate the main horizontal gradation of the upright cylinder shaft as observed in our previously studied cylinder model. Be sure to keep the rectangle in this orientation as the majority of past gradations may have been executed vertically. Executing multiple gradations in various directions will add additional versatility to your developing skill sets.

**STEP 4**

Now that we have established a strong gradation that begins to successfully communicate the body of the Cylinder, we must revisit the model to take a deeper look at the values that reveal its form. We will re-administer the effects of the reflected light in our example shown here to make the common values of Chiaroscuro we explored, far more evident.

Thus far, our Cylinder build contains a general Highlight, Middle-Tone, and Attached Shadow. Our Cast Shadow and Cast Shadow Accent are not currently applicable; however we can still add the Reflected Light. The addition of the Reflected Light will allow the Attached Shadow Accent to become more apparent.

With 5 of the 7 common values of Chiaroscuro successfully communicating the main body of our cylinder build, we arrive at the goal for our Cylinder Build exercise.

REFER TO THE PAGE 95 FOR ASSIGNMENTS INSTRUCTIONS.
FORM PRIMATIVES

THE CYLINDER — PAINTING

YOU MAY CHOOSE TO DRAW OR PAINT THE FOLLOWING EXERCISE. REFER TO THE PAGES 90 THROUGH 92 FOR DRAWING DIRECTIONS. SKIP TO THE PAGE 95 FOR ASSIGNMENT.

Goal: Explore, through analysis and repetition, the manner in which light describes cylindrical forms.

Materials: full basic palette, 16x20" exercise panel, a minimum of 2 filbert bristle brushes: sizes 4 and 6. Any synthetic or sable brushes. Rounds, flats, or brights may be used if you prefer. Medium of choice, palette knife, paper towels, ruler, pencil, kneaded eraser, Color Cylinder

DIRECTIONS PART 1:

Begin by establishing an extremely light 4x3" graphite or charcoal rectangle that will house the cylinder build gradations.

Just as we have established reference lines to indicate major light and dark separations in previous gradation or sphere build exercises—you may establish any schematic reference marks you wish as long as they are applied in a manner that will not adversely affect the application of paint. We can subdivide our housing rectangle into quadrants just as with our sphere schematic (figure 1). Our far left quadrant boundary will act our highlight anchor and the far right as our main light and dark separation line.

With this layout, or schematic, of our simplified cylindrical form, we will add value as we have in our other Gradation-based or previous sphere build exercises. As to our value range and rate of change, we will set the exercise parameters for a full value range-bright white to rich black—and a somewhat short main transition around the indicated central light/dark separation line. A gradation rate equivalent to Gradation Block models 2 or 3 is acceptable.

With the exception of color use and the implementation of an optional highlight, our painting procedure for this Cylinder build remains the same (figure 2).
The goal here is to execute a gradation of pure color to black within the Cylindrical schematic introduced. The area of the Cylindrical gradation where we initiated our pure white may consist of pure color if desired. This area of pure color, or high Chroma, will become less brilliant—or lower in Chroma—as it follows the darkening values approaching the shadow section of the Cylinder. The shadow section should remain black, however you may utilize umbers or other colors to help augment a challenging transition—like certain yellows, where a resulting green may emerge as the color nears black. A reddish neutral like burnt umber or even something stronger may help to eradicate some of the influence of an undesired green. Some of these color issues were faced in the earlier Gradation Block Model exercises.

Additionally, for this exercise it is acceptable to add a subtle hint of white to any dark color with which a gradation is almost non-visible. Remember that white will lower Chroma so be extremely conservative with its use.

Just as each pure color on your palette has a different value—the value range of each gradation will vary. However, the rate of change can still fall between the rates seen on Gradation Blocks 2 and 3. It is also important to remember here that black and white are also colors on your palette. Obviously a black to black transition will yield no gradation unless a hint of white is added to the light region. Again, be conservative with its use.

You may choose to include an optional specular highlight if you are painting with color. However, as with the sphere build repetitions, if the addition of a bright specular highlight interferes with the successful development of your initial value/Chroma form gradation, omit it and revisit it after some practice.

Now that we have established a strong initial gradation that begins to successfully communicate the body of the Cylinder, we must revisit the model to take a deeper look at the values that reveal its form.

We will re-administer the effects of the reflected light in our example shown here to make the common values of Chiaroscuro we explored, far more evident (figure 3). Watch as the common values we discussed are identified. Based on your previous experience with Chiaroscuro and the sphere, see if you can locate them before they are revealed.

Thus far, our Cylinder build contains a general highlight (if in color), middle-tone, and attached shadow. Our Cast Shadow and Cast Shadow accent are not currently applicable, however we can still add the Reflected Light. The addition of the Reflected Light will allow the Attached Shadow Accent to become more apparent (figure 4). Refer to your cylinder model to reference the intensity of the reflected light, its rate of change, and other variables that you otherwise may need to estimate.

---

**FIGURE 3**

**FIGURE 4**
DIRECTIONS PART 2:

With 5 of the 7 common values of Chiaroscuro successfully communicating the main body of our cylinder build, we arrive at our goal for the Cylinder Build exercise.

ASSIGNMENT

You may either draw or paint the following assignment. Draw or paint at least three cylinders as shown. Keep each cylinder consistent in size and shape. Confident and consistent execution is key to develop strong, valuable skill sets.
FORM PRIMATIVES

THE CYLINDER — ELLIPSES

**DRAWING EXERCISE ONLY!**

**Goal:** To accurately draw ellipses.

**Materials:** Paper, Charcoal Pencil, White Pastel Pencil, Kneaded Eraser, Sharpener, Easel, Tape, Cylinder, Ruler, Ellipse Chart

Returning to our Cylinder model, we must now incorporate the aspects of the cylinder we removed to initially simplify our study: the circular bases, or as seen in this perspective, ellipses. Drawing circles in perspective can prove challenging. However, we will present a simplified approach to not only creating a successful ellipse, but a manner in which to successfully marry it to the main cylinder body.

We once again employ a simple ‘x’ grid to analyze and understand the construction of a basic ellipse. In this orientation of an ellipse as shown we can identify a short and long axis. The two points of the shape that are at the furthest distance create a major axis while the two closest points create a minor axis. Just as with the sphere, these lines form a 90 degree angle and bisect the ellipse symmetrically. As mentioned, not only will we use these two axis lines to create a successful ellipse, but the minor axis (illustrated earlier as line A) will join with the central axis of the cylinder body to marry the components of the cylinder together.

As seen here, the cylinder’s central axis and the ellipse’s minor axis join, while the major ellipse axis remains at a 90 degree angle. Again, this relationship between circular base and cylinder body remains intact regardless of orientation. To become more familiar with the construction of ellipses we have included an ellipse chart exercise.

**DIRECTIONS:**

As seen on the following pages, establish the overall height and width of the chart. Ellipses must be 4 inches wide to match the ellipses provided. Proceed to then add the central axis guide line and individual ellipses' major axis. You may feel free to add any guidelines that are helpful to you. Just as with the Sphere’s ‘x’ grid, keep the guidelines extremely light. You do not want these early schematic lines to hinder the application of later value. Take time to observe your cylinder model so as to analyze how the model’s ellipses behave when your perspective is changed.

Just as observed in our cylinder model, we will need to add an ‘internal’, secondary ellipse to the primary ones already populating the chart. This addition of a secondary inner ellipse will describe the thickness of the cylinder body and further promote depth.
The secondary ellipses will have the same degree of shape as the primary ellipse; however, it will be reduced in size. To further communicate the effects of perspective, we will also shift the inner ellipse above or below the primary axis line depending upon which part of the cylinder’s base is closest to us.

In this example the bottom of the first ellipse is closest, so the inner ellipse is slightly shifted above the primary ellipse’s axis, towards the top edge of the primary ellipse. This makes it appear as though the thickness of the cylinder's body is greater as it is nearer the viewer, as is often observed in nature.

However, as the ellipse turns more towards the viewer and evolves closer to a circle, the axes will grow closer and eventually align. Here the distance between the edge of the inner and outer ellipse remain fixed.

Using your cylinder model as a reference guide, draw in the inner ellipses to give additional dimension to the cylinder’s body. By replicating the ellipses found on the chart with a physical cylinder model you can get a good sense of how far to shift inner ellipses.
Student’s Example

NOTE: Print at actual size for 4” wide ellipses
Student’s Example

**NOTE:** Print at actual size for 4” wide ellipses
Teacher Transparency

**NOTE:** Print at actual size for 4" wide ellipses
Teacher Transparency

**NOTE:** Print at actual size for 4” wide ellipses
FORM PRIMATIVES

CYLINDER WHEEL

 DRAWING EXERCISE ONLY!

**Goal:** To explore the shape of the cylinder in varied orientations.

**Materials:** Paper, Charcoal Pencil, White Pastel Pencil, Kneaded Eraser, Sharpener, Easel, Tape, Cylinder, Ruler, Cylinder Wheel Reference Sheet

This exercise not only further familiarizes you with the nature of the Cylinder, but it begins to develop your improvisational skills and your ability to make logical estimates.

CYLINDER WHEEL REFERENCE DIRECTIONS:

Arrange 5 to 8 Cylinders in varied orientations around a central hub. Use the lines extending from the hub as your primary cone axis (a). Ellipse axis (b) will then run perpendicular to a.

ASSIGNMENT

Draw a Cylinder Wheel line drawing within the parameters described in the directions. Individual Cylinder and overall Wheel sizes are open to design, but variety is encouraged. Use a physical Cylinder model as a source of reference as often as possible.
YOU MAY CHOOSE TO DRAW OR PAINT THE FOLLOWING EXERCISE.

Goal: Demonstrate a thorough understanding of the sphere and cylinder by executing a work that contains spherical and cylindrical subjects.

MATERIALS:

DRAWING: Paper, Charcoal Pencil, White Pastel Pencil, Kneaded Eraser, Sharpener, Easel, Tape, Sphere

PAINTING: full basic palette, 16x20” exercise panel, a minimum of 2 filbert bristle brushes: sizes 4, 6 or 8. Any synthetic or sable brushes. Rounds, flats, or brights may be used if you prefer. Medium of choice, palette knife, paper towels, ruler, pencil, kneaded eraser, Sphere

At this stage we have amassed a good deal of information regarding the nature of the cylinder and how we perceive it. Our skills have further developed and we now prepare to create a Final Cumulative project to close out this challenging chapter. Unlike the Sphere’s Cumulative Final, which was comprised of only spherical subjects, this chapter’s exercise grows to fulfill what its title implies, a combination of both Spherical and Cylindrical subjects. As with the previous Cumulative Final, this chapter’s version offers a departure from idealized model we have been using in lieu of more varied spherical and cylindrical models.

Proceed to select and arrange 2 to 3 spherical and cylindrical objects into one composition. Make every effort to have your subjects interact with one another and their environment. Make every effort to challenge yourself by using subjects with texture or surface variations. Once again, this project should be executed from actual models.

When your arrangement is ready and your drawing or painting surface aligned, proceed with your normal drawing process.

As your early drawing begins, remember to maintain the axes’ relationships when illustrating any cylindrical objects. Regardless of orientation, these relationships will remain intact.

By better understanding how each stage is set to unfold, you may garner a better understanding of the artist’s decisions throughout. As each stage develops, this image will become a more accurate representation of the reference models on the left.
Remember to consider the influence of your form on your subject’s surface features. Values that communicate the surface features will be greatly influenced by their location on the object. Deviating from the value influences of the form when incorporating surface textures may cause your subject to lose dimension and appear flatter.

As with many of our other exercises thus far, the goal of this project is create a faithful representation of your subjects. Make every effort to maintain accurate proportions and value structures.

Here are several additional examples of Sphere and Cylinder Cumulative drawings.
THE CYLINDER – CREATIVE CUMULATIVE EXAMPLES

Here are several examples of paintings containing a combination of spherical and cylindrical subjects. Notice that some of these objects do not confirm to the idealized solid form models that have been explored in the build chapters thus far. This presents a wonderful challenge for the individual to adapt the previously studied models in an effort to capture a new cylindrical configuration of value and color. Try to choose subjects that will present new and exciting challenges.

Timothy W. Jahn  
*Defeat in Victory (DETAIL)*  
8x5.5 Oil on Masonite

Brian O’Neill  
*Still Life Alla Prima*  
19x16 Oil on Canvas

Anthony Waichulis  
*Lessons*  
8x10 Oil on Masonite

Brian O’Neill  
*Still Life Alla Prima*  
Oil on Canvas

ASSIGNMENT

Arrange and execute a drawing or painting containing 2 to 3 spherical and cylindrical subjects in an environment. Make an effort to utilize subjects that have texture or surface variations. Be sure to develop some interaction between the subjects and their environment when arranging the composition. Keep your drawing or painting as true to the actual size and value structure of your still life model. Make every effort to replicate the observable shapes and values as accurately as you can.

Review all of the information presented up to this point. Feel free to revisit any of the exercises that we have covered.