



Design III

# CRAFTS SUPPLEMENT

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#### 4-H MOTTO

Learn to do by doing.

#### 4-H PLEDGE

I pledge

My HEAD to clearer thinking,  
My HEART to greater loyalty,  
My HANDS to larger service,  
My HEALTH to better living,  
For my club, my community and my country

#### 4-t! GRACE

(Tune of Auld Lang Syne)

We thank thee, Lord, far blessings great  
On this, our own fair land.  
Teach us to serve thee joyfully,  
With head, heart, health and hand.



Agriculture and  
Agri-Food Canada

Agriculture et  
Agroalimentaire Canada



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# Introduction

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Hi! Welcome to the 4-H Design Book III. In this design book you use the Fundamentals of Design learned in **Design-Book I and II**. You also learn about perception, optional illusion and characteristics of good design.

First of all, let's quickly review the **Fundamentals of Design**:

**Design** is a plan or an arrangement of something for a certain purpose. The **fundamentals of design** consist of the elements and principles of design. The **elements** are the basic, visible parts of a design. The **principles** are rules that help us to arrange the elements into a pleasing design.

## FUNDAMENTALS OF DESIGN

ELEMENTS	PRINCIPLES
line	proportion
shape	balance
space	rhythm
texture	emphasis
colour	harmony

The purpose of this book is to increase your design knowledge and sensitivity, and enable you to apply this knowledge to everyday living.

# Perception

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What we see depends not only on the objects in the world around us but upon expectations based on learning and earlier experiences. No two people interpret things in exactly the same way. If everybody saw things in the same way it would be a very dull and monotonous world indeed.

Man has a tendency to organize visual stimuli into a meaningful picture. The three basic ways of organizing are:

1. figure and ground relationship
2. grouping
3. closure

## 1. FIGURE AND GROUND RELATIONSHIPS

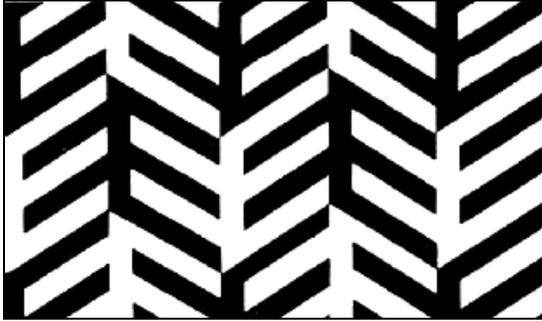
People have a tendency to organize what they see into figure and ground relationships. On a simple design the figure is usually seen clearly because it contrasts with the empty space of the background.

Learning affects which stimuli we perceive as figure and which as ground. Try this simple experiment.

Look at the illustration below and describe what you see. Look again, very carefully. Depending on how you perceive figure and ground, you see different designs.

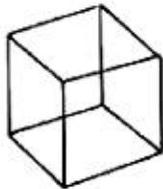


Do you see a vase or two faces?



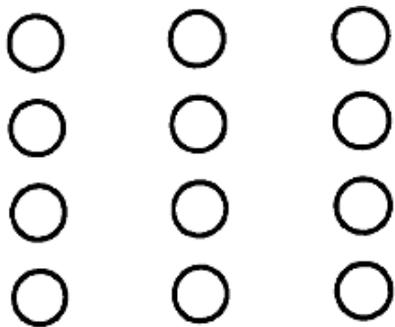
Do you see a white pattern or a black one first?

Look at the cube below. Does it seem to flip-flop?



## 2. GROUPING

Often group objects that are closer together are stimuli that are similar in appearance. Look at the examples below and describe what you see.



Generally, we see three columns of four balls rather than just seeing twelve balls.

We tend to see a block of circles, a block of squares, and a block of circles rather than



four squares and eight circles.

## 3. CLOSURE

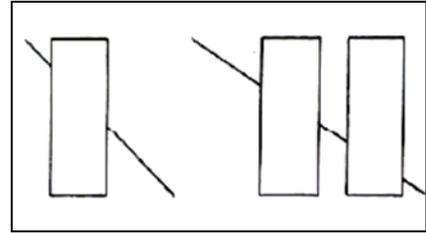
Individuals organize stimuli so they form a meaningful picture. If the picture is not quite complete, they tend to perceive it as though it is complete. This principle is known as closure. Take a look at the example below and describe what you see:

Did you see the letter B? Look again and notice how the letter is not complete but is in fact the number 13.

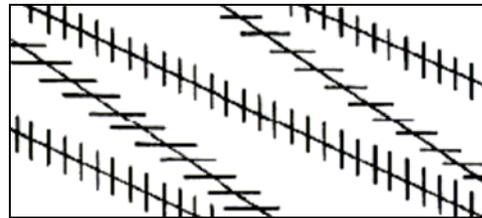
# Optical Illusions

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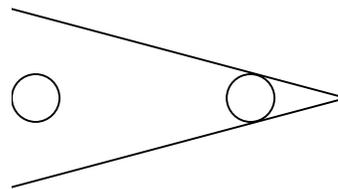
Sometimes what we think we see is not what actually exists. These situations are called optical illusions. Look carefully at the examples of optical illusions below:



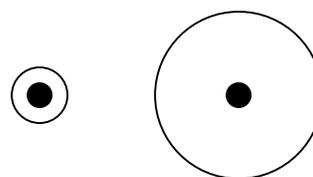
The lines covered by rectangles are actually straight.



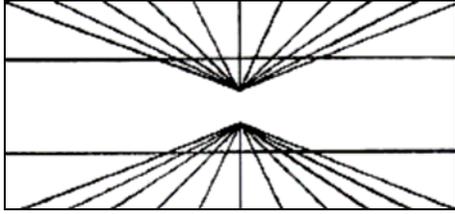
The long lines are parallel.



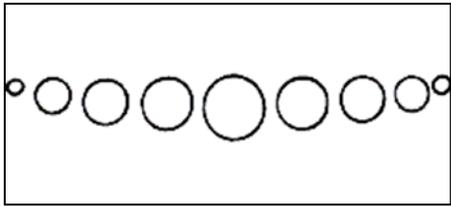
The circles are of equal size.



The black dots are of equal size.



The horizontal lines are parallel.



The tops of the circles are on a straight line.

## VISUAL ILLUSIONS WITH COLOUR

Illusions also occur in contrasting colour relationships. If you stare at a yellow object for several minutes and close your eyes, you probably see the same object in its complementary colour, purple. What you are seeing is called the after-image.

Try these simple experiments in colour illusion:

1. Get two pieces of construction paper; one red and one green. Stare at the red piece of paper for two minutes and then look at the green piece of paper. Does the green piece of paper look a lot brighter? This occurs because the colours red and green are complementary, and tend to intensify each other. Try this experiment with other complementary hues.

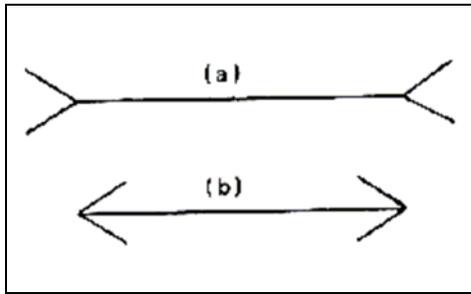
2. Go outside when the sun is shining brightly, for about 15 minutes and then enter a dark room. The room is quite dark by contrast. It takes a few minutes for your eyes to adjust to the difference in lighting and restore things to the proper value.
3. Cut out a grey shape and place it on a yellow background. The grey shape takes on a purple tinge. Now put the same grey shape on a purple background. Does it look a little bit yellow?
4. Cut out two grey shapes and mount one on a sheet of black paper and one on a sheet of white paper. The grey shape on the white paper looks much darker than the grey shape on the black paper.

Warm hues in the foreground with cooler hues in the background create the illusion of depth. Strong contrasts of value up close and similar values in the background suggest distance. Bright intensities in the foreground and dull intensities in the background also create the illusion of depth.

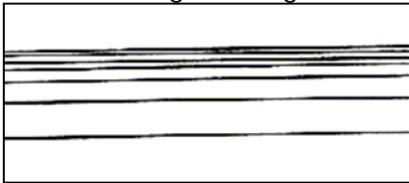
## OPTICAL ILLUSIONS WITH LINE

In general, vertical lines tend to slenderize and make objects appear taller, whereas horizontal lines make objects appear shorter and broader.

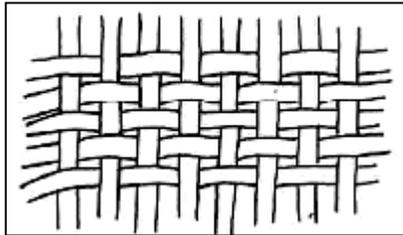
Diagonal lines can be used to make a line appear shorter or longer. You may wish to create this illusion when designing clothes or costumes to change the apparent height of a figure.



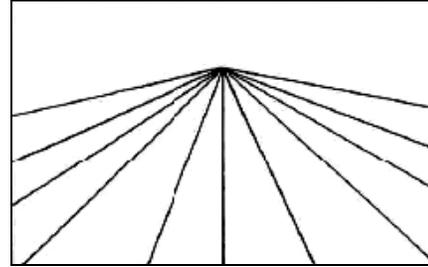
These horizontal lines are the same length, but the diagonal lines in (a) create the optical illusion of additional length. The diagonal lines in (b) create the optical illusion of reducing the length.



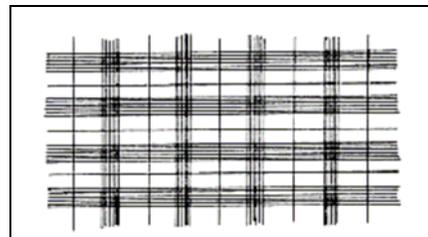
Horizontal lines can be organized to create the illusion of distance. Horizontal lines gradually coming together as they reach a horizon line give the effect of being further away.



Lines are overlapped to create the optical illusion of interlacing.



Line movement from the foreground toward a vanishing point in the background give the illusion of depth.



Distance can be expressed by Broad lines in the foreground and thin lines in the background.

## SCALE AND OPTICAL ILLUSIONS

Scale can play an important role in creating optical illusions. A room can appear much smaller if the furniture is large and heavy, and the upholstery and draperies have large, bold figures. If the same room contains refined furniture and large areas of solid colour or small prints, the room appears much larger.

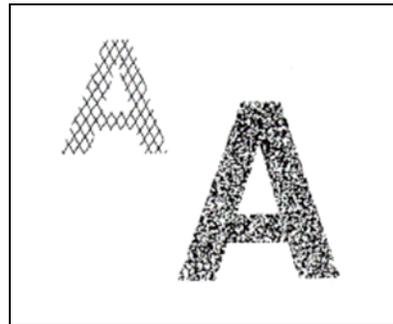
## VISUAL ILLUSION AND SHAPE

Large shapes in the foreground and small shapes in the background give the illusion of depth. More detailed shape in the foreground and less detailed shape in the background also give the illusion of depth or distance.



## TEXTURE AND OPTICAL ILLUSION

Coarse textures in the foreground and fine textures further away create the feeling of distance. Sharp details close up and fuzziness in the background also give the illusion of depth.



# Characteristics of Good Design

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Design is as individual as the person who creates it. It is difficult to judge design because everyone has different tastes and values which lead to varied opinions about design. The changing nature of time also brings about changes in design concepts. However, even in our changing world there are a number of good design characteristics that persist.

1. **A good design is a plan for order.** This implies that order is created out of chaos. If you think about this you discover that even the simplest design involves some planning and the end result is in fact, an arrangement of a group of elements.
2. **Any design should be an expression of its material.** Any added decoration should contribute to and improve the original structural design and not take away from it. The designer should work with the material and appreciate its characteristics rather than forcing it to be something it is not.
3. **An effective design fulfills its purpose.** Even if it seems that an object is merely to look at, it does have a purpose. If that object captures your attention then it fulfills this purpose very well.
4. **The arrangement of the design elements should be organized into a pleasing whole following the principles of design.** The various shapes, colours, textures, lines and spaces should relate to each other and give an overall feeling of harmony.
5. **An interesting design has individuality.** No design is completely original; all ideas have a source of inspiration. Yet each design should be different in some aspect from that source of inspiration. No two snowflakes are exactly the same, but each can still be recognized as a snowflake. Each design should reflect the unique personality and life of the designer. To the artist, individuality is the most important of all because the uniqueness of his work makes him stand out amongst other artists.

## LIMITATIONS IN DESIGN

When developing new designs or improving old designs to solve design problems, we are restricted to some extent by the material itself, resources available, and technology. It is important to work with these limitations and not against them.

Honest use of materials is very important for a successful design. A material should be used for the qualities of that material and not to imitate an entirely different material. For example, wood should be treated as wood. Plastic has its own unique characteristics and should not be used to imitate wood. A material should not pretend to be something it is not.

Each design should reflect our present knowledge and use of modern tools, equipment and materials. Perhaps the traditional solution to a design problem can be improved by using new techniques or equipment. If so, by all means use this new knowledge to adapt the old design.

Never be satisfied with one design solution. Think of all the possible improvements you can make to your design to find the best solution to your design problem.

# Creating Your Own Designs

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When you create your own designs try to use all the knowledge stored in your head, but remember to search out new sources of design information. Here are a number of hints to help you explore design in everyday living:

1. Always try to achieve new and complete results. When you complete a first design you often find that it gives you more ideas that lead to many new solutions. First of all identify the problem. Then think of all the possible solutions. Finally, evaluate all your solutions.
2. Look for new or fresh inspiration. Inspiration can come from personal experiences such as interactions with other people and the environment. Take known objects and look at them from a different point of view. Inspiration can come from a closer look at existing objects. Take a walk through the woods and notice the elements and principles of design in nature. Studying primitive cultures and art history can give you many ideas for new designs.
3. Constantly search out unusual design problems and try to find solutions through experimentation. Become involved in each new design problem you discover. Explore all the possible solutions and seek out new Information.
4. Try to find new uses for old materials and experiment with all the new materia1s and ideas. Above all strive for a sense of order or harmony.

# Evaluation of Your Own Designs

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Evaluation of your own designs helps you to see what you have accomplished. It can also give you a sense of satisfaction when you realize that you have progressed and gained knowledge. Read through each of the standards below and evaluate your own design. Imagine you are an art judge and be truthful in your evaluation.

1. The design should have a pleasing arrangement of the design elements. The principles of design should be carefully applied. Ask yourself how well the various textures, colours, lines and shapes relate to each other. Any decorative design added to an object should enhance it.
2. The design should successfully fulfill its purpose.
3. The materials should be used honestly. The type of material should be suited to the technique used and the final purpose.
4. Each design should show an understanding of the materials and techniques used.
5. Construction should be neat and accurate. There should be no obvious errors or flaws that affect use.
6. The design should show individuality and creativity. Ask yourself, "Am I the only one who could have done this?"