

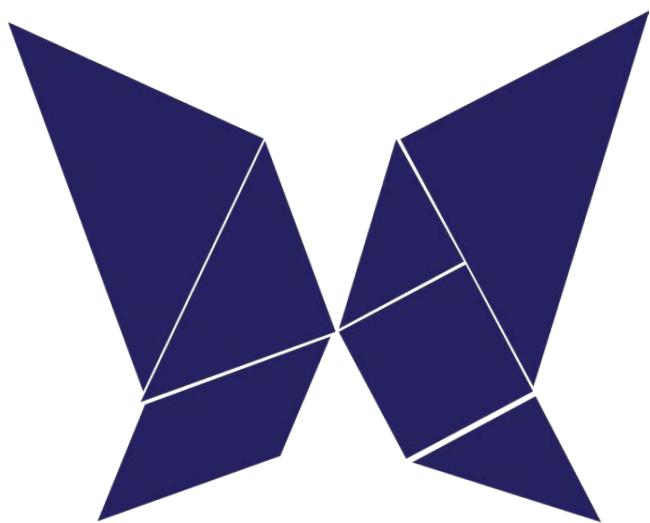
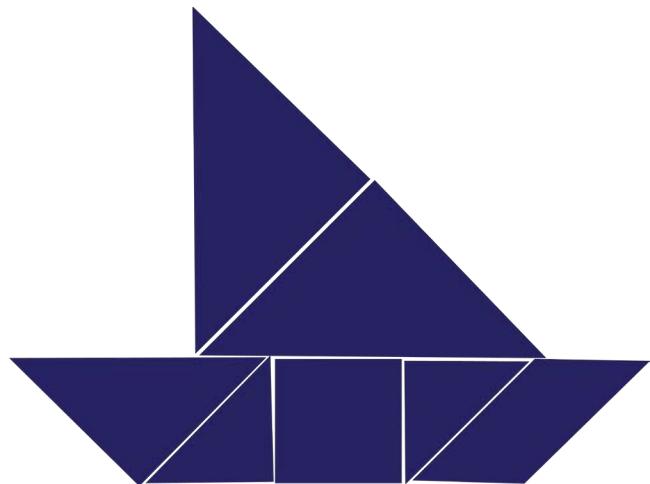
Design and Play

Instinct

By Paul Rand

Design Play and Instinct

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"I demand of art." says LeCorbusier, "the role of the challenger...of play and interplay, play being the very manifestation of the spirit."¹

The absence in art of a well-formulated and systematized body of literature makes the problem of teaching a perplexing one. The subject is further complicated by the elusive and personal nature of art. Granted that a student's ultimate success will depend largely on his natural talents, the problem still remains how best to arouse his curiosity, hold his attention, and engage his creative faculties.

Through trial and error, I have found that the solution to this enigma rests, to a large extent, on two factors: the kind of problem chosen for study, and the way it is posed. I believe that if undue emphasis is placed on freedom and self-expression in the statement of a problem, the result is apt to be an indifferent student and a meaningless solution. Conversely, a problem

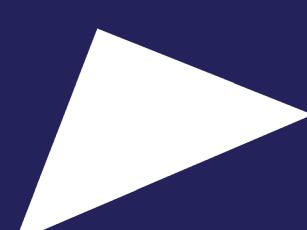
with defined limits, with an implied or stated discipline (system of rules) that in turn is conducive to the instinct of play, will most likely yield an interested student and, very often, a meaningful and novel solution.

Two powerful instincts exist in all human beings which can be used in teaching, says Gilbert Highet: one is the love of play. "the best Renaissance teachers, instead of beating their pupils, spurred them on by a number of appeals to the play principle. They made games out of the chore of learning difficult subjects – Montaigne's father, for instance, started him in Greek by writing the letters and the easiest words on playing cards and inventing a game of play with them."²



motivation
excitement
competition
enjoyment
challenge
discovery
stimulus
reward
goal
fulfillment
promise
anticipation
interest
curiosity
skill

Depending on the nature of the problem,
some or all of the psychological and
intellectual factors implicit in game playing
are equally implicit in successful
problem-solving:



observation
analysis
perception
judgment
improvisation
coordination
timing
concentration
abstraction
discrimination
patience
exploration
discretion
economy
restraint

Without the basic rules or disciplines, however, there is no motivation, test of skill or ultimate reward—in short, no game. The rules are the means to the end, the conditions the player must understand thoroughly and work within in order to participate. For the student, the limits of a well-stated problem operate in much the same way. “Limited means,” says Braque, “beget new forms, invite creation, make the style. Progress in art does not lie in extending its limits, but in knowing them better.”³

Badia de Fiesole.

Unfortunately, in some of our school's little attempt is made to guide the student's thinking in a logical progression from basic design to applied design. We are all familiar with the so-called practical problems formulated by a teacher in an attempt to duplicate the conditions of industry-the atmosphere of the advertising agency, for example. Such problems are frequently stated in the broadest terms with emphasis, if any, on style and technique in advertising,

rather than on interpreting advertising in terms of visual design principles.

Without specific limitations and without the challenge of play, both teacher and student cannot help but be bored. The product may take the form of a superficial (but sometimes "professional looking") literal translation of the problem, or of a meaningless abstract pattern or shape, which incidentally, may be justified with enthusiasm but often with specious reasoning.

Similarly, there are badly stated problems in basic design that stress pure aesthetics and free expression without any restraints or practical goals. Such a problem may be posed in this fashion: arrange a group of geometric shapes in any manner you see fit, using any number of colors, to make a pleasing pattern. The results of such vagaries are sometimes pretty, but mostly meaningless or monotonous. The student has the illusion of creating great art in an atmosphere of freedom, when in fact he is handicapped by the absence of certain disciplines which would evoke ideas and make playing with those ideas possible, work absorbing, and results interesting.



Crossword Puzzle.

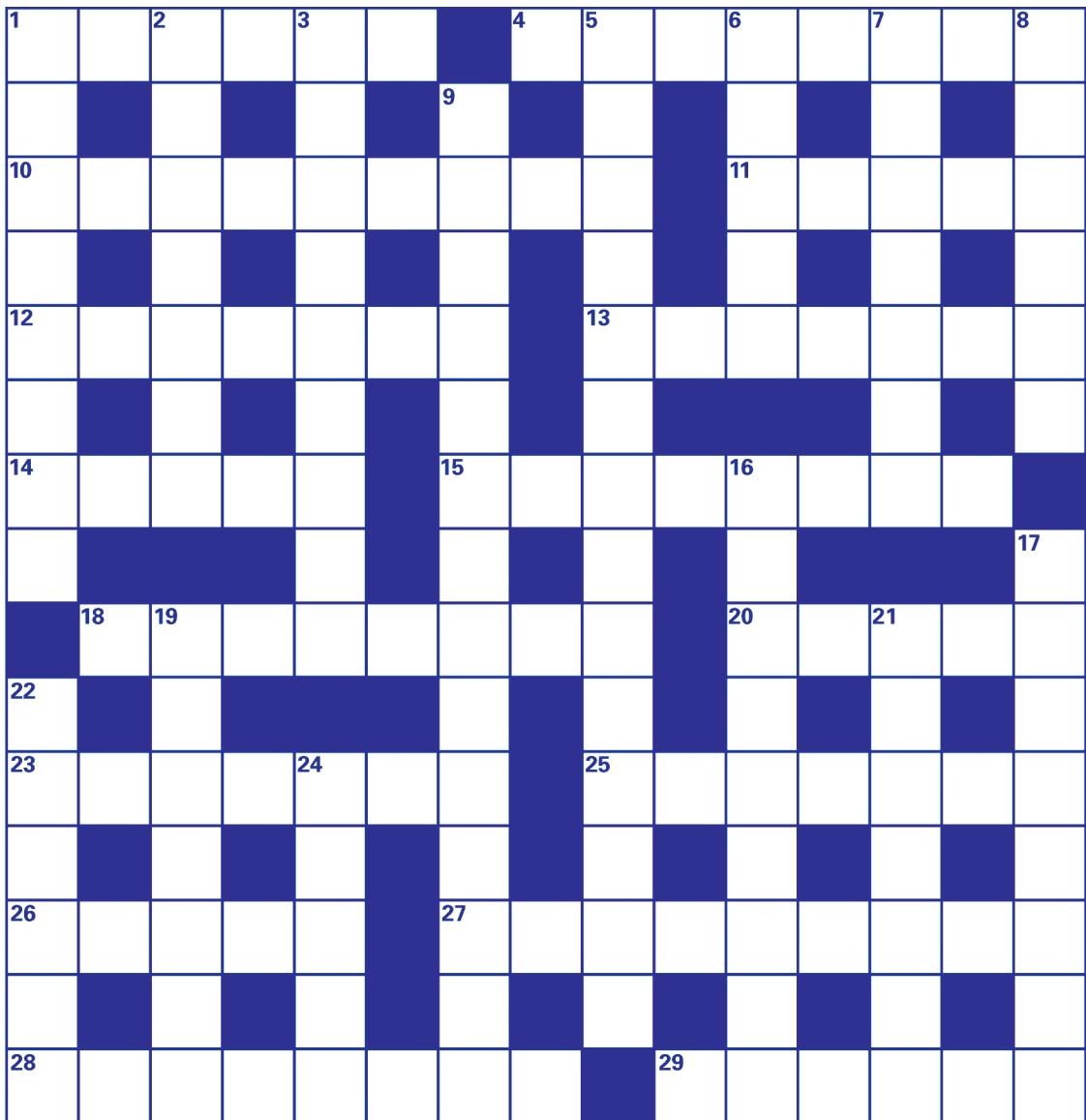
The basic design problem, properly stated, is an effective vehicle for teaching the possibilities of relationships: harmony, order, proportion, number, measure, rhythm, symmetry, contrast, color, texture, space. It is an equally effective means for exploring the use of unorthodox materials and for learning to work within specific limitations.

To ensure that theoretical study does not end in a vacuum, practical applications of the basic principles gleaned from this exercise should be undertaken at the proper time (they may involve typography, photography, page layout, displays, or symbols).

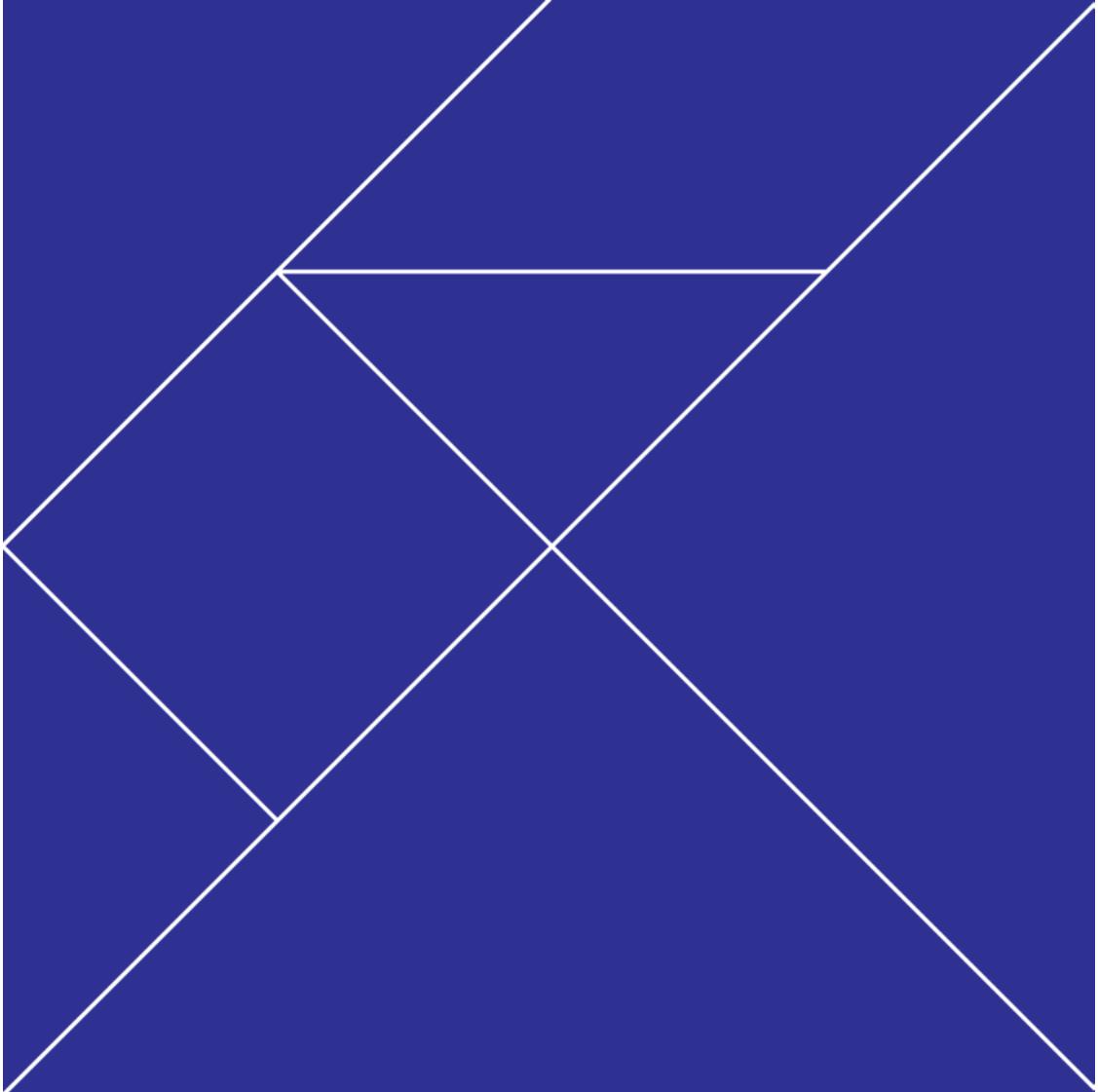
The student learns to conceptualize, to associate, to make analogies: to see a sphere, for example, transformed into an orange, or a button, into a letter, or a group of letters into a broad picture. "The pupils," says Alfred North Whitehead, "have got to be made to feel they are studying something and are not merely executing intellectual minuets."⁴

If possible, teaching should alternate between theoretical and practical problems, and between problems with tightly stated "rules" imposed by the teacher and problems with rules implied by the problem itself. But this can happen only after the student has been taught basic disciplines and their application. He then is able to invent his own system for "playing the game." "A mind so disciplined should be both more abstract and more concrete. It has been trained in the comprehension of abstract thought and in the analysis of facts."⁵

There are many ways in which the play principle serves as a basis for serious problem-solving, some of which are discussed here. These examples indicate, I believe, the nature of certain disciplines and many suggest the kinds of problems that will be useful to the student as well as to the teacher of design.



The crossword puzzle is a variation on the acrostic, a word game that has been around since Roman times. There have been many reasons given for the popularity of the game. It fulfills the human urge to solve the unknown; it is orderly; it represents, according to the puzzle editor of the New York Times, "a mental stimulation...and exercise in spelling and vocabulary building."⁶ But the play in such a game is limited to finding the exact word to fit a specific number of squares in a vertical and horizontal pattern. It allows for little imagination and no invention or aesthetic judgment, qualities to be found in abundance, for example, in the simple children's game the Tangram.



The Tangram

The Tangram is an ingenious little Chinese toy in which a square is divided into a special configuration. It consists of seven pieces, called tans: five triangles, one square, and one rhombus. The rules are quite simple: rearrange to make any kind of figure or pattern.

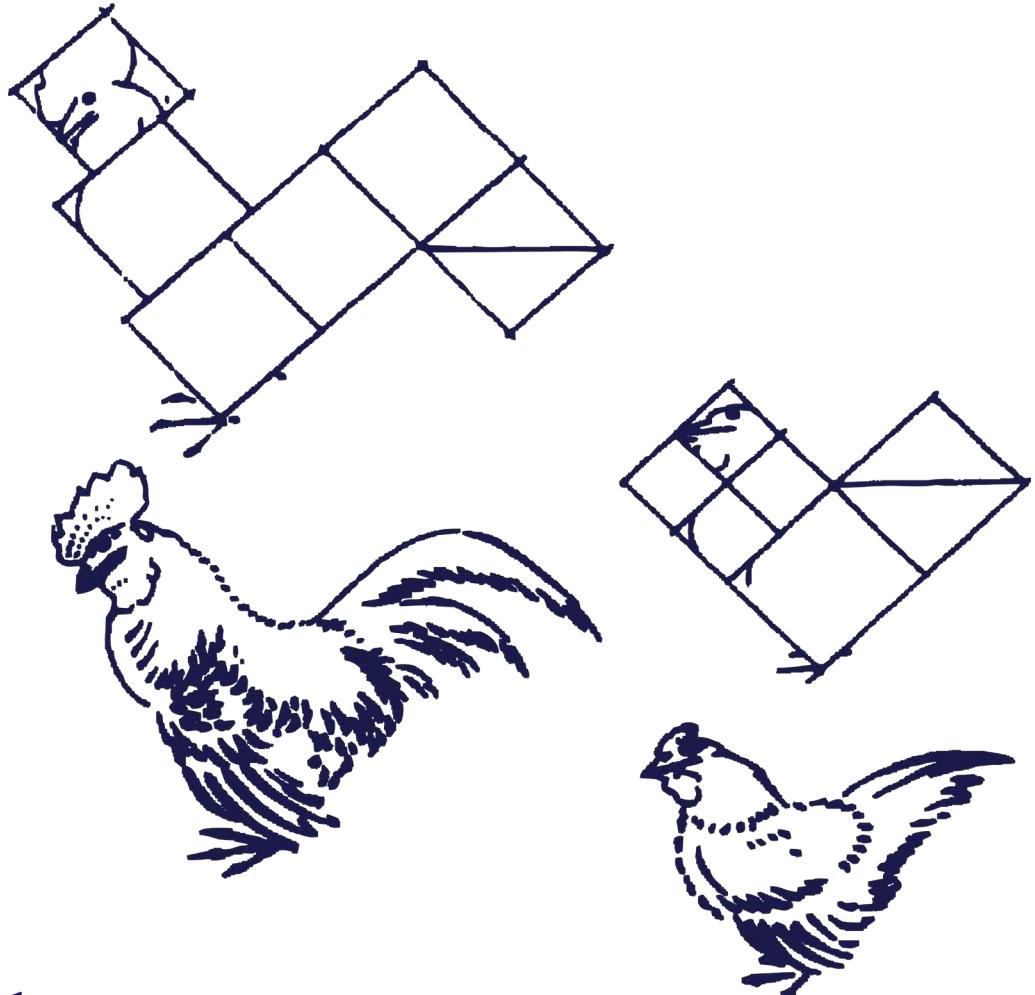
Lamington



Here is one possibility. Many design problems can be posed with this game in mind: the main principle to be learned is that of economy of means making the most of the least. Further, the game helps to sharpen the powers of observation through the discovery of resemblances between geometric and natural forms. It helps the student to abstract: to see a triangle, for example as a face, a tree, an eye, or a nose, depending on the context in which the pieces are arranged. Such observation is essential in the study of visual symbols.

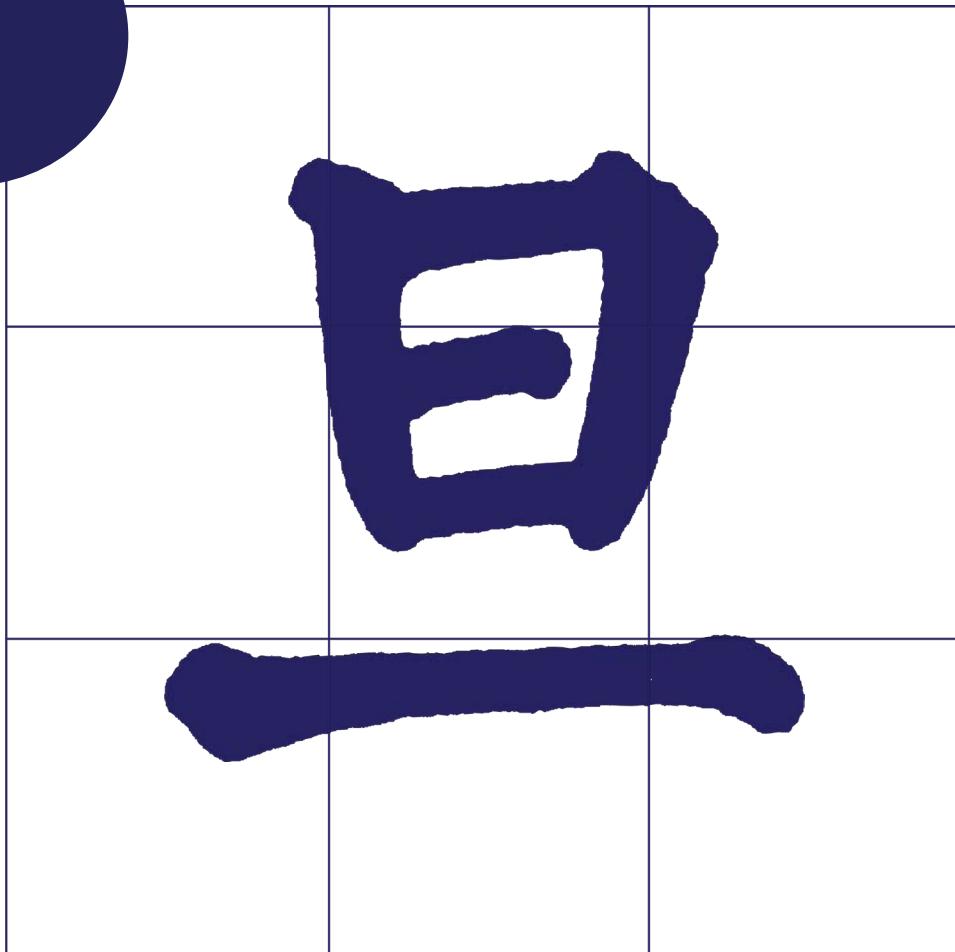
Hokusai's Drawing

This drawing is reproduced from the first volume of Hokusai's *Rapid Lessons in Abbreviated Drawing* (*Raikougwa Hayashinan*, 1812). In the book Hokusai shows how he uses geometric shapes as a guide in drawing certain birds. This exercise may be compared to the Tangram in that both use geometric means. The Tangram, however, uses geometry as an end in itself-to indicate or symbolize natural forms-whereas Hokusai uses it as a clue or a guide to illustrating them. In the artist's own words, his system "concerns the manner of making designs with the aid of a ruler or compass, and those who work in this manner will understand the proportion of things." Illustration D (Hokusai's Drawing)



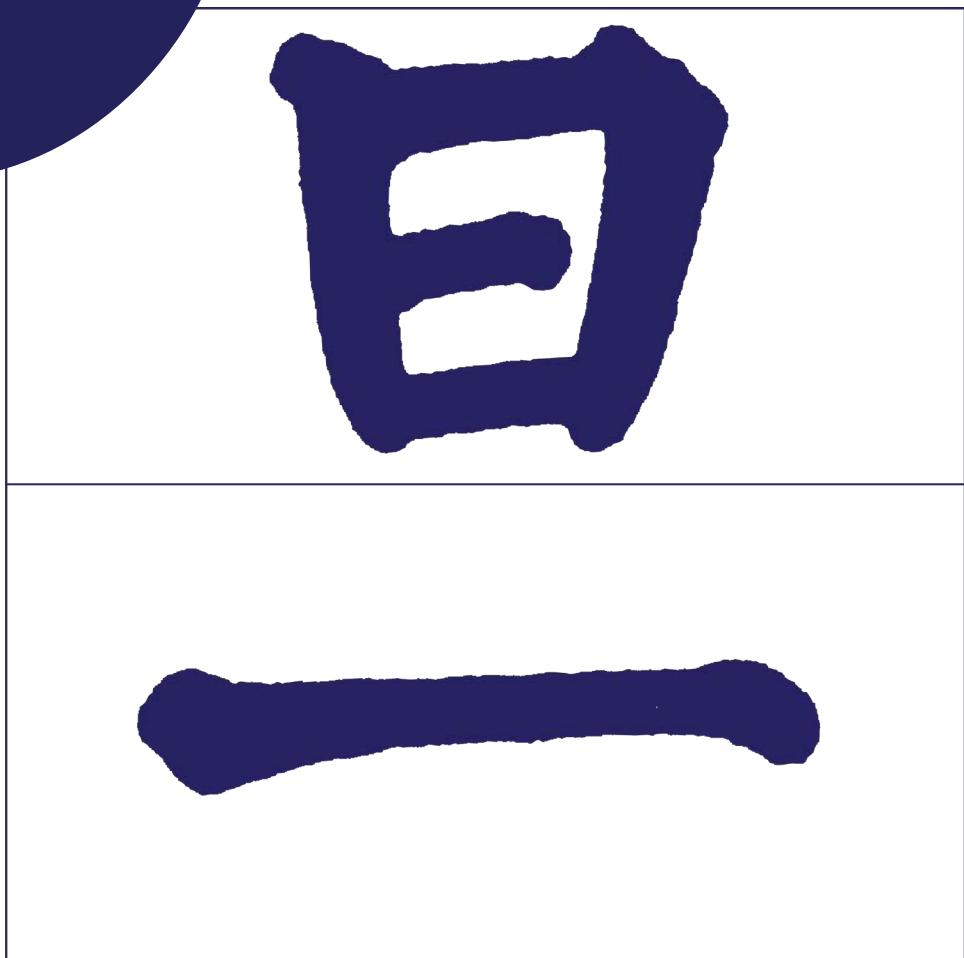
Hokusai's Drawing.

Chinese Characters.



Chinese

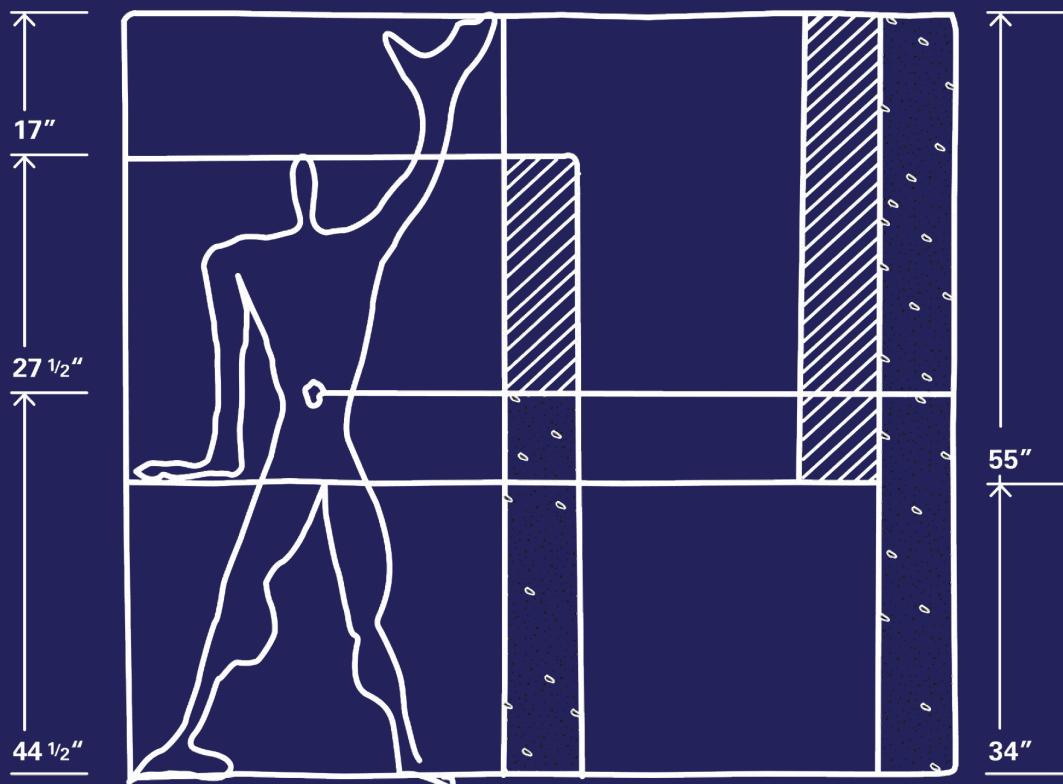
Chinese Characters
This character for the word tan (sunrise) is designed within an imaginary grid. Geometry functions here in a manner similar to the illustration (above?, ref Hokusai's Drawing.), namely as a guide to filling the space correctly, but not to producing a geometric pattern. The Chinese character is always written in an imaginary square. The nine-division square, invented by an anonymous writer of the T'ang dynasty, has been employed as the most useful, because it prevents rigid symmetry and helps to achieve balanced asymmetry.⁷ At the same time it makes the writer aware of the negative and positive spaces. Each part of the character touches one of the nine squares, thus achieving harmony between the two elements and the whole.



In a two-division square, on the other hand, the elements seem to fall apart, as can be seen in this illustration.

Within this rather simple discipline the calligrapher is able to play with space, filling it as he feels would be most appropriate. The composition of Chinese characters, says Chiang Yee, “is not governed by inviolable laws... however, there are general principles which cannot be ignored with impunity.”⁸

Modular Man.



The Modulor is a system based on a mathematical key. Taking account of the human scale, it is a method of achieving harmony and order in a given work.

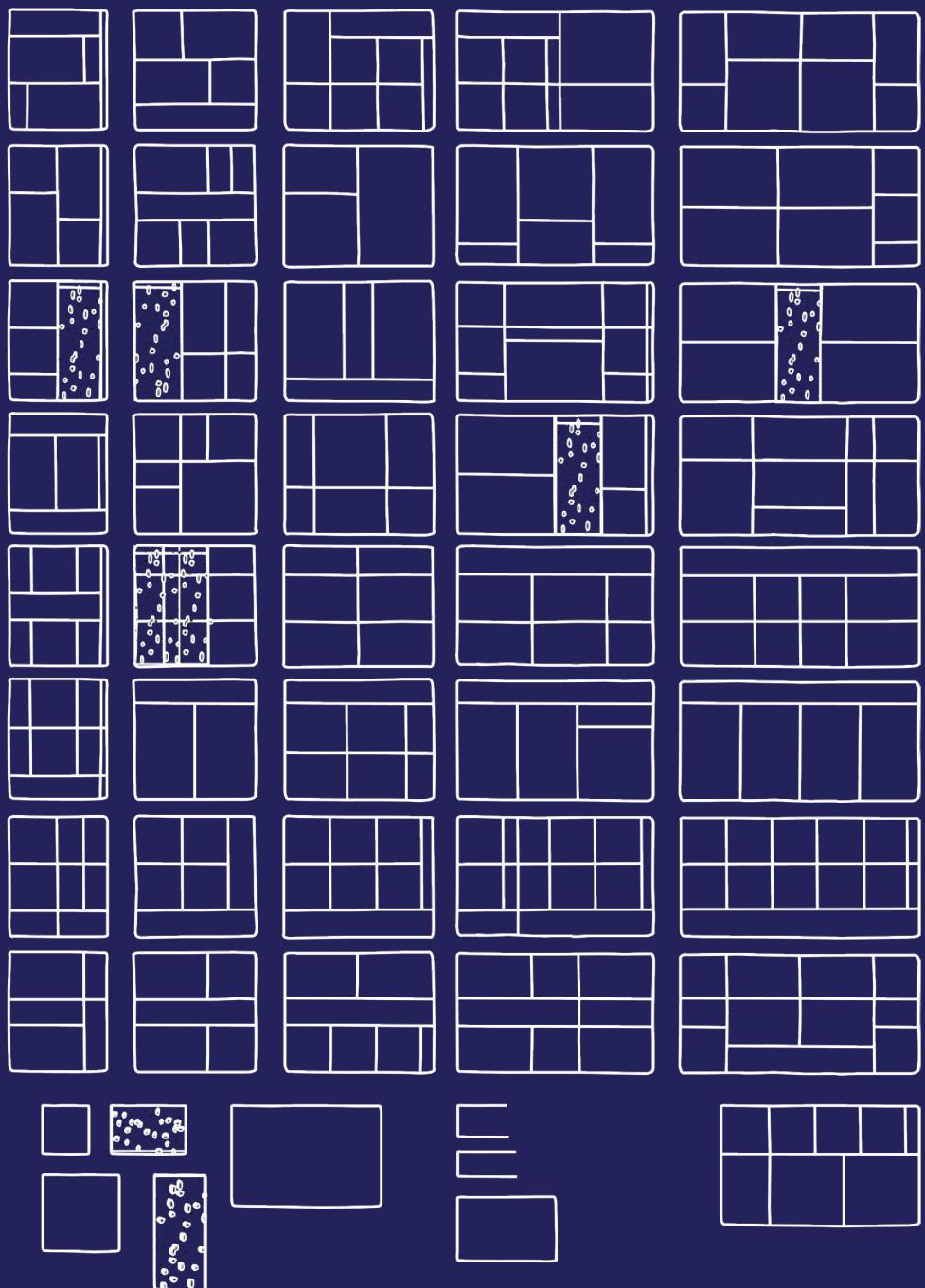
In his book, *The Modulor*, Le Corbusier describes his invention as “a measuring tool [the proportions] based on the human body [six-foot man] and on mathematics [the golden section].”

A man-with-armupraised provides, at the determining points of his occupation of space-foot, solar plexus, head, tips of fingers of the upraised arm-three intervals which give rise to a series of golden sections, called the Fibonacci series.”⁹ [1,1,2,3,5,8,13,etc.]

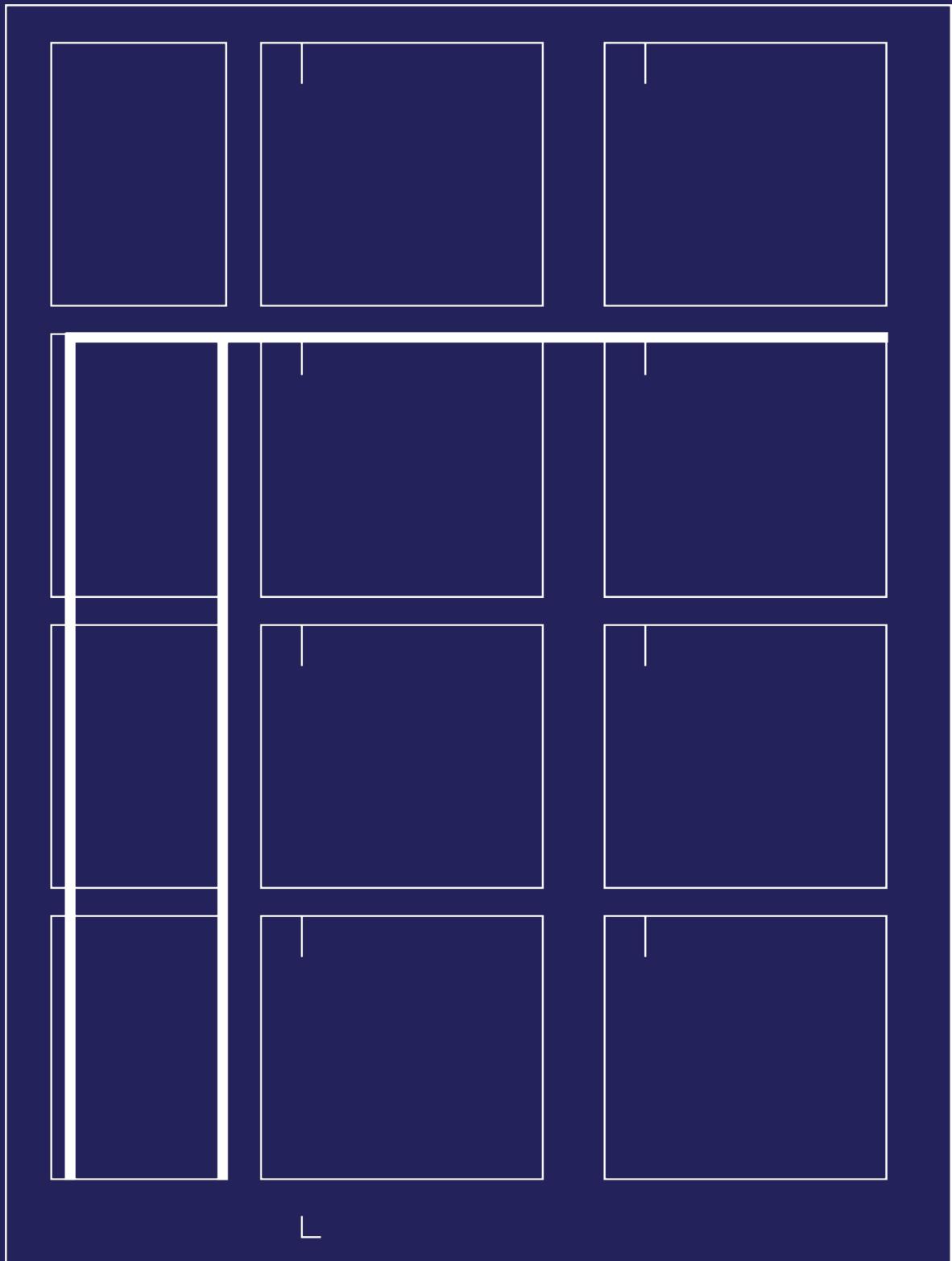
The Modulor is a discipline which offers endless variations and opportunities for play. Le Corbusier’s awareness of these potentialities is evident from the numerous references to games and play in his book, such as “All this work on proportioning and measures is the outcome of a passion, disinterested and detached, an exercise, a game.” He goes on to say, for if you want to play modulor...”¹⁰

In comparison to most so called systems of proportion, the Modulor is perhaps the least confining. The variations, as will be seen from this illustration, are practically inexhaustible (and this example utilizes only a very limited number of possibilities). This drawing is one of a limitless number of so-called Panel Exercises, played for pleasure or for some special application in order to discover a most satisfactory or beautiful configuration. If, however, the system should present any difficulties which happen to run counter to one’s intuitive judgment, Le Corbusier himself provides the answer: “I still reserve the right at any time to doubt the solutions furnished by the Modulor, keeping intact my freedom which must depend solely on my feelings rather than on my reason.”¹¹

Illustrations G, H (Modular Man, Proportion Systems)



Proportion System.



The Grid System.

Like the architects' plan, the grid system employed by the graphic designer provides for an orderly and harmonious distribution of miscellaneous graphic material. It is a system of proportions based on a module, the standard of which is derived from the material itself. It is a discipline imposed by the designer.

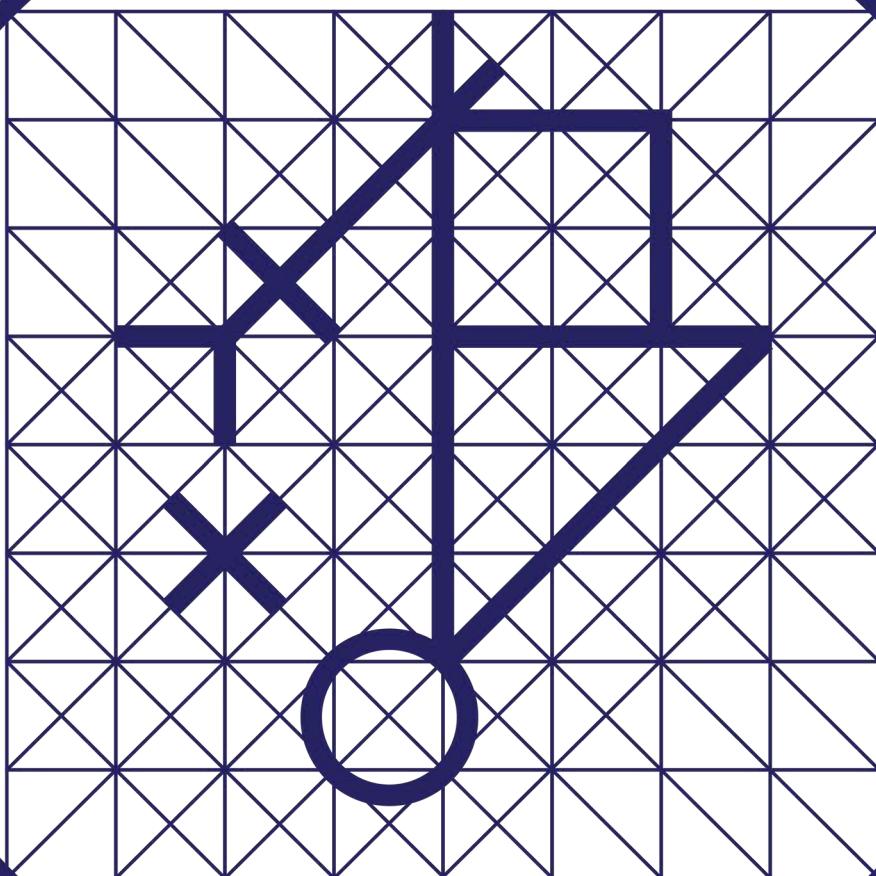
Unlike the Modulor, it is not a fixed system based on a specific concept of proportion, but one which must be custom-made for each problem. Creating the grid calls for the ability to classify and organize a variety of material with sufficient foresight to allow for flexibility in handing content that may, for one reason or another, be altered. The grid must define the areas of operation and provide for different techniques, pictures, text space between text and pictures, columns of text, page numbers, picture captions, headings, and other miscellaneous items.

Here is the grid for this book. Devising such a grid involves two creative acts: developing the pattern that is suitable for the given material and arranging this material within the pattern. In a sense, the creative ability required for the former is no less than that for the latter, because the making of a grid necessitates analyzing simultaneously all the elements involved. But once it has evolved, the designer is free to play to his heart's content: with pictures, type, paper ink, and color, and with texture, scale, size, and contrast.

The grid, then is the discipline that frees one from the time-consuming burden of making certain decisions (dimensions, proportions) without which fruitful and creative work is extremely difficult. One can move directly to those aspects of the problem in which individual expression, novel ideas, and freedom of choice are essential.

The grid system has as many detractors as it has adherents. Its detractors generally misunderstand its use or its potential-and that it is merely a tool. It has been condemned as stifling, rigid, and cold. But this confuses the product with the process. The grid does not automatically insure an exciting solution. The designer must still exercise all the experience at his command: discretion, timing, and a sense of drama and sequence. In brief, the intelligent designer will recognize that the grid can help him achieve harmony and order, but also that it may be abandoned when and if necessary. To function successfully, the grid system, like all workable systems, must be interpreted as freely as necessary. It is this very freedom which adds richness and a note of surprise to what might otherwise be potentially lifeless.

Masons' Mark.



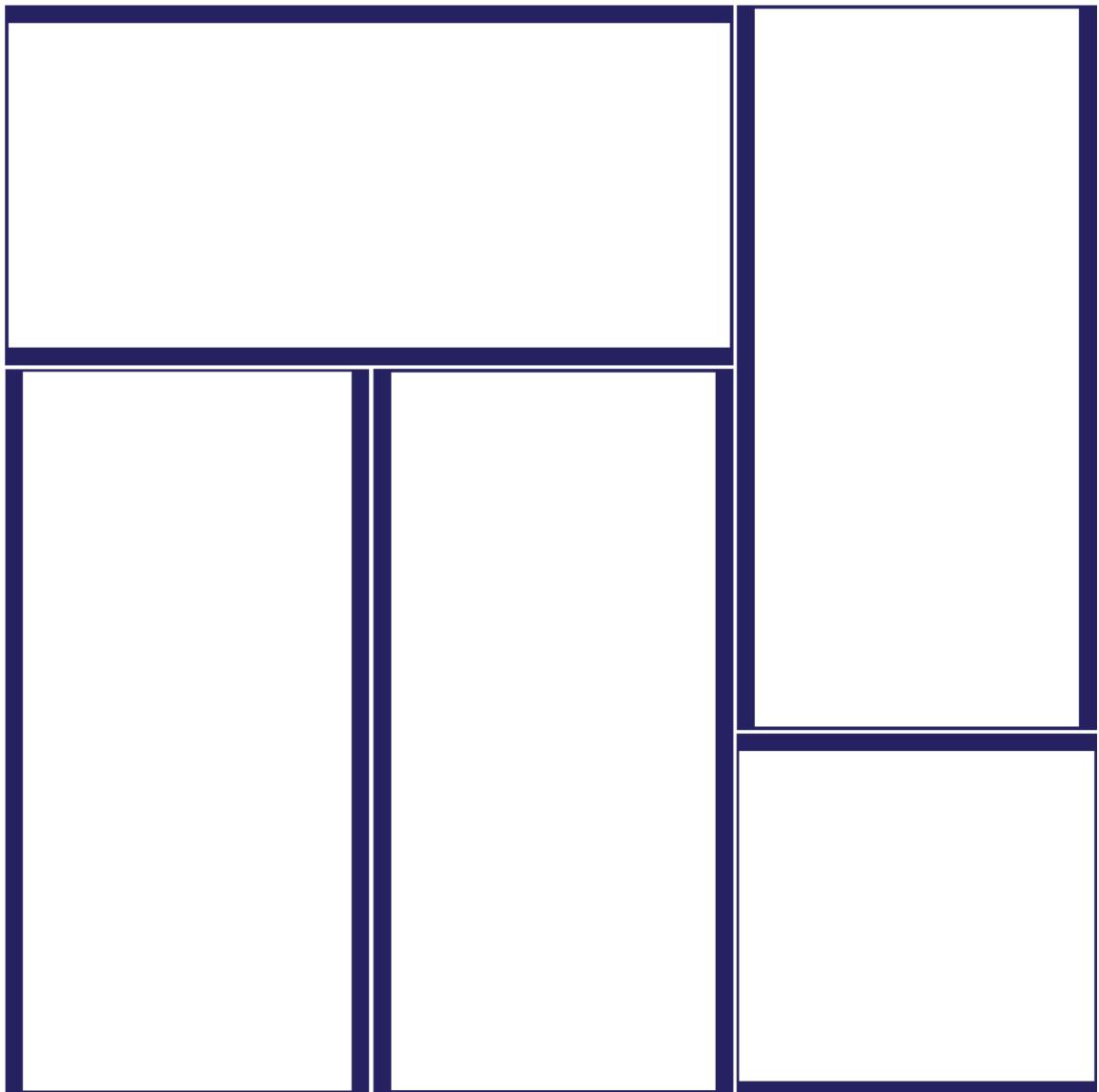
The background of the page features several large, dark blue geometric shapes scattered across the white space. These shapes include a tall triangle on the left, a square in the upper right, a circle on the right edge, a large triangle at the bottom center, and a trapezoid in the bottom right corner.

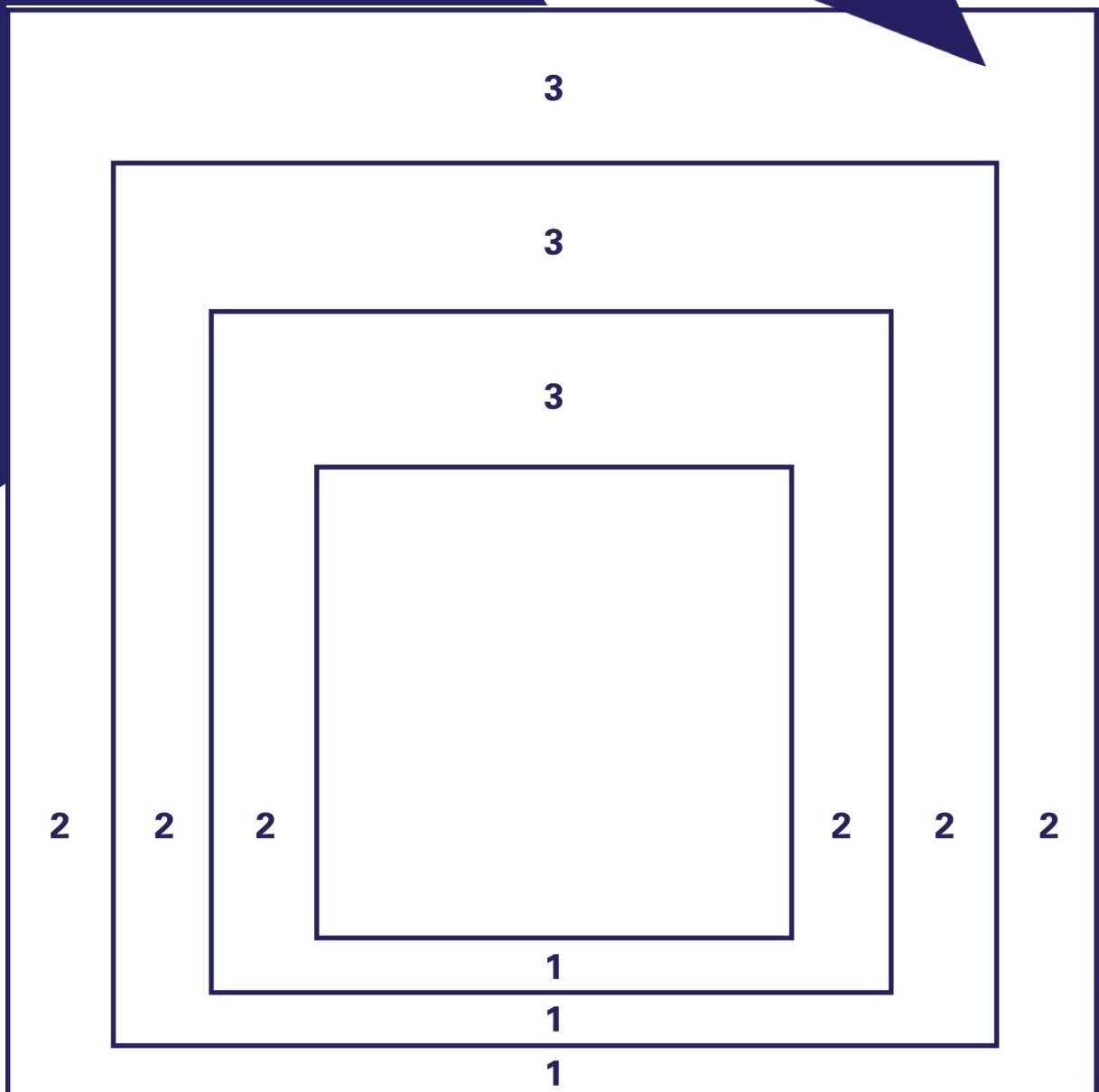
We find other variations of the geometric plan in Japanese architecture, modern painting, and Byzantine masons' marks, such as the seal shown. This seal "employs a mathematical key as its design basis. The thick lines represent the mark, the thin lines represent the ground lattice which allows an infinite number of combinations."¹²

The geometric scheme is the discipline in which the designer works. Designs stemming from such a scheme are limited only by imagination.

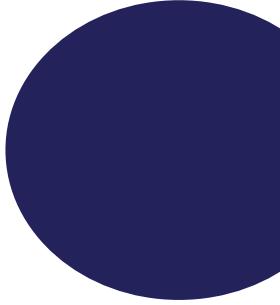
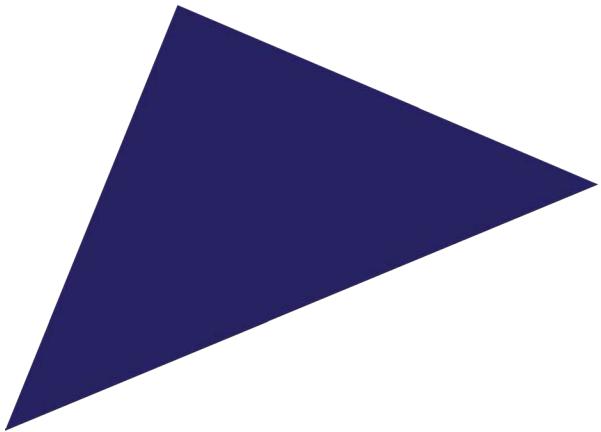
Tatami.

The system employed by Japanese architects in designing their traditional houses both determines the size of various rooms in the house, as well as floors, walls, furniture, and creates the style and appearance of the house. The Tatami, a straw mat approximately 3 by 6 feet and 2 inches thick, is the module or standard from which the plan of the house grows. Edward S. Morse, in his book Japanese Homes, describes the mat system as follows: "The architect invariably plans his rooms to accommodate a certain number of mats; and since these mats have a definite size, any indication on the plan of the number of mats a room is to contain gives at once its dimensions also. The mats are laid in the following numbers: two, three, four-and-one-half, six eight, ten, twelve, fourteen, sixteen, and so on."¹³ This illustration shows the plan of a four-and-onehalf-mat room. Once the outer dimensions of the house are determined, the mats, together with the Japanese system of sliding doors, give you complete flexibility in the arrangement and number of rooms. A perfect example of form and function, of discipline and play.





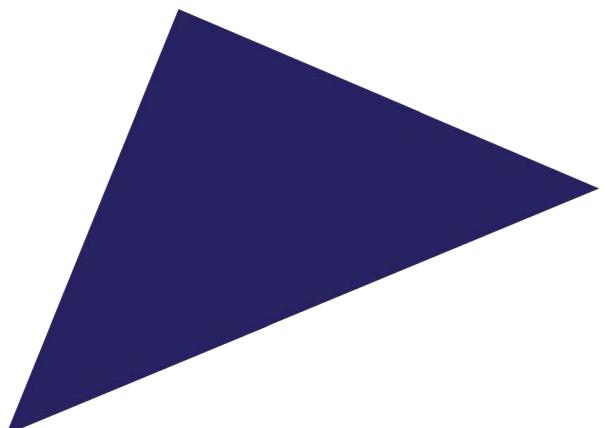
Albers
Square.

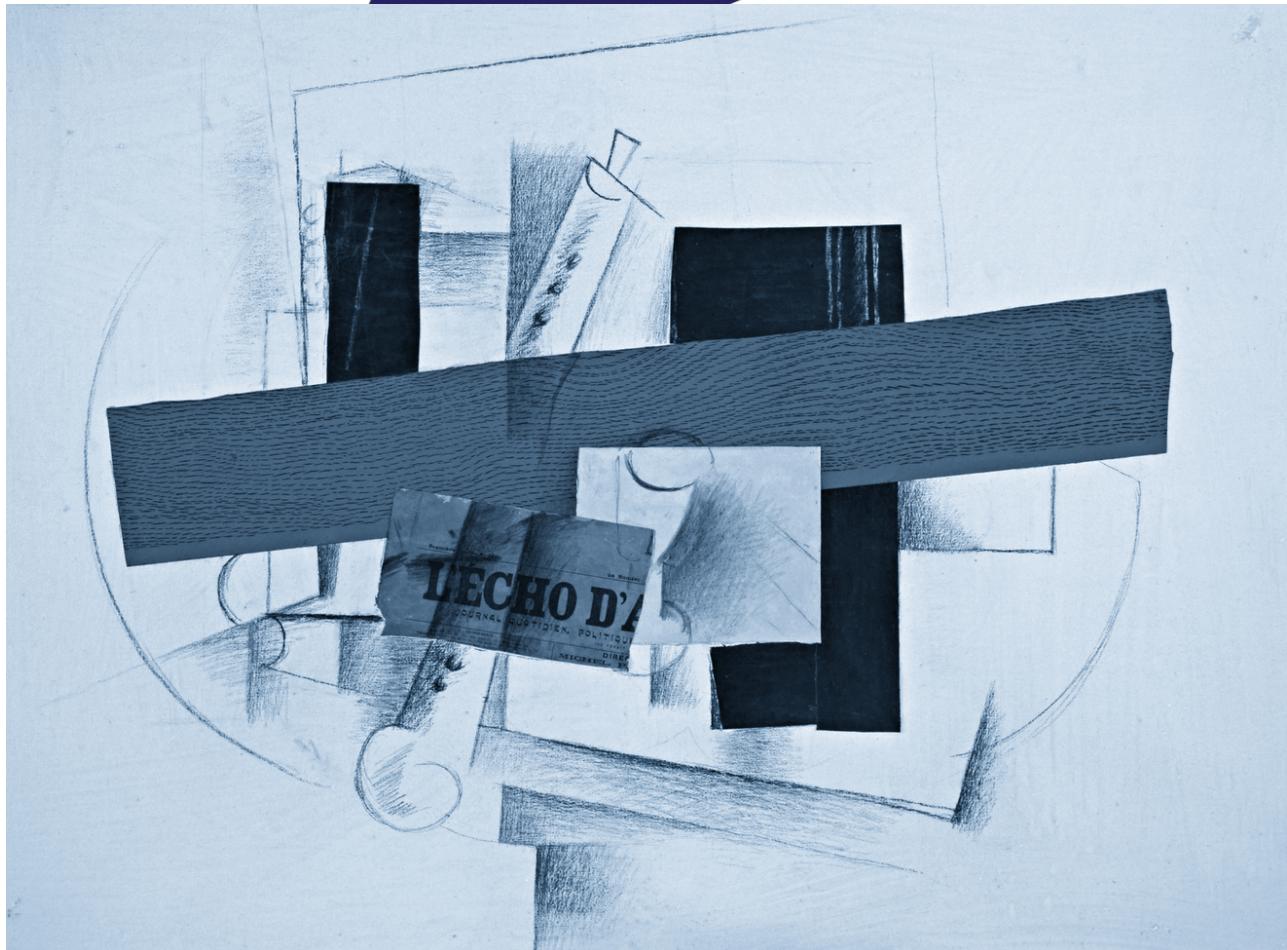


Albers

Much of the painting of Josef Albers is based on the geometric pattern we see here. The pattern is not used, however, in the same manner as the masons' lattice. Here the pattern is the painting itself. It represents a strict, immutable arrangement (theme) in which the artist, by juxtaposing colors (variations), plays the fascinating game of deceiving the eye. The squares as we see them here appear to recede into the picture plane. However, by skillful manipulation of colors, the painting flattens out and is thus seen as a two-dimensional picture. The many variations based on this and similar designs attest to the fascination Albers finds in the interplay of a great variety of color schemes and an extremely limited geometric format.

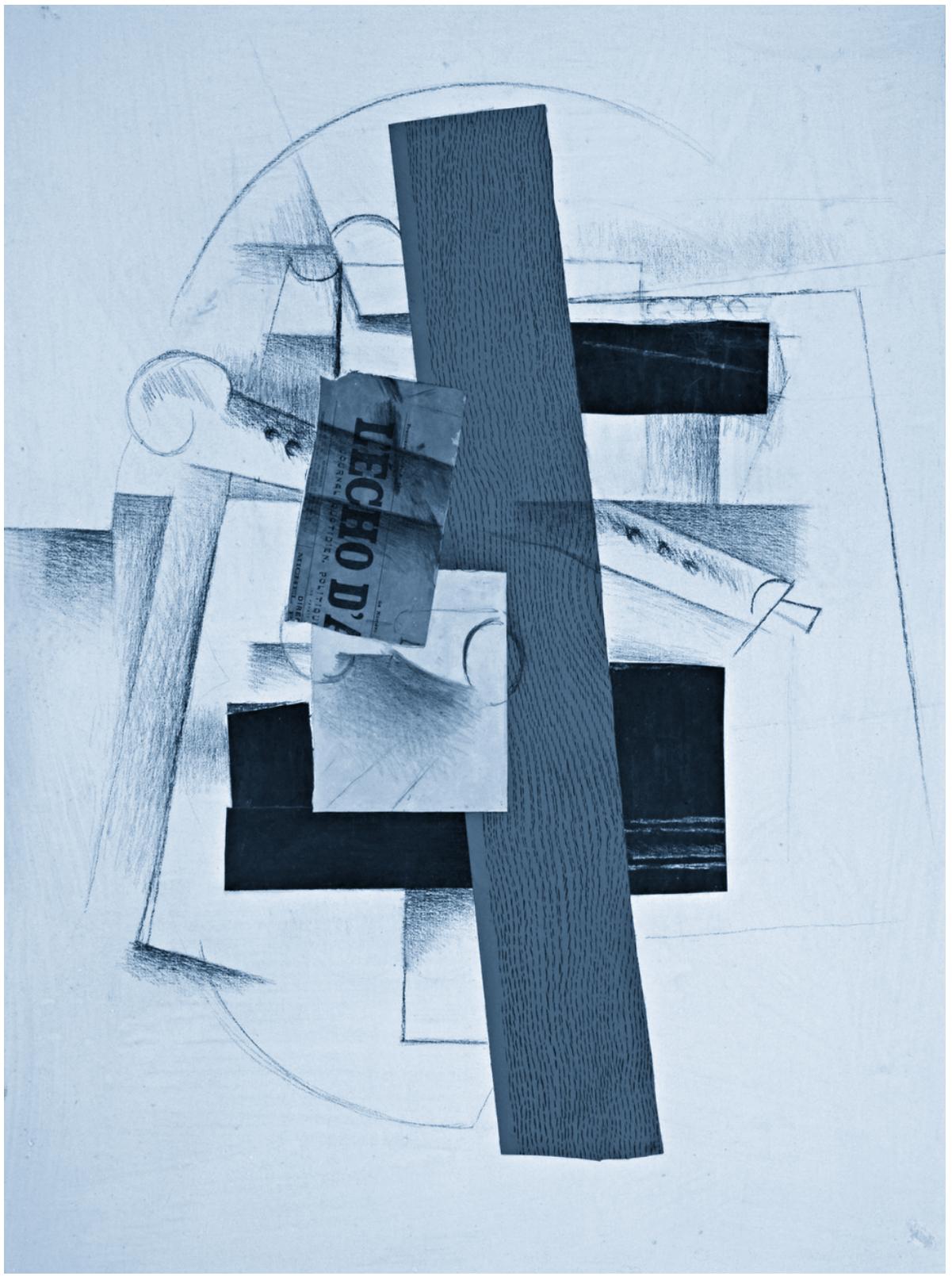
Illustration L (Albers Diagram)





Similarly, the early Cubist collages, in which cut paper played an important part, are products of strict rules, limited materials: newspaper mounted on a surface, with the addition of a few charcoal or pencil lines, usually in black and white; sometimes tan or brown or similarly muted colors were used. These elements were juggled until they satisfied the artist's eye. The playfulness and humor in the production of some of these compositions in no way detracts from the end result of a serious work of art. (Painting shown is Braque's Clarinet, private collection, New York)

Braque's Clarinet.



Matisse.

It is inconceivable to consider Matisse's cut paper compositions without, in some way, linking them to the play element—the joy of working with simple colors and the fun of “cutting paper dolls.” The greatest satisfaction perhaps is derived from creating a work of art with ordinary scissors and some colored paper—with so simple means, such satisfying ends.



One cannot underestimate the importance of restraint and playfulness in almost any phase of Picasso's work. Here, for example, one sees a straightforward use of the brush and a single color. The drawing of the child's face, the ornament, and the lettering are all one. Lettering is not used as a complement to the drawing, but an integral part of it. It serves as both a garland and a verbal image-visual pun. What emerges is itself a kind of game, revealing the ingenuity and playfulness of the artist, his ability to deal with problems in the simplest, most direct, and most meaningful manner.

Similarly, this ability to do much with little-to find a bull's head in a bicycle seat and handlebars-is another aspect of Picasso's wizardry, his humor, his childlike spontaneity, his skill as a punster, and his ability to improvise and invent with limited, often surprising means.

Bulls Head.



VALLAURIS

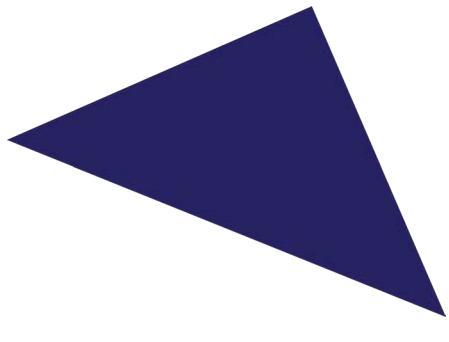
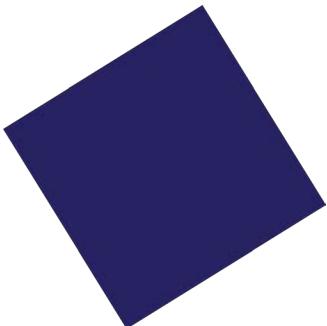
1951



EXPOSITION

[Signature]

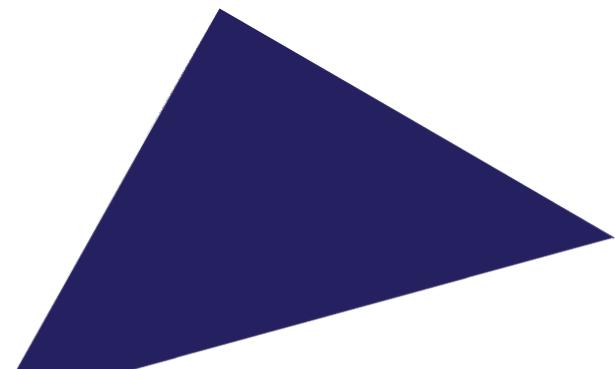
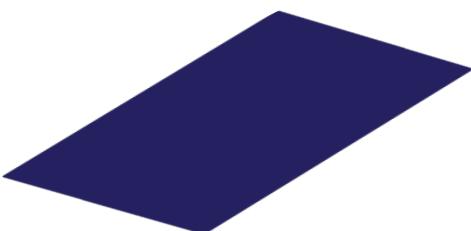
Picasso's Vallauris Exposition.



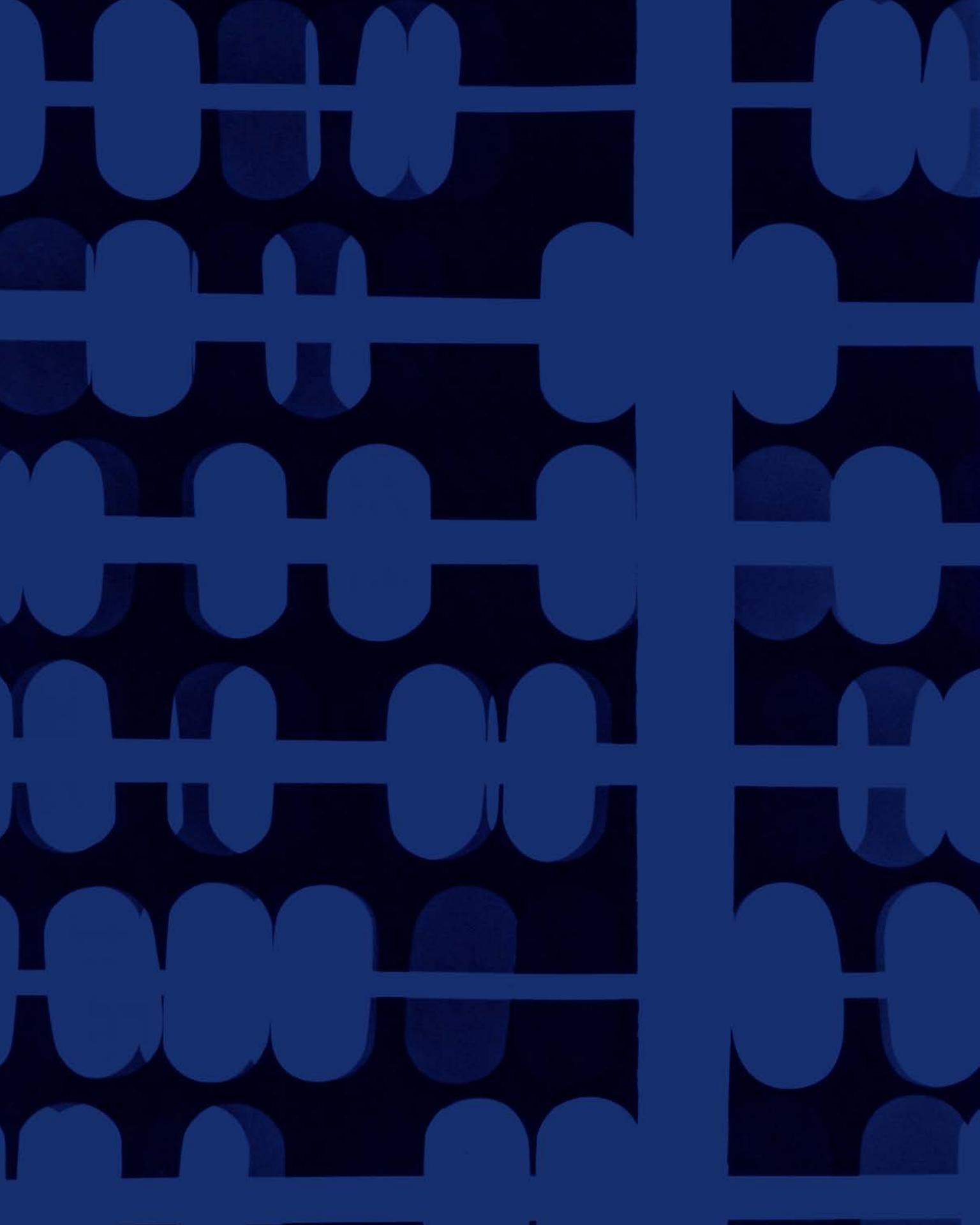
Mu Ch'i.

This monochrome, Persimmons, by Mu Ch'i, a thirteenth century Zen priest and painter, is a splendid example of a painting in which the artist plays with contrasts (the male and female principles in Chinese and Japanese painting) : rough and smooth, empty and full, one and many, line and mass, black and white, tint and shade, up and down. It is a study in the metamorphosis of a fruit, as well as of a painting. (The artist, incidentally, never used any color but black.)

The reader may find a parallel, at least in spirit, between this painting and the preceding one by Picasso. Both employ a single color, both exploit this limitation to achieve as much variety as possible, and both undoubtedly were painted very rapidly, a condition often conducive to utmost simplification and improvisation.



正一七



The Photogram.

The idea of the photogram or camera-less photography goes back as far as the 19th century with Fox Talbot's photogenic drawings. In our time the pioneers of photography without the use of a camera were Christian Scad, Man-Ray, Moholy-Nagy, and Kurt Schwitters. Among the first to apply this technique in advertising was the constructivist El Lissitzky. Later, Picasso experimented with the photogram. In advertising, the photogram has yet to be fully exploited. Although the effectiveness of the photogram depends chiefly on straight-forward mechanical methods (light on sensitized paper), it offers the designer ample opportunity for aesthetic, manual control. In a sense, it is not a picture of the object but the object itself; and, as in stroboscopic photography, it makes picturization of continuous movement possible as in this photogram of an abacus, by the author. Although some of its effects may be approximated with pen, brush, or scissors, the quality inherent in the subtle light modulations can be achieved, perhaps, only by means of the photogram.

Illustration R (Abacus photogram)



verdeelbaar tot



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no



particulair



particulair niet



ofo



vervaard. galvaniseert



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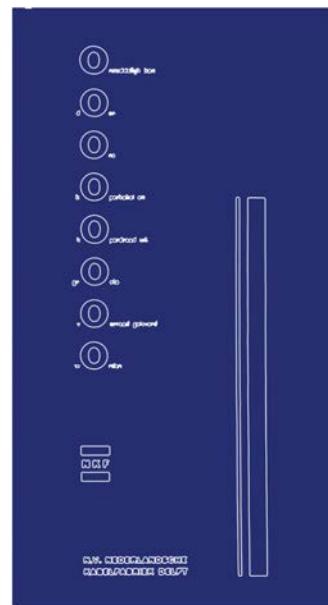
N.V. NEDERLANDSCHE
KABELFABRIEK DELFT

Piet Zwart.

The deStijl movement, founded in 1917, had a profound influence on painting, architecture, and typography. Piet Zwart, the designer responsible for this advertisement for the Dutch firm Nederlandsche Kabelfabriek, was associated with this group.

The disciplines which deStijl encouraged are evident in this Zwart design: functional use of material and meaningful form, and the restrained use of color (black and/or primary colors).

From a few simple typographic elements and an ingenious play on the letter O, a humorous, yet significant design evolved. A picture is created by typographic means: a few type characters and type rules are so manipulated as to make a useful product, an advertisement. Many examples of this artist's work reveal the same playful approach and are worthy of serious study.



The earth colors of Africa, the ice of the polar regions, and the bamboo of Japan are among the many challenging materials with which artists and artisans create their idols, their utensils, and their houses-all natural limitations that provide their own built-in disciplines which, in turn, contribute to the creative solution.

Some years ago in Kyoto I was fortunate enough to witness a young Japanese craftsman

make the chasen you see here. The chasen is a whisk used in the tea ceremony and is cut from a single piece of bamboo with a simple tool resembling a penknife. Both the material and the manufacturing process (which took about one-half hour) are the quintessence of discipline, simplicity, and restraint. The invention of such an article could

not possibly have been achieved by anyone lacking the ability to improvise and the patience to play with specific material: to see the myriad possibilities and to discover the ideal form.



A Japanese Craftsman.

Footnotes

1. Le Corbusier, *The Modulor* (Cambridge, MA, 1954), 220.
2. Gilbert Highet, *The Art of Teaching* (New York, 1950), 194.
3. Cahier de George Braque (Paris, 1947), 33.
4. Alfred North Whitehead, *The Aims of Education* (New York, 1949), 21.
5. Ibid. 24.
6. The New York Times Magazine, December 15, 1963.
7. Chiang Yee, *Chinese Calligraphy* (London, 1938), 167.
8. Ibid., 166.
9. Le Corbusier, *The Modulor*, 55.
10. Ibid., 80,101.
11. Ibid., 63.
12. Matila Ghyka, *The Geometry of Art and Life* (New York, 1946), 120.
13. Edward S. Morse, *Japanese Homes* (Boston, 1885), 122.

Garamond

Named for the French punch-cutter Claude Garamond, the typeface in its current form has a foggy past. What we now know as Garamond are modern interpretations of fonts that were inspired by drawings which were modeled after the punches of Claude Garamond. The original punches, long slender metal rectangles with individual letterforms carved into the ends, were finely-tuned and perfected during the early to mid 1500's up until Claude's death in 1561. After his death, sets of his punches found their way into the hands of foundries and served as inspirations for many different typefaces in addition to the many variations of Garamond. It should also be said that not all of the Garamond's in the world are the same. Some are modern interpretations, some are recreations of typefaces from the late 1500's modeled after the original punches and a few are faithful modern recreations based on the original punches.

Graphic Designer
Janai Turner

