# Mary Stewart
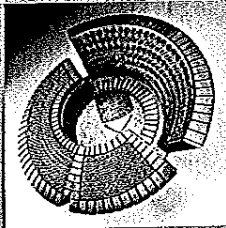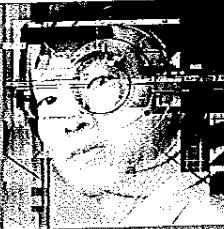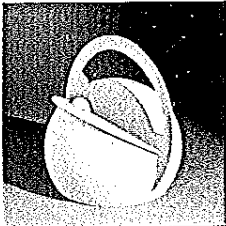
# Launching the imagination

**A Comprehensive Guide to Basic Design**

# Concepts and Critical Thinking

In *A Kick in the Seat of the Pants,* Roger Von Oech identifies four distinct roles in the creative process.

First, the *explorer* learns as much as possible about the problem. Research is crucial. Ignorance of a topic may result in a superficial solution, while finalizing the first solution envisioned often results in a cliché.

Second, the *artist* experiments with a wide variety of solutions, using all sorts of combinations, proportions, and materials. By creating 10 answers to each question, the artist can select the best solution rather than accepting the only solution.

Third, the *judge* assesses the work in progress and determines what revisions are required. Innovative ideas are never fully developed when first presented; most need extensive revision and expansion. Rather than discard an underdeveloped idea, the judge identifies its potential and determines ways to increase its strength.

Finally, the *warrior* implements the idea. When the project is large and complex, implementation can be a challenge. When obstacles appear, the warrior assesses the situation, determines the best course of action, and then completes the project.

We will explore each of these roles in the next four chapters. Strategies for cultivating creativity and improving time management are discussed in Chapter Four. Chapter Five deals with concept development and visual problem solving. Chapter Six is devoted to critical thinking and provides specific ways to improve any design. In Chapter Seven, we expand our discussion of visual communication and consider ways to make more meaningful designs.
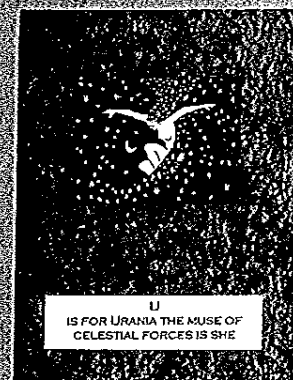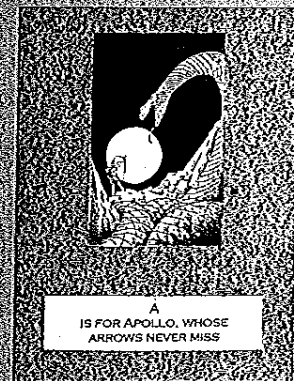
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# Cultivating Creativity

"The heart of all new ideas lies in the borrowing, adding, combining or modifying of old ones. Do it by accident and people call you lucky. Do it by design and they'll call you creative."

Michael LeBoeuf, in *Imagineering*

## DESIGN AND CREATIVITY

Design and creativity are natural partners. The quality of a design is determined by the integration of its parts into a cohesive whole. The design will work when the parts fit together well. Many compositional possibilities are invented and discarded during the design process. Likewise, creative thinking requires extensive exploration and experimentation. Old ideas are recombined to create new structures. These new structures suggest new questions, which then suggest new answers. By looking at familiar elements in a new way and by combining ideas that have traditionally been separate, we can cultivate a cycle of creativity.

Once viewed as peripheral, creativity and innovation have become highly valued in the current business climate. In the Information Age, intellectual property can be the most important asset in a business. Innovation in art and design, always highly valued in Western culture, has accelerated. New technologies have expanded the range of approaches available, and new ideas drawn from literature, science, philosophy, and history inspire contemporary artists and designers. The sky is the limit. An effective artist or designer cannot simply follow instructions. Cultivating creative thinking is as fundamental as mastering any technical skill.

## SEVEN CHARACTERISTICS OF CREATIVE THINKING

Creativity is inherently unpredictable. Through creative thinking, old habits are broken and familiar patterns of thought are transformed. Anything can happen. Predicting the future based on past experience becomes inadequate when a creative breakthrough occurs. Like a shimmering drop of mercury, creativity eludes capture.

We can actively encourage creative thinking, however. Rather than waiting for inspiration, we can set up the conditions favorable to creativity. Based on observation and on interviews, various researchers have noted the following characteristics in many creative people.

## Receptivity

Creative people are open to new ideas and welcome new experiences. Never complacent, they question the status quo and embrace alternative solutions to existing problems. Listening more and talking less is helpful. As journalist Larry King says, "I never learn anything new when I'm the one talking!"

## Curiosity

A good designer brings an insatiable curiosity to each project. Researching unfamiliar topics and analyzing unusual systems is a source of delight rather than a cause for concern. Like a child, the designer is eager to learn new things and explore new places. "How does it work?" and "How can it work better?" are frequently asked questions.

## Wide Range of Interests

With a broad knowledge base, a creative person can make a wider range of connections. Consider the number of words you can create from the letters in the word *image:*

age, game, gem, am, aim, a, I, me

Try the same game with the word imagination:

gin, nation, gnat, ton, tan, not, man, again, gain, oat, got, tag, am, aim, ant, no, on, tin, gamin, inn, ingot, main, a, I

With more components, the number of combinations increases. Likewise, an artist who has a background in literature, geology, archery, music, and history can make more connections than a single-minded specialist.

## Attentiveness

Realizing that every experience is potentially valuable, creative people pay attention to seemingly minor details. Scientists often develop major theories by observing small events, which they then organize into complex patterns. Artists can often see past superficial visual chaos to discern an underlying order. Playwrights develop dramatic works by looking past the surface of human behavior to explore the substance of the human condition. By looking carefully, creative people see possibilities that others miss.

## Connection Seeking

Seeing the similarity among seemingly disparate parts has often sparked a creative breakthrough. For example, Egyptian hieroglyphs became readable when a young French scholar realized that they carried the same message as an adjacent Greek inscription on a slab of stone. By comparing the two and cracking the code, Jean-François Champollion opened the door for all subsequent students of ancient Egyptian culture.

## Conviction

Creative people value existing knowledge. Since new ideas are often derived from old ideas, it is foolish to ignore or dismiss the past. However, creative people also love change. Never satisfied with routine answers to familiar questions, they constantly consider new possibilities and often challenge the authorities. Convinced of the value of their ideas, they tenaciously pursue an independent path.

## Complexity

In lecture classes, we must accurately take notes, memorize facts, and collect and analyze data. We are encouraged to think rationally, write clearly, and present our ideas in a linear progression. In studio classes, exploration, experimentation, and intuition are encouraged, especially during brainstorming sessions. Synthesis, emotion, visualization, spatial perception, and nonlinear thinking are highly valued.

To be fully effective, a creative person needs to combine the rational with the intuitive. While intuition may be used to generate a new idea, logic and analysis are often needed for its realization. As a result, the actions of creative people are often complex or even contradictory. As noted by psychologist Mihaly Csikszentmihalyi,[1] creative people often combine

- Physical energy with a respect for rest. They work long hours with great concentration, then

rest and relax, fully recharging their batteries. They view balance between work and play as essential.

- Savvy with innocence. They use common sense as well as intellect in completing their work yet remain open to experience. Creative people tend to view the world and themselves with a sense of wonder, rather than cling to preconceptions or stereotypes.

- Responsibility with playfulness. When the situation requires serious attention, creative people are remarkably diligent and determined. They realize that there is no substitute for hard work and drive themselves relentlessly when nearing completion of a major project. On the other hand, when the situation permits, a playful, devil-may-care attitude may prevail, providing a release from the previous period of work.

- Risk-taking with safe-keeping. Creativity expert George Prince has noted two behavioral extremes in people.[2] Safe-keepers look before they leap, avoid surprises, punish mistakes, follow the rules, and watch the clock. A safe-keeper is most comfortable when there is only one right answer to memorize or one solution to produce. Risk-takers are just the opposite. They break the rules, leap before they look, like surprises, are impetuous, and may lose track of time. A risk-taker enjoys inventing multiple answers to every question.

  An imbalance in either direction inhibits creativity. The safe-keeper lives in fear, while the extreme risk-taker lives brilliantly—but dangerously. Creative thinking requires a mix of risk-taking and safe-keeping. When brainstorming new ideas, open-ended exploration is used: anything is possible. But, when implementing new ideas, deadlines, budgets, and feasibility become major concerns. The risk-taker gets the job started; the safe-keeper gets the job done.
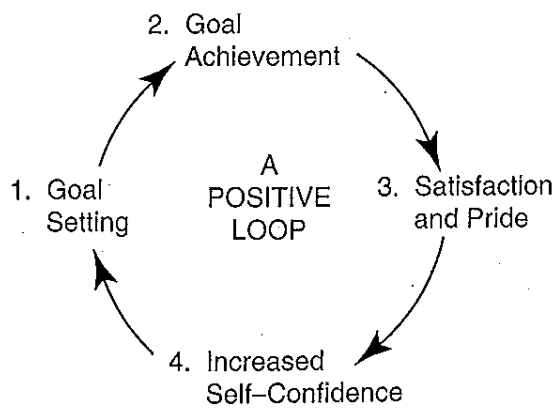
- Extroversion with introversion. When starting a new project, creative people are often talkative and gregarious, eager to share insights and explore ideas. When a clear sense of direction develops, however, they often withdraw, seeking solitude and quiet work time. This capacity for solitude is crucial. Several studies have shown that talented teenagers who cannot stand solitude rarely develop their creative skills.
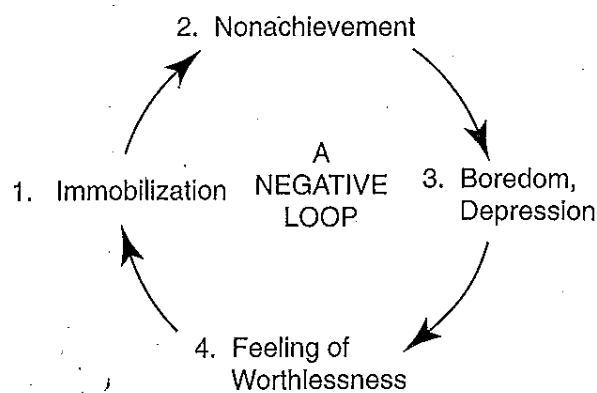
- Passion with objectivity. Mature artists tend to plunge into new projects, convinced of the significance of the work and confident of their skills. Any attempt to distract or dissuade them at this point is futile. However, when the model or rough study is done, many will pause to assess their progress. This period of analysis and judgment may occur in a group setting or may be done by the artist alone. In either case, the emotional attachment required while creating is now replaced by a dispassionate objectivity. Work that does not pass this review is redone or discarded, regardless of the hours spent in its development. In major projects, this alternating process of creation and analysis may be repeated many times.

- Disregard for time with attention to deadlines. Time often dissolves when studio work begins. An artist or a designer can become engrossed in a project: when the work is going well, 6 hours can feel like 20 minutes. On the other hand, an acute attention to deadlines is necessary when preparing an exhibition or working for a client.

- Modesty with pride. As they mature, creative people often become increasingly aware of the contributions to their success made by teachers, family, and colleagues. Rather than brag about past accomplishments, they tend to focus on current projects. On the other hand, as creative people become aware of their significance within a field, they gain a powerful sense of purpose. Distractions are deleted from the schedule, and increasingly ambitious goals are set. When the balance is right, all these complex characteristics fuel even greater achievement.

## GOAL SETTING

As humans, our behavior is strongly goal-directed. Every action occurs for a reason. When we focus our attention on a specific task, we can accomplish just about anything. Goals help us channel our energy and manage our time. When we reach our goals,

## A POSITIVE LOOP

1. Goal Setting → 2. Goal Achievement → 3. Satisfaction and Pride → 4. Increased Self-Confidence

A POSITIVE LOOP

4.1 Michael LeBoeuf, *Imagineering*, 1980

## A NEGATIVE LOOP

1. Immobilization → 2. Nonachievement → 3. Boredom, Depression → 4. Feeling of Worthlessness

A NEGATIVE LOOP

our self-esteem increases, which then helps us overcome obstacles. And, with each goal met, our knowledge increases. Michael LeBoeuf has diagrammed this effect clearly (4.1).

## A Goal-Setting Strategy

Self-knowledge is essential. To be effective, goals must be authentic. No matter how hard we try, we can never really fulfill our potential when pursuing goals set by others. Identifying our true interests, strengths, and objectives can be liberating. The following exercise can help clarify personal interests.

1. Get a package of small Post-it notes. Working spontaneously, write one of your characteristics on each note, such as "I am creative," "I love music," "I write well." Identify as many attributes as possible.

2. When you finish, lay out the notes on a table and look at them for a while. Consider the type of person they describe. What are this person's strengths? What additional interests might this person need to develop?

3. On a fresh stack of notes, write a new set of responses, this time dealing with the question "Why not?" as an expansion of these interests. Why not travel to Tibet? Why not learn Spanish? Why not master canoeing? Add these to the grid.

4. Then, leave the room. Go for a walk, have dinner, or head to class. Let your subconscious mind play with the possibilities suggested by your notes.

5. Next, organize the notes into four general categories: intellectual goals, personal-relationship goals, spiritual or emotional goals, physical fitness goals. If you are an extreme safe-keeper, add a category called "Adventure." If you are an extreme risk-taker, add a category called "Organization." Since a mix of activities helps feed the psyche, working with each of these categories is important. Even though spiritual, emotional, or social development is fluid and continuous, recognition of these categories can contribute to effective time management.

6. Prioritize the notes within each category. On the top note, write "This is first because _____." One the second, write "This is second because _____." Continue until you complete the grid. Discard notes that you now realize are unnecessary.

7. Choose one goal from each of the four categories. It is tempting to choose the top goal in each case, but this is unrealistic. Even the most experienced businessperson can rarely manage more than three major goals at a time. Choose one primary goal and three secondary goals.

8. Now, specify your goals. "I want to become a better artist" is too vague. Consider specific actions you can take to improve your artwork. "I need to improve my drawing" is more specific. "I want to learn anatomy" is better still. To learn anatomy, you can take a class, study an anatomy book, or draw from a skeleton. These are tangible actions: you now know what to do.

9. Determine how to achieve your goals and develop a rough timetable, listing weekly goals,

semester goals, and one-year goals. It is not necessary to list career goals just yet. Most of us explore many ideas during our first year of college, and formalizing career goals prematurely is counterproductive. After you are clearly committed to a major field of study, you can add a page of long-term goals, projecting your priorities for the next three to five years.

10. At least once a month, review your chart and add or delete information as necessary. If you realize that you are overextended this term, shift one of your minor goals to next semester or delete it altogether. This system is intended to provide you with a target, not to create a straitjacket. Make adjustments as necessary, so that your primary goals are met.

11. If you achieve all your goals, congratulate yourself—then set more ambitious goals next term. If you achieve half of your goals, congratulate yourself—then prioritize more carefully next term. You may have taken on too many tasks and thus dissipated your energy. Because there is always a gap between intention and outcome, a 70 to 80 percent completion rate is fine.

## Characteristics of Good Goals

### Challenging but Attainable

Too modest a goal will provide no sense of accomplishment. Too ambitious a goal will reduce, rather than increase, motivation. No one wants to fight a losing battle! Knowing your strengths and weaknesses will help you set realistic goals.

### Compatible

Training for the Boston Marathon while simultaneously trying to gain 20 pounds is unwise, since you will burn off every calorie you consume. Trying to save a thousand dollars while touring Europe is unrealistic, since travel always costs more than you expect. On the other hand, by taking a dance class or joining a hiking club, you may be able to combine a fitness goal with a social goal.

### Self-Directed

Avoid goals that are primarily dependent on someone else's actions or opinions. "I want to earn an A in drawing" is a common example. Since the grade is determined by a teacher, your control in this area is limited. Instead, focus on improving your drawing as much as possible. This will increase your receptivity to learning and will focus your attention on actions you can control. When you do your best work, good grades generally follow.

### Clearly Defined

We all have "too much to do." No matter how carefully we organize our time, there are only 24 hours in a day. Identifying daily and weekly priorities can help focus attention, increase productivity, and reduce stress.

1. Identify your target. It may be a specific action (such as doing your laundry) or a broader intention (such as improving your knowledge of anatomy). Specificity is important. It is nearly impossible to hit a target you cannot see.

2. Focus. Reduce distractions as much as possible. If visiting friends have taken over your living space, plan another time for socializing; then chase them out. If you need music to improve your concentration, put on an appropriate CD. If you can't seem to focus due to an assortment of worries, try writing them down; then refocus on the task at hand. Getting worries off your mind often helps.

3. Then, hit your target with the necessary force and energy.

### Temporary

Set clear target dates, get the job done, and move on to the next project. Each completed task increases your self-confidence and adds momentum. Unfinished work, on the other hand, can drain energy and decrease momentum. If you are overloaded, delete secondary goals, so that you can complete primary goals.

## TIME MANAGEMENT

Time management can help you achieve your goals. Working smarter is usually more effective than simply working harder. In a world bursting with opportunity, using your work time well can increase

the time available for travel, volunteer work, or socializing. The following time-management strategies have been used by many artists and designers.

## Set the Stage

Choosing when and where to work can significantly increase your output. If you are a lark, bursting with energy and enthusiasm in the morning, tackle major projects before noon. If you are an owl, equipped with night vision and able to hunt after dark, work on major projects after dinner. If you are distracted by clutter, clean your desk before beginning your workday, and tidy up your desk before you leave. These seemingly minor actions can substantially increase your productivity.

## Prioritize

Use your goal list to help determine your priorities. Note which tasks are most *urgent* and which tasks are most *important*. Timing can be crucial. When you pay your phone bill on time, you easily complete an urgent but unimportant task. When your phone bill is overdue and the service is cut off, this unimportant task becomes a major headache. Dispense with urgent tasks quickly. Distribute important tasks over several weeks if necessary.

## See the Big Picture

Use monthly calendar pages to record your major projects and obligations. A calendar that is organized by months can help you see which weeks will be packed with deadlines and which weeks will be relatively quiet. To avoid all-nighters, distribute large, important tasks over several weeks. To avoid missing a pivotal lecture or critique, schedule out-of-town trips during "slow" weeks.

## Work Sequentially

Many activities are best done in a specific sequence. If you are writing a 20-page paper, it is best to start with research, make an outline, complete a rough draft, make corrections, then write the final draft. If you are designing a poster, it is best to start with research, make thumbnail sketches, assess the results, make a full-size rough layout, consult the client, and

*then* complete the poster. It is tempting to try to cut out the intermediate steps and move directly to the final draft, but this is rarely effective. With most large projects, you learn more, save time, and do better work by following the right sequence of events.

## Use Parts to Create the Whole

Seen as a whole, a major project can become overwhelming. In an extreme case, creative paralysis sets in, resulting in a condition similar to writer's block. Breaking down big jobs into smaller parts helps enormously. In *Bird by Bird*, Anne Lamott gives a wonderful description of this process:

> Thirty years ago my other brother, who was ten years old at the time, was trying to get a report on birds written that he'd had three months to write. [It] was due the next day. . . . He was at the kitchen table close to tears, surrounded by binder paper and pencils and unopened books on birds, immobilized by the hugeness of the task ahead. Then my father sat down beside him, put his arm around my brother's shoulder, and said, "Bird by bird, buddy. Just take it bird by bird.[3]

By doing the job incrementally, you are likely to learn more and procrastinate less.

## Make the Most of Class Time

Psychologists tell us that beginnings and endings of events are especially memorable. An experienced teacher knows that the first 10 minutes of class sets the tone for the rest of the session and that a summary at the end can help students remember the lesson. A choreographer knows that the first 10 minutes of a performance can set the stage for the next 2 hours and that the end of a dance determines the overall impact. Similarly, the wise student arrives 5 minutes early for class and maintains attention to the end of class.

Be an active learner. You can use that 5 minutes before class to review your notes from the previous session and organize your supplies. This helps create a bridge between what you know and the new information to be presented. Try to end the class on a high note, either by completing a project or by clearly determining the strengths and weaknesses

of the work in progress. By analyzing your progress, you can organize your thinking and provide a solid beginning point for the next work session.

## Start Early

Momentum is extremely powerful. It is much easier to climb a hill when you are already moving forward, rather than reclining. When you receive a long-term assignment, such as a 20-page paper, start it right away. Even one hour of research will help focus your attention on the problem and get you going. A slow start is better than no start!

## When in Doubt, Crank It Out

Fear is one of the greatest obstacles to creative thinking. When we are afraid, we tend to avoid action and consequently miss opportunities. It is difficult to act decisively or pursue the unknown potential of a new idea. Both habit and perfectionism feed fear. If you consistently repeat the same activities and limit yourself to the most familiar friendships, you will become more and more fearful of new experiences. If you insist on doing each job perfectly, you can waste time on minor defects and avoid exploring new ideas. Perfectionism is especially destructive during brainstorming, which requires a loose, open approach.

Creativity takes courage. As IBM founder Thomas Watson noted, "If you are not satisfied with your rate of success, try failing more." Baseball player Reggie Jackson is renowned for his 563 home runs—but he also struck out 2,597 times. Thomas Edison's research team tried over 6,000 materials before finding the carbon-fiber filament used in lightbulbs.

"When in doubt, don't!" is the safe-keeper's motto. "When in doubt, do!" is the risk-taker's motto. Creativity requires risk-taking. By starting each project with a sense of adventure, you increase your level of both learning and creativity.

## Work Together

Many areas of art and design, including filmmaking, industrial design, and advertising design, are often done collaboratively. Working together, artists and designers can complete projects that are too complex or time-consuming to be done alone. Collaborative thinking helps us break familiar patterns and teaches us to listen to alternative or opposing ideas.

Here is one example. Gather 20 people. Start with a copied fragment from an existing image, such as *Metamophosis II*, an 8 × 160 in. banner by M. C. Escher (4.2). In this case, students in a design class were provided with a 1-inch strip of the banner to create a beginning point and another 1-inch strip of the banner to create the ending point (4.3A). Each person invented an 8½ × 11 in. connection between the two strips. Buildings, plants, abstract shapes, chess pieces, and other images were used to bridge the gap between the strips at the beginning and the end. The images were then connected end to end, like cars in a train. When combined, they created a collaborative banner, 20 feet long (4.3B). Students had to negotiate with the person ahead of them in the line and with the person behind them,
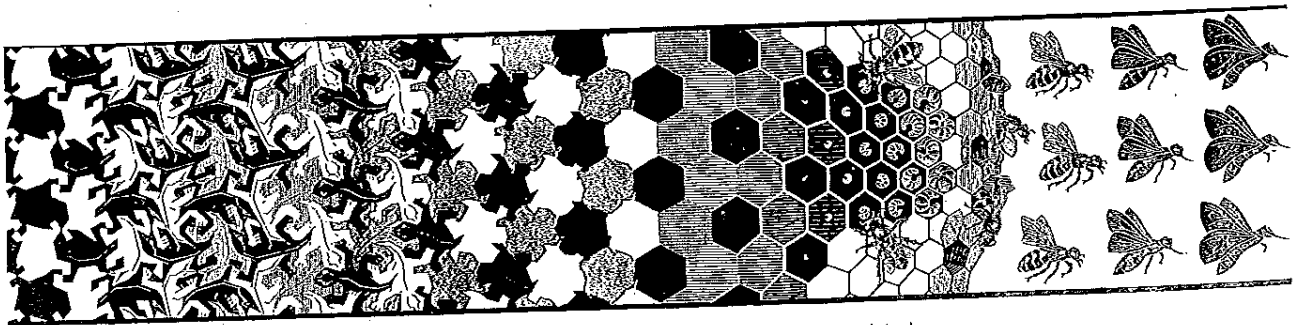


4.2 M. C. Escher, Part of *Metamorphosis II*, 1939–40. Woodcut in black, green, and brown, printed from 20 blocks on three combined sheets, 7½ × 153¾ in. (19 × 390 cm). © 2002 Cordon Art B. V. Baarn, Holland. All rights reserved.
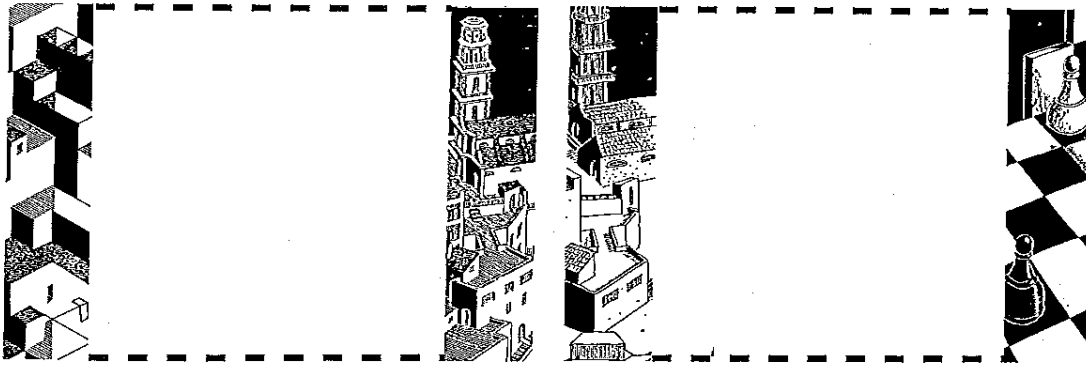
4.3A  Examples of Escher Starter Images
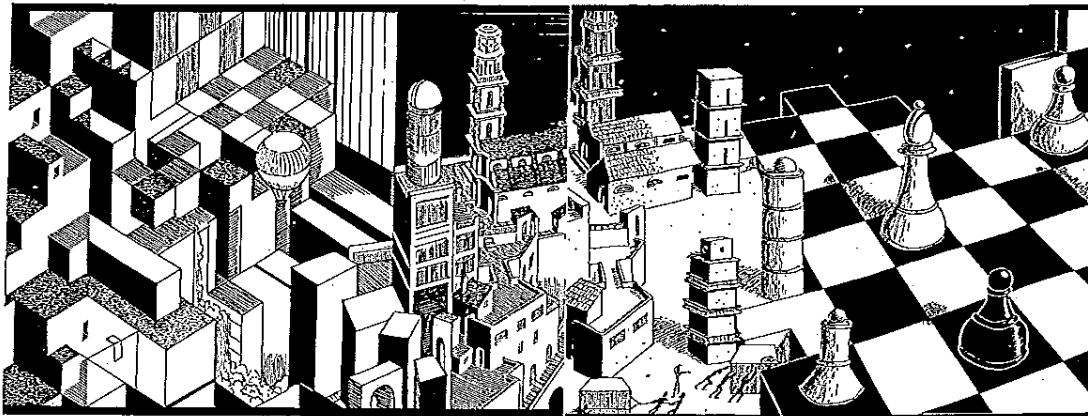


4.3B  Mary Stewart and Jesse Wummer, Expanded Escher Collaboration. Student work.

in order to make a continuous image with graceful transitions. In effect, all 20 participants become members of a creative team. Finally, each 8½ × 11 in. section was photocopied and traded, providing each person with the completed artwork. In a collaboration of this kind, everyone gains, both in the learning process and in the sharing of the product.

## Reduce Stress

Finally, good time management can help you avoid excessive stress. When you are pushing beyond familiar limits, some stress is inevitable. Excessive stress, however, leads to illness, anger, insomnia, mental paralysis, exhaustion, and depression. Here are some strategies that can help.

### No Blame

No matter what happens, blaming yourself or others is never useful. Work on the solution rather than remaining stuck in the problem.

### Keep Your Balance

A mix of emotional, spiritual, physical, and intellectual activities will help feed all areas of your psyche. No matter how significant a particular assignment may appear to be, remember that it is only one aspect of your life. Taking a break can often give you the fresh perspective you need to solve a difficult problem. Value rest. When the balance is right, your time off can actually increase your productivity.

### Remember That Positives Attract

A creative person seeks change. Any change tends to present a combination of obstacles and opportunities. Focusing on the opportunities rather than on the obstacles increases confidence. Furthermore, an upbeat, positive attitude attracts other creative thinkers, while a negative, excessively critical attitude drives creative thinkers away. By assuming that you *can* do the job well, you start the spiral of accomplishment needed to fully realize your creative potential. Accentuate the positive!

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# SUMMARY

- Creativity and design both require new combinations of old ideas.

- Creative people are receptive to new ideas, are curious, have a wide range of interests, are attentive, seek connections, and work with great conviction.

- Creative people combine rational and intuitive thinking. While intuition may be used to generate a new idea, logic and analysis are often needed for its completion. As a result, the actions of creative people are often complex or even contradictory.

- Goals you set are goals you get. Establishing priorities and setting appropriate goals will help you achieve your potential. Good goals are challenging but attainable, compatible, self-directed, clearly defined, and temporary. Deadlines encourage completion of complex projects.

- Creating a good work area, completing tasks in an appropriate sequence, making the most of each work period, maintaining momentum, and reducing stress are major aspects of time management.

- Collaborative work can help us expand our ideas, explore new fields, and pursue projects that are too complex or time-consuming to do alone.