

PINE COUNTY

Rural Schools Bulletin

September, 1938

Volume 4 No.1

Pine City, Minn.

RURAL TEACHERS 1938-1939

1—Nina Johnson
 4—Agnes Myrdahl
 6—Elizabeth Van Leeuwan
 Audry Glimm
 7—Carman Kelley
 8—Verna Sandell
 9—Doloros Kraft
 10—Ellen Johnson
 21-A—Molly Skubic
 11-B—Myrtle Overland
 11-C—Ethel Anderson
 12—Doris Thompson
 Eva Blost
 13—Lois Potter
 14—Anna Elkjer
 15—Florence Kick
 16—Viola Virta
 17—Kathryn Hynes
 18—C. Evelyn Larson
 19—Mae Upgren
 Irene Anderson
 22—Betty Soens
 23—Luella Anderson
 25—Gertrude Fosvick
 26—Charlotte Amundson
 27—Margaret Edstrom
 28—Mary Prochaska
 30—Marvin Hinze
 32—Mary Pulkrabek
 33—Alma Fogt
 34—Helen Bennett
 35—Alyce Teich
 Jennie Anderson
 36—Agnes De Rungs
 37—Agnes Kraft

38—Harriet Bassett
 39—Henrietta Nieboer
 40—Lenore Rupp
 Alfhild Torvick
 41—Vida Warner
 42—Magdalena Pitka
 43—Helena Van Der Werf
 44—Mayme Eglseder
 45—Ernest Von Retden
 46—Ocar Haavisto
 Aletha Larson
 Grace La Tourelle
 47-E—Nina Larson
 47-W—Mary Connaker
 48—Janet Kargas
 49—Alice Sanburg
 50—Florence Hedlund
 51—Mabel Sanburg
 53—Anna Meyer
 56—Hazel Nelson
 59—Dorothy La Tourelle
 60—Carol Lennox
 61—Carol Hansen
 62—Harriet Hansen
 65—Evelyn Reid
 66—Lester Schraeder
 67—Hazel Troolin
 69—Clarabel Schulz
 72—Cora Cyr
 73—Odrun Torvick
 74—Edith Eastling
 75—Elizabeth Delmore
 77—Aurelia Lahodny
 80—Eileen Coyne
 81—Alma Fosvick
 82—Leona Johnson

83—Edith Melander
 84—Lois E. Giroux
 85—Lee Guptil
 87—Leonard S. Skinner
 90—Eleanor Lyseth
 91—Virginia Benson
 92—Mary Gallik
 93-A—Grace Sherer
 94—Mary Louise Schulz
 95—Vera Olson
 96—Lavina Swendsen
 97-A—Mathilda Hedtke Sadler
 97-B—Ruth Gustafson
 98—Dora Dahl
 99—Esther Carlson
 101—Helen Langstrom
 102—Beatrice Swan
 103—Juanita Anderson
 104—Mildred Anderson
 106—Donald Ehmke
 Genevieve Lennox
 107—Wanda Habdas
 108—Peggy Brown
 110—James Coyne
 111—Ruth Fuller
 112—Ethel Currie
 113—Ida Sandell
 114—Leona Anderson
 116—Nellie Benson
 117—Marjorie La Tourelle
 122—Sarah Warner
 123—John Trendera
 124—Vivian Larson
 125—Thomas Stine
 Clara Jean Anderson
 126—Mary E. Sherer.

HIGH SCHOOL SUPERINTENDENTS 1938-1939

ASKOV—O. Hoiberg
 BRUNO—H. M. Shawl
 BROOK PARK—A. F. NEUTZMAN

CLOVERTON—F. C. Thompson
 FINLAYSON—E. F. Peltola
 HINCKLEY—L. H. Tanglan

PINE CITY—V. W. Ziebarth
 SANDSTONE—S. G. Skaaland
 WILLOW RIVER—C. G. Aakhus.

— Published Monthly —

ARTHUR E. GUSTAFSON, County Superintendent—

ETTA M. WILEY, Assistant.

VACH COLLECTION

PCAHA 2016.232

FACTORS IN PUPIL GUIDANCE

By PAUL E. VOGAN
Moors Central Rural School

Considering the number of years our young people spend in educational institutions and the number of courses available, it is a tragedy that so many finish without any special fitness for and so little idea of a vocation.

In order to make education of more definite value, there are two critical points at which the student's capacities and possible talents should be examined, just before the high school course is chosen and before the decision is made about higher education. High school students of today may decide upon a number of courses such as a scientific course, a liberal arts course, a course in music or arts, or a commercial course.

We as teachers are challenged to act as guides in steering pupils along those lines for which they are mentally and physically fitted. But how are we to know what those lines are? Do we all agree that the object of education is to prepare people for useful living? Such an objective tends increasingly to prolong the period in which young people are kept out of the stream of actual life without adequately preparing them for it.

The I. Q. is not an infallible measure of the child's intellectual capacity. It is only a rough measure of what he may do in the field of orthodox education. Moreover, when the I. Q. is measured, the good or bad influences of training and environment have already distorted the result so that the intelligence quotient of young children of intellectual parents, which may at first be high, may five or ten years later have dropped considerably. If I. Q. testing is to be an important factor in guidance, tests should be given at various periods of the student's development.

Along with mental fitness we must be aware also of physical abilities. In the school where I am now teaching there are several pupils who have been afflicted with rickets or infantile paralysis. One fine lad cannot walk without the aid of crutches. Because of his physical handicap correct guidance is of extreme importance to him.

For success in one's life work, personality is a third factor too often neglected in our emphasis on the other two. We may all be born free and democratically equal, but there is just as wide a range in our personality differences as in our mental and physical variations. What can the school do to develop desirable personality traits? I find that children who do things they do not like to do, simply because they think they should do them; children who like to try things even when they cannot do them well; children who, realizing they are far from expert at some particular thing, take special pains to improve; children who participate in a variety of activities and competitive sports are more popular and stand higher in personality traits than those who do not react in these ways.

We as teachers must, at every opportunity, especially urge backward pupils to take part in various activities and we must not neglect to commend whatever progress they make. I have noticed there seems to be little correlation between scholastic success and a good personality, but that does not minimize the importance of personality guidance.

The problem of providing for those pupils is an ever-increasing one. By means of careful note of physical and mental abilities and by close observation of pupils' interests in certain activities, we may help many to gain the purpose of education—more useful, more successful, and happier living.

"My boy," a father advised his son, "treat everybody with politeness, even those who are rude to you. For remember that you show courtesy to others not because they are gentlemen but because you are one."—*Texas Outlook*.

FIRST DAY OF SCHOOL

As one teacher tells her story

School started at the usual hour. I was just as anxious to begin as the children.

We took some time to get acquainted. First I introduced myself. Then the children gave their names, their hobbies and what they did during their vacation.

Next we saluted the flag, distributed books and materials. We discussed the correct way to open new books, read the introductions, located the tables of contents and indexes of books. I want the children to feel definitely at ease with their books—to love them.

I then asked if there were any improvements that could be made in the room. Here are the suggestions: "We could have some flowers." "Some current events should be brought in for the bulletin board."

The children noticed that the erasers looked shabby and decided to cover them with oil-cloth.

OPTICAL ILLUSION

Like to travel? I do. One of my earliest recollections is that of kneeling on a seat in one of the old "day coaches," nose pressed against the glass . . . waiting for the train to pull out. Not more than two feet away, the train on the next track would start—it always went first—and I'd shout gleefully: "Look Daddy! We're moving!"

But, as the last coach slowly rolled past, I would be very disappointed to find that we were still waiting to go!

It wasn't until later years that the force of this childish illusion registered its importance. Then I discovered that sometimes, as I watched others "going places" on the road to fame, success, personal achievement, I would say: "Look, we're going."

In watching them, I did not realize that they were the only ones moving . . . until they were out of sight. Then I discovered that I had to look to my own power, initiative and "steam" to get me there. In other words, I learned that what was inside of me made me go . . . and if my friends went places and did things that I didn't, it was because they knew how to use that same power inside of them to better advantage.

Since then, I have been vastly more concerned about my own train than the conveyance upon which the others ride.—*The Silver Lining*.

PRICE OF PROGRESS

As one takes a look backward and views the slow, intermittent, but persistent upward struggle of mankind he is deeply impressed by the part which freedom of thinking and freedom of expression have played in the human drama. It never has been altogether safe to think outside of the patterns of convention and to speak without restraint. Socrates propounded his doctrines for the enlightenment of the young men of Athens; he was charged with making "the worse appear the better reason"; and he paid for his hardihood by being forced to drink the poison hemlock. But his death did not end all. Through his disciple Plato and a host of followers he gave to Athens a position of distinction and of leadership which for centuries has supplied positive direction to human affairs. Galileo, imprisoned for proclaiming that the earth is round, lives on while even the names of his persecutors have scarcely a place in the memory of men; and the earth still revolves daily on its axis, and relentlessly follows its orbit around the sun. *Countless men have dared to speak the truth and have been willing to pay the price.* The fact is that without free utterance even at a price the moral and spiritual progress of the world would be seriously impeded if not altogether restrained.—*Thos. W. Gosling in Texas Outlook*.

Activity Method

By EDWIN B. FLOYD
Field Supervisor of Rural Education

As "Learning by Doing" in our schools is a better method of learning, I feel it is here to stay. Even the most conservative of teachers or parents readily admit that it is the only way of making learning meaningful and purposeful.

The activity method or "Learning by Doing" is a natural way of learning. It is the only way of making acquired knowledge meaningful. In fact it is the only purposeful way of acquiring knowledge. Too long teachers and parents have thought of the activity method as only a physical activity: hammer, nails, saw, and irresponsible wandering around the room. It will be granted that in many cases that was all the activity meant to some teachers, for after the free period was over "back to your seats meant now do some real work." The teacher who holds that philosophy of education will not be much of a success in developing children through the activity method.

Contrast in your own mind the old type of assignment, recitation, drill, testing with about one-half the class below the average passing mark of 75, with some of the achievements of our schools today. In the past the child spent a year at school and was able to master less than three-fourths of his allotted task. Should we forget or ignore the by-products of such a system, namely, pupil failures, lack of self-confidence, bad attitudes acquired toward school, learning and life? I'll leave you to list the other undesirable by-products. Even the brighter individuals or groups who attained a passing mark got their satisfaction out of the mark which they received rather than out of the appreciation of the knowledge acquired. Am I too presumptuous in saying the knowledge acquired had very little meaning for the learner in "out of school situations"? To make these statements more meaningful I suggest you review your own classroom experiences as a learner "in the subject-matter-set-out-to-be-learned" school.

Perhaps the activity method would have been appreciated more if we had called it dramatization and by dramatization I mean playing the part one plays in real life. Only teachers get a living by knowing subject matter and getting others to know the same subject matter in the same way. Life in our world today is not made up that way. Life is dynamic. It is doing something. Hence the activity method becomes a natural way of acquiring those appreciations, attitudes, knowledges, skills and habits so necessary to make life successful in our world.

The activity method must include the mental activity, the social activity and the physical activity. These are all nevertheless proportionately integrated in a well developed personality. Mental activity must be stimulated by the various experiences one confronts as he meets the problems of life. It is dangerous to assume that any course-of-study-body-of-knowledge will be sufficient to help one solve all the perplexing problems in life. He must attain this mental alertness through meeting actual life problems rather than book problems. Books, papers, magazines, radio, moving pictures, lectures and discussion groups are some of the tools used in stimulating mental activity. May I ask what has given you the greatest mental activity during the past month? In my own case it was a P. T. A. group discussing, "Personality and How to Develop It." Hence any activity that does not consider mental development is sadly missing its objective. The activities of the world are made possible through mental activities—the thinkers who are doers as well.

Any activity program which does not provide for experiences in living with the group has been poorly planned. Society's advances or retreats are directly proportional as the people find better ways of living and working together. Character teaching must be developed through experience; hence

the activity method must provide for those social, experiences that will help the learners to understand each other and to work cooperatively for the improvement of their society. Selfishness, egotism, domination, must give way to an appreciation of "What is best for all." Through a properly planned activity the learner absorbs the Better Way of Living through daily experiences. To be intellectual and to be sociable will not guarantee success and happiness to anyone. Both of these attainments will be affected by our health and our physical condition.

A healthy body as well as a healthy mind must be our aim in education. The activity program must provide for desirable health activities such as rest periods, games, dancing, hot lunches, sanitation, clinics, immunization. Many bad attitudes and most pupil failures in school can be traced to poor physical conditions. In any activity program the old adage, "All work and no play makes Jack a dull boy," is clearly appreciated and provisions are made to give Jack a balanced program of mental, social and physical activities so that the may develop a personality. Education is the development of hidden personalities. The activity method through its intellectual, social and physical experiences offers the learner opportunities of learning by doing.

Our units of work based on human activities, if they have been properly planned by the teacher, and with the teacher and pupils, are broad enough to tax the intelligence of a college professor and yet can be so adjusted as to meet the needs of the slowest pupils in the room. This is a life situation. Teachers and parents need to appreciate the magnitude, the purposefulness and the meaningfulness of the activity method as a better way of "Learning by Doing."

THE LEARNING PROCESS KATHARINE TAYLOR

If teachers notice children at all, they realize with devastating clarity how much that is taught is not learned, and how much that is learned is not taught by those paid to teach. Although the teacher is frequently present when learning occurs, he is often more like an interested bystander than a chief agent.

A child is a whole person, and not a collection of separate receptacles into which are deposited various units of habit, discipline, skill, and subject matter. Learning is an affair of the entire personality. Any young child's questions reveal that his curiosity, his zest for knowledge and experience are part of his being. To see this, and to prevent the dimming of his superb energy, is part of the job of a school.

Children who actually go through the process of placing inverted glass tumblers in water and noting the way in which the tumblers remain partially empty, of observing the action bubbles coming to the surface, will avoid that pseudo-knowledge which often comes from purely verbal teaching. All too frequently the young child is able to recite glibly, without any realization of the meaning of the words he is using.

Mathematics, in particular, suffers from over-verbalization. Ideas can be as real to children as are the things they see and handle. In one fifth-grade arithmetic class the children first became familiar with the idea of fractions through dividing actual lines, surfaces, and volumes into equal parts, and through noticing divisions in all sorts of things with which they were acquainted, such as windows, floors and football fields. They could then really understand the meaning of $\frac{1}{2}$ and $\frac{3}{4}$ and they could work with fractions with a sense of what they indicate. If practice is introduced too soon, before its meaning is clear, it often becomes merely a game of chance.

ART IN THE MODERN SCHOOL

By PAULINE JOHNSON

Central Washington College of Education, Ellensburg

Some educators believe that art is taught in the schools of today as a mere pastime or a relaxation from the regular school routine. These people see no relation between this subject and life but believe that art is a subject shunted off by itself serving as a pleasant release from "heavier" subject matter and filling a temporary need only. They maintain that art must be kept entirely separate from any other subject as its association with the so-called textbook courses might lessen its popularity.

To quote from a recent pamphlet: "Philosophers have shown that art affects many different life experiences and does not exist alone in a separate compartment. We cannot fully develop one part of an individual's mind if we neglect another. Art weaves itself into a man's whole nature and contributes to a well rounded development. Few people realize the powerful effect of art on civilization. In fact, the art of the world is the record of civilization."

It is important that the art educator formulate a sound basic philosophy of art education that he may clearly and definitely know the significant goals toward which he is working and what it is he wishes to accomplish. He must realize that man can change his environment and improve his condition, that the lives of children are greatly influenced even by the advertising signs he puts up.

The art of China was characteristic of that civilization from which it grew as an expression of a particular age and people. Our expressions will be entirely different than theirs, as we are living in a period of great change that has produced demands and problems that must be met in a new way. Art is not an escape from reality, away from our times into a land of dreams, but it interprets and contributes to things here and now in our modern living. There are those who resist this inevitable growth, and the art teacher must help in making people conscious of current trends and needs.

Art education should concern itself with the ideals and principles of American democracy in the cherishment of individual personality and the concern for the general social welfare of the group. The art teacher who has these aims in view will place first of all the emphasis upon pupil development and social integration and will be more concerned with individual character than in producing beautiful works of art. "Results" are easy to get if that is all that is wanted. There are many means—legitimate and otherwise—by which they can be obtained. However we have come to see that we are educating people to fit into life situations and the only way they can be trained to meet these situations is through direct personal experiences.

To develop the individual personality and make for good citizenship where each must learn to live with those about him, we must introduce problems and materials that will produce the desired results. Art is a natural means for expression needed by the child and the creative aspect can be used to maintain a balanced emotional life and, if rightly used, a big force in the molding of character. We are not trying to train people who can "draw" or "produce pictures" necessarily. The woods are full of them now. Our concern is primarily in producing a well rounded, cultured, appreciative and self-sustaining individual. And if we can help do that through the art program, well and good.

Appreciation is a factor that begins immediately in the art experience whether it is taught directly as such or not. By this, I do not mean the old conception that appreciation is acquired by accumulating facts about paintings and learning what to say about them. But rather through learning to draw

and paint, can new orders of experience be enjoyed and a deeper understanding and feeling be developed. This understanding can only be brought about through good teaching. Appreciation is not merely absorbed—it is the result of competent direction with practice. Through appreciation we hope to raise the taste and level of the consumer, so that we can produce a people who can choose wisely and make intelligent selections.

TEACHERS, GET ACQUAINTED WITH

YOUR PATRONS EARLY

By GENEVIEVE BAKER

Principal, North Grade School, Lake Worth, Florida

One of the most important single elements in the activities of the first month of school, on the teacher's part, is to make voluntary contact with parents. Many distinct advantages are to be gained by this contact.

If a teacher rings the bell at the home of Johnny, introduces herself as Johnny's teacher, explaining that she is interested in the boy, and wishes to become acquainted with his mother, she has established a friendship which the parents appreciate and which will be invaluable to her later in the year. Since the mother has met the teacher, knows from her call that she is interested in the welfare of Johnny, that teacher has a strong ally in the mother.

Later on if he comes home with a tale of some injustice which he attributes to his teacher, the mother is likely to see her point of view as well as that of Johnny. If the visit resulted in mother forming the opinion that teacher is friendly and capable Johnny will receive some valuable help in developing a right attitude.

Teachers who win the good will and the respect of patrons early in the school year, before any disturbance has had an opportunity to arise, will have gained a coveted advantage.

"But," protests the teacher, "Saturday and Sunday are the only days which I can call my own. Would you have me use all of this time to call upon patrons who are often uninteresting, uneducated, and unresponsive?" Yes, some of it. Use as much spare time as possible in the first few weeks of school to let your patrons know that you are human, and that you are interested in their children.

You may teach for many years in your present school; the fact that you are beloved both by pupils and patrons may make your work much easier and may be the means of enabling you to reach a much higher place in your work.

I know one teacher who made 125 visits at her pupils' homes during the first part of the year. Of course, it took time; but she made and cemented friendships which have been of the utmost value, not only to her and to her pupils, but to the morale of the whole school.

Teachers will find that they and their school have no truer friends than understanding, appreciative, satisfied mothers and fathers. They will be invaluable in straightening out what otherwise might often be a thorny pathway; and each year one may have the glorious satisfaction of seeing such friendships increase.

MY SYMPHONY

By WILLIAM HENRY CHANNING

To live content with small means; to seek elegance rather than luxury, and refinement rather than fashion; to be worthy, not respectable, and wealthy, not rich; to study hard, think quietly, talk gently, act frankly; to listen to stars and birds, to babes and sages, with open heart; to bear all cheerfully, do all bravely, await occasions, hurry never; in a word, to let the spiritual, unbidden and unconscious grow up through the common—this is to be my symphony.

Cutting and Polishing Stones

LAPIDARY

Why should one be interested in rocks and minerals? Because the whole world is made of rocks and minerals. From them we draw all our metals. The extent to which we use the minerals determines the advance of our civilization. The soil from which we draw our food is composed of fragments of rocks. The precious gems that are so highly esteemed and have been sought, admired, and hoarded through the ages, and over some of which blood has been shed, even wars have been fought, are merely varieties of those materials that make up the earth's crust and which we call minerals.

Mankind's entire history has been closely associated with stones—stones as tools and weapons. Later, man discovered that some stones appealed to him for their color and beauty. He found that they could be ground into various shapes and used for personal adornment. No custom, perhaps, has been more enduring throughout the ages than the love and use of gem stones. Man has sought and treasured them as far back as we know. They are mentioned throughout the scriptures. The use of gems of all kinds has come down from the ages, the necklace of beads being the most ancient form. Prehistoric man pierced and strung together pebbles gathered from various sources, and many treasures in the way of necklaces, bracelets, ear and finger rings, have been found during the excavation of ruins of ancient cities and tombs, both in the old world and America.

Primitive man had no machinery for cutting and polishing stones. He ground his stones down to the size and shape he wanted them by patiently rubbing them against harder stone than the piece on which he was working. To this day deep grooves can be found worn in the rocks in Southwestern America where these people many centuries ago ground and polished stones. The polishing was done by filling the grooves with successively finer grades of sand and earth, and patiently rubbing the stone in these grooves.

The modern lapidarist (the name for stone cutter and polisher of any kind of stone) does the same thing, working from the coarsest abrasive to the finest.

Minerals are substances formed by natural processes that are operating upon and within the earth's crust. Each mineral is a substance characterized by a definite chemical composition and its own characteristic crystal form. A crystal is a mineral bounded by symmetrically grouped faces, giving the specimen a definite geometrical form.

Minerals can be classified according to the manner in which we use them. The iron, zinc, lead minerals, or ore minerals, and the so-called rock minerals, which make up the common rocks of the earth. Thus limestone is chiefly calcite, sandstone is composed of grains of the mineral quartz, common granite is mostly quartz (feldspar and dark mica. Nearly all of the semi-precious stones are forms of fairly common minerals.

Its value as a gem stone may be due to flaws or even to an impurity. For example the ruby is a clear, transparent and flawless form of the common mineral corundum, which is a very hard mineral used extensively as an abrasive and is an essential ingredient of common emery. When such corundum is tinted with chromium oxide as an impurity, giving it the highly prized blood red it becomes one of the costliest of all gems. The opal owes its gem quality to the abundance of irregular cracks that permeate the entire mass of the milky looking mineral, and cause the beautiful color

play. The beautiful amethyst is clear quartz tinted a purple color by some foreign substances.

There are three factors that give to these common minerals their gem quality: 1. They must be durable; 2. They must be beautiful; and 3. They must be rare. To be durable they should be very hard so that when polished they will not become marred and scratched. Hardness is one of the most essential properties of gems. One mineral will be found to be harder than another if it scratches it. The following scale of hardness has been established:

- | | |
|-------------|-------------|
| 1. talc | 6. feldspar |
| 2. gypsum | 7. quartz |
| 3. calcite | 8. topaz |
| 4. fluorite | 9. sapphire |
| 5. cepatite | 10. diamond |

Approximate hardness for testing: Fingernail will scratch up to $2\frac{1}{2}$; copper coin up to 3; knife blade up to $5\frac{1}{2}$; window glass up to $5\frac{1}{2}$; steel file to 6 and 7. No known substance is harder than the diamond.

Gems can be roughly divided into three groups: the opaque, none of which are valuable; the translucent, such as opal, moonstone; and the transparent, which includes all the highly valuable gems. The transparent can again be divided into two sub-groups: the colorless and the colored. The chief one of the colorless group is the diamond, and the greatest of the colored group are the ruby and emerald.

Gem minerals, particularly the transparent ones should have a hardness above seven, because quartz, whose hardness is seven is common in dust and soil and any gem would become marred and damaged if mounted in rings, though they can be used in brooches.

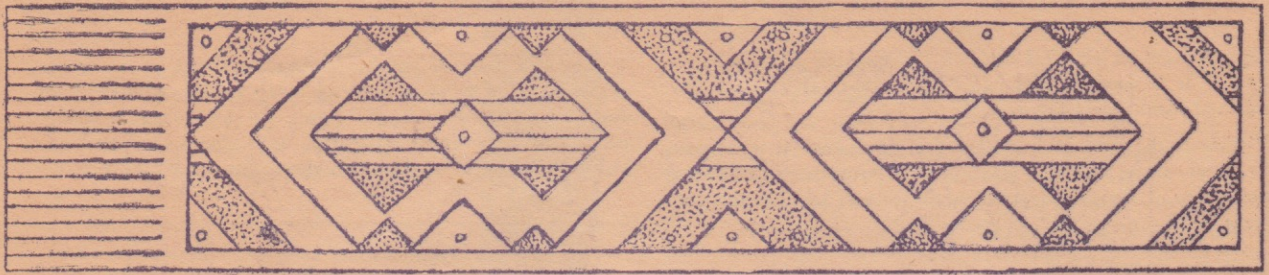
Stone cutting is divided in two phases. The first is called cabochon cutting, which means flat and curved surface styles. Any well marked or colored stone may be used for this type. The second division, facet cutting, is used mainly for transparent gem stones having a hardness of seven or more, diamonds for example are always cut in facet style. The lesson this year will be confined to the first style of cutting, the other being too difficult for the amateur.

Precious gem stones usually include diamonds, ruby, emerald, sapphire, and opal. Semi-precious are the agate, turquoise, jasper and many others. Stones can be found along the shore of creeks, rivers, and lakes. Gravel roads and gravel pits often have small hard stones that would take a good polish.

For the beginner with no money to spend, a common grindstone can be used for shaping small stones. The easiest shapes are those with flat bases and oval tops, cabochon style. The polishing can be done on fine grades of emery paper wet with putty powder.

Each of the following seven issues of this bulletin will contain a page of instructions on amateur lapidary work. These lessons will give instructions on sawing the stones, grinding into form, sanding, polishing, and engraving, making the mountings and setting the stone. Also a description of precious and semi-precious stones and where they are found.

The equipment for sawing, forming and polishing stones need not be elaborate or expensive. In fact the old grind stone will do more than most people think. Details and patterns for equipment will be in the October issue. Instructions in sawing, grinding, polishing and setting stones, leading into the study of rocks and minerals, and their origin will follow in successive issues. Instructions in jewelry making will also be given.



VACH COLLECTION



Leathercraft

Burgess Handicraft and Hobby Service
By W. P. PATERIK

Leather, a time honored material for the application of design to form, is an ideal medium for teaching art and handicraft. It is inexpensive because leathercraft articles are lasting and useable in everyday life.

This is the first of a series of eight lessons in this basic, practical craft and will deal mostly with the fundamental principles of design, preparation of leather, tooling and construction.

Choosing Leather:

The beauty of leather articles is in the hand tooling. For this purpose, vegetable tanned leathers should be used. Leathers used in the manufacture of shoes or luggage are unsuitable as this is usually chrome tanned and therefore, will not tool.

Calfskin—The best tooling leather. It has a beautiful smooth finish, a pleasant "feel" and is obtainable in black, brown, tan, red, green, blue, mahogany and natural. It is suitable for most leathercraft projects, such as book marks, coin purses, under-arm bags, bill folds, desk sets, key containers, etc.

Steerhide—Natural, mission, and mottled.

Tooling Sheepskin—An inexpensive leather obtainable in natural and imitation grain, such as imitation steerhide, red, blue, green, black and brown morocco grains. Somewhat harder to tool than calfskin and not as durable, but costs only about one-half of calfskin.

Tooling Cowhide—A heavier leather which tools beautifully. Obtainable in natural color only, but in several weights or thicknesses. Used for belts, camera cases, portfolios, large under-arm bags, axe and knife sheaths, neckerchief slides and wherever a heavier leather is desired.

Lining leathers will be described in the next issue.

Tools:

Only a few tools are required for beginner projects, although a large variety of useful tools are made for advanced and specialty work. For this week's projects, only a sharp knife, a regular modeling tool and a punch are required.

Preparation of Leather:

Leathers that are to be tooled should first be moistened. This is best accomplished by applying water to the back of the leather with a soft sponge or cloth until the moisture shows through on the front. For very small projects, such as book marks, coin purses, etc., the leather may be immersed in clean water for several minutes. Surplus moisture may be taken out by placing the leather between several sheets of newspaper or blotters.

Tooling:

There are five fundamental tooling methods with which the student should become familiar. One or more of these methods are used on all designs to be tooled. These are as follows:

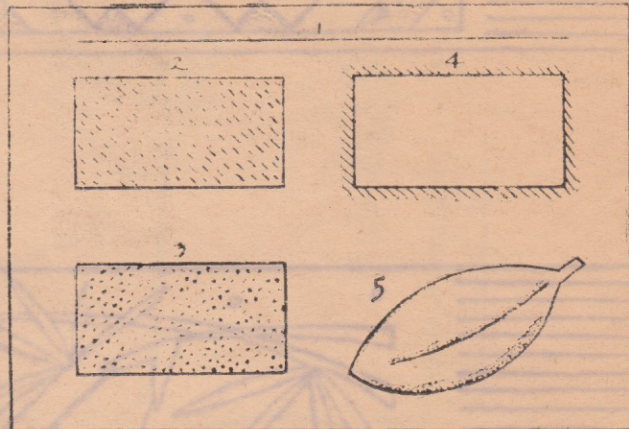
1. Outline tooling. 2. Flat or background tooling. 3. Stippling. 4. Bevel tooling. 5. Embossing or Repousse tooling.

Before working on an actual project, it is wise for the student to practice these various kinds of tooling on a piece of scrap leather about 4x5". The steps explained under "Practice Tooling" are the same as though an actual project were being undertaken.

September, 1938

Practice Tooling:

1. On a piece of paper approximately 6x7", draw a rectangle as large as your piece of scrap leather will accommodate. Inside this rectangle across the top, draw a straight line. Next draw three rectangles, each about 1½" and one oval or leaf shape, as shown in the following illustration.



2. Soak the piece of leather for several minutes and blot the excess moisture out between sheets of newspaper or a blotter. Lay the leather to be tooled on any hard surface, such as a hardwood board, desk top or piece of glass.

3. Place the paper design over the leather and fold the edges of the paper under the leather to prevent the design from moving while tracing.

4. Go over all lines with the pointed end of the regular modeling tool—the straight lines along a ruler. Press firmly, but not hard. The design is now traced to the moist leather which is quite impressionable.

5. Remove the paper and tool all lines down firmly with the pointed end of the modeler, being careful not to scrape the point over the leather so as to break the surface. This is outline tooling.

6. In the first rectangle, the entire surface should be pressed down with the broad or spoon end of the modeler. This should be accomplished with a motion away from the outline of the rectangle to the center, the larger center area being pressed down with a circular motion of the spoon end. This is flat or background tooling and gives the effect of the area around the rectangle being raised.

7. In the next rectangle, we will try stippling. With any blunt pointed tool or nail or with the pointed end of the modeler, tap down the entire rectangle, placing the tap marks quite close together. Stippled parts of a design show up well and will give contrast.

8. We will now bevel the third rectangle. The process is similar to outline tooling, except that the spoon end of the modeler is used to run along the outside lines of the rectangle. This widens the line and gives the appearance of the rectangle being raised without the entire background around it being tooled down.

9. Repousse or Embossing is the raising of parts of a design from the back of the leather. Lay the leaf design on several layers of cloth or in the palm of the hand, right side down. With an embosser (ball end modeling tool), or with

the spoon end of the regular modeler, press down the area firmly, using a circular motion. Now lay the leather on a hard surface again right side up and bevel around the outline. The design will now be well raised.

10. When tooling is complete, the leather should be polished with any good wax.

Projects:

Book Mark Project—An inexpensive project for the beginner, affording tooling practice.

1. Cut leather to size as shown on design page (Duplicating Ink). Cut slits on bottom for fringe.

2. Place design over moistened leather and follow same procedure as on practice piece.



**LEATHERCRAFT
PRICE LIST OF MATERIAL AND TOOLS:**

	Each	Dozen
Regular Modeling Tools	\$.40	\$4.40
Bevel Point Leather Knife	.35	3.85
Six-tube Punch—Revolving Head	1.00	
Calfskin Book Marks, including designs	.10	1.00
Sheepskin Book Marks	.06	.66
Calfskin, (skins average 10 to 13 sq. ft.), whole or half skins Per Sq. Ft.		\$.60
Tooling Sheepskin, (skins average 6 to 9 sq. ft.), whole or half skins, Per Sq. Ft.		.32
Steerhide—(Av. 24 ft.), whole or half skins, Per Sq. Ft.		.45
Tooling Cowhide, (skins average 24 square feet), whole or half hides, Per Sq. Ft.		.45
Tooling Calfskin—Scrap Leather, Per Pound		1.50
Leather Goatskin Lacing, Yard		.05
Lemos Folio of Designs and Instruction, Each		1.00

CORK CRAFT

By DANNY WEBSTER

Burgess Handicraft and Hobby Service

This inexpensive, pliable material adapts itself to many new uses. For covering wood, cardboard or metal containers, it lends itself admirably. Dyed pieces applied over larger pieces of natural cork makes smart decorations. It can be painted with oil colors, dyes or crayons and is attractive combined with other materials, such as linen or leather.

In succeeding issues, we will give patterns and directions for making note book covers, coasters, hot pads and many other interesting projects from this versatile material.

The following two simple projects cost very little to make and will be fun to do.

The first project is to cover a wooden box with cork and decorate it. These boxes are approximately 5 3/8 x 3 3/8 x 2" and when decorated, make acceptable gifts as trinket, jewel or cigarette boxes.

When working with cork, the forms should be simple and designs not too small. Measure the surface of box or container to be covered and cut the sheet cork to fit. Glue the cork in place with LePage's Glue or Tri-Tex Cement. A little pressure on the box while the glue is drying is helpful, but not absolutely necessary. The box may now be decorated with a monogram or other design or if an applique design is used, the overlay pieces may first be dyed or colored and then glued into place.

Monograms, strips of cork, bits of leather or bits of wood, give the students a chance to use their own ingenuity in creating interesting designs. On another page designs will be found, showing a simple monogram on the top of a box. This monogram was first cut out and the cork then dyed. When it was dry, it was pasted into place. Another pattern has applied wooden buttons with a gay craftstrip tie on top. The corners are developed from a wooden button sawed in four parts and glued to each corner.

The second project for this month is a cork covered flower

container made over a tin can. Multi-colored raffia is used to give a smart Mexican touch.

1. Cut a piece of cork the size of your tin can and glue it on, bind tightly with string while drying.

2. Take two pieces of pliable cardboard* one to two inches wide and hook together by cutting a slit in each end at opposite sides so that the two ends hook together, cover these with raffia by winding around and around.

3. Also make two handles* by covering wire with raffia. Wrap this covered wire around the circular cardboard at both ends (see illustration) so that when the raffia covered cardboard is glued to the cord, the handles will extend out on either side.

4. Thread a large needle with raffia and sew back and forth from top to bottom as in the sketch making a knot where threads cross.

*The length to be determined by the size of your container.

**CORKCRAFT
PRICE LIST OF MATERIALS**

	Each	Dozen
Sheets of Cork: 12x36"x1-16"	\$.40	\$4.00
16x36"x1-16"	.55	5.50
Tri-Tix Water Proof Adhesive, 5 Oz. Jar	.50	5.00
Craftstrip, 16 colors available, Yard	.02	
Wooden Boxes, 5 3/8 x 3 3/8 x 2"	.25	2.50
Wooden Buttons, 1 1/2" Diameter	.02	.20
Natural Color Raffia, Per Pound	.35	-10%
Colored Raffia, Per Pound	.80	

BURGESS HANDICRAFT AND HOBBY SERVICE
117 North Wabash Avenue, Chicago, Illinois

NATURE STUDY

Nature's beauty is available to all our boys and girls if their eyes have been trained to see and their ears to hear. It is the responsibility of the school to provide experiences, by direct contact with nature, insofar as possible, that will provide enriching experiences.

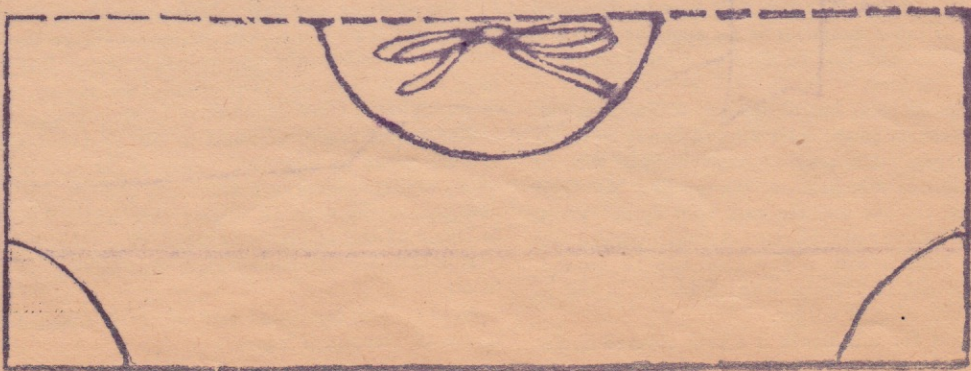
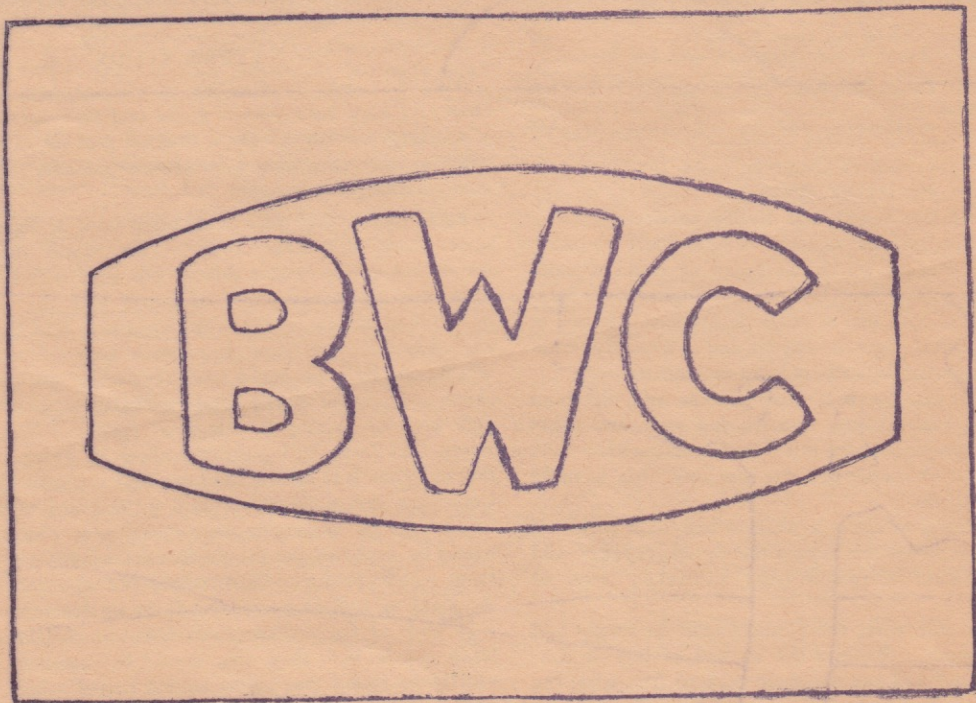
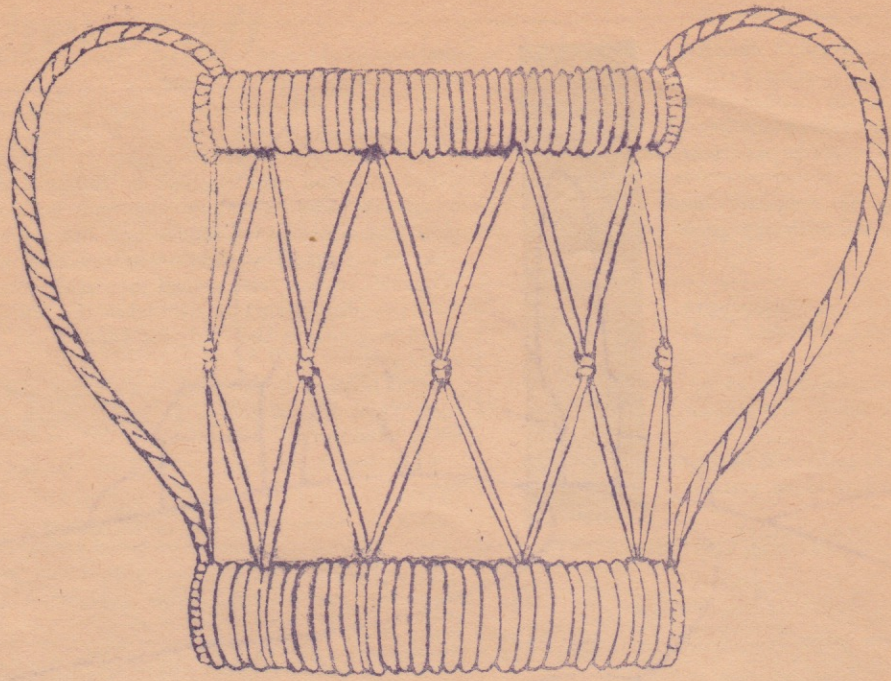
Each month this year will bring you a lesson covering some phase of nature study. This month the subject is leaves and on the reverse side of this page will be found pictures showing several kinds of leaves with the various types of veining, netted veined, feather veined, and parallel veined. See that each pupil is given a copy of these pictures, which can be reproduced on any hectograph or ditto machine, and ask the class to find and bring as many samples of each kind of veining to school as possible. Taking all the leaves thus brought in, arrange them in groups, being sure that only one leaf of any kind of plant is placed in the group. Count the leaves in the several groups and thus determine which type of veining is most common in your locality. It would be well to have the pupils note where each plant grew from which the leaves were taken, and also note the size of the plant as well as its general form or structure.

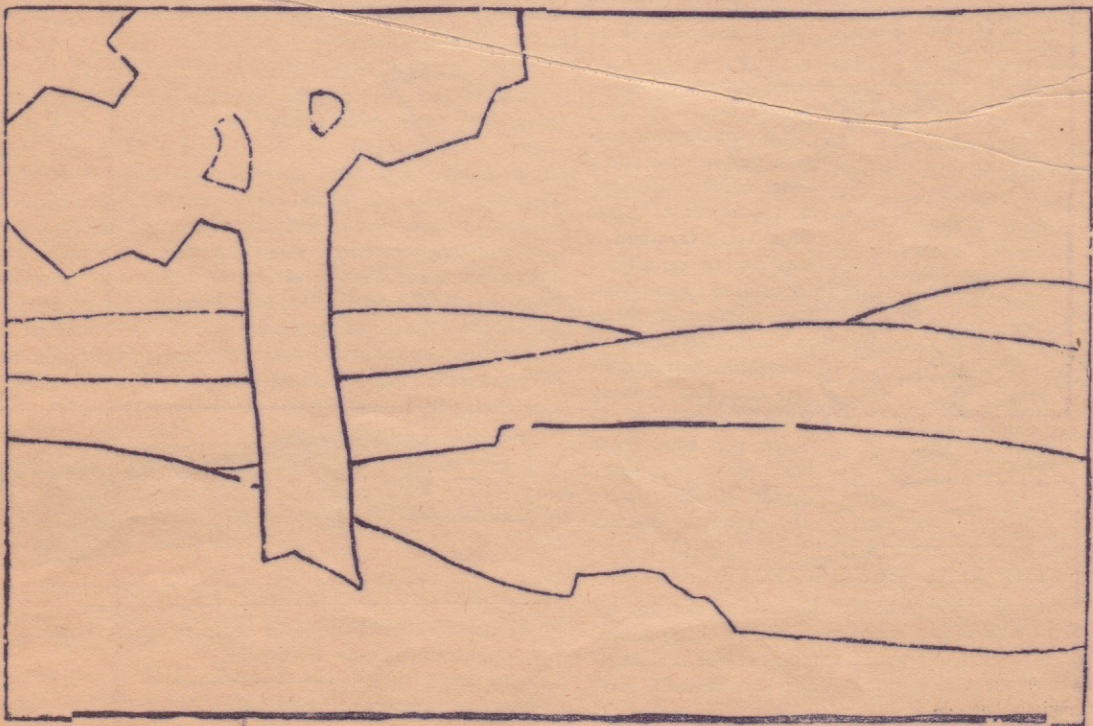
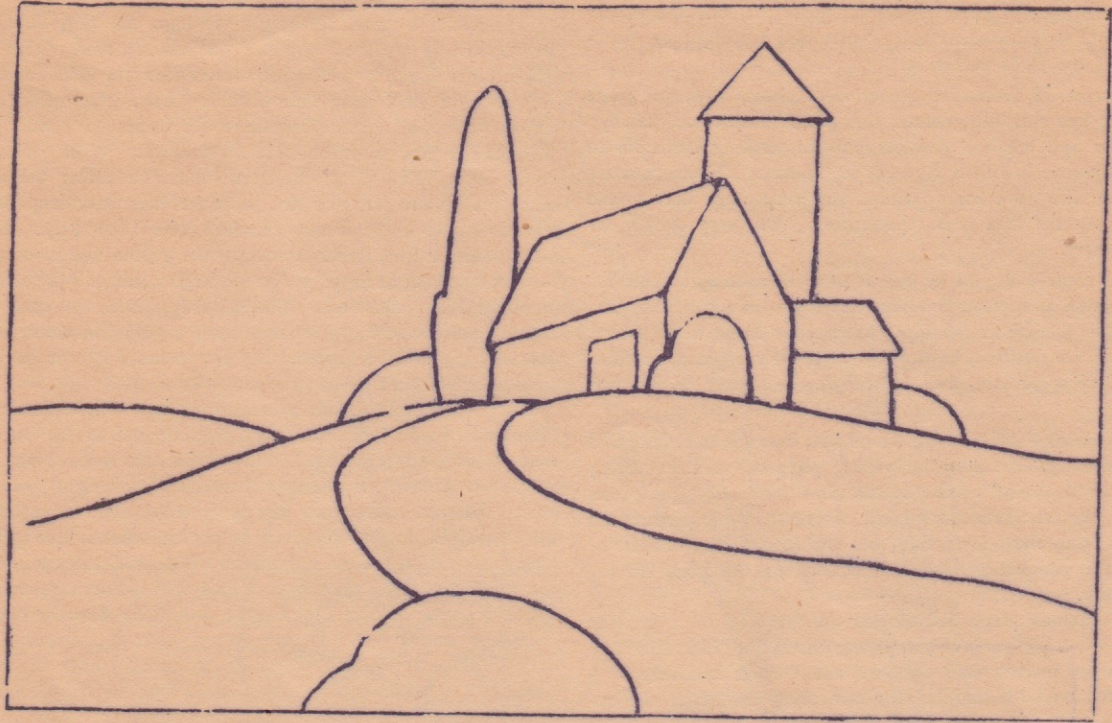
If seeds of the various plants from which leaves have been taken can be had, they, too, should be examined for it will usually be found that plants having netted veined leaves will have seeds having two parts while those having parallel veined leaves such as oats, corn, wheat, and grasses will be found to have seeds of one part. If flowers are available, the netted veined leaf plants will be seen to have flowers mostly with five petals while the parallel veined leaf plants will have flowers with but three petals (the five or three may be in multiples of those numbers in some instances).

The pupils might be asked to list as many plants in each veining group as they can. They might also be given seeds of unfamiliar plants such as pecans, peanuts, etc., to examine and suggest the type of veining that would likely be found in leaves of the plants from which they came.

It might be well to preserve leaf specimens by pressing them.

NOTE: The compound leaf shown is a netted veined leaf as are all compound leaves.





Very lovely veneer pictures can be produced by inlay. It is not a difficult process, but does require patience and a few very simple tools; a razor blade knife and a weight are practically all the tools necessary.

The secret of successful veneer is to choose a simple piece of veneer for the background, one which is not too "flashy" in pattern and cut the smaller spots in striking contrasts to the background; either lighter or darker. These smaller spaces can also have more pattern and very often the pattern may suggest the idea it is representing. Use very simple designs to start.

All the veneer should be cut at once to insure absolute fit. The best way is to tack it down, one layer on top of another, placing the picture at the top. With your razor blade knife, cut out on all outlines, cutting through all the pieces at once. If you have a jig saw, they can all be cut at once with a fine saw.

The picture of the barn, trees and silo, also the tree, lake and hills, are designed for wood veneer pictures. After cutting out all the sheets of veneer at the same time select the pieces that best fit each particular place. More than one picture can be made from the one cutting, but the first picture should be the best for you select the wood that best fits the scene for the first picture.

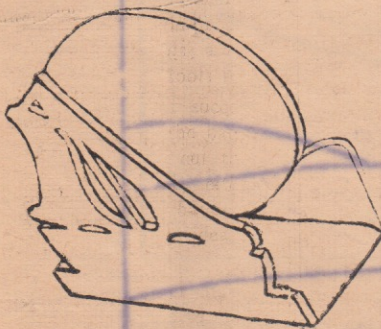
These various pieces of veneer are applied to a heavier piece of wood $\frac{3}{8}$ " or over, applying the large pieces first and fitting in the smaller ones until the entire space is covered.

Use glue on both surfaces for cementing and place the entire piece of work under a weight. After the cement has thoroughly dried, sandpaper lightly with a very fine sandpaper. Then shellack two or three times, rubbing lightly with a very fine steel wool after each shellacking. Then varnish with a dry dull varnish.

A thin veneer glued to craft paper makes a flexible veneer that is easy to work. This veneer has made pictures in wood possible for classroom work. It is easy to work and very attractive. Most every one loves the rich color and beautiful grain of natural wood. We have this veneer in Walnut, Ayous, Lacewood, Maple, Oriental, Mahogany. One piece of each, $6\frac{1}{2} \times 9\frac{1}{2}$, post paid, \$1.00. 5 Oz. Jar of cement, post paid, \$.60. This is the same cement as used in sand painting.

ARTS AND CRAFTS SUPPLY HOUSE, Valley City, N. Dak.

COPING SAW



The coping saw pattern this issue is for a letter holder. This can be sawed out of wood or metal. If wood is used it can be stained or colored to suit your own fancy. If metal is used, use a metal saw blade. Saw out the two ends first, leaving space enough in the center for base, then bend it over a sharp corner. Glue a piece of felt on the bottom.

THE REAL MELTING POT

Some poetic mind called America the melting pot for all races; there have been some disappointments in melting adults, but none will deny that our public schools are the real melting pot, pouring out a new race. Under our schools, race, class, and religious hatreds fade away. From this real melting pot is the hope of that fine metal which will carry the advance of our national achievement and our national ideals.
—Herbert Hoover.

Directions

To obtain a level line sight through the peep-hole until the bubble is centered opposite the middle line. The short stadia lines above or below the center line are used for shooting straight lines only (not level). Each graduation above or below the center line represents six inches (6") at a given distance of one hundred feet (100 Ft.). When using the stadia lines, i. e., if the first line above or below the center line is used this straight line would represent a drop or rise of six inches (6") at one hundred feet (100 Ft.). If the second stadia line above or below the center line is used this would represent a drop or rise of twelve inches (12") at one hundred feet (100 Ft.). The same applies to the other lines above or below the center lines, each graduation above or below the center line representing six inches (6") at one hundred feet (100 Ft.).

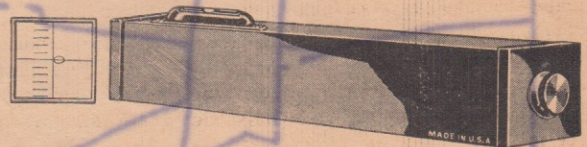
For best results drive a stake or board into the ground about five feet (5 Ft.) long. Level the end of the board or stake with your Sighting Level. After this is done place the Level on the end of the stake or board and sight from this base. Do not move your board or stake after once setting. If a straight line is required below the center line place a thin piece of wood or cardboard of desired thickness under the eyepiece end of the Level. This will allow a reading below the center line. The bubble should be directly opposite the short stadia line. If a reading above the center line is desired place a piece of wood or cardboard under the objective end. This should be adjusted so that the bubble will be directly opposite the short stadia line above the level line.

LESSON I

The elements of surveying are so commonly used about the home and farm that teachers will find this short series of surveying lessons or projects both interesting and valuable to their pupils. An inexpensive instrument known as an engineer's sighting level or Army Locator's level will prove both fascinating and effective in accomplishing the requirements of these projects, the first of which is to run a straight line of stakes.

Select five or six stakes about four feet long (lath will do) and drive one a few inches into the ground at the starting point (any point from which the row is to be run) so that it stands firmly upright. Using this stake as a rest, place the sighting level on top of the stake and sight in the direction the row of stakes is to run. The center line in the instrument should be in a perpendicular position and the stakes set in line with the center line. One pupil should be assigned to the instrument while another places the stakes as he directs. The stakes should be about 5 or 6 in number and set at intervals of about 10 feet making the entire row 40 or 50 feet long.

When one pupil has succeeded in running a straight row of stakes, another pupil should be assigned to the instrument.



Army Hand Sighting Level, Post Paid \$1.00

We should correct our own faults by seeing how uncomely they appear in others.—Beaumont.

It's good to have money and the things that money can buy, but it's good, too, to check up once in a while and make sure you haven't lost the things that money can't buy.—George Horace Lorimer.

WOOD BURNING

Good designs are the basis of successful wood burning. The character of wood burning in itself is beautiful and combined with beautiful designs, wood burning can be developed into a very beautiful art. Its possibilities so far have not been touched upon, only in rare instances, not because it is so difficult, but more because we have been satisfied with mediocre designs, so if you can learn good designing, it can be applied to wood burning or any other applied art.

Practice and experimenting are the best teachers. It is a work you cannot hurry, but some needles do much faster work than others. A light touch for delicate lines and a slower, heavier use of the tool makes a deeper, darker impression. It can even be used for boring holes where they are needed. On our duplicating pages, you will find a few designs we have worked out which are practical for wood burning. The deer, the boat and the boy fishing was designed especially for wood burning. Take the picture from the hectograph directly on the wood you are going to have the pupils burn, preferably basswood. For practice a white 6-ply cardboard can be used instead of wood. Then burn them in. You can finish them with a coat of clear shellac and a coat of varnish. If you wish, you can color certain portions with stains or water colors.

Wood burning can be applied to advantage on many useful articles about the home, such as wooden bowls, spoons, forks, plates, boxes, book ends, lamp bases, tie racks, etc.

The electric pencil is as simple to use as any ordinary writing pencil and by following a few easy instructions any one can achieve amazingly artistic results.

Contact the plug into any 110 volt electric light socket either A. C. or D. C. current and the pencil will reach the desired heat almost immediately, and is ready for use.

Hold as any ordinary pencil, use lightly (no pressure is needed); use the point for fine lines and the flat side of the point for broad lines or background.

Practice a few strokes on the back of one of your wood plaques. Try to obtain a free, easy flowing stroke. The pencil should not touch the wood either at the start or the end of the stroke, or you will notice a dark spot at both the beginning and end of your stroke. If you desire a darker background, use the broad side of the point and use a slower stroke and not a heavier pressure.

Shading carefully done lends a real artistic finish to the picture. Drag the broad side of the point quickly across the wood. Try first a very light shading and then for darker and darker shades. You might try a graded shading, making the effect darker at the end of the stroke, then try making it darker at the beginning of the stroke. If your stroke gradually gains speed, the shading becomes lighter toward the end of the stroke. If your stroke begins fast and becomes slower the shading becomes darker toward the end of the stroke. Brush the point of the pencil occasionally with sand paper for cleaner work.

In order to preserve and make your work more attractive, it is necessary to lacquer the surface. When you have finished brush a coat of lacquer over the surface of the wood. When dry the surface will become glassy rich and your work will be preserved.

The electric pencil like all instruments must be handled with care. Treat it like you do your fountain pen. Do not drop or apply pressure on the point.

A spike can be filed, pen shape, and heated in any manner, and used to burn wood. The larger the spike the longer it will hold the heat.

Electric Wood Burning Pen, 110 Volt, Complete, Post Paid\$1.00
ARTS AND CRAFTS SUPPLY HOUSE, Valley City, N. Dak.

SAND PAINTING

An art long practiced by the Indians, is having a popular revival by the younger generation. The difference in today's sand painting and that of our Indian Artists is that the sand we use is dyed very gay colors, while the sand used by the Indians was the natural colored sand found in the desert. Bold, simple designs are most effective for this work. A special adhesive is used for holding the sand on the paper.

The pictures to be used for sand painting should be taken from the hectograph on to a white cardboard. Do not use paper as the moisture from the cement will wrinkle paper and spoil the picture. Arrange some convenient container for the different colors of sand. Select one color to be used. Using a small fine-haired brush, paint liberally with cement, the parts of the picture selected for that color. Apply cement liberally, always working up to the line, never away from it. Finish all spots using that color. Pour a liberal quantity of the sand over the wet surface of the picture. Shake the picture back and forth gently in order to work the sand into the cement, then pour the excess sand back into the container. If white spaces or streaks appear, it will mean that you have put on too little cement or have applied it unevenly. You can remedy this by waiting for the first coat of sand to dry thoroughly, then spread cement over and apply a second coat of sand. Uneven lines caused by cement and sand running beyond the line can be straightened with the tip end of the brush handle or with the point of a knife. Let the first color dry thoroughly before placing another color next to it. Repeat the same process with other colors.

The solid white can be left open. That is not colored. When through using a color, clean up carefully and put it away. This will avoid mixing colors.

After all the required sand colors have been applied, set picture aside to dry. To prevent sand from rubbing off, the surface should be brushed with a coat of thin cement. That is cement diluted with water. By sizing one color at a time, and washing the brush carefully after each color, you will prevent sand grains of one color being carried over another color.

Remember: Let one color dry before applying a different color next to it.

Wash the brush thoroughly with water each time after using, letting brush dry with a point.

Cement must be thinned with water until it flows easily.

The picture of the Soldier, also the picture of the Fish, printed in duplicating ink, were designed especially for sand painting. These two pictures can be worked out in three colors of sand, red, blue and yellow. Parts of the drawings indicated by diagonal lines may be painted solid black, using India ink, water color or crayon. The flesh tone of the face and hands can be painted with water color or crayon.

Possible color scheme (Soldier). Paint black parts, indicated by diagonal lines. Flesh tone, for face and hand. Sky, blue sand; roof and side of houses, yellow sand; front of houses, green (mix yellow and blue sand); foreground, yellow sand; trousers, blue sand; coat, yellow sand; hat, red sand.

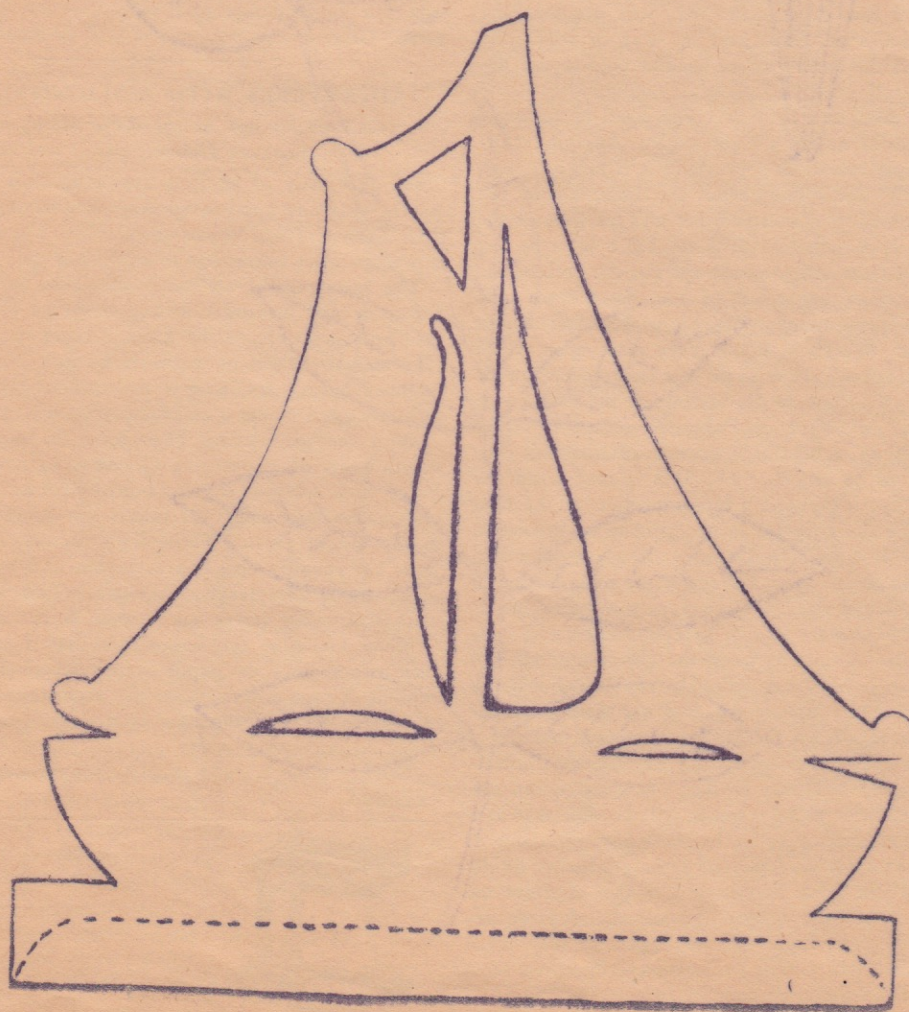
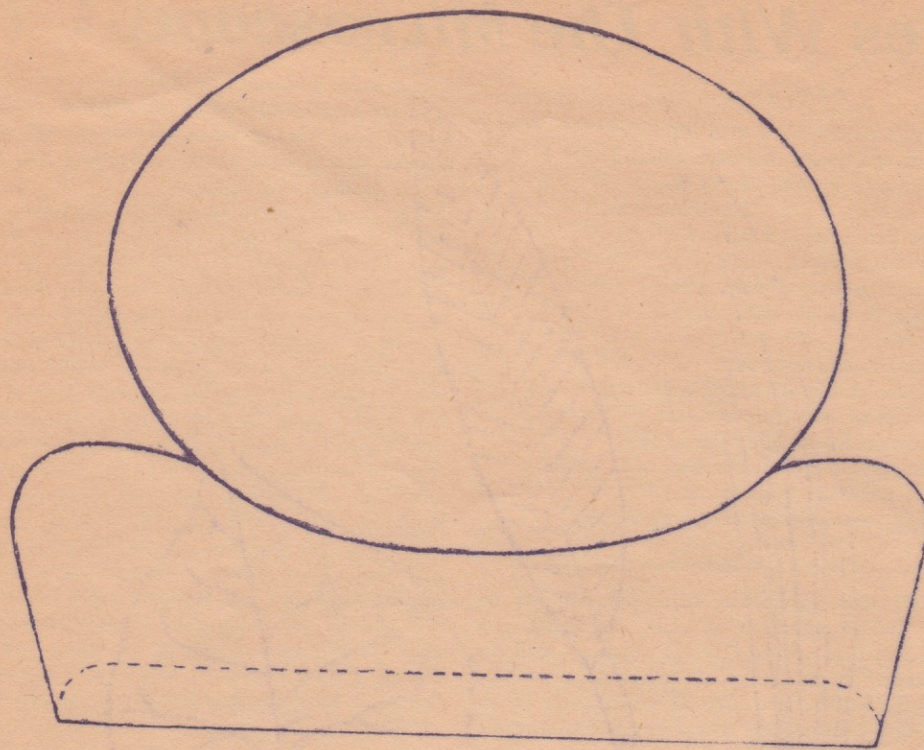
Possible color scheme (Fish). Head, tail, fins, orange (mix yellow and red sand); body of fish, yellow sand; shells, yellow sand; background, blue.

1 lb. each of three colors of sand, and 2 oz. jar of cement, post paid...\$1.00
(This is the same cement as used with wood veneer)
ARTS AND CRAFTS SUPPLY HOUSE, Valley City, N. Dak.

Fear not that thy life shall come to an end, but rather fear that it shall never have a beginning.—*Cardinal Newman.*

We act as though comfort and luxury were the chief requirements of life when all that we need to make us really happy is something to be enthusiastic about.—*Charles Kingsley.*





Studies With The Microscope

NEW TOY

A microscope, a gift more prized than all
The sleds and guns and games that once he cried
And begged for, now is his and can be tried
Through golden peering hours. The dinner call
Goes by unheeded, for he is in thrall
To tiny wiggling things upon a slide
That he can, with a probing pipette, guide
And name and stain and douse with alcohol.

Here is an augury for him who fears
The future, and who dreads with worried breath
The doubtful harvest of our anxious years.
The long tomorrows hold no shadowed strife
While boys whose games have always dealt with death
Bend eager eyes to learn the ways of life.

—*Good Housekeeping*, October, 1937.

PLEASURE AND PROFIT WITH A MICROSCOPE

There is nothing more fascinating than exploring the invisible world of minute organisms of plant and animal life and the detailed structure of many things about us with the aid of a microscope. In this series of studies which we are presenting this year will be a wealth of information of interest and profit to the elementary school pupil and especially so to those in rural schools. To introduce the subject, however, we suggest a few experiments that will acquaint the pupils with the nature of vision and the way in which the microscope increases the ability to see smaller objects and details.

The human eye takes in a field of vision equal to an angle of about 90 degrees or nearly a right angle. Anything falling within this angle can be seen provided it is large enough to be visible to man's eye. The greater the distance from the eye the larger the field of vision becomes and the greater the number of objects it contains, hence those objects must be cast in smaller images on the retina of the eye for the area of the retina remains the same regardless of the distance we may look and the consequent number of objects that fall within the field of vision. We have only a given space upon which the image of anything we see must be cast and objects appear large or small in proportion to the amount of the retina area they cover. Thus an object near the eye reflects a larger image than it does when held at a greater distance and consequently appears to be larger. The fact is that when the object is near the eye it occupies a larger portion of the field of vision and its image covers a larger portion of the retina than when placed at a greater distance. Thus we note that the distance of the object from the eye is the main factor in determining its apparent size. Objects appear to grow larger as they near the eye and are seen in greater detail because the light rays from the various parts of the object are reflected at greater angles. It has been definitely established through experimentation that the human eye does not distinguish between light rays which reach the eye less than two minutes or $\frac{1}{30}$ of a degree apart. An interesting experiment illustrating or demonstrating this fact is that of watching an approaching automobile at night when it will be seen that at a great distance there appears to be but one headlight, but as the automobile comes forward the one light gradually divides into two lights which grow farther and farther apart as the car comes nearer. At the longer distance the distance between the rays of light from the two lights as they reach the eye are less than two minutes, thus the eye interprets them as both coming from the same point.

Another experiment is that of looking at an object such as

a book from a distance of about 20 feet and, holding a ruler at arm's length, measuring the apparent length of the book as seen from that distance. Then advance to only half the distance and measure again. The ruler will show the length of the book to have doubled.

The magnifying glass, and to a greater extent the compound microscope, brings the object nearer the eye, or rather, increases the size of the angle at which the light rays from the object reach the eye and thus many things so small as to be invisible are revealed by these instruments.

With a microscope having a magnifying power of 150 or more diameters many interesting studies can be made. We would recommend that the common house fly be used as the first subject using the several parts as different lessons. The first might deal with the fly's wing which should be carefully removed and placed on a slide and covered with a cover glass and then placed under the microscope for observation. It would be well to first show the front or leading edge of the wing and call attention to the horn-like saw-toothed construction. Then present a view of the more delicate back or trailing edge and call attention to the apparent frail structure and the small hair-like projections sticking straight behind. Next present a view of the upper surface showing how the entire wing is covered with stiff bristly hair and also how these hair hold dirt particles if any happen to be in the field of vision.

Other parts of the fly will make just as interesting subjects for investigation and especially the feet and mouth parts. Other insects, too, might well be studied.

ADVENTURES WITH A MAGNIFYING GLASS

God writes not in the Bible alone, but on the trees and flowers, clouds and stars.

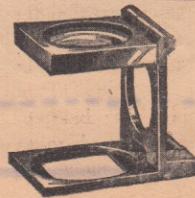
For this series of projects appearing each month throughout the year any good inexpensive magnifying glass of 10 or more diameters will prove acceptable. The linen tester style is perhaps most convenient to carry and use.

The insect world all about us makes an interesting field for study and investigation and this time of year is rich in excellent specimens of all kinds. Have the pupils bring to class as many different specimens as they can find. A wide-mouthed bottle containing a little ether, gasoline, or alcohol tightly corked makes a satisfactory collecting bottle.

With the magnifying glass have the pupils examine the mouth parts of the several specimens to determine to which group each belongs, bugs or beetles. These are the two general classes into which all insects can be classified according to the mouth parts. Those with chewing or biting mouth parts are roughly classified as beetles and those with sucking mouth parts are classified as bugs. This is not a scientific classification but serves our purpose here.

Now, knowing the nature and habits of certain insects such as ants have the pupils examine their mouth parts to determine if they differ in any way from those of the grasshopper, etc. Wings, feet, and eyes of the various insects also make an interesting study.

NOTE: Keep a good supply of light on the object being examined.



MAGNIFYING GLASS

$\frac{1}{2} \times \frac{1}{2}$ inch brass, postpaid \$.75

MICROSCOPE

150 power Microscope \$9.00

This low priced microscope will do for beginner. It will take care of much of the work in the school where high power is not needed.

Know The Stars

NYLLA G. ALLYN
Milan, Ohio.

PART I "PICTURES IN THE SKY"

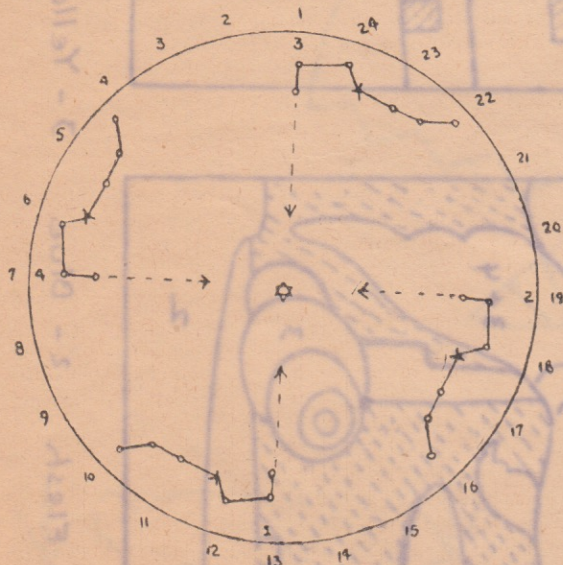
The Big Dipper and the North Star

The stars are all friends of the children of the Earth. They tell the time of the day and the season of the year. And they are very beautiful. We like to call our friends by name and learn about their homes so that we may find them easily. Let us spend a few minutes each evening looking at our star friends in the sky.

To know the stars we must understand why they seem to change their positions during the night. We are taught that the Earth turns on an axis, and the ends of this axis are the poles. There is a star almost directly above the North Pole of the Earth. This is called the North Star, or Pole Star, or Polaris. This star never seems to move.

As our Earth rotates on its axis, the whole sky appears to turn around the Pole Star like a giant wheel, making one complete turn every twenty-four hours. Stars near the Pole Star appear to travel in small circles. Stars far from the pole turn in circles so large that only a part of them can be seen at one time. The rest is hidden from view below the horizon. The horizon is the line where sky and Earth seem to meet. The stars that travel on the large circles seem to rise in the East and set in the West like the Sun.

The Pole Star and the stars which turn about it in small circles make a great clock in the northern sky with the stars



turning around the Pole Star once in twenty-four hours, but in the direction *opposite* to that of the hands of our clocks. People in very ancient times used this star clock to tell the hour. They also knew the season of the year by the stars and the North Star was their guide when traveling.

The people of long ago had names for many of the stars and star groups. No one knows how the star groups first got their names. We only know that thousands of years ago the people were using many of the same names that we use today. The people who named the groups may have thought the groups looked like certain animals, or they may have wanted to tell some story and use the star groups as pictures. The star groups are called *constellations*.

One of the best known constellations is the Great Bear, or Ursa Major (pronounced Ūr sà Mā'jor). People of many lands have called this group of stars a bear and have told their boys and girls stories or legends about it.

The Iroquois Indians say that a party of Indians following a bear was chased by three monster giants who killed all but three of them. These three, together with the bear, were carried up to the sky. There we can see the bear still being chased by the three hunters.

The seven brightest stars of the Great Bear look like a huge dipper in the sky. The diagram shows the position of the Big Dipper at four different hours. On November 1st, at 8 o'clock it will be at the lowest position beneath the pole. Six hours later it will have swung one-fourth of the distance around the pole to the next position. Study the diagram carefully then early in the evening look toward the North. In the Autumn at that hour you will see the Big Dipper low in the sky but right side up or nearly so. The star at the bend of the handle is named 'Mizar'. Just above it is a tiny star which the Arabs called 'Alcor', which means 'The Test'. If you can see Alcor you have good eyes. The two stars are often called 'The Horse and Rider'.

When you have found the Big Dipper, imagine a line drawn between the two stars farthest from the handle of the Dipper. Let your eyes follow this line upward from the bowl about as far as the Dipper is long. Here you will see another bright star. This is the North Star. Whenever the Big Dipper can be seen you can easily find the North Star. The two stars of the Big Dipper which point to the North Star are called 'The Pointers'.

When you can find the North Star you are well started in learning to find the most important stars and star groups, just as Indian children and children of other lands did a great many years ago. And you will soon be able to speak the names of some of the brightest and most interesting stars. When you can do this you will know them as your friends.

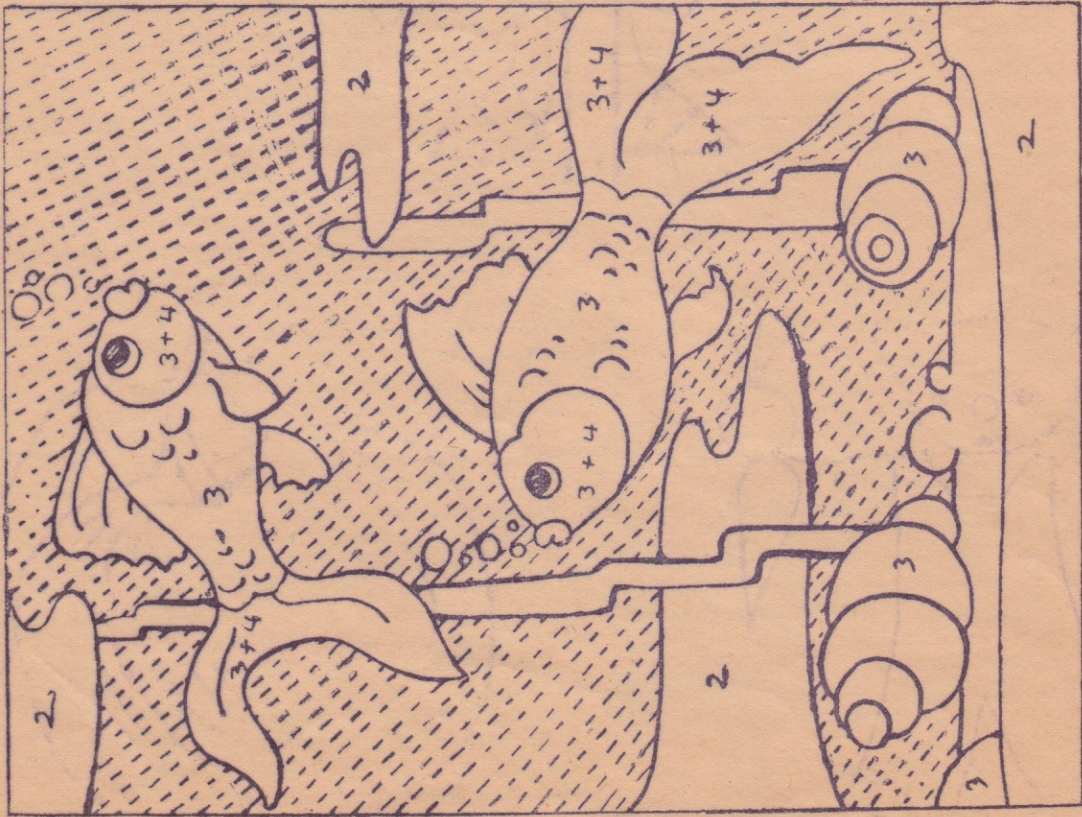
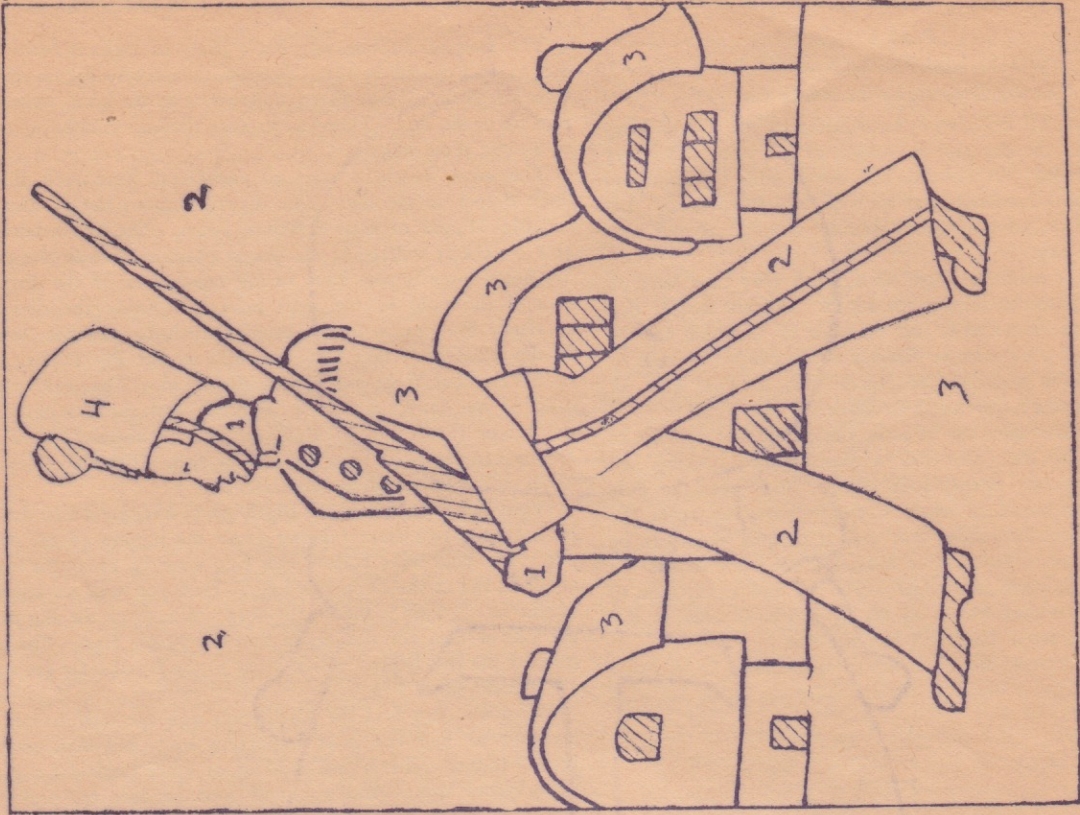
He who would learn to know the sky
The figures and the stars to tell
Must turn his eyes toward the North
And learn the Dipper well.

Questions for Chapter I

1. What is the name of the star that never seems to move?
2. In what direction do the stars seem to turn about the pole?
3. What is meant by 'The Pointers'?
4. What are the names of the stars at the bend of the handle of the Big Dipper?
5. What is the common name for the best known constellation?

NOTE: This is the first of a series of articles which will appear each month, following the outline given below:

1. Polaris and the Great Bear (Star Clock);
 2. Draco and the Little Bear (Star Calendar)
 3. Cepheus and Cassiopeia (Milky Way)
 4. Andromeda and Pegasus
 5. Orion and Two Dogs.
 6. Bootes and Corona and Hercules.
 7. The Band of Animals (Zodiac), 1. Capricornus and the Zodiac (Star Distances) 2. Aquarius (How Stars are Named); 3. Pisces (Multiple and Colored Stars); 4. Aries (Cetus and Variable Stars); 5. Taurus and the Pleiades (Star Clusters); 6. Gemini (Nebula and the Galaxy).
 7. Cancer, Leo and Virgo (Constellations of late spring)
 8. Scorpio, Libra and Sagittarius (Constellations of Summer.
- ### III. Brightest Lights in the Sky.
1. Brightest Stars of the Sky (Review); 2. Solar System and Our Sun. 3. Moon and The Earth; 4. Planets—Venus and Mercury; 5. Planets—Jupiter and Mars; 6. Planets—Saturn and Others; 7. Meteors and Comets; 8. Brightest Stars of Spring and Summer (A Review).

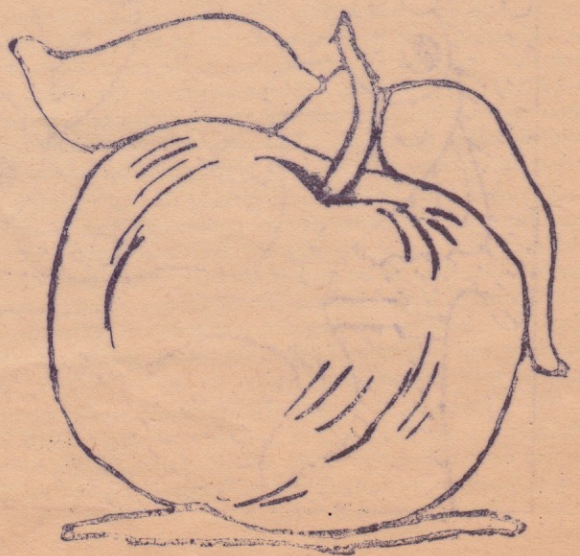
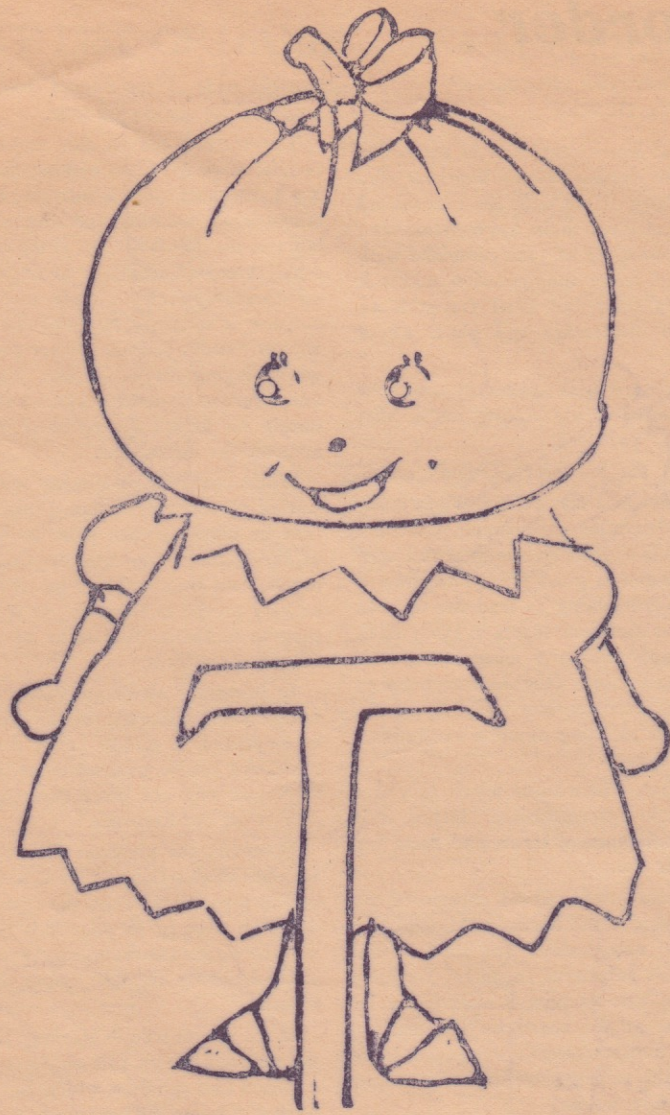


3 - Yellow 4 - Red

2 - Blue

1 - Flesh

Black ink



The Recorder

STONE'S MUSIC STORE
FARGO, NORTH DAKOTA

SUGGESTIONS FOR USING THE "RECORDER" By CHESTER DUNCAN

The Recorder is a musical instrument used in the lower grades. It is fast replacing the rhythm band. Teachers who have tried the Recorder have been elated with the educational possibilities it offers for musical growth in appreciation and performance. Its purity and resonance of tone combined with its ease of tone production and finger manipulation makes it particularly qualified to fill a long felt need for such an instrument in the program of elementary and grade school music.

Music, fingering and instructions will appear in successive issues. The music will be printed in duplicating ink so that you can have as many copies as you need.

Suggestions for Using the Recorder Method

In presenting the first lesson to a class, the previous musical training of the class will determine the opening procedure to a slight extent. If the class is a primary one in which staff notation has never been introduced, a good plan is to draw a staff on the blackboard and while doing so lead the class to discover that there are five lines and four spaces in every staff. Then explain briefly and simply that $4/4$ means that there are four beats or counts to the measure (the distance between bar lines) and that a quarter note receives one count. Do not go into greater detail than to bring about a recognition of one-beat notes and one-beat rests.

Give the students only that information which they can immediately use. Complexity brings confusion. Hence, it is unwise to confuse the class with musical terms and facts for which they have no immediate use.

After the class has had this brief musical experience we are ready to begin the first lesson in the Recorder Method. Of several methods of teaching note values and rhythms the following has proved the most successful in actual teaching experience. In presenting the first exercise it will likely be more impressive if it is done at the board by the teacher where every student's eyes are concentrated on one place, leaving no chance for looking at the wrong place in the book and thus missing the preliminary instructions.

The child is led to discover that there are four beats to the measure and that we sing and play on some beats and rest on others.

We shall *first* count the exercise together, counting aloud the numbers upon which there are notes and counting silently or whispering those numbers which are on rests. Thus in the first three measures of Exercise No. 1, we count 1-2-3-(4); 1-2-3-(4); 1-(2)-3-(4). The numbers in parentheses are those counts which are rests, and are whispered or better still said silently to themselves. This method leaves nothing to be relearned or changed when later playing the instrument.

The *second* step, still without playing the instrument, is to substitute the syllable "tu" for the spoken number and to sing the exercise with the syllable "tu" (the same articulation or tongue movement to be used in the next step when playing the Recorder). If the class can sing the correct pitches, so much the better; however, if they cannot nothing is lost as the instrument will take care of the differences in pitches after the students have learned *when* to play.

The *third* step is the easiest of all, that of actually playing the piece on the Recorder. A complete self-explanatory fingering chart will appear in the next issue of the bulletin. It is not necessary to use a great deal of breath in playing the Recorder. Better tones will result if very little breath is used, particularly on the low tones. Care should be taken to see

that the pads of the fingers close the holes completely to assure the best quality of tone.

The teacher can in this manner take up each succeeding exercise with the class without further trouble or problem. In No. 6, the half note is introduced. The voice should be sustained when counting and singing this half note. Thus in the last two measures of No. 6, the count is: "one-two-three-four; o-ne-(three)-(four)", or in singing with "tu" it is sung, "to-oo-(three)-(four)". Note that when the first tone in the measure is sustained for two counts as in a half note, we do not say "two", because neither are we going to tongue on two when playing the half note. This sensation of sustaining the voice during these two counts will likewise help the student to sustain his breath during these two counts when playing the note on the instrument.

While counting or singing with "tu", it is further impressive if the student makes a physical gesture such as beating time by marking each pulse or beat with a downward stroke of the hand. Some teachers find it further valuable to have the students beat with the toe or foot, insisting the foot action be very precise in tapping. It is just as important in foot tapping to make the foot come up precisely and evenly as to go down on the beat.

In bringing about an understanding of eighth notes to be found in later lessons, the same plan as previously used should be employed: i. e. (1) count each measure until it is understood and can be counted correctly, (2) substitute the syllable "tu" and sing the piece through with this articulation, (3) play it on the Recorder.

However, the presence of two notes to the beat necessitates an additional syllable, thus $2/4$ is counted "1 an 2 an". Note that in tapping the foot, the foot goes down on one, up on an, down on two, up on an. It is possible to teach without tapping the foot. However, many successful teachers prefer this method during the first stages of teaching rhythms and note values.

It is likewise true in learning to count eighth notes that only the numbers which fall on notes are spoken aloud leaving the numbers and syllables which fall on rests to be spoken silently or in a whisper. For example: $2/4$ is counted "1 (an) 2 (an)" the syllables in parentheses indicating as before that they are to be spoken silently or whispered. In this example special care should be taken to speak the numbers in a crisp staccato style in order to not confuse it with two quarter notes. Likewise when singing with "tu", the voice should correctly interpret the note values. This distinction is slight yet important as this counting and singing is to serve as a basis and a model for the correct playing to follow.

In two part playing it is well to have the entire class learn first the melody or upper part, and then the lower part. After both parts are learned the teacher can divide the class as she sees fit for the duet.

It has likely been observed by this time that the general scheme of fingering on the Recorder is quite similar to that of other woodwind instruments and saxophones. This similarity is of help to the student who later takes up the study of one of these instruments, however the habits learned of matching certain definite fingering combinations for certain printed notes on the page will likewise carry over into the playing of brass and stringed instruments.

THE RECORDER

No. 1399 Soprano Recorder in key of D, 6 hole, each, postpaid \$3.35
No. 14 Soprano Recorder in key of C, 8 hole, each, postpaid \$4.00
In half dozen lots, 20% discount. In dozen lots, 25% discount.

STONE MUSIC STORE,
Fargo, North Dakota

PARTIAL PRICE LIST OF HANDICRAFT MATERIALS AND KITS

SUPPLIED BY
BURGESS HANDICRAFT AND HOBBY SERVICE
117 N. WABASH AVE., CHICAGO, ILL.

BEADCRAFT

	Per C	Per M
Wood Beads—Round—All Colors	\$.05	\$.45
White Enamel	.06	.55
Wood Beads—Oval—All Colors	.10	1.00
Cube Bead Craft Kits	Ea. 1.00	Doz. 10.00
Buckles: 3 pc. wood	Ea. .15	Doz. 1.50
Ball Screw Clasps	Ea. .10	
Slide Buckles—5 and 7 Row	Ea. .10	
9 Row	Ea. .15	
2 Part Buckles—5 or 7 Row	Ea. .15	
7 or 9 Row	Ea. .20	
Waxed Twist—200 yards per spool	Ea. .25	
Blunt Point Needles, for wood beads—25 to pkg.	Ea. .25	
Elastic Cord for tile or wood bead bracelets.	Yd. .01½	
144 Yard Spool	1.50	
	Per C	Per M
Tile Beads—All Colors	\$.11	\$ 1.10
Tile Craft Bead Outfit	Ea. 1.00	Doz. 11.00
Tile Craft Cord, 20 yard spool	Ea. .10	Doz. 1.00
	Each	Dozen
Indian Seed Beads—All Colors—Hanks	\$.45	\$ 4.90
Warp and Wool Thread, 500 yard spools	.25	2.50
No. 16 Needles	Pkg. .10	1.00
Bead Ring Kit	.50	5.50
Wire Bead Loom, 4"	.50	5.50
Indian Bead Outfit—Loom, Beads, Needles, etc.	1.00	11.00
Bead Wire—300 ft. spools	.25	2.50
Instructions and Designs for Wood Bead Craft	.10	
Instructions and Pattern for Tile Craft	.10	
Instruction Book for Indian Bead Crafts	.10	

CLAYS AND POTTERY

Amaco Clay Flour—5-lb. sealed carton, per pound	\$.07
50-lb. cloth bag, per pound	.06
Marblex—A Permanent Setting Clay, 1-lb. can	.40
5-lb. can	1.50
Mexican Pottery Clay—Durable Without Firing, 1-lb. can	.30
5-lb. pkg.	1.25
Permaplast Modeling Clay—10 colors—1-lb. pkg. in quarters	.30
5-lb. pkg. in 10 pcs.	1.25
Modeling Tools—Made of Maple—3 styles	\$0.05 Ea., Doz. .50
Amaco Powdered Tempera—Poster and Easel Paint—Set of 8	1.00
Amaco Modeling Wheel—Made of Aluminum with 7" head	2.50
Bisque Finished Pottery—For Hand Decorating—6 styles	Ea. .25
Dozen	2.50

LEATHERCRAFT

Leathers	in Skin	Per Sq Ft.	Per Sq. In.
	Average	Whole or	Cut to
	Sq. Ft.	Half Skins	Measure
Tooling Russja Calfskin	10-14	Brown, Black, Tan, Dark Brown, Mahogany, Red, Blue, Green and Natural.	\$.60 \$.009
Natural Tooling Sheepskin	6-8	Red, Blue, Black, Black Brown and Green Morocco Grain	.28 .005
Embossed Grain Tooling Sheepskin	6-9	for linings—all colors	.28 .005
Velvet Suede Sheepskin	6-8	for linings	.22 .004
Skiver Sheepskin	9-12	Black and Brown	.55
Morocco Goatskin	4-7	Natural and Mottled	.45 .007
Tooling Steerhide	22-28	Natural	.45 .007
Tooling Cowhide	24-28	Black, Brown, Natural	.45 .007
Cowhide Belt Leather	18-22	Natural, Brown	.50
Elkskin	18-22	Natural	.75
Pigskin	14-16	Moccasins, etc.	.32
Wool Sheepskin	8-10	Long Wool	.40
Wool Sheepskin	8-10		.40
No. 1 Selection Tooling Scrap Leathers—With Pattern Sheet	Lb.		1.50

BELT PROJECT

	Each	Dozen
The Aristocrat—Black, Brown and White*	\$.65	\$6.50
The Diamond—Black, Brown, Blue, Red, Natural, White*	.35	3.50
The Colero—Black, Brown and White*	.50	5.50
The Ashley—1¼" wide—Same Colors as The Diamond	.30	3.00
Bobby Boy's Belt—1" wide—Black, Brown, White, Red, Blue	.35	3.50
Miss America—¾" wide—Calfskin-Black, Brown and white	.40	4.00
Miss Danny—¾" wide—Black, Brown and White	.35	3.50
3-Strand Inner Braid—Brown, Tan and Black	.50	5.00
10-Strand for Braid—Brown, Tan, Black and White*	.65	7.00
6-Strand for Braid—Brown, Tan and Black	.55	6.00

1" Plain Belt—Black, Tan and White*	.45	5.00
1½" Plain Belt—Black, Tan and White	.50	5.50
1¾" Plain Belt—Black, Tan and White	.55	6.00
2" Plain Belt—Black, Tan and White	.60	6.50

*These Belts in White cost \$1.00 per dozen extra.

LEATHERCRAFT KITS

	Natural or Embossed	Tooling Sheep	Tooling Cowhide
Book Mark	\$.10	\$.06	\$.07
Triangle Coin Purse	.25	.20	
Envelope Coin Purse—2½x4½"	.35	.30	
Envelope Coin Purse—3x5"	.45	.35	
Envelope Coin Purse—2½x4¾"—Inner Flap	.50	.40	
Double Flap Coin Purse	.35	.30	
Gusset Coin Purse—one piece	.40	.30	
Round Zipper Coin Purse—4"	.50	.40	.35
Blotter Corners—Set of Four	.80	.65	.70
Letter Case—Bottom—4½x7"	.70	.55	.60
Letter Case—Pocket—4x7"	1.10	.80	.90
Archery Arm Guard—7½"			1.00
Neckerchief Slide		.06	.06
Knife Sheath—With Fringe			.40
Axe Sheath—With Fringe			.40
Scout Reg. Card Case	.25	.20	.20
Post Key Case—2½x1½"	.12	.10	.10
Comb and File Case—2x5½"	.35	.30	.30
Four Hook Key Case	.35	.25	.30
Six Hook Key Case	.40	.30	.35
Six Hook Key Case—with Pocket	.50	.40	
Zipper Bill Fold	1.25	.85	
Bill Fold—2 card pockets	1.00	.85	
Tobacco Pouch—Zipper Top	1.00	.80	.90
Slip Cover—Memo Book—2¾x4¾"	.55	.35	.45
Pocket Photo Folder—3½x4¾"	.70	.45	.60
Desk Photo Folder—5½x6"	1.65	1.00	1.45
Photo Album—7x10"	2.50	1.80	2.10
Hand Purse—4x6", not lined	.80	.50	.70
Hand Purse—4½x7", with Gussets and Lining	1.50	1.10	1.25
Under-Arm Bag, 5x9"	3.00	2.25	2.50
Under-Arm Bag, 7x11"—2 pockets	5.00	3.50	4.25
Under-Arm Bag, 5½x9¾"—Zipper and Glove Pocket	5.50	4.00	4.75
Oval Hand Bag—Zipper Top	5.50	4.00	4.75
Book Ends—Hexagon Style	1.75	1.25	1.50
Book Ends—Gothic Style	1.75	1.25	1.50
Book Cover—5x7"	1.25	.70	.95
Book Cover—6x8"	1.70	1.00	1.30
Scout Handbook Cover—5x7½"	1.25	.70	.95
Kitchen Memo Holder	.80	.60	.70

LEATHERCRAFT TOOLS & ACCESSORIES

	Each	Dozen
1. Tracer	\$.20	\$ 2.20
2. Regular Modeler	.40	4.40
3. Deerfoot Modeler	.40	4.40
4. Deerfoot and Double Line Tool	.60	6.60
5. Liner	.40	4.40
6. Diamond Point Modeler	.60	6.60
7. Large Modeler	.40	4.40
8. Ball Point Embosser	.60	6.60
9. Edge Trimmer	.35	3.85
10. Embossing Wheel Holder	.40	4.40
11. Embossing Wheels—9 styles available	.60	6.60
12. Bone Folder, 6"	.30	3.30
13. Bevel Point Skiving Knife	.35	3.85
14. Skiving Knife—French Pattern	.65	6.50
15. Square Point Knife	.25	2.75
16. Incising Knife	.50	5.00
17. Swivel Top Cutter		
18. Extension Blade Handle	.80	8.00
19. Extension Blades	.25	2.50
20. Lignumvitae Mallet	.50	5.00
21. Hickory Mallet	.35	3.50
22. Brass Stamps	.40	4.40
23. Brass Stamps—Descriptive List on Request	.25	2.75
24. Awl	.20	2.00
25. Fid	.25	2.75
26. Stippler	.35	4.00
27. Snap Setting Outfit	1.00	11.00
28. Snap Setting Outfit, 4" long	.50	5.50
29. Thonging Chisel, 1-8" or 3-32"	.65	7.00
30. Eyelet Spreader	.20	2.00
31. Drive Punch, Size 00	.75	8.00

32. Drive Punch, Size 0	.50	5.50
33. Drive Punches, Sizes 1 to 6	.40	4.50
34. Drive Punches, Sizes 7 and 8	.45	5.00
35. Metal Edge Creaser	.65	7.00
36. Diamond Shape Drive Punch	1.00	11.00
37. Universal Punch, 7 attachments	2.50	27.50
38. 6 Hole Spring Punch	1.00	11.00
39. 1 Hole Spring Punch	.40	4.40
40. Space Wheel—5, 6, or 7 spaces to inch	.50	5.50
41. Metal Ruler	.25	2.50
42. Lacing Pliers	.60	6.00
43. Maple Cutting Board—10 3/4 x 7 3/4	.50	5.00
44. Junior Tool Set, 6 Tools—Modeler, Mallet, Knife, Fid, Drive Punch and Cutting Board	2.00	22.00
45. Advanced Tool Set, 16 tools—Snap Fastener Set, Mallet, Skiving Knife, Stippler, Creaser, Fid, Modeler, Tracer, Punches—Size 7 & 0, Eyelet Setter, Stamps, Square and Board	6.00	66.00

LACINGS

Goatskin Lacing—3-32", per yard		\$.05
1-8", per yard		.06
Calfskin Lacing—3-32", per yard		.06
1-8", per yard		.07
Florentine Lacing—3-32", per yard		.09
3-8", per yard		.12
Rawhide Lacing—1-8", per yard		.05
5% Discount on 100 Yards.	Each	Dozen
Snap Buttons with celluloid caps—small and medium—in all standard colors	Ea. \$.20	Gr. \$2.00
Rapid Rivets, 6 dozen to a box,	Box	.25 2.75
Key Plates, Nickle Swivel Type, 2 Hook		.03 .30
3 Hook		.04 .40
4 Hook		.05 .50
6 Hook		.06 .60
8 Hook		.08 .80
Brass Lanyard Hooks	Doz.	.15 Gr. 1.50
Eyelets, Nickle, Black, Brown	Per C	.20
Watch Swivels, Nickle		.08 .80
Dog Leash, swivel with clasp		.20 2.20
Binder Posts		.02 .20
Nickle Buckles—		
5/8"		.05 .20
Wrist Watch Strap—5/8"		.03 .30
1" Belt		.05 .50
1 1/4" Belt		.06 .60
1 1/2" Belt		.06 .60
2" Belt		.08 .80
1 1/2" with clamp attachment		.08 .75
Slide Fasteners, Brown, Black, White, 3" to 6"		.15 1.65
6" to 12"		.20 2.00
Longer lengths, 1c per inch more.		
Tri Tix Water Proof Cement, Tube		.25 2.75
4 oz. Jar		.50 5.00

LEATHERCRAFT GARMENTS

Stylish and Durable

Garment Suede—(Skins average 5 to 7 sq. ft.) Per Sq. Ft.		\$.28
Glove Suede, Per Sq. Ft.		.50
Doeskin, Per Sq. Ft.		.55
Pattern Sheets:	Each	
Jackets—Small, Medium, Large (Bolero, Vestee and Sleeveless Hip-length)		\$.25
Gloves—Sizes 5 1-2, 6, 6 1-2, 7, 7 1-2, 8, 8 1-2, 9, 9 1-2		.25
Suede Bags—(Tramp, Gypsy, Duchess, Symon)		.10
Hats—(Dink, Tyrolean, Trim-tam, Elfin)		.10

BURGESS MODELING SHEET

Brown or Ivory

5x6"		\$.05
6x10"		.10
10x12"		.20
12x20"		.35
20x24"		.60
Discounts: 25% on orders of \$5.00 or more.		
Tools: Ball Point Modeler for raising	Ea. \$.15	Doz. \$1.50
Diamond Shape Modeler—Background-tooling	Ea. .15	Doz. 1.50

GAYWOOD PROJECTS

Beautiful Wood to Decorate

Rings, Sizes: Small, Medium and Large	Each	Dozen
	\$.10	\$1.00
Bracelets	.12	1.20
Buttons, 1 1/2" Diameter	.02	.20
Hinge Box, 5 3/8 x 7 5/8 x 2"	.25	2.50
Cigarette Box—2 packs—Lid Lift	.35	3.50
Jewel Box—2 3/4" Diameter	.10	1.00
Napkin Ring	.08	.80
Serving Tray—18 1/2 x 9"	.75	7.50
Gaywood Plates—Northern Hardwood—6" Plates	.25	2.50
8" Plates	.35	3.50
10" Plates	.50	5.00
Cup and Saucer Set—California Alder—Set	.65	6.50

Coasters—3 3/8" Diameter	.15	1.50
Bowls—All Smooth Hardwoods—6" Utility Bowls	.25	2.50
9" Salad Bowls	.35	3.50
11" Salad Bowls—3 ball legs	.75	7.50
Salad Fork and Spoon	Per Set	.20 2.00
Candles—10"—Poplar	.06	.60
Candle Holder with metal cup	.15	1.50
Gaywood Sealer—1/2 Pt.	.30	3.00
Pint	.50	5.00
Gaywood Varnish—1/2 Pint	.30	3.00
Pint	.50	5.00

GAYBOARD

Craftboard Mats and Projects

	Each	Dozen	100
3 1/2" Round and Octagon Mats	\$.03	\$.30	\$1.80
6" Round, Square and Octagon	.04	.40	2.50
8" Round	.08	.80	5.00
6"x8" Oval and Rectangle	.10	1.00	7.00
Letter Holders—4x5"	.15	1.50	10.00
Book Ends, 5x7"	.25	2.50	17.50

BASKETRY MATERIALS

Natural Selected Reed:		
No. 0—Per Pound		\$1.00
No. 1—Per Pound		.70
No. 2—Per Pound		.65
No. 3—Per Pound		.60
No. 4—Per Pound		.55
No. 5—Per Pound		.50
No. 6—Per Pound		.45
1/4" Flat—Per Pound		.50
3/8" Flat—Per Pound		.55
10% Discount on 10 lbs. or more.		
Chair Cane:		
Fine, 500 foot bundles, Per Bdl.		\$.70
Medium, 500 foot bundle, Per Bdl.		.80
Coarse, 500 foot bundle, Per Bdl.		.90
Cellophane Reed:		
300 foot coils—weaver. Each		\$.70
100 foot coils—stakes with wire. Each		.70
Fibre Cord—Paper Reed—Needs No Soaking:		
3-32"—Weaver, Per Pound		\$.25
3-32"—Stakes with wire, Per Pound		.25
Natural color only—Put up in 2 lb. coils.		
Raffia:		
Natural Color—Per Pound		\$.35
All Colors—1/2 and 1 lb. packages—Per Pound		.80
Raffia Needles—Per Pkg.		.25
Raffia Dyes—All colors—Per Jar		.25
Shellac—white—Per 1/2 Pt.		.30
Shellac—white—Per Pt.		.50
Shellac—white—Per Qt.		.80
Reed Snips—Per Pair		.60
Sloyd Knives—Each		.50
Pliers—5" Flat or Round Nose—Each		.75

BASKET BASES

Round or Square	Each	Dozen
3"	\$.05	\$.50
4"	.07	.70
5"	.09	.90
6"	.10	1.00
7"	.13	1.30
8"	.15	1.50
9"	.18	1.80
10"	.21	2.10
11"	.24	2.40
12"	.30	3.00
13"	.35	3.50
14"	.40	4.00
Oval or Rectangular	Each	Dozen
3x5"	\$.70	\$.70
4x6"	.10	1.00
5x7"	.12	1.20
6x9"	.16	1.60
8x12"	.20	2.00
10x16"	.28	2.80
14x20"	.55	5.50

INDIAN LORE

	Each	Dozen
Waving Plume Headpiece, with Eagle Feather	\$.35	\$ 3.50
Ceremonial Horn Rattle Kit	.25	2.50
Ceremonial Horn Tomahawk	.75	7.50
Tomahawk, Iron Head; May be used for throwing contest	.90	9.00
10" Tom-Tom, with Rawhide head	2.00	20.00
8" Rawhide Tom-Tom Head	.18	1.80
10" Rawhide Tom-Tom Head	.25	2.50
13" Rawhide Tom-Tom Head	.75	7.50
12" Model Teepee, Canvas, with Lampshade Frame Base	.75	7.50
Knife Sheath, Rawhide with Fringe	.20	2.00
Eagle Feathers, Single	.20	2.00
32 Eagle Feathers, matched sets for head-dresses	3.00	to 5.00
Turkey Feathers, White, Red, Blue, Yellow, Orange and		

Black	Doz.	.35	Gr.	2.50
Turkey Down, Red, White and Yellow	Doz.	.07	Gr.	.75
Cowrie Shells, for imitation Elk Teeth				.35
Eagle Claws		.25		2.50

FIBRECRAFT

Peacock Fibre—Hanks approx. 42 feet—All Colors	Each	.12	Dozen	\$1.35
Peacock Straight Brush Fibre—Per Pound		.65		7.25
Tying Cord—All Colors		.06		.60
Cellophane Twist—For Tying and Weaving, 150 ft. Spools		.15		1.50

CRAFTSTRIP

For Lacing, Braiding, Etc.

Widths: 3-32" "Narrow", 7-54" "Wide" and Round Cord; 16 Colors—Seamless, Waterproof.

Discounts: 10% on 100 yards or more—25% on 500 yards or more.

Supplies:	Each	Dozen
Nickle Lanyard Swivels	\$.08	\$.80
Brass Lanyard Hooks	Doz. .15	Gr. 1.50
1", 1 1/4", 1 1/2" Nickle Plated Buckles		.60
Metal Blanks for Bracelets, 3/4" or 1"x9"		.03 .30
Craftstrip Instruction Booklet		.25 2.50

CORK CRAFT

A Popular, Practical Handicraft

Sheets:	Each	Dozen
12x35"—Regular 1-16" thick	\$.40	\$4.00
12x36"—3/8" thick		8.00

7" Sail Boat Kit	Each	Dozen
U. S. S. Destroyer or U. S. S. Cruiser—13" Hull	\$.10	\$1.00
Tramp Steamer—13" Hull	.25	2.50
Ore Boat—13" Hull	.50	5.00
Clipper Ship—12" Hull	.50	5.00
Four Masted Schooner—13" Hull	.75	7.50
Cabin Cruiser or Harbor Patrol Boat—19" Hull	1.00	10.00

METAL TAPPING

Young America's Favorite Craft

Bulk Materials:	Each	Dozen
Fir Plywood, 1/2" 5 ply—12x24"	\$.45	\$4.50
Brass, Aluminum or Copper, 30 gauge—Per Sq. Ft.	.25	2.50
Design Sheets—Several styles for each project	.05	.50
Tapping Tools	.04	.40
Brass or Nickle Plated 3/8" Nails, per lb.	1.00	11.00
Metal Hangers	Doz. .07	Gr. .75
Walnut Stain	Pt. .40	
Clear Lacquer to preserve bright finish	1/2 Pt. .50	

Discounts: The dozen price of all kits is ten times the unit price.

METAL TAPPING KITS

There are several different designs for each

Handy Holder, for Potholders, Etc.	\$.25	\$2.50
Condiment Shelf, with shakers	.75	7.50
Tie Rack, with hooks	.30	3.00
Tie Rail, with bar	.40	4.00
Plaques, 5 1/2 x 6 1/2"	.20	2.00
Plaques, 6 1/2 x 8 1/2"	.30	3.00
Plaques, 8 1/2 x 11 1/2"	.40	4.00
Plaques, Round	.20	2.00
Waste Basket—10" high by 8" square	1.25	12.50
Book Ends—Round Top or New Style Round	Pair .35	3.50
Wall Shelf—8" high	.40	4.00
Whisk Broom Holder	.40	4.00
Spool Holder—6" Diameter	.25	2.50
Letter Holder—To Match Book Ends	.35	3.50
Telephone Screen—Center and two hinged wings	1.00	10.00
Door Stop	.35	3.50
Modern Hostess Cheese Board or Serving Tray	1.50	15.00
Sundial—11x11"—a Copper project	.90	9.00

ART MATERIALS

SUPPLIES FOR GLOWING GLASS PICTURES	Each	Dozen	
Gypsy Glaze Set, 5 transparent and opaque colors, thinner, brush and instructions	\$1.75	\$17.50	
Glaze, 1 oz. bottles, all colors	.25	2.50	
Studies—Send for complete list	.10	1.00	
Silhouettes, set of 20, 4x5"	.25	2.50	
Glass	Dozen	Frames	
4x5"	\$.25	4x5"	Each
5x7"	.60	5x7"	\$.12
8x10"	1.00	8x10"	.20
9x12"	1.50	9x12"	.25
12x16"	3.50	12x16"	.50
Gypsy Craft Colors, a semi-oil paint. The best medium for wood, pottery, lamp shades and all around craft work.	Each	Dozen	
Set of 7 colors, brushes and instructions	\$2.10	\$21.00	
Craft Colors, Individual 2 3/4" tubes	.25	2.50	

Weber Show Card Colors—Tempera—All spectrum colors and white, black, brown and gray.		
No. 634, 6—3/4 oz. jars, assorted,	Set	.60 7.00
No. 161, 16—1 oz. jars, assorted,	Set	2.50 25.00
No. 162, 16—2 oz. jars, assorted,	Set	4.00 41.50
2 Oz. Jars, Regular Colors		.25 2.50
2 Oz. Jars, Gold or Silver		.50 5.00
1/2 Pt. Jars		.65 6.50
1 Pt. Jars		1.00 10.00
Amaco Wax Crayons, Hexagon		
No. 708, box of 8 colors		.10 .90
No. 716, box of 16 colors		.20 1.80
No. 724, box of 24 colors		.30 2.70
Crayons in Bulk, packed one gross to box—Any Color	Box	1.80 18.00
Amaco Pastels. These pastels have excellent blending qualities, and do not easily break or crumble.	Each	Dozen
No. 2212, 12 sticks, 12 colors	\$.25	\$2.50
No. 2224, 24 sticks, 24 colors	.50	5.00
Amaco Powdered Tempera, a poster and easel paint.		
No. T14, Set of 8 colors in metal containers	1.00	10.00
1 Pt. any listed color	.75	7.50
1 Pt. Gold or Silver	1.50	15.00
Colors: White, Black, Red, Magenta, Yellow, Orange, Green, Violet, Brown, Turquoise, Blue, Ext. White.		
Water Colors, Box of 8 and brushes	.40	4.40
Camel Hair Brushes, 12 on a card, Nos. 1 to 7 assorted	.50	
DeVoe Students Oil Set, 12 colors and 2 brushes	1.75	17.50
DeVoe Beginners Oil Color Outfit, 10 tubes colors, oil, turpentine, cup, pallet, blender, knife, 3 brushes—in wooden box	4.00	40.00
Higgins Water Proof Drawing Inks	.30	3.00
Spatulas, 3"	.50	5.00
Colored Drawing Pencils, All Colors	.10	1.00
Wooden Pantograph, 20" long	1.00	11.00
School Rulers, 12" long	.05	.55
Cloth Suspension Rings	.01	1.00
Silver Foil, 20x25"—7 Designs	.15	1.50
Weber Malfa Oil Colors—4" Studio size tubes—Color Chart sent on request	.25	2.70

METALCRAFT TOOLS AND ACCESSORIES

1. No. 11 Forming Hammer		\$1.85
2. No. 4 Planishing Hammer—for bowls		2.10
6. No. 27B Planishing Hammer—for edges		1.85
7. Ball Pein Hammers		
2 Oz.		.60
4 Oz.		.65
6 Oz.		.65
8 Oz.		.65
10 Oz.		.65
8. Riveting Hammers—2, 4, 6, 8 Oz.		.85
9. Franch Chasing Hammer, 1 1/8" Face		1.45
No. 46 Spotting Hammer		1.80
No. 67 Horn Mallet, 3 1/4" long		.45
No. 68 Horn Mallet, 4 3/4" long		.70
No. 83R Raw Hide Mallet, 3 1/2 Oz.		.80
No. 84R Raw Hide Mallet, 6 Oz.		.95
No. 85R Raw Hide Mallet, 7 1/2 Oz.		1.10
No. 86R Raw Hide Mallet, 10 Oz.		1.35
Wooden Tray and Plate Forms:		
10. 10" Outside Diameter, 6" hollow diameter		2.00
11. 8" Outside Diameter, 4" hollow diameter		1.50
12. 6 1/2" Outside Diameter, 3 1/2" hollow diameter		1.25
13. 5 1/2" Outside Diameter, 2 1/2" hollow diameter		1.00
14. 6" Forming Block		1.10
15. 8" Outside Square, 5" hollow diameter		1.00
16. No. 74 Dogwood Mallet		.40
17. No. 65 Dogwood Mallet		.50
18. No. 60 Dogwood Mallet		.80
19. 12" Fret Saw Frame		1.50
3" Fret Saw Frame		.90
5" Fret Saw Frame		1.10
8" Fret Saw Frame		1.50
Fret Saw Blades, No. 000 to No. 6	Doz. 17c; Gr.	1.70
21. No. 4 1/2 Hand Drill		1.75
22. Drive Punch for 1-16" hole		.15
23. No. 3 Stake—See Dixon Catalog for complete line of stakes, forms and anvils		3.25
24. Stake Holder		3.25
25. 3" C Clamp		.30
26. Flat and Half-Round 6" Files		.32
27. Needle Point Files, Flat, Half-Round, Round, Knife, 3 Square, 3 Corner		.30
28. 6" Spring Dividers		1.00
29. 8" Metal Shears for Circles		1.10
30. 8" Metal Shears for Straight		1.00
31. Pliers:		
Flat Nose 5"		1.35
Round Nose 5"		1.35
Long Nose 5"		1.35
Nippers, side cutting, 4 1/2"		1.35
Pointed Tweezers, 4 1/2"		.10
32. Alcohol Torch No. 7, 5 1/2 x 7/8"		.65
33. Electric Solder Set—3 point		3.00
34. Dapping Die Punches, Set of 12		1.50
Set of 18		2.25

VACH COLLECTION

Bench Vise, No. 149, 1 3/4" jaws	1.00
Bench Vise, No. 150, 2 1/2" jaws	1.50
Bench Vise, Swivel Base, 3" jaws	10.00
Scratch Awl or Scriber, 2 3/8" long	.30
Engraver's Marker, 7" long	.64
Center Punch, 4" long	.30
Sand Bag for Forming	2.00
Copper Rivets, 3-16", 1/4 lbs., Round Head	Lb. .35
(All sizes)	
Oxidizing Chemical—8 oz. jar	.40
Polishing Rouge for Gold and Silver, 1/2 lb. sticks	Lb. .45
Polishing Rouge for Pewter, 1/2 lb. sticks	Lb. .45
Jewelers Rouge Paste, for Hand Polishing	Per Tube .25
Steel Wool No. 00	Lb. .45
Steel Wool No. 000	Lb. .56
Powdered Pumice—Fine, Medium, Coarse	Lb. .15
Asphaltum Varnish	Pt. .35
Etching Resist—2 oz. Bottle	.50
4 oz. Bottle	.75
Etching Mordant—For Copper and Aluminum	Pt. 90c; Qt. 1.50
Etching Mordant—For Silver	Pt. \$1.20; Qt. 1.75
Metal Lacquer—To Preserve Finish	1/4 Pt. .30
Metal Lacquer—To Preserve Finish	1/2 Pt. .50
Acid or Rosin Core Solder	Lb. .70
Brass Solder	Oz. .60
Silver Solder	Oz. 1.25
Tinol Paste Solder	Tube .25
Nekorode Soldering Paste	2 Oz. .15
Powdered Borax	Lb. .18
Amberline Flux	4 Oz. .30
Shino Polishing Cloth	Each .25
French Emery Paper—9x13" 4/0 to 3/0	Doz. .72
French Emery Paper—9x13" 2/0 to 4	Doz. .60

METALCRAFT

Creative, Constructive, Enduring

Modeling Metal—Aluminum, Copper, Brass or Rich Brass:	
Price per square foot	\$.20
10 feet or more	.17
25 feet or more	.14
Wooden Modeling Tools	Each \$.05; Dozen .50
Bracelets Blanks:	
1/4x6"	Copper \$.05; Nickel .06
3/4x6"	Copper .06; Nickel .07
1x6"	Copper .07; Nickel .09
1 1/2x6"	Copper .08; Nickel .11
Paper Knives—Kit makes two	Copper .20; Nickel .28
Metals	Copper Brass Nickel Pewter Alloy Aluminum
10 Ga., per sq. ft.	\$.25 \$.25 \$ \$.25 \$.25
24 Ga., per sq. ft.	.50 .50
20 Ga., per sq. ft.	.70 .70
18 Ga., per sq. ft.	.80 .80 1.25 1.40
16 Ga., per sq. ft.	1.05 1.05
18 Ga., Pewter in 3, 4, 5, 6, 8, and 10" Discs	Per Lb. 1.00
10% Discount on \$5.00 or over	

SANDPAINTING

A Colorful, Fascinating Craft

Tinkersand Sets:	Each	Dozen
No. 1 Regular, 16 pictures, 3 tubes sand, cement, brush	\$.50	\$ 5.00
No. 1M Mickey Mouse Series, same as above	.50	5.00
No. 2 Regular, 12 pictures, 6 tubes sand, cement, brush	1.00	10.00
No. 2S Snow White Series, same as above	1.00	10.00
No. 3 Regular, 16 pictures, 12 tubes sand, cement, brush	2.00	20.00

FINGER PAINTING

Ideal for Younger Children

4 Oz. Jars	Each \$.30	Dozen \$ 3.00
8 Oz. Jars	.50	5.00
Set No. 904—4 colors, 12 sheets paper, 4 spatulas, directions	1.00	10.00
Set No. 906—6 colors, 12 sheets paper, 6 spatulas, directions	2.00	20.00
SPONGEX—Inexpensive, Educational and Really Fun.		
10-Lb. box with 16 pg. instruction and design booklet	\$ 2.00	
Spongex Cement—4 Oz.	.25	

CARWRITE

An Economical Carving Medium

Block of Carwrite 5x2x3/4" with design and instruction sheet, and 2 wooden modeling tool.	Each \$.15; Doz. \$ 1.50
---	---------------------------

WOOD BURNING

Wood Burning Sets	Each \$ 1.00; Doz. \$ 10.00
Wood Burning Pens—110 Volts	Each .80; Doz. 8.00
3x6" Stamped Plaques	Each .10; Doz. .90
7x10" Stamped Plaques	Each .25; Doz. 2.50
Coasters—Set of Four	Set .25; Doz. 2.50

SQUARE KNOTTING

Macrame Cord—10 standard colors	Each \$.20; Doz \$ 2.00
Seine Cord—Nos. 12, 18, 21, 24—1 lb. Hanks	Each .65 ²
Dreadnaught Cord—No. 12, All Colors—1/2 lb. balls	.75
1", 1 1/4", 1 1/2" Nickel Buckles for Cord Belts	Each .06; Doz. .60
Instruction Booklets for Knotting	Each .15; Doz. 1.50

JIFFY LOOM

Weave Yourself. Dresses, Scarfs.

Instruction and Design Book	Each \$.10; Doz. \$ 1.10
Hollywood Yarn Reels	Each .50; Doz. 5.50
No. 401 Regular Loom, 4" square	Each .25; Doz. 2.75
No. 1101 Hollywood Set—4 Assorted Looms	1.00; Doz 11.00

FLOOR AND TABLE LOOMS

Art Craft Loom No. 240, 4 Harness, 8" Weaving Space	\$ 10.00
Jr. Art Craft Loom No. 7, 2 Harness, 8" Weaving Space	5.50
Handcrafters 2 Harness Loom, 12"	6.75
Handcrafters 6" Loom	2.00

CRAFT AND HOBBY BOOKS

Archery Simplified—Rounseville	\$ 2.00
Bows and Arrows for Boys—Decker	.75
Flat Bow, The—Hunt and Metz	.50
Block Printing with Linoleum—Frankenfield	.25
Folio of Designs—Lemos	1.00
Indian Bead Booklet	.10
Tile Bead Booklet	.10
Wood Bead Booklet	.10
Burgess Leathercraft Designs—Webster	1.00
Folio of Leathercraft—Lemos	1.00
Working With Leather—Decker	.25
Aluminum Projects—Hobbs	3.00
Art Metal Work With Inexpensive Equipment—Payne	3.25
Beaten Metal Work—Horth	1.00
Decorative Metal Overlay—Cuzner	1.25
Book of Designs and Motifs for Piercing, Etching and Chasing—Dixon	1.50
Dixon Manual for Metal Artists—Dixon	1.50
Decorative Metal Work	2.00
Elementary Wrought Iron—Ballinger	1.35
Educational Metalcraft—Davidson	2.75
Enameling of Metal—Millenet	2.00
55 Tin Can Projects—Lukowitz	1.25
Hand Wrought Jewelry—Sorenson and Vaughn	1.00
How to Make Jewelry—Overton	3.00
Interesting Art Metal Work—Lukowitz	1.00
Jewelry, The Art of Metal Craft and Jewelry—Kronquist	2.00
Metal Work—Jones	2.50
Metal Work and Etching—Adams	1.00
Pewter Designs and Construction—Varnum	2.75
Silverwork and Jewelry—Wilson	3.00
Tin Can Toys, Making—Thatcher	2.00
American School Toys—Kunon	1.35
Boy Bird House Architecture—Baxter	1.00
Chip Carving—Moore	1.00
Colonial Furniture—Shea and Winger	3.50
Coping Saw Work—Worst	2.00
Course in Wood Turning—Wokler	1.50
Easy to Make Toys—Krenson	1.45
Furniture Inlay—Frost	2.50
Handcraft Projects (Wood), Books 1, 2 and 3—Solar	Each 1.25
Making Tin Can Toys—Thatcher	2.00
Model Sail and Power Boats—Horst	2.00
Permanent Bird Houses—Califf	1.00
Principles of Wood Working—Hjorth	1.75
Problems in Artistic Wood Turning—Ensigner	2.50
Puzzles in Wood—Wyott	.60
Toys Every Child Can Make—Wright	1.60
Twenty-Five Kites That Fly—Horst	1.25
Wood Carving Designs & Workmanship—Jack	2.50
Wood Carving and Whittling—Tangerman	3.00
Model Boats for Juniors—Horst	2.00
Art Craft for Beginners—Sanford	2.00
Jewelry, Gem Cutting and Metalcraft	2.65
Be A Puppet Showman—Bufano	2.50
Book Binding Made Easy—McGee & Brown	1.60
Camps, Log Cabins, Etc.—Brimmer	2.00
Craft Work—Cave	3.00
Fibrecraft Manual	.30
Foot Power Loom Weaving—Worst	6.00
Handbook and Pottery	.25
Indian and Camp Handicraft—Hunt	2.25
Jiffy Loom Patterns	.10
Modern Home Crafts—Minter	5.00
Money Making Hobbies—Collins	2.00
Sixty Alphabets—Hunt	1.50
Square Knotting Booklet—Herwig	.75
Square Knotting Manual—Herwig	1.00