

## SECTION 2B: MANIPULATING THE TOOLS - THE PRINCIPLES OF DESIGN

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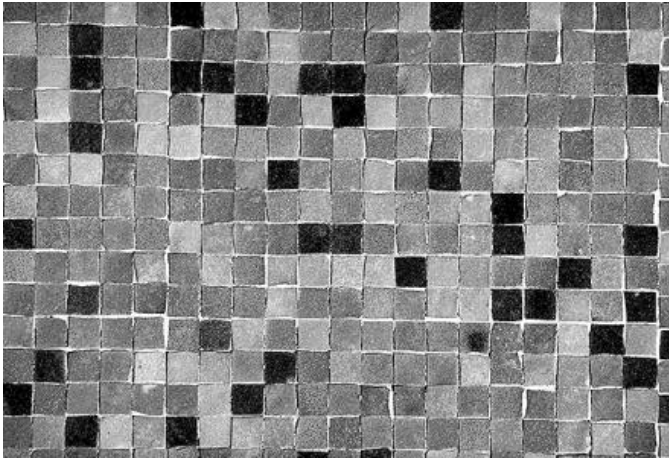
*Figure 2.7i* A spider's web can be seen as an example of the principle of balance (radial approximate symmetry).

The principles of design are the ways in which the elements of design are combined to create effective visual images. There are an almost infinite number of ways that the principles of design can be combined to create visual images.



## 2B.1 BALANCE

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**Figure 2B.11** Visual balance created through approximate symmetry.

*The most important psychological as well as physical influence on human perception is Man's need for balance, to have his two feet planted firmly on the ground and to know if he is to remain upright in any circumstance, in any attitude, with some reasonable certainty.*

Donis A. Dondis  
A Primer of Visual Literacy

### Specific Curriculum Outcomes

Upon completing this section, students will be able to:

- demonstrate an understanding and explain the concept of balance as representing order and stability
- explain and demonstrate different types of balance: symmetry, approximate symmetry, asymmetry, and radial
- demonstrate an understanding of and explain how balance can be described as corresponding to, or varying from a horizontal/vertical axis
- create images that explore and make use of balance.

## Introduction

**B**alance refers to the orderly creation of an arrangement of forms in a visual composition. Balance represents harmony and order. It is stability; a sense that things are as they should be.

Although there have been systems, such as the Golden Section developed to mathematically balance a composition, balance is difficult to subject to a mathematical model. It resides in the eye of the artist or designer, and in the eye of the viewer. There may not be absolute agreement on what constitutes a balanced composition, but there will be general agreement. An “out of balance” composition is not wrong; it does not conform to our expectations of reality, or our general experience of visual images. Sometimes an unbalanced composition can be visually striking.

**golden section**

–n. A ratio, observed esp. in the fine arts, between the two dimensions of a plane figure or the two divisions of a line such that the smaller is to the larger as the larger is to the sum of the two, roughly a ratio of three to five.<sup>28</sup>

Balance can be achieved in at least three ways: using symmetry, using approximate symmetry, and using asymmetry. Symmetry means “the same”; patterns are symmetrical. That is, the surface of the image is formed from repetitions of identical motifs.



**Figure 2B.12** *Repetition of forms as an example of symmetry.*

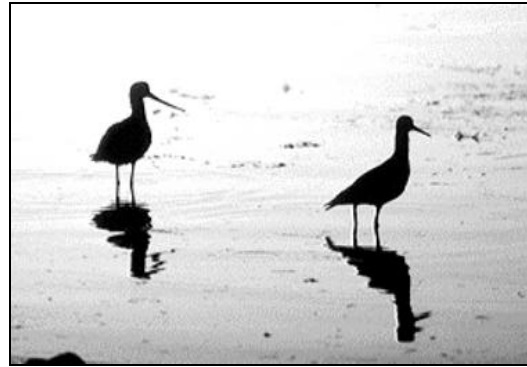
Approximate symmetry means that repetition is employed, but the motifs are not identical. Colour changes, or slight form changes are possible. Asymmetry means that a variety of different motifs or objects are used in the composition, and they are arranged in no set pattern. The whole composition will be balanced, but not through repetition of identical or similar forms.

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<sup>28</sup>

The American Heritage Dictionary and Electronic Thesaurus, 1987. Houghton Mifflin Company.

Balance can also be described in another way. It is our common experience as human beings that the world is ordered along a horizontal/vertical axis. The earth is the horizontal axis. Trees, people, buildings, they become the vertical axis. When the elements of a visual composition are organized on a horizontal and vertical axis, we could say that the composition is in harmony; it conforms to our expectations of reality.



**Figure 2B.13** The shapes of these two birds are an example of approximate symmetry.

When a composition is organized on the diagonal, we could say that it is not harmoniously balanced, because the arrangement of forms contradict our experience of reality.



**Figure 2B.14** These varied shapes balance the composition through a symmetry.

Images of different types often appeal to different people. Some will prefer images balanced on a horizontal/vertical axis, while others prefer the more unusual diagonal arrangement. Look in a selection of magazines, or watch television closely. Is there a difference between the use of balance in various advertisements? Do those ads appeal to different age groups, genders, or income levels?

Artists of the High Renaissance, such as Michelangelo, Raphael, and Leonardo da Vinci, organized their compositions with harmonious balance. Artists of the Expressionists or Neo-Expressionist movements, often used non-harmonious balance. Most patterned objects such as wallpaper, quilts, floor tiles, and fabric are structured using symmetry or approximate symmetry. Most works of visual art are constructed using asymmetry or approximate symmetry.

## Discussion

Using imagery from a variety of sources, discuss the impact of balance on a viewer. How does the type of balance used impact on the meaning or feeling of the image? If an advertisement is being viewed, does the type of balance reinforce the message of the ad? If a work of art is being viewed, does the type of balance enhance or detract from the message?

## Projects

1. Using a variety of media, create images that illustrate the following concepts: symmetry, approximate symmetry, asymmetry, harmonious balance, and non-harmonious balance, and radial balance. Materials could include traditional art media, performances, computers, camcorders, or slide presentations.
2. Examine advertisements in the media. What kind of balance is being used, and how does it relate to the product being sold? Is there a different kind of balance used to sell products to young people, as opposed to selling products to older people?
3. Create a photo display of images from your community that depict all of the aspects of balance discussed above.
4. Research the way balance is used by artists and designers from different time periods and cultures. Do they use balance in a similar way? What are the differences?
5. Pick a single artist. How does she or he use balance in the majority of her or his work?
6. Scan an image/artwork into the computer and experiment with multiple arrangements of the image to create different kinds of balance. How do these affect the impact of the image? Do you see why the artists chose the balance he/she did?
7. Using cut and/or torn shapes of coloured paper or other material, arrange shapes to create each of the types of balance mentioned above. Determine which you prefer and why. Glue your creation to an appropriate surface.

## 2B.2 PROPORTION

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*Tiger, Tiger, burning bright  
In the forests of the night,  
What immortal hand or eye  
Could frame thy fearful symmetry?*

William Blake 1757-1827  
Songs of Experience [1794]. The Tiger, st. 1, 2

**Figure 2B.21** Variations in proportion give important depth cues to the viewer as well as help to establish the main subject matter of the composition.

### Specific Curriculum Outcomes

Upon completing this section, students will be able to:

- define and illustrate the use of proportion in the visual arts
- explain the stages, and describe the types of decisions artists make when using proportion
- demonstrate through their own work and in the work of others how changes in proportion in an image can be used to indicate the size and/or importance of an object
- explain the role of mathematics in the historical and contemporary use of proportion in image-making
- create images that explore and make use of proportion.

## Introduction

**P**roportion is the proper relationship of the size and scale of objects to each other. Artists spend considerable time refining their ability to place objects within an image, and to ensure that all objects in an image are in the appropriate size and scale relationship to each other.

When creating a new image, the question should be asked: “How big or small is this image going to be?”. Reaching a decision about the particular size of image is an issue of proportion. A decision such as “I will make it so big because that is the size of my paper” is not giving proper consideration to the size the idea needs to look right. Some ideas are small. That is to say, they need to be produced as small images. They will look better, and make more visual sense. Some ideas need to be big. They almost demand big sheets of paper, or to be painted on the wall of a building, or performed with a cast of dozens of people on a stage. Thinking about the size an idea needs is the first step in proportion.

The second step is arranging the objects in the composition so that they work together. This often requires decisions about which things are important, and which things are meant to play a supporting role. Just as in life, not everyone can be in charge. In a visual image, if everything has equal importance, the viewer will not know where to look. Everything will be fighting for her attention. Deciding what is important helps to direct the viewer’s attention, and to limit confusion. Adjusting the proportion of objects in a composition is a good way to indicate their importance. Creating a strong relationship between parts and the larger whole is one of the keys to proportion.

In the past, there were attempts made to combine the study of proportion with mathematics. Leonardo da Vinci, and other artists of the Renaissance, were very interested in the relationship between mathematics and proportion in works of art. There was a perception in society that there were rules underlying everything in the universe, including the proportions of objects. Since then, the desire to relate geometry or mathematics to proportion in visual images has declined. Society itself is less likely to believe in a universal harmony of proportion. Artists tend to look for the unique, the novel, and the original; not uniformity, but variety. Now, most artists tend to use intuition to determine the relative sizes of objects in a composition.

In the near future, society may see renewed interest in the relationship between visual images and mathematics. New technologies such as computers rely heavily on mathematics to perform their functions. Although some computer programs are designed to work in ways that are already familiar to artists and designers, others, such as complex animation, drafting, and special effects programs function in a way that make their connection to mathematics obvious. Just as when looking at images produced in the Renaissance it is possible to see the influence of mathematics, now it is possible in computer generated images to see the impact of mathematics. New images, created through the manipulation of fractal geometry, are excellent examples of the growing partnership between mathematics and visual images.

## Discussion

What impact does proportion have on a visual image? Look at a variety of visual images as examples. How do the artists relate parts of their compositions to the whole? How does the use of proportion affect the mood or meaning of the image?

## Projects

1. Using a computer, create a composition containing several objects. Change the sizes of the objects in the composition relative to each other. How do these changes affect the meaning and look of the image?
2. Select an existing image from a clip-art collection, or scan one into a computer. Use the cut and paste tools to break the image into smaller parts, and then rearrange them. Add new parts yourself using other tools in the program. Try to come up with a new composition, using proportions different from the original.
3. Research the use of mathematics and proportion by the ancient Greeks, or artists in the Renaissance. Select one artwork as an example. Present your findings to the class.
4. Create a collage out of a variety of materials, that explores the idea of proportion.
5. Create fractal images using software that generates fractal compositions.
6. Using a pencil and a sketchbook, draw scenes from your community. Deliberately distort the relative sizes of objects. How do these changes affect the way the final image looks?



## 2B.3 COMPOSITION: HARMONY AND CONTRAST

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*Composition is, for the most part, an effort of slow diligence and steady perseverance, to which the mind is dragged by necessity or resolution.<sup>29</sup>*

Dr. Samuel Johnson (1709-1784)  
English author, lexicographer

**Figure 2B.31** *The contrast of light and dark, and the asymmetrical arrangement of forms adds drama to this composition.*

### Specific Curriculum Outcomes

Upon completing this section, students will be able to:

- define composition as it is used in the visual arts
- explain and demonstrate how composition is used to effectively organize a visual image
- demonstrate how the terms “harmony” and “contrast” relate to composition
- create images that explore and make use of harmony and contrast.

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<sup>29</sup> The Concise Columbia Dictionary of Quotations, 1990. Columbia University Press.

## Introduction

Composition is the art of arranging and organizing forms. How various objects are arranged play a large part in the visual impact of a finished work, whether it is a painting, a piece of pottery, or a well-designed room in a house. There is no single tool for composition. It is a complicated process, involving perspective, colour, shape, texture, rhythm, symbolism, the special characteristics of the tools selected for the task and the unique abilities of an individual artist, craftsman, or designer.

Every image—representational or not—requires organization. Even if a person is trying hard not to be organized, it is possible that there could be some kind of subconscious organization taking place.

There are many different ways of arranging objects, and many different thoughts on how it should be done. The most important thing is to ensure that the arrangement of objects is as visually interesting as possible, and that it enhances the meaning or intention of the work. To create visually interesting compositions, artists tend to use contrast. Some examples of contrast include big/small, thin /thick, organized/chaotic, or bright/dark. Good compositions also tend to have a dominant mood or feeling. For example, most of the objects in an image might be bright colours, large shapes, or heavily textured. The artist might then include a few dark, small, or lightly textured objects for contrast. The presence of contrasting elements provides variety, as well as emphasizing the dominant mood of the image.

A visual composition is often described using one of two terms: harmony or contrast. These two terms refer to the visual impact of the composition: is the sense generally one of order and harmony or one of randomness and variety (contrast)? Almost all images can be categorized under one of these two terms. Harmonious images may have some or all of the following characteristics:

- *balance*: a regular and predictable arrangement of shapes and forms, that correspond to our experience of objects in the world
- *symmetry*: a stable pattern of images, much like a traditional quilt
- *simplicity*: a composition that does not assault the eye with too much information
- *unity*: a feeling that all parts work together in a composition to create the whole
- *predictability*: a visual structure that follows an understandable and known pattern, as in the appearance of objects in a landscape
- *repetition*: the use of visual elements over and over in a regular pattern.

Viewers tend to perceive these images as harmonious. They suggest a sense of order, and control. Images based on contrast may be described as having the following characteristics:

- *instability*: a composition in which the shapes or forms are more or less autonomous, and do not work together in a logical or predictable pattern; the composition feels as though it is about to break apart at any moment
- *asymmetry*: a visual arrangement based on unequal distribution of shapes of different sizes, textures, colours, etc.
- *irregularity or randomness*: the apparent lack of a pattern or underlying sense of structure
- *complexity*: a composition that may appear chaotic or busy; one that is very active to the eye
- *fragmentation*: a composition that has no sense of unity or underlying structure
- *spontaneity*: a composition that appears to have occurred without pre-planning; a lack of an organizing principle in the work
- *variety or variation*: a composition that presents a number of different visual strategies; a range of expressive techniques within the same composition.

These words may help us to understand, analyze and describe existing visual images, and might help us to construct visual images of our own.

When looking at works of art, craft, or design, we could describe any work as projecting a dominant feeling. On the one hand that feeling could be one of harmony, or order, or balance, or unity. On the other, the composition could suggest contrast, or variety, or randomness, or fragmentation. Each of these terms expresses a polarity; the truth of any one image may be a combination of both. Each of the terms listed above could also be considered a visual strategy when creating a composition. An artist, designer, or craftsperson who wanted to work with the concept of repetition, would develop a visual structure that used the same or similar visual elements over and over again. The decision to create a composition based on spontaneity would dictate an approach that excluded pre-planning of some or all elements. When considered as a whole, the terms associated with harmony and contrast, can be used to encompass all of the nearly infinite possibilities of the human imagination.

## Discussion

What impact does composition have on a visual image? Look at a variety of visual images as examples. How do the artists organize their compositions? How does composition affect the mood or meaning of the image?

Students should analyze works of art, craft, and design from different cultures and time periods. They should examine selected works to determine the compositional strategy that was used. Did works of the early twentieth century rely more on visual harmony or

fragmentation? Were the colours used in the paintings of Die Blaue Reiter group based more on the use of violent colour contrasts, or a harmonious palette? Can we describe the furniture designs of the Shaker style as symmetrical, or are they better described as exhibiting a pattern of irregularity or randomness? Once familiar with applying these terms to existing works of craft, art, and design, the students will be better prepared to use them in developing their own images.

## Projects

1. Create a series of images, each one of which expresses one (or more) of the terms listed above, by rearranging a set of common shapes or forms.
2. Develop a technique of image creation that is truly spontaneous.
3. Using a computer, create a symmetrical composition based on a traditional quilt design. Experiment with changing the colours and observe how that changes the feel of the work.
4. Use the concept of rhythm to suggest movement in a composition.
5. Create a composition on the theme of “Life in My Community”. What do you want to say about the topic? Choose a visual strategy from among the words listed above, that relates to your feelings on the topic.
6. Using a variety of media, try creating compositions on a number of geometrical models. Arrange objects in a square, or a circle, or on a diagonal, a curve, or an “x” shape. Now try arranging the objects randomly, without thinking. Looking at all of them together, how does the use of composition affect the way the final image looks? Could you say that the geometrically arranged images are more organized than the random ones? Do the random ones look more spontaneous?
7. Use a computer program to combine existing images, or create a series of objects. Arrange them in a variety of ways, and save them in separate files. Print them out, and examine the results. Which compositions appear more effective? Is the meaning of these works changed by the different arrangements?

8. Using a variety of media, create an assortment of large and small objects. In some compositions, arrange the objects so that all of the larger ones are in the lower half of the composition, and the smaller ones are at the top. In others, arrange the objects so that most of the small ones are in the lower half of the composition, and the larger ones are at the top. How do these different arrangements affect the look of the images?
9. Research artists' use of composition. Artists from different cultures and time periods are all suitable subjects. Compare their compositions to others from their culture or time period. Are there stylistic similarities? Are there similarities between these artists, and other artists from other periods and cultures?
10. Analyze examples of work by artists from different time periods and different cultures in light of the examples of harmony and contrast listed above. Try to categorize those works under one or more of the headings. Why would you choose that heading?
11. Produce an image, using any one of a variety of media, based on one or more of the terms associated with harmony and contrast.

