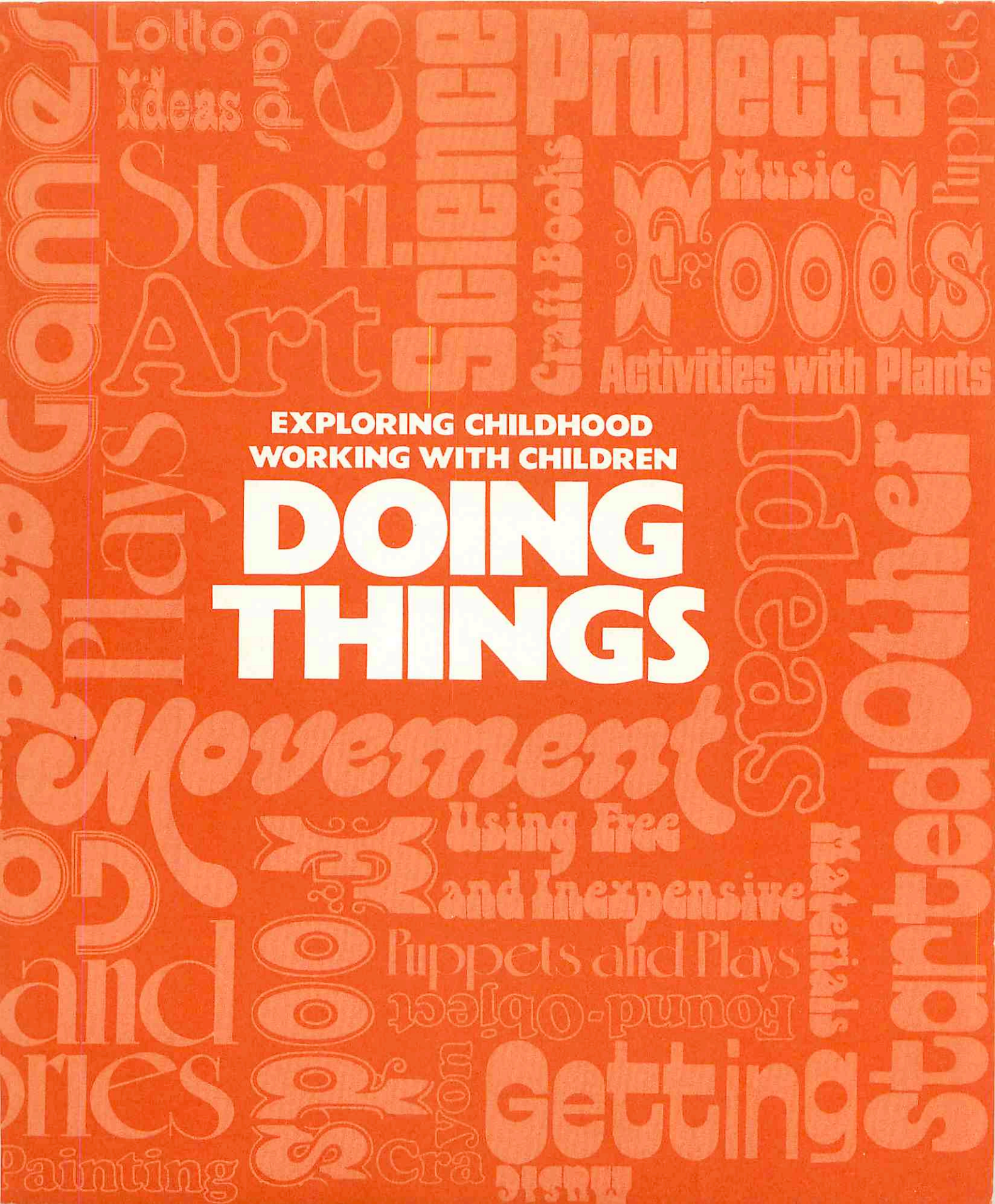
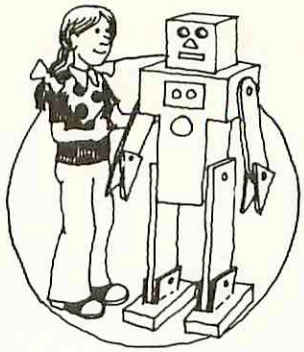

EXPLORING CHILDHOOD
WORKING WITH CHILDREN
DOING THINGS
Projects
Foods
Activities with Plants
Art
Stories
Games
Plays
Movement
Using Free
and Inexpensive
Materials
Puppets and Plays
Found-object
Getting
Painting

EXPLORING CHILDHOOD
WORKING WITH CHILDREN

DOING THINGS

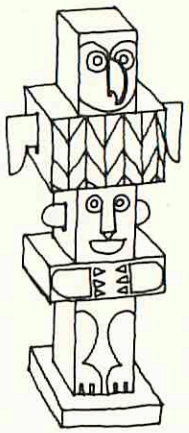
Social Studies Program, 15 Mifflin Place, Cambridge, MA 02138.

What Can You Do With Cardboard Boxes ?



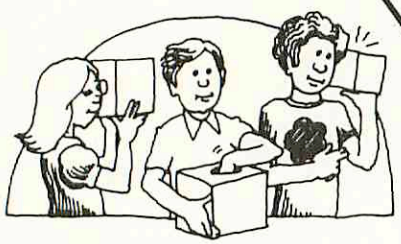
Constructions

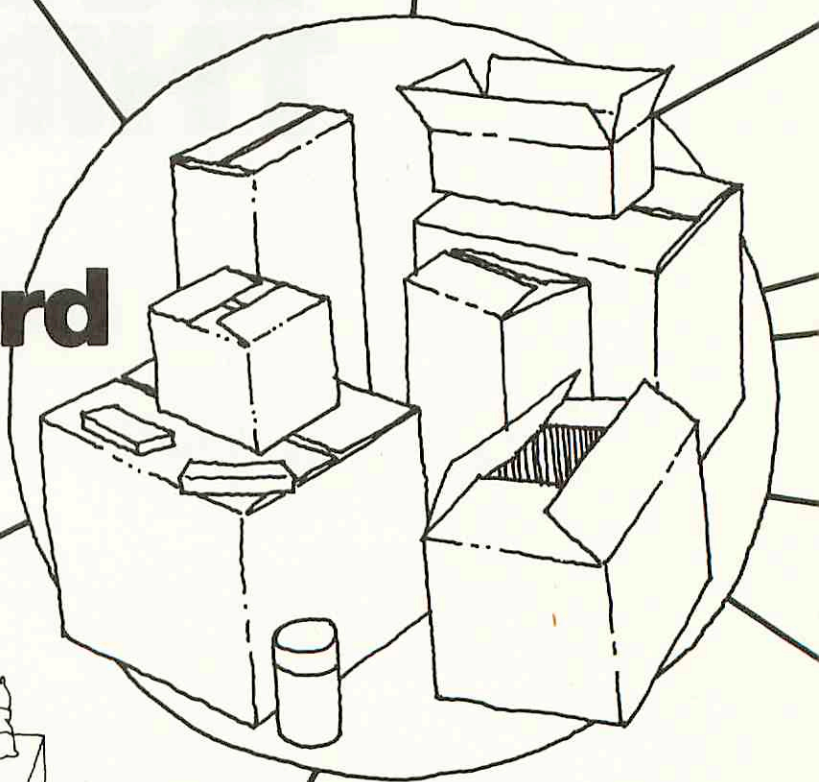
blocks
robots
mobiles
totem poles

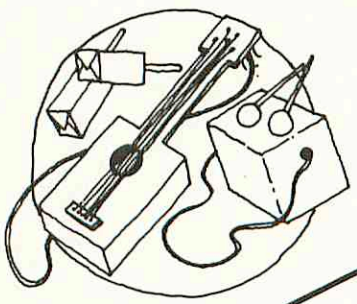


Mystery Boxes

piñata
sounds
textures
tastes
smells







Musical Instruments

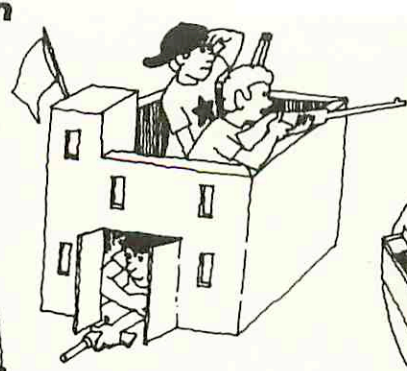
drums
rattles
guitars

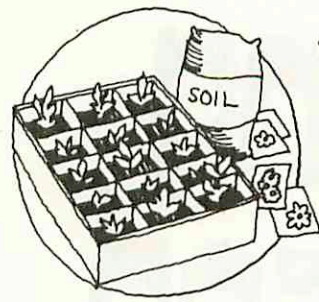
for flour
for water
for sand

Play Tables

for children

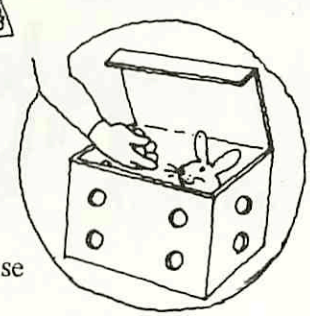
playhouse
cave
store
darkroom
fort
clubhouse



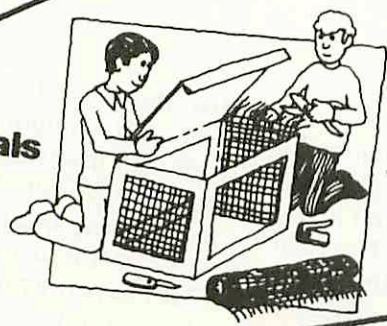


for plants

greenhouse
terrarium



Environments



for animals

tunnel
cage
bed
casket

firehouse
zoo
dollhouse
garage

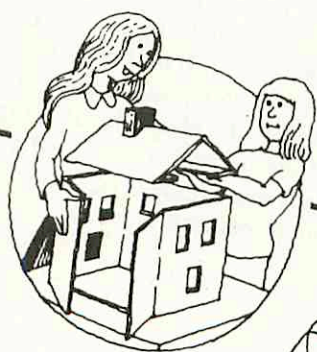
Costumes & Masks

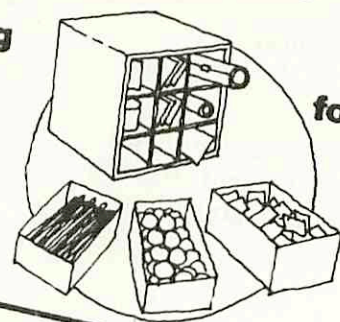
hat
helmet
mask
horse

Containers

for sorting

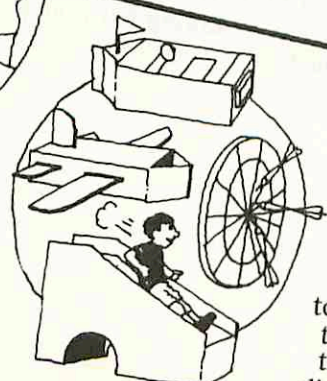
color
size
shape





for storage and collection

cubbies
mailboxes



Toys

to throw
to kick
train
slides
targets
obstacle course

Platforms

models
collections
board games
collages

Getting Started

Telling stories, singing, drawing, doing experiments, and cooking can be great fun for children. Such activities allow them to express their feelings and ideas, try new roles, develop physical coordination, and discover new and exciting uses for a variety of materials. While exploring and testing his or her own imagination and skill, a child can discover new feelings and ways of doing things. For you, activities offer a chance to be inventive, to gain understanding of what affects young children, and to find out what matters to them most. This two-way learning is one of the most exciting parts of being with young children.

Creating activities that are fun and engaging for children seems to happen best when the following things are true:

- You are willing to follow the children. Once you present an activity, stand back a moment. What interests them? Where do they want to go with it? What do they want to try?
- You have put together a good mixture of preparation and experiment. It is important to provide the right materials, enough materials, clear directions, and ideas and questions to get children started. (The fieldsite teacher may be able to help you with the preparations.) But it is just as important to provide "room" for experiment and discovery—space, time, and freedom to explore. You can draw out a child's interest by saying things like, "Let's build from boxes. What will you make?" Or, "Could you make new colors by putting colors together?" There are many things that children can and want to learn, but it takes "messing around."
- You contribute actively to the project. For example, what could you do with plain and ordinary materials? Have you ever thought about the hundreds of things that could be made from a cardboard box? If a child becomes fascinated with a spider found in a corner of the preschool, could you follow up on this interest? What about telling stories about spiders, drawing pictures of spiders, counting the spider's legs and the legs of other insects, or taking yarn outdoors and weaving a huge web?

The activities suggested here are just starting points—samples of all the things you might do. They are not meant to be followed precisely. You may want to amend them as you try them out and develop your own ideas. What new activities do these suggest to you? What new twists can you or the children introduce? How can you vary or extend an activity? Add your thoughts, notes, and observations to this book, so you can use them during the year.

Art Ideas

Using Crayons

TRICKS WITH OLD CRAYONS

Every fieldsite has an abundance of old and broken crayons. With the following "tricks" you can keep crayons interesting and usable, while introducing children to new ways of drawing:

(1) Peel the paper off the crayons. Put crayons of the same color together in an empty juice can. Set all the cans in a pan of hot water over medium heat on a stove. When the crayons melt, pour the wax into the cups of an old muffin tin. Cool and unmold.

Grate these blocks of color with an old cheese grater. Then let the children sprinkle shreds onto large sheets of paper in bold patterns. Place newspaper over and under the design, and iron the children's designs (medium setting): a beautiful "stained glass" pattern emerges as the wax melts. Hang the pictures in windows, so the light can shine through. *Both the crayon-melting and the ironing should be done by an adult.*

(2) Cut notches in the side of a crayon, after removing the paper. Don't cut too deeply, or the crayon will break when used. What happens when a child pushes the crayon on its notched side across a sheet of paper?

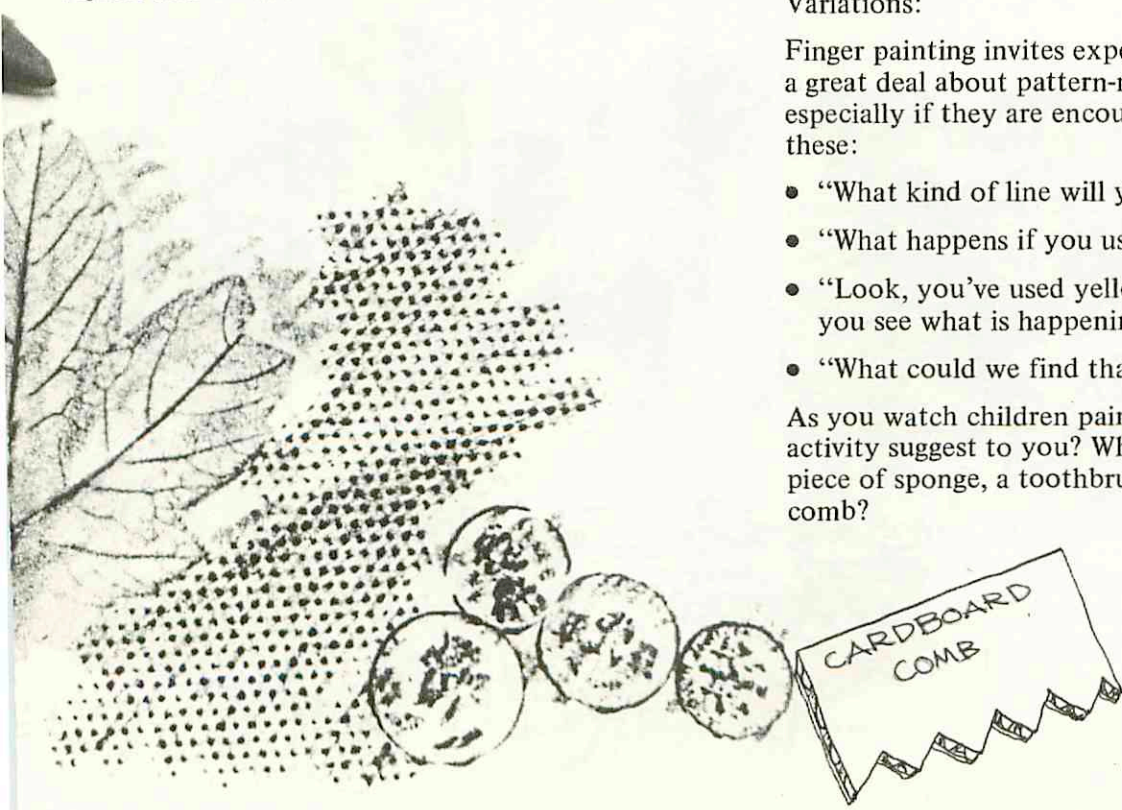
(3) Take the paper off two crayons that are about equal in size. Using a candle, melt one side of each. Then press the two together and let them dry. When a child uses such double crayons, what happens? Try binding three or four crayons together with a strong rubber band.

CRAYON ETCHINGS

Give children small sheets of drawing paper, and ask them to fill the pages with patches of bright color. They need to color thick and hard. When the papers are full, ask them to color over their first layer with black—again, thick and hard. When all the color is covered, give them good-sized nails or sharpened pencils, and suggest that they draw on the black. What happens?

CRAYON RUBBINGS

Provide children with two sheets of paper, peeled crayons, and an assortment of differently patterned flat objects: paper clips, rubber bands, coins, leaves, grasses, scraps of textured materials, and anything else you can think of. Children can arrange their objects on one piece of paper, then place the other sheet on top. Drawing the side of a crayon firmly across the top piece of paper will bring out the pattern of objects underneath.



Finger Painting

Finger painting is an excellent activity for young children who can't yet cope with brushes, jars, and water, but older children enjoy it, too. Finger painting invites any child to get his or her whole body into the act of creating a rich and interesting painted surface.

Basic Steps:

- Cut paper into sheets about 16 to 20 inches wide. Use paper with a glossy surface (shelf paper works).
- Cover the working area with newspaper or plastic sheeting.
- Set out finger paint in bowls with spoons, so that the children can "serve themselves." One color is plenty for beginners, but older children will enjoy having several colors.
- Just before the children set to work, the paper should be wetted down on both sides, then laid smoothly on the table, glossy side up.

Variations:

Finger painting invites experiment. Children can learn a great deal about pattern-making and color-mixing, especially if they are encouraged with questions like these:

- "What kind of line will your little finger make?"
- "What happens if you use your whole hand?"
- "Look, you've used yellow and red together. Do you see what is happening?"
- "What could we find that would make a thin line?"

As you watch children paint, what ideas does their activity suggest to you? What could they do with a piece of sponge, a toothbrush, or a notched cardboard comb?

FOLD-OVERS

Make a strong design on half of a finger painting. Fold the blank side over, press, and open. What happens? Now try a new color.

GIANT PAINTINGS

Cover an entire table with plastic sheeting. Gather four or six children together, provide finger paints in several colors, and let them paint a huge scene: the ocean, the sky, outer space, a big city. . . .

COOKIE SHEET PRINTS

Finger paint a design on a large cookie sheet. Lay a sheet of paper on top, press it down completely, and peel it back. There is a print of your design!

Make a new design in a new color, and print over your first painting. What happens?

CLAY STAMPING

Cover a sheet of paper with an even layer of finger paint. Flatten one side of a ball of clay. Using a pencil point, scratch a design into the flat side of the clay. Stamp the clay on the finger painting. Can you make patterns?

FINGER PAINT RECIPES

Cornstarch Finger Paint

8 parts water

1 part cornstarch

Food coloring (lots)

Boil water. Add coloring and cornstarch. Stir, and bring back to a boil. Keep stirring as mixture thickens. Cool and store in a cool place.

Soap-flake Paint

1 cup soap *flakes* (powder won't work)

1/2 cup instant laundry starch

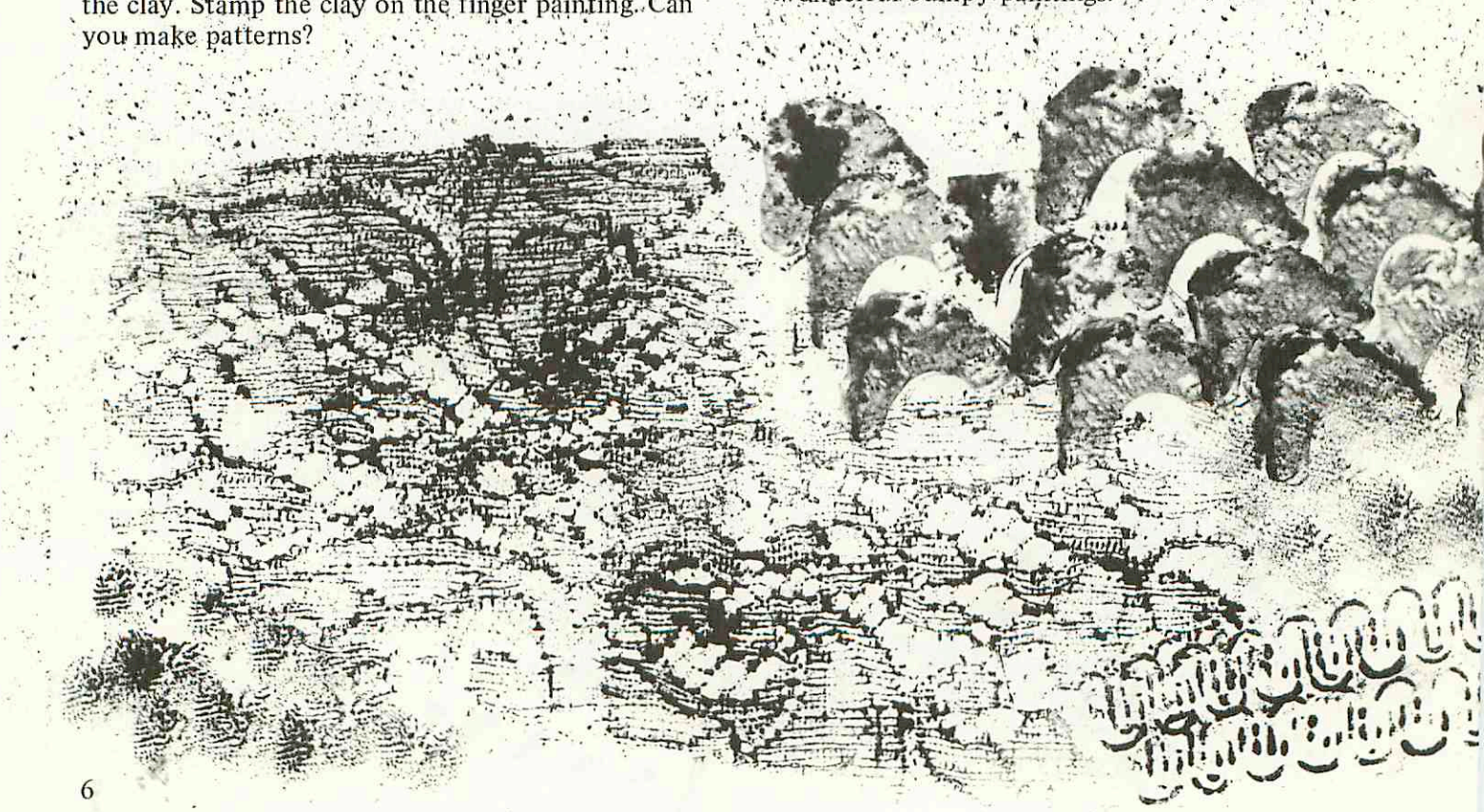
3/4 cup water

1 teaspoon powdered paint

Place ingredients in a big bowl and whip with an egg beater until stiff. This mixture will make three-D paintings. Try using it in squeeze bottles or pastry tubes.

Oatmeal Relief

Make a thick paste out of oatmeal or cornmeal and warm water. Color with powdered paint. This makes wonderful bumpy paintings.



Found-Object Printing

Making prints is just as easy as pressing. Try it and you will see.

Basic Steps:

- Collect all kinds of objects you want to try to print from. You might go on a scavenger hunt with the children.
- Cover your working area with plenty of newspaper. Using powdered paint and a little water, mix up some thick, gooey "ink." It should look and feel like melted ice cream.
- Make "ink pads" by setting several layers of paper towels in shallow baking dishes and pouring "ink" onto the pads. Be sure it soaks in. (Wetting the towels will help.)
- Ask the children to pick an object they want. While they are choosing, provide each with paper for printing. Placing several layers of newspaper under each paper will make the printing easier.
- Let the children press their objects onto the "ink pads" and then onto the printing paper, paint side down. (Each time they want to print an object it will have to be re-inked.)

Variations:

Once children have this process well in hand, start them thinking about other possibilities:

- trading objects
- adding new shapes
- printing one shape or color over another
- using several colors of ink

GLUE PRINTS

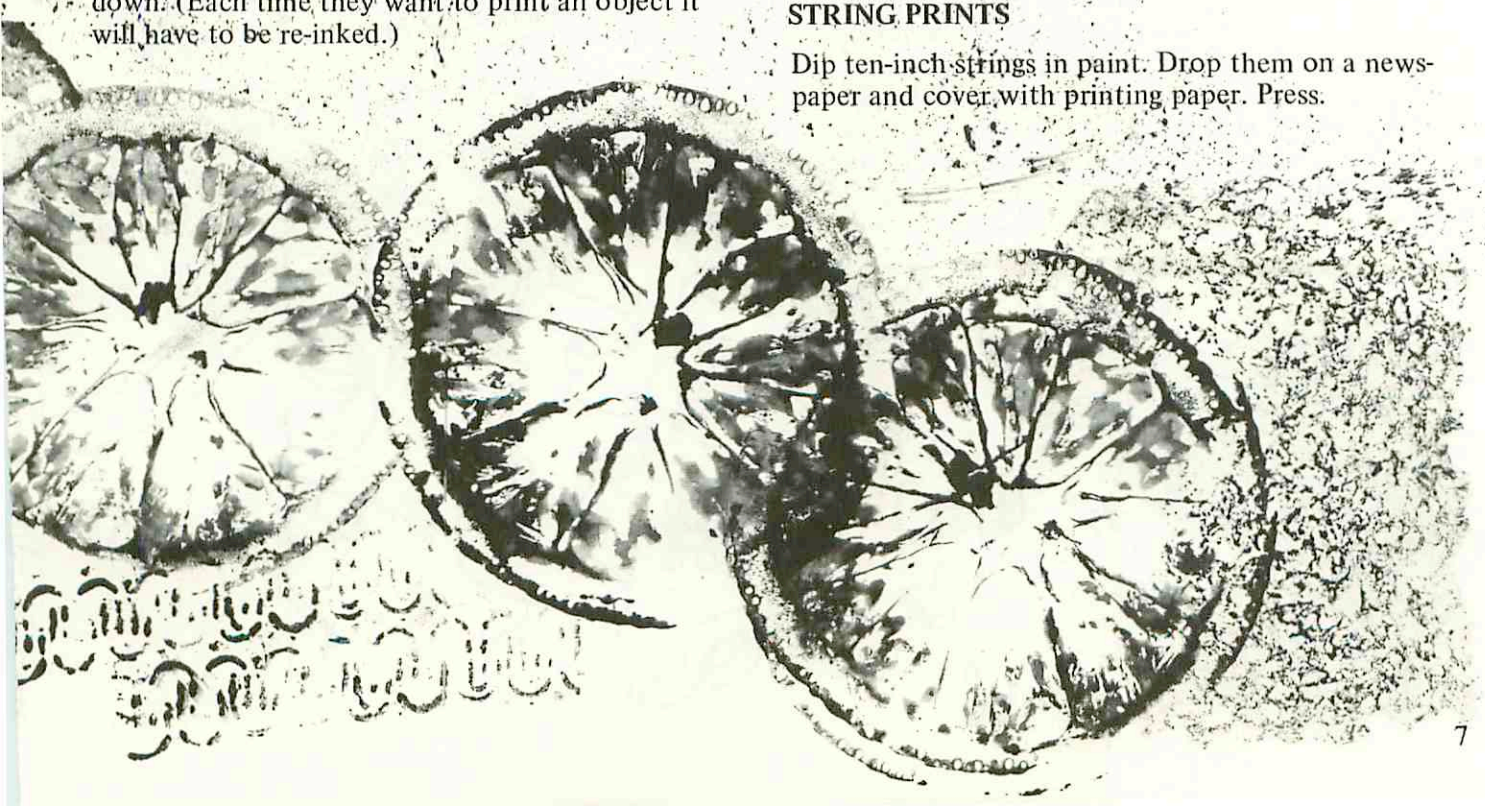
Squeeze white glue onto a five-inch square of cardboard in a pattern of lines. Dry overnight. Cover with a thin layer of thick paint. Press a sheet of paper lightly onto the painted design. Try using new colors; printing several times on a large sheet of paper; overprinting, by using one color, moving the paper slightly, and printing a second color.

LEAF PRINTS

Choose different kinds of leaves and press them overnight in books with a weight on top. The next day, select one leaf to print. Lay it on paper towels and paint it with thick paint. Place it carefully on a new towel and lay a clean sheet of paper over it. Press down. Lift up.

STRING PRINTS

Dip ten-inch strings in paint. Drop them on a newspaper and cover with printing paper. Press.



Constructions

A construction is anything you build from anything you find. Young children (two to four) simply enjoy the process of adding more and more pieces to a construction, and building something that lasts. Older children may build fantastic forts, castles, tunnels, creatures, or robots.

Collect wood scraps, odd plastic pieces, boxes, scraps from a lumber yard, broken puzzle pieces—anything that you want to try to build from. Be sure to have plenty of material, as each child will need a good supply. Try to collect lots of different shapes, sizes, colors, and textures.

Provide glue, paper clips, staples, tape, and whatever else children will need to do their building. Again, have plenty, because children will get involved and won't want to stop to share.

Allow ample working space. Find a safe spot for drying objects. Children are heartbroken when their creations are bruised or broken.

PAPER TURNS

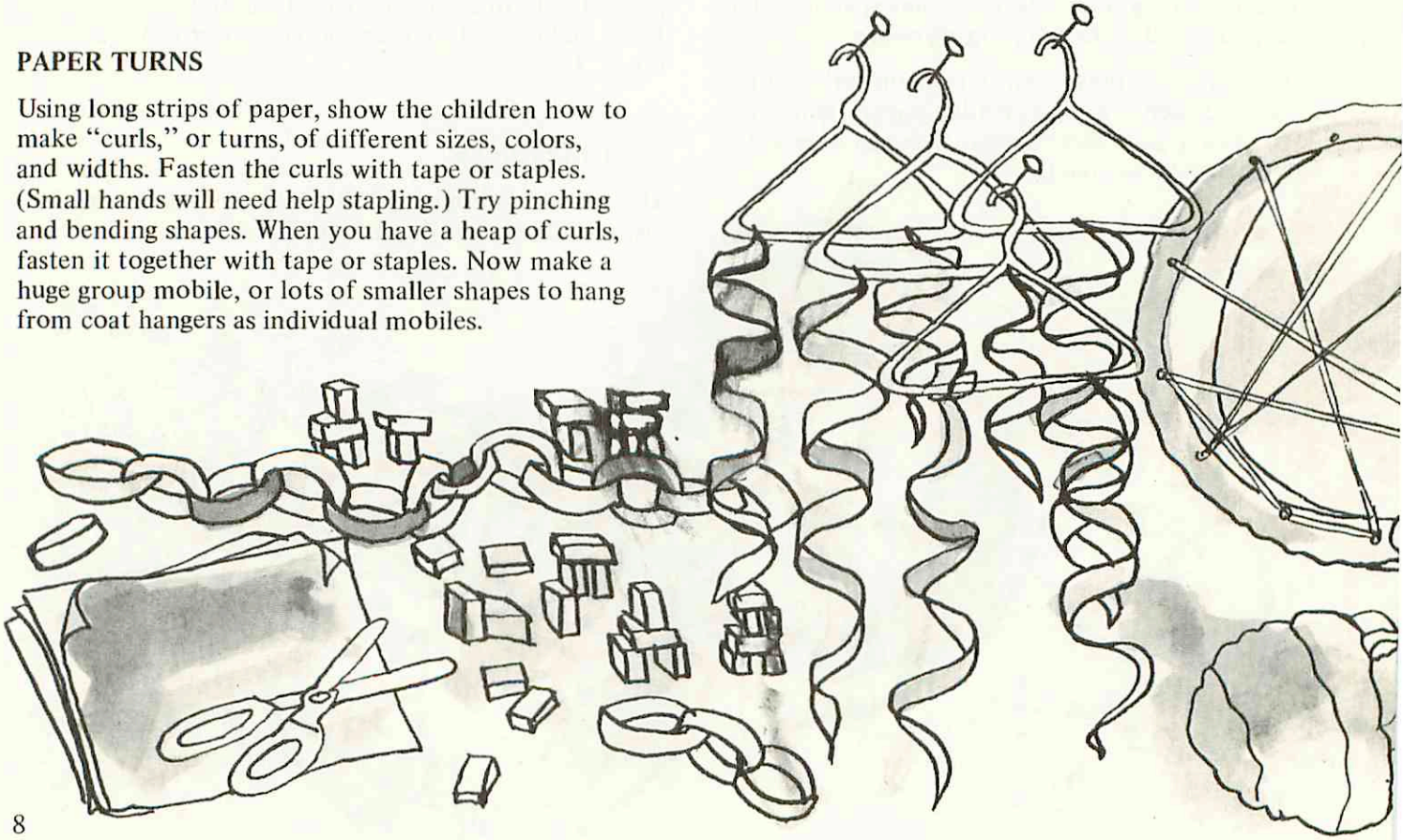
Using long strips of paper, show the children how to make "curls," or turns, of different sizes, colors, and widths. Fasten the curls with tape or staples. (Small hands will need help stapling.) Try pinching and bending shapes. When you have a heap of curls, fasten it together with tape or staples. Now make a huge group mobile, or lots of smaller shapes to hang from coat hangers as individual mobiles.

SUGAR CUBE CONSTRUCTION

Use double sugar cubes. Put out cans or cups of glue, and cotton swab sticks, brushes, or small squeeze bottles for applying glue. Let the children build up shapes with cubes, using lots of glue between cubes. Suggest that they try adding shapes to shapes. Use fabric, colored paper scraps, ribbon, or straws for color or interest. If you add food coloring or paint to the glue, you will get a colored structure.

STRING THINGS

Make a mixture that is 1/3 white glue and 2/3 water. Cut yarn of all colors into foot-long lengths. Give each child a pile of yarn, a cup of the mixture, and a piece of wax paper. Let the children dip the yarn into the mixture, pull it out, and drop it onto wax paper. Keep adding pieces and building up a form. (Make sure that all parts touch.) When the object is dry, peel it off the paper and hang it in an air current. Link several together or hang them from wire coat hangers to make a mobile.



Weaving

The repeated, "under and over" process of making something on a loom takes a great deal of patience, time, and interest in the finished product. But there are several simple weaving activities that give children the sense of "making something" in a short time.

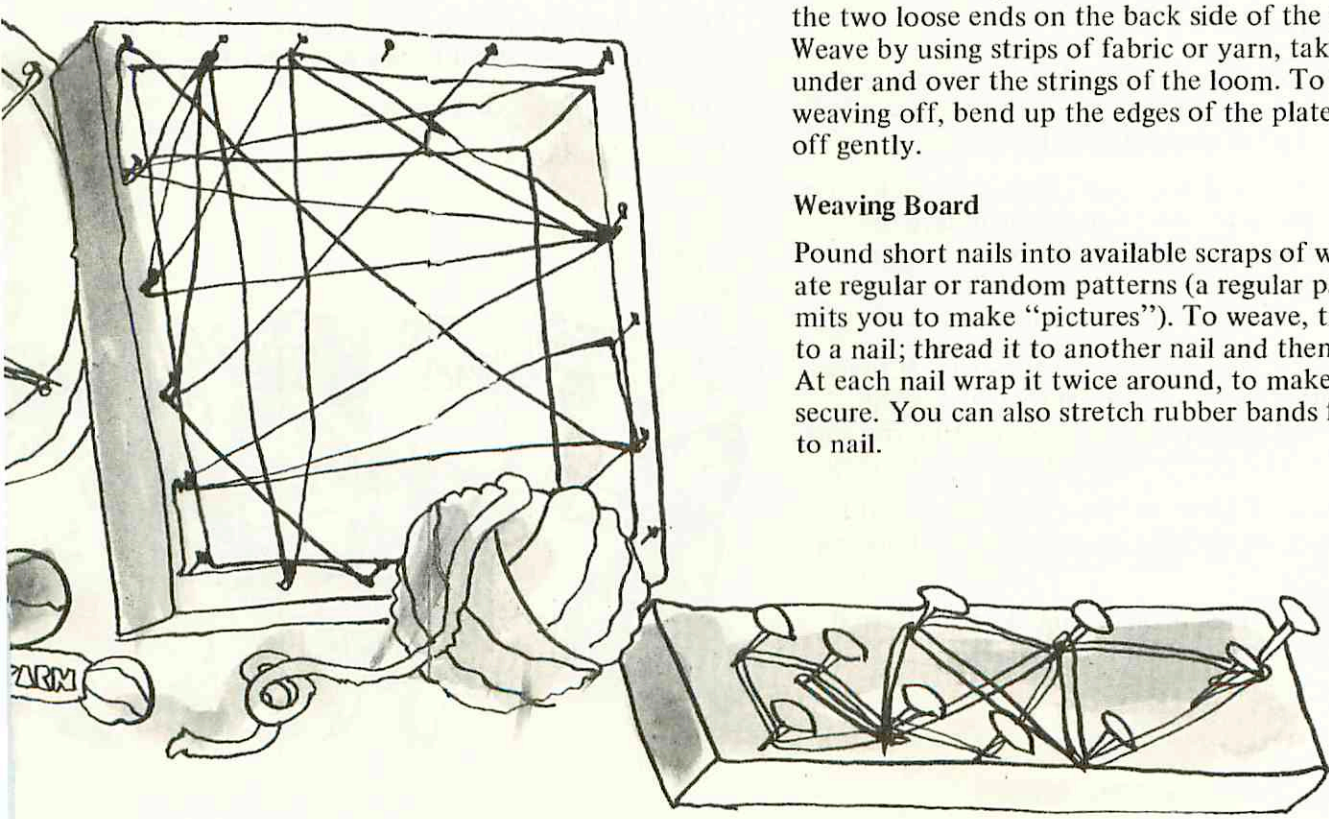
MATERIALS

Use thick materials that build up quickly: string, yarn, wire, strips of material, straws, strips of cellophane, weeds or grasses, ribbons, and strips from colored plastic bags are just a few materials you might try. Provide a variety of gay colors and interesting textures.

SOME SIMPLE LOOMS

Onion or Potato Bag

This is a great loom for beginners. Open up a mesh onion or potato bag to make one big flat section. Tack it up in a window. Using fabric strips, thick yarn, string, or straws, weave back and forth. Because of the pattern of the mesh, it doesn't matter how much or where you weave.



The Outdoors

Provide children with balls of yarn or string. Help them find tree branches, shrubs, and other structures in which they can make string patterns by weaving back and forth. Discovering "looms" where you never saw them before is a great adventure.

Plumber's Tape Loom

Plumber's tape is a flexible aluminum stripping punched with holes; it is sold inexpensively in all hardware stores. Cut a section of the tape about two to three feet long. Bend it into a circle. Push a short bolt through two overlapped holes and hold it in place by screwing on a nut. (Or use light wire or string to tie the circle closed.) Tie on some yarn, and go back and forth from hole to hole in any pattern. Wind Scotch tape around the free end of the yarn, to make threading through the holes quicker and easier. When you come to the end of a strand of yarn just tie it to an edge and start again. This weaving stays in its loom.

Paper Plate Loom

Use a deep-dish paper plate made from strong cardboard. Around the edges cut an *uneven* number of slits, 1/2 to 1 inch apart and 3/4 inch deep. Push a piece of thick yarn into one of these slits. Leave a "tail" of several inches. Wind the yarn back and forth across the plate. When all the slits are filled, tie the two loose ends on the back side of the plate. Weave by using strips of fabric or yarn, taking them under and over the strings of the loom. To lift the weaving off, bend up the edges of the plate and slip off gently.

Weaving Board

Pound short nails into available scraps of wood. Create regular or random patterns (a regular pattern permits you to make "pictures"). To weave, tie yarn onto a nail; thread it to another nail and then another. At each nail wrap it twice around, to make it more secure. You can also stretch rubber bands from nail to nail.

Music and Movement

Songs

As you may have noticed already, the songs that children learn most easily tend to be short and have simple tunes and easy-to-remember words. Songs with motions, games, or make-believe are the ones children ask to sing most often.

SINGING SONGS

Give the children the overall feel of the song by singing it through once by yourself (at a good pace—don't slow it down) while the children listen.

Focus their attention on phrases they can handle. Try singing one line or phrase yourself, then have the children sing it right after you. When you've gone through one verse that way, sing the whole verse through with the children two or three times.

Let the children join in as soon as they can. If there is a chorus after each verse, teach that first; then the children can sing out on the chorus after you sing the verses. Learning verses will come easier this way.

Don't force the children to learn all the words. If they enjoy singing what they do know, you can all have a good time.

Let the children make it their song. As they learn it, lower your voice so you don't dominate.

Other children are often the best teachers. If one of the children already knows the song, your troubles might be over!

Pick good times to sing: a quiet time when the children are all seated together, such as before or after a snack; walking to the park or riding a bus; in the middle of an activity that reminds you of a song ("Skip to my Lou"); at the end of a morning or afternoon, after the children have been playing hard.

Record the children's singing, and let them dance to their music.

Substitute a child's name or a familiar location for names in a song: "Old Becky Reynolds Had a Farm."

Sing like a mouse or a monster.

Make up motions.

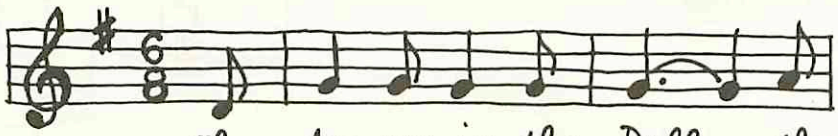
Did You Ever See a Lassie?

The Hokey Pokey

Six Little Ducks

Brother John

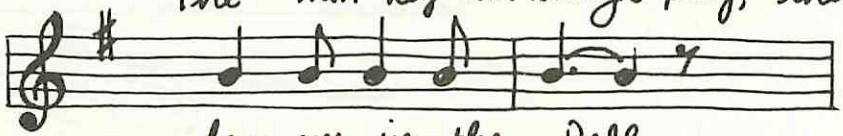
Twinkle, Twinkle, Little Star



The far-mer in the Dell, the
We're go-ing to the zoo, we're
We're go-ing to see a lion, we're
The mon-key will swing & play, the

If You're Happy and You Know it Clap Your Hands

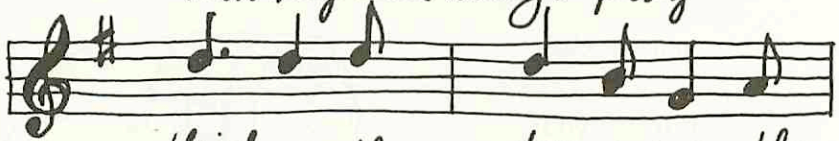
She'll Be Comin' Round the Mountain



far-mer in the Dell
go-ing to the zoo
go-ing to see a lion
mon-key will swing & play

The Grand Ole Duke of York

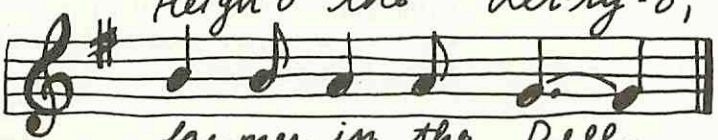
The Itsy Bitsy Spider



Heigh-o the der-ry-o, the
Heigh-o the der-ry-o, we're
Heigh-o the der-ry-o, we're
Heigh-o the der-ry-o, the

Old MacDonald Had a Farm

Row, Row, Row Your Boat



far-mer in the Dell.
go-ing to the zoo.
go-ing to see a lion
mon-key will swing & play.

Head, Shoulders, Knees, and Toes

Musical Instruments

MAKING A STRAW HORN

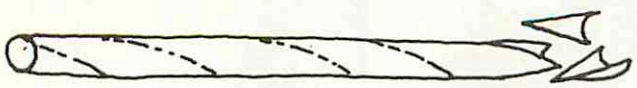
When you blow into a clarinet, saxophone, oboe or bassoon, the reed in the mouthpiece begins to vibrate and cause the air molecules around it to vibrate too. This motion creates what our ears hear as a (hopefully) musical sound. A plastic straw with one end clipped will also produce sounds—sounds whose pitches vary with the length of the straw.

Basic Steps:

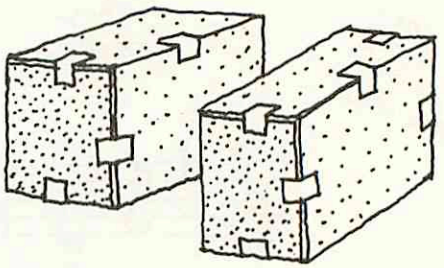
- Flatten in about one inch of one end of a plastic drinking straw with a large hole. (Teeth are a very efficient tool for this; just clamp down and pull.)
- Cut off the corners of this flattened end to form a long, narrow point nearly one inch long. (An adult should do this.)
- Snip off the very tip of the point so that the children won't prick their lips.
- To play the horn, put the whole point inside your mouth and blow hard. It may take a little practice, and straws may need reflattening.
- Make one horn yourself, ahead of time, so that you can show the children how it sounds.

Variations:

- What happens when you snip slices off the open end?
- What does a super-long horn sound like? (You may need to use tape to keep several straws together.)
- Make a panpipe by taping straws of different lengths together.
- If you attach tubes or bottles or funnels to the straws, what happens?
- Can you match straw sounds to piano sounds?

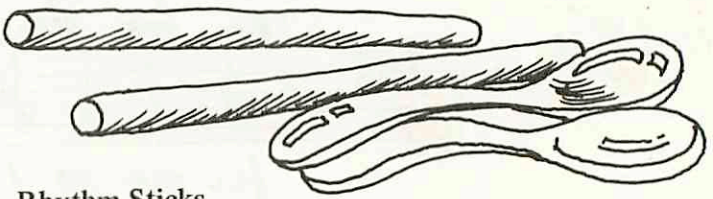


OTHER INSTRUMENTS YOU CAN MAKE



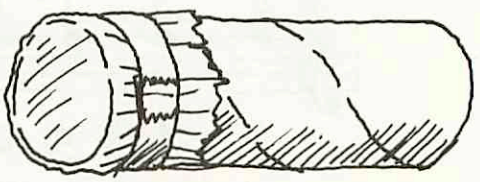
Sanders

Cover two hand-sized wood blocks or cardboard boxes with sandpaper. Rub together.



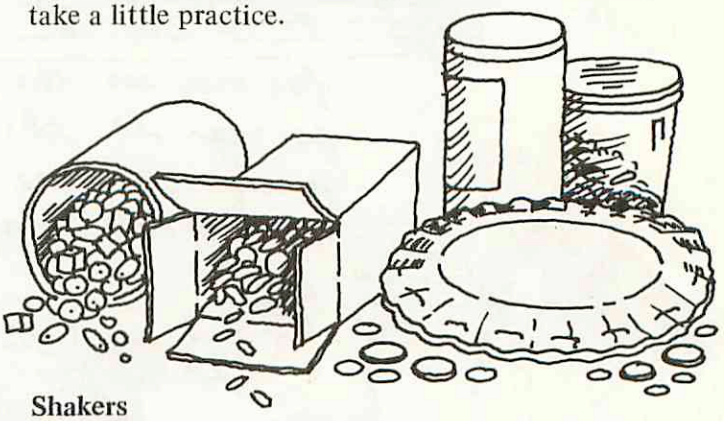
Rhythm Sticks

Any variety of sticks will do; the children could collect their own. Spoons can be substituted, or anything else you can think of.



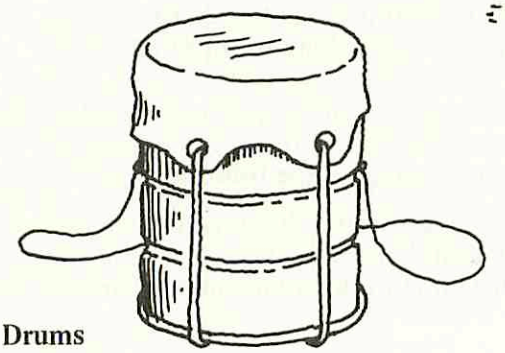
Tube kazoos

Tape waxed paper over one end of a cardboard tube (from paper towels or toilet paper). Hum into the open end with your mouth open a little. This may take a little practice.



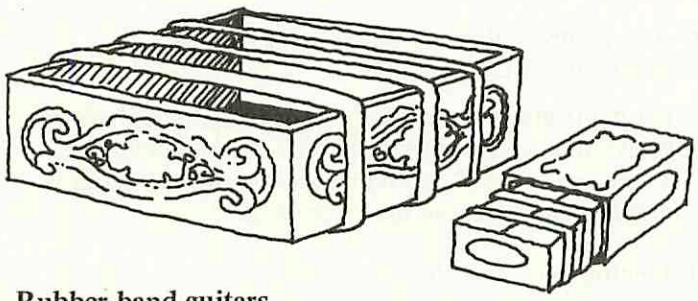
Shakers

Use tin cans or boxes with lids. Experiment with different sounds by filling them with dry beans, buttons, rocks, etc. Staple paper plates together with something that rattles inside, attach tie strings, and you have musical hats.



Drums

Make them with coffee cans and old inner-tube rubber. Or use any surface as a drum. Compare differences in sound.



Rubber-band guitars

Stretch rubber bands of different sizes around an open or partially open box. How can you make the sound change?

FINDING OTHER INSTRUMENTS

Bring in your own instrument, if you play one, and play it for the class.

Can you make music from splashing water, playing cards, banging doors, clacking typewriters? What else? Someone once wrote an entire symphony to be played only on snapping dollar bills. Really!

Sounds and Rhythms

Ask the children to close their eyes (or blindfold them) and listen. What sounds do they hear? Where are they coming from? Compare indoor and outdoor sounds, or sounds in different rooms. Can the children guess which room they're in from the sounds they hear? Have you ever listened to a snowstorm?

Make up other "Guess what's making the sound" games, using sounds from odd things in the room, musical instruments, children's voices. . . .

Experiment with rhythms, using hands, feet, voices, rhythm sticks, and other instruments. Can the children make a fast rhythm? A slow one? The rhythm of a horse galloping? A snail crawling? Play "Follow the Rhythm": Can they copy a simple rhythm that you or another child plays? Can different children play different rhythms at the same time? Or beat out the rhythm of a familiar song?

Form a symphony of sounds with real and unconventional instruments and give a "concert." Alternate loud and soft sounds, slow and fast rhythms; let children take turns conducting; ask different "sections" to play at different times or in different rhythms; alternate solos, trios with "full orchestra" passages; form a marching band; let children dance or sing to the music.

Movement and Dance

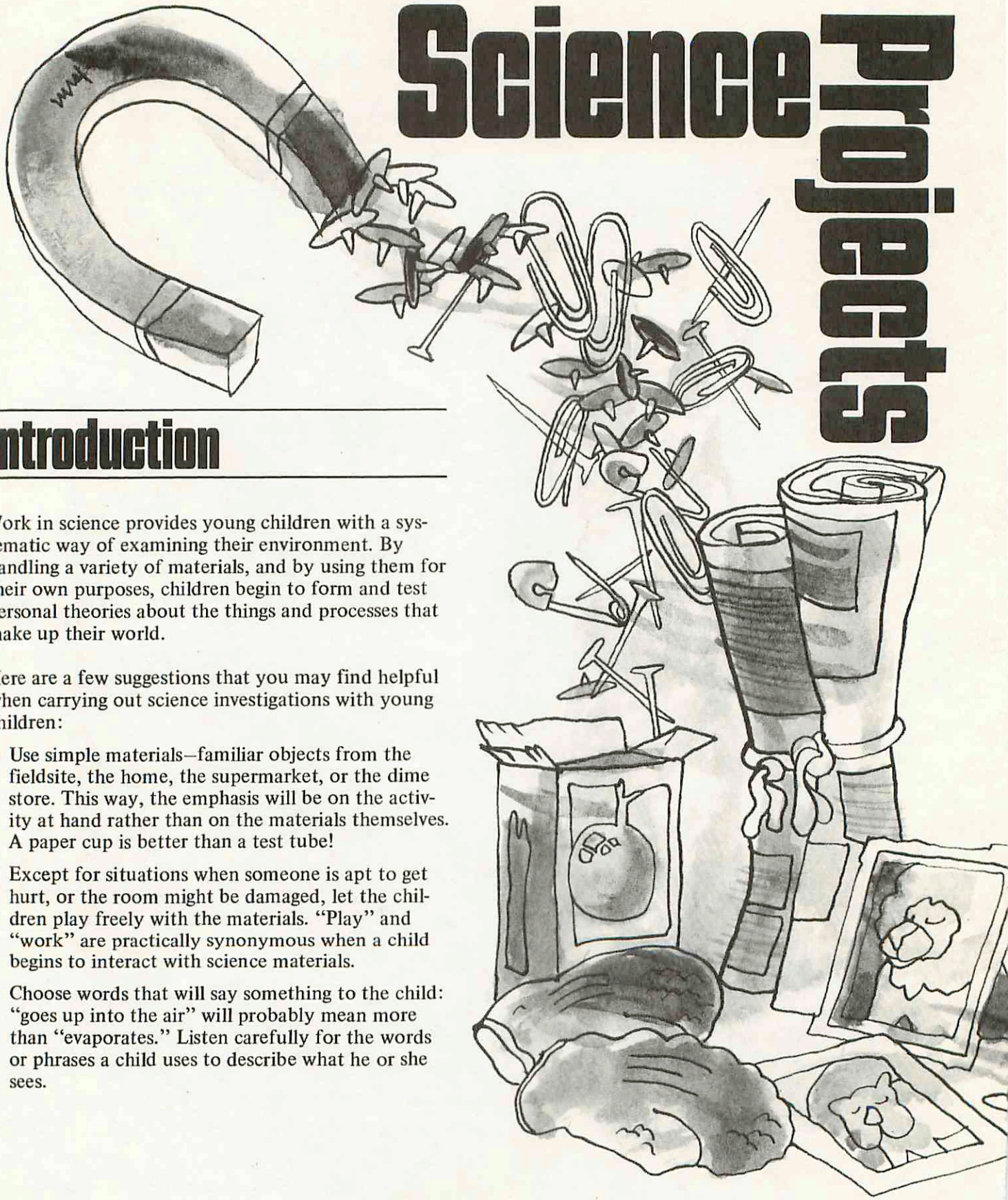
Just putting on a record or playing a simple rhythm on an instrument can transform rainy-day wriggles and squirms into a welcome outburst of free-form dancing. (How about a sun dance?) Be sure that you have plenty of space and won't be disturbing others by being noisy. Start simply and slowly, keeping in touch with what kind of dancing the children want to do. Let them take turns thinking up variations.

To widen the children's vocabulary of movements, and to draw them into moving freely and expressively, you might try some of the following ideas:

- Make drastic changes in the rhythm and tempo while the children dance. This will help them concentrate on listening to the sound and dancing with it.
- Start with simple warm-up exercises, like touching toes or hopping in time to the music.
- Call out different parts of the body and have the children move just that. Chin dancing is a riot!
- Add props: balloons, scarves (try big ones, or a sheet), mirrors, costumes.
- Do pantomime dancing: lumber like an elephant or weave like a snake; pretend to be a bouncing ball, a tree in the wind, someone picking up spilled pins, or someone carrying heavy packages.

If dancing ends too abruptly, the children's energy is left scattered, jagged, and raw. It's best to wind down gradually—from kangaroo steps to snail steps, from a bouncing ball to a floating feather.

Science Projects



Introduction

Work in science provides young children with a systematic way of examining their environment. By handling a variety of materials, and by using them for their own purposes, children begin to form and test personal theories about the things and processes that make up their world.

Here are a few suggestions that you may find helpful when carrying out science investigations with young children:

- Use simple materials—familiar objects from the fieldsite, the home, the supermarket, or the dime store. This way, the emphasis will be on the activity at hand rather than on the materials themselves. A paper cup is better than a test tube!
- Except for situations when someone is apt to get hurt, or the room might be damaged, let the children play freely with the materials. "Play" and "work" are practically synonymous when a child begins to interact with science materials.
- Choose words that will say something to the child: "goes up into the air" will probably mean more than "evaporates." Listen carefully for the words or phrases a child uses to describe what he or she sees.

Ways of Finding Out

Conducting surveys and making collections are two ways to offer children the opportunity to gather information about their environment and assemble it into manageable packages. As they do these activities, they will become involved in the process of categorization: grouping things by size, color, shape, behavior, or any other distinguishable trait.

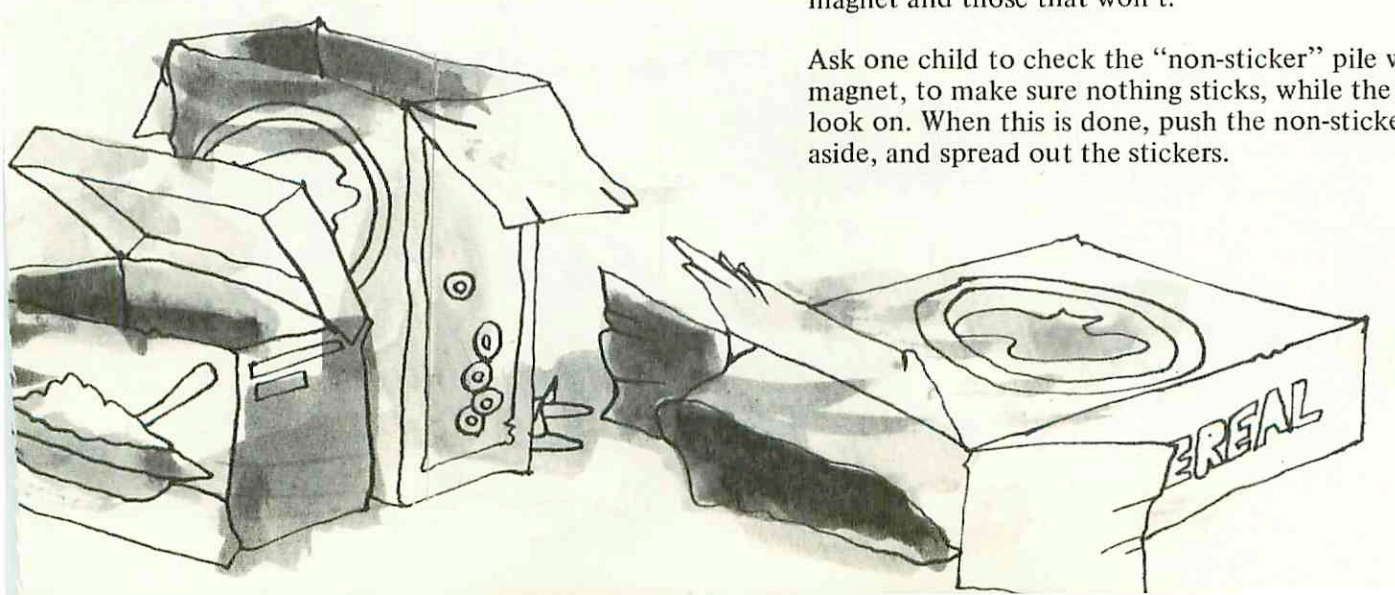
COLLECTIONS

Every collection has a built-in rule. The rule determines those things that can be included in a particular collection, and leaves out those things that cannot: in a collection of red objects, anything red can be included, while anything blue, black, pink, or yellow cannot.

To build up a collection, a child must understand the particular rule, and be able to examine and discriminate between objects according to that rule. Whenever possible, the cue for beginning a collection should come from a child's own interest:

- *Child:* "I went to the beach yesterday and found this green rock in the water."
- *Response:* "There are a lot of interesting rocks around the school, too. Let's see how many we can find to start a rock collection."

Some things you might collect are: seeds; soft things; soft, red things; wooden things; animal pictures; cereal boxes.



SURVEYS

Surveys require a series of careful observations which, when assembled, suggest a conclusion or general statement. Activities of this kind make children increasingly aware of the differences and similarities among the objects that make up their world. For this reason, it is important that the children be allowed to discover their *own* solutions to the problems you raise. As tempting as it might be to share your knowledge with the children, try to avoid saying things like "Here, try this nail; it will stick to the magnet." Quite often, in fact, a well-worded question on your part will encourage a child to try to find the answer, rather than passively accept or leave unchallenged what you have said.

What Things Will Stick to a Magnet?

Children are fascinated by magnets, and this is a good survey to try with a few of them. You will need a large, but not necessarily strong, magnet for each child, and a variety of fieldsite materials: paper clips, thumbtacks, paper, toys, rubber bands, blocks, coat hangers, etc.

Set aside an area in the fieldsite where the children can experiment with the magnets and the objects you've collected. Suggest that they also test furniture around the room and parts of their clothing. Talk with them informally about their findings.

With older children, the process of drawing a conclusion based on their observations can be carried out in a more formal manner. You might, for example, gather the group together and ask them to put the objects into two piles: those that will stick to a magnet and those that won't.

Ask one child to check the "non-sticker" pile with a magnet, to make sure nothing sticks, while the others look on. When this is done, push the non-stickers aside, and spread out the stickers.

Now suggest that the children look for something that the stickers have in common. Try to involve all the children in the group in the conversation. Encourage them to share their theories, and to test them on other objects around the room.

You can encourage this kind of generalizing with comments like these:

- *Child:* "Maybe red things stick."
- *Response:* "Try the magnet on that red piece of paper over there, or on Lisa's apple."
- *Child:* "If they're heavy they'll stick."
- *Response:* "Will that big book stick to the magnet? What about the piano?"
- *Child:* "They're all metal."
- *Response:* "Will these scissors stick? How about the metal tow truck? Can you find any metals that won't stick?"

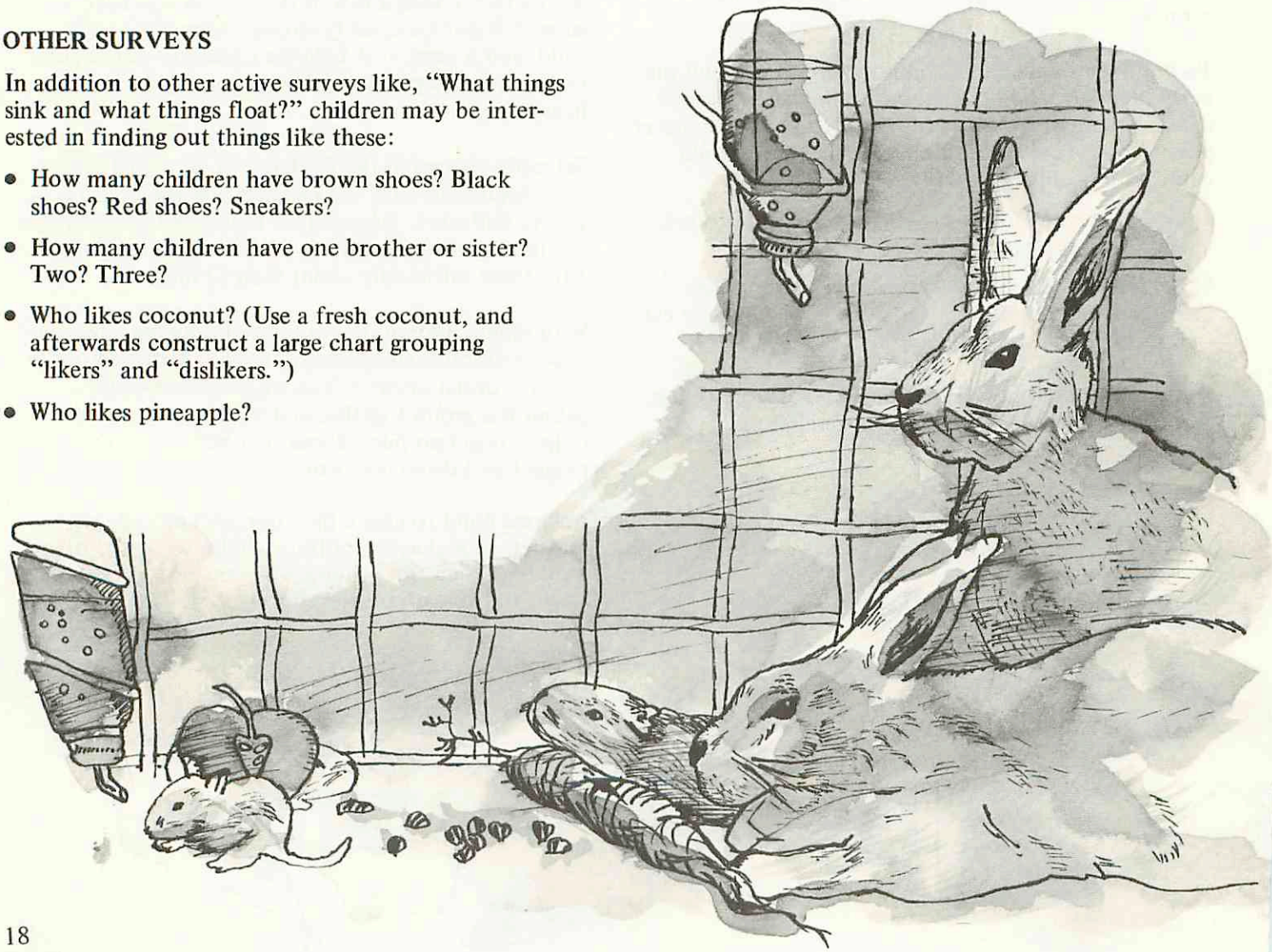
OTHER SURVEYS

In addition to other active surveys like, "What things sink and what things float?" children may be interested in finding out things like these:

- How many children have brown shoes? Black shoes? Red shoes? Sneakers?
- How many children have one brother or sister? Two? Three?
- Who likes coconut? (Use a fresh coconut, and afterwards construct a large chart grouping "likers" and "dislikers.")
- Who likes pineapple?

Animals in the Classroom

Small mammals—rabbits, guinea pigs, gerbils, hamsters, and mice—make the most popular fieldsite pets. If handled regularly and gently, they are easily managed and nip only when frightened. (Be sure to check the fieldsite's policy on animals.) Small mammals can be housed in a covered aquarium or wooden box, and fed food pellets, grain, seeds, fresh fruits, and vegetables. Most pet shops sell drip-proof, leakproof water bottles that eliminate a source of mess. Wood shavings and/or newspaper strips make good bedding materials, and a piece of wood allows the animals to keep their teeth chiseled.



Caring for animals gives children a chance to examine the "mechanics" of life firsthand. As children begin to think about what they observe, and to become more intimate with their pets, their questions will turn to things they see happening—growth, pregnancy, birth, relationships between individuals, and death. These topics are very important to them and provide opportunities to show children what they have in common with other living beings:

- "It's a boy—see its penis?"
- "They're sucking milk from their mother, just like you did when you were a baby."

SOME ACTIVITIES WITH ANIMALS

What kind of food does it like? Set out five shallow cans (tuna cans are ideal) with a different food in each. Examine the cans over a period of several days to find out your pet's food preference. Try a variety of fresh fruits and vegetables with rabbits and guineas, and a variety of breakfast cereals with gerbils.

How much does it drink? Put a strip of masking tape on the water bottle, and draw a line on the tape each day to show the water level. Does your pet have "thirsty" days?

See if your pet can find some food you've hidden.

Make a tiny plaster cast of your pet's feet. Compare them to yours.

See how long it takes a gerbil to shred a piece of construction paper.

Learn how to determine your animal's sex.

Observe your pet's behavior carefully. Can you imitate it?

If any of the children feel like making up animal stories, let them dictate their stories for you to copy down. They might also want to illustrate them.

How fast does it grow? Cut a strip of construction paper as long as the animal at the end of each week. Compare the strips.

How much does it weigh? Balance your pet against a lump of plasticene or clay each week. Keep your collection of lumps.

Activities with Plants

STARTING FROM SEEDS

This activity will guide children through the life cycle of a bean. In addition to some dry beans, which you can get at a supermarket, you'll need paper towels, plastic bags, a few stones, a dirt-and-vermiculite mixture, and some small cardboard milk containers with their tops cut off. (These make great flower pots!)

Set aside about 15 minutes a day for the activity.

On the first day, explain to the children that seeds need water to grow into plants. Then wrap the seeds in a wet paper towel, and place them in a sealed plastic bag. Keep this miniature "greenhouse" in a warm place. (As a variation, you might use a dry towel, or a cold environment, and later compare what happens to the two groups of seeds.)

After two or three days, examine the seeds. Have any of them sprouted? Slice open several unsprouted beans. Are there signs of activity that were invisible from the outside?

Once some green has appeared (after about four days), the sprouts should be planted in soil. Poke holes in the bottom of each milk carton and lay some small stones on the bottom—these will help the water drain through the soil properly. Cover with a little soil mixture. Then, gently place the sprouts in the soil and add more soil mixture. Pack the soil down around the sprouts, so they stand up straight. Water generously and put in a sunny place. Check the soil every day, and keep it moist.

Children can keep track of how much a plant grows each day with strips of construction paper. They might also want to record the appearance of leaves, flowers, and pods. Make sure they notice the relationship between the flowers and the pods.

When the pods have become full size, pick one and open it carefully. What do you see? Compare it to the beans from the supermarket. Try repeating the growing cycle with your new seeds.

OTHER PLANT ACTIVITIES

Start a "lentil forest" by sprinkling lots of lentils on a wet sponge sitting in a dish of water. (This will work with grass seed as well.)

Try to germinate the seeds of familiar fruits and vegetables. The banana is a real challenge! Plant any seeds that sprout.

Onions, potatoes, and the tops of carrots and pineapples will sprout readily in water.

Plant other varieties of beans. Look for differences and similarities.

The multicolored leaves of the coleus plant are fun to observe. How do the leaves of a coleus plant kept in bright light compare in color to those of a plant kept in the shade?

Smell and dissect a variety of cut flowers. Get a "bird of paradise" if you can.

Watch bees at work in the springtime.

Visit a florist with a small group of children. Ask about a garden-in-a-bottle.

Study the effect of darkness on plant growth by growing one plant on a windowsill and another under a cardboard box.

Balances

Making sense out of a series of balancings calls for many of the same skills that children use in working with numbers. Especially when accompanied by active conversation, work with balancing represents an important body of experience.

A balance should be an *available* piece of fieldsite equipment, like blocks or dress-up clothes. Supplement it with jars of some of the following: chestnuts, walnuts, large and small washers, spools, lima beans, styrofoam cubes. Let the children experiment on their own.

BALANCING ACTIVITIES

Put something in one pan. What can you do now to make the "up" side of the balance go down? To make the "down" side go up? (This activity is very good for helping children get a feeling for the workings of the balance.)

Determine equivalents: How many chestnuts balance a spool? How many washers? How many buttons? (You might want to make drawings of the relationships on paper.)

Find two of something that balance against one of something else.

Which object in the collection is the heaviest? Which is the lightest?

Do all chestnuts balance one another? Do all pennies?

Find the lightest book in the room. Find the heaviest.

Find something big and light. Find something small and heavy.

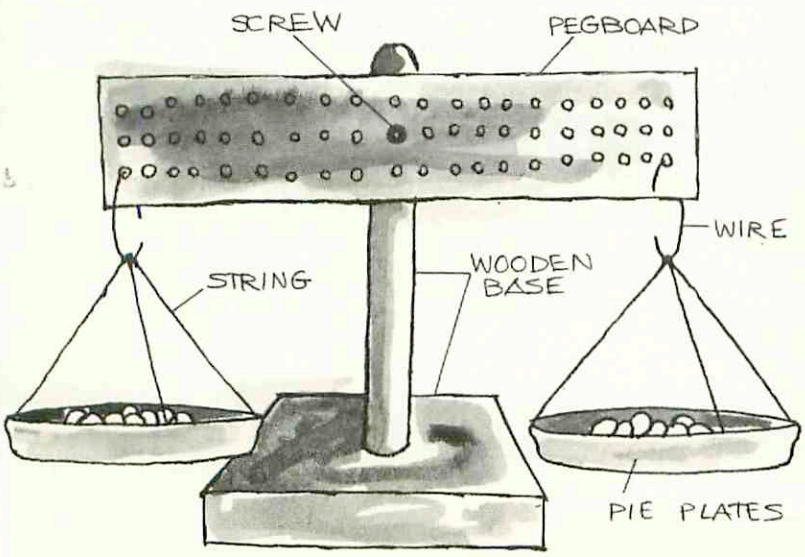
How many guinea pig pellets balance a guinea pig? How long does it take for the guinea pig to eat that many pellets?

Do wet sponges weigh more than dry ones? What happens if you let them sit on the balance overnight?

Experiment using a seesaw as a balance.

MAKING A BALANCE

If your fieldsite is not equipped with a balance, here is one you can make.



Measurements

The measurements suggested in these activities are linear ones: how tall, how far, how wide. Rather than using units generally considered "standard," units like inches, feet, and yards, try to choose units that will mean more to the children: "David's hand widths," or "Susan's body lengths."

By inventing units of measurement in situations where children feel a need to measure and compare, the process of measuring may become clearer to them, as may the reason for having standardized units.

Besides giving directions and suggestions, what questions can you pose that challenge children to do more than just observe? How can you encourage them to make sense out of what's going on?

MEASURING ACTIVITIES

Mount a large piece of kraft paper on a wall, approximately 2 1/2 feet off the floor. Trace the shoulders and head of each child in the class. During the next day or so, let the children draw in their faces for themselves.

Use the chart to point out the variation in size among individuals. The children may have also noticed a similar variation among dolls, among animals in the classroom, or among family members at home.

Trace and compare shoe lengths.

Trace and compare hand widths.

Working with a small group, determine the height of a child in the group in terms of spread-hand widths. You might want to make cardboard "hand rulers" by tracing each child's hand on cardboard and cutting it out. Compare the hand rulers; are they alike? When everyone measures the same thing, do the results vary? To make sense out of everyone's measurements, each child would need a copy of everyone's hand ruler. Introduce the idea of a "standard" hand ruler—one that everyone would use.

Try a similar problem by measuring the length of the room in terms of bodies. Come up with a standard unit of length.

How many guinea pigs long is the guinea cage?

Water Things

Water—children drink it, wash with it, swim or float in it, play with it, and, because it is so familiar, become actively engaged in water projects.

A water table provides an ideal setting for activities that involve pouring, funneling, stirring, filling, and emptying. (If your fieldsite does not have a water table, a baby's plastic bathtub makes an excellent substitute.) You might even want to include measuring cups and measuring spoons. Try to provide the children with containers of different sizes and shapes, and give them plenty of time to experiment on their own before you present the activity that follows.

WHICH CONTAINER HOLDS THE MOST?

This activity involves ordering a series of containers in terms of how many cups of water each holds. The standard unit of measure in this case should be a cup that holds about 16 ounces. (It is important to refer to this as "the cup" rather than a "two-cup measure," which will just confuse young children.)

State the problem carefully: "Which container holds the most water? You can use this cup to fill them and find out."

Count along with the child as he or she fills each container. Make drawings to represent your findings.

OTHER WATER ACTIVITIES

Blow giant bubbles with a liquid solution made of one cup Joy per gallon of water, using a loop made of straws and string like the one in the picture above.

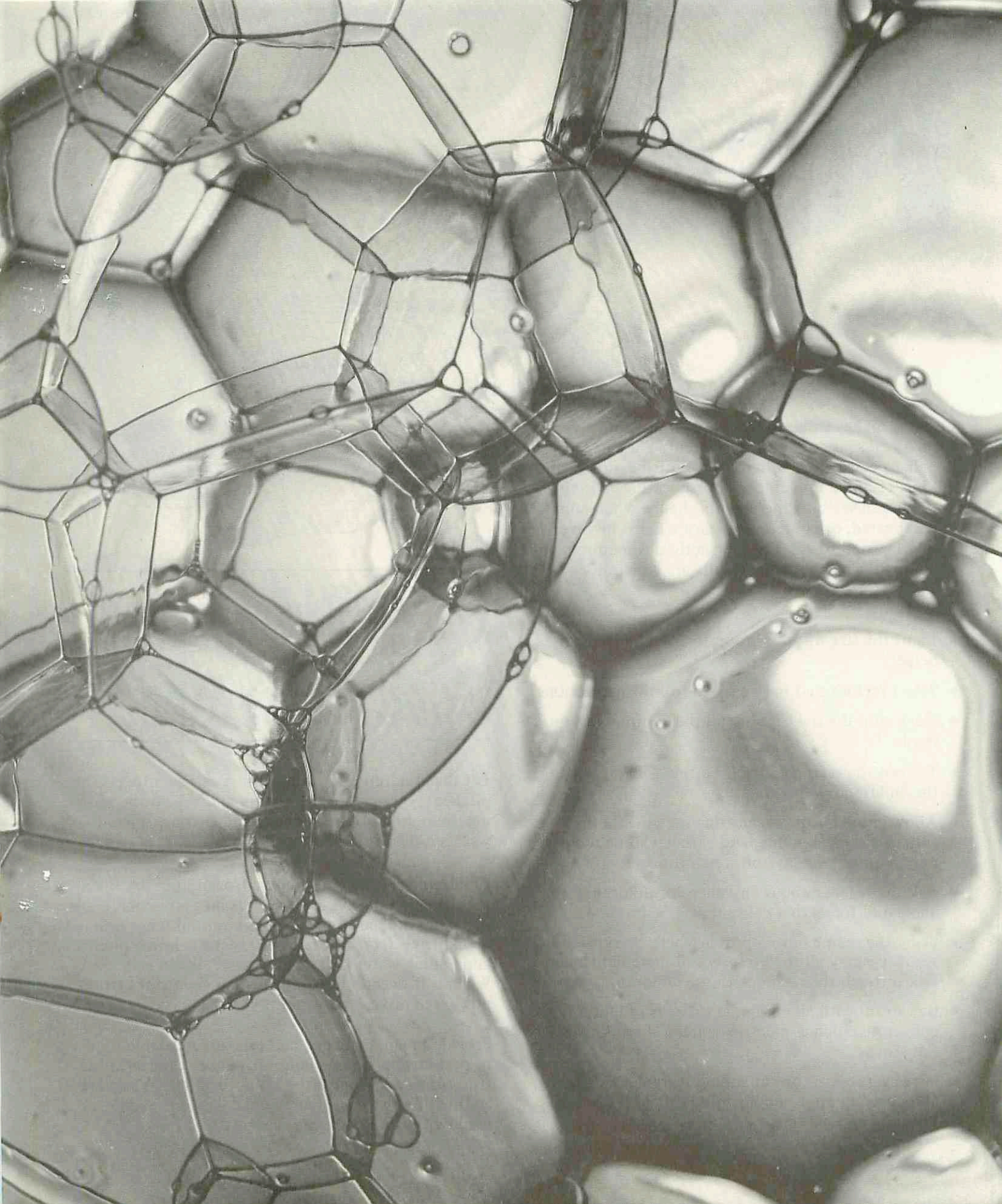
How many ways can you think of to melt ice cubes? Which way works fastest? (Enclosing the ice in plastic bags makes less of a mess.)

Make ice cubes with bizarre shapes. Try rubber gloves, jar tops, plastic bottles (*not* glass!), pie plates, etc.

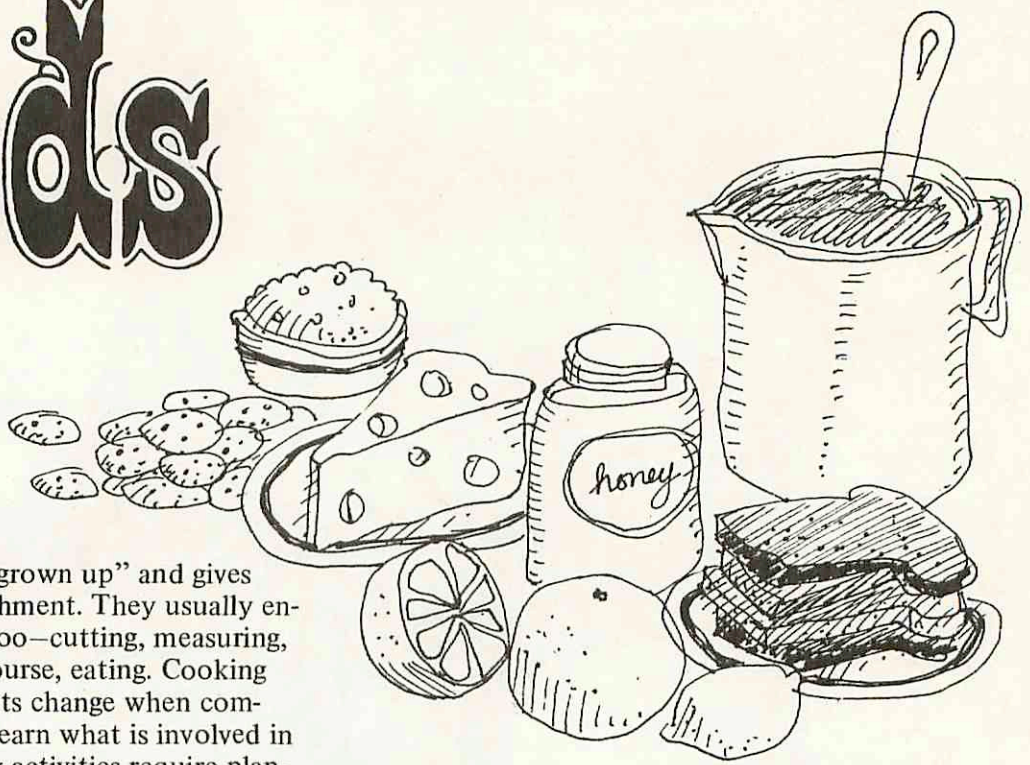
Freeze things in ice. Cherry ice cubes make an ordinary drink *very* special.

Using a hot plate, turn ice to water to steam.

Observe the shapes of falling snowflakes. (If you set out a sheet of black construction paper for them to land on, they will be easy to see.)



Foods



Cooking makes children feel "grown up" and gives them a real sense of accomplishment. They usually enjoy all aspects of the activity too—cutting, measuring, mixing, cleaning up, and, of course, eating. Cooking lets children see how ingredients change when combined, heated, or cooled, and learn what is involved in preparing food to eat. Cooking activities require planning on your part, but the results are worth it.

Basic Hints:

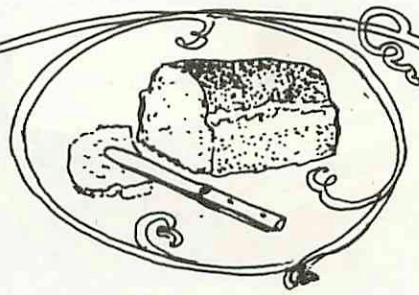
- Limit the size of your group to five children per helper.
- Select recipes that have easy-to-follow instructions.
- Make sure the fieldsite has all the equipment you need.
- Try out the recipe yourself before doing it with the children.
- Allow enough time for putting ingredients together, baking, cooling, and eating. (Some recipes may require two days of preparation.)
- Ask the teacher about any allergies children have, and avoid foods that cause them.
- Copy the recipe onto a poster where everyone can see it. Display all the utensils and ingredients, and talk through the recipe with the children.
- Be careful with all equipment that is potentially dangerous, such as electric beaters, sharp knives, or hot stoves.
- Give everyone a turn at adding ingredients, stirring, and cleaning up. Keep hot food out of reach until it is cool enough to eat.

Some Simple Food Activities

Let the children pour milk from a carton into a pitcher (you may need to help), and take turns adding the right amount of cocoa and stirring. In cold weather, heat it for hot cocoa.

Children can help you prepare frozen juice, by opening the can, pouring the contents into a pitcher, adding water dipped out of a wide-mouth pitcher or bowl, and stirring. Try squeezing citrus fruits into a pitcher and adding water and sugar to taste. When is it sour? When is it sweet? Prepare fruit-flavored drinks from powdered mixes and water.

Provide bread, crackers, and lots of spreadable foods: peanut butter, honey, jelly, soft cheese, butter, tuna fish, egg salad. What tastes good together? What tastes awful? For a special treat, spread icing or marshmallow fluff on cookies.



Pumpkin Bread

3 cups sugar

2 sticks of butter, melted

4 eggs

1 can of pumpkin

2/3 of a cup of water

1½ teaspoons salt

1 teaspoon cinnamon

1 teaspoon nutmeg

3½ cups of flour

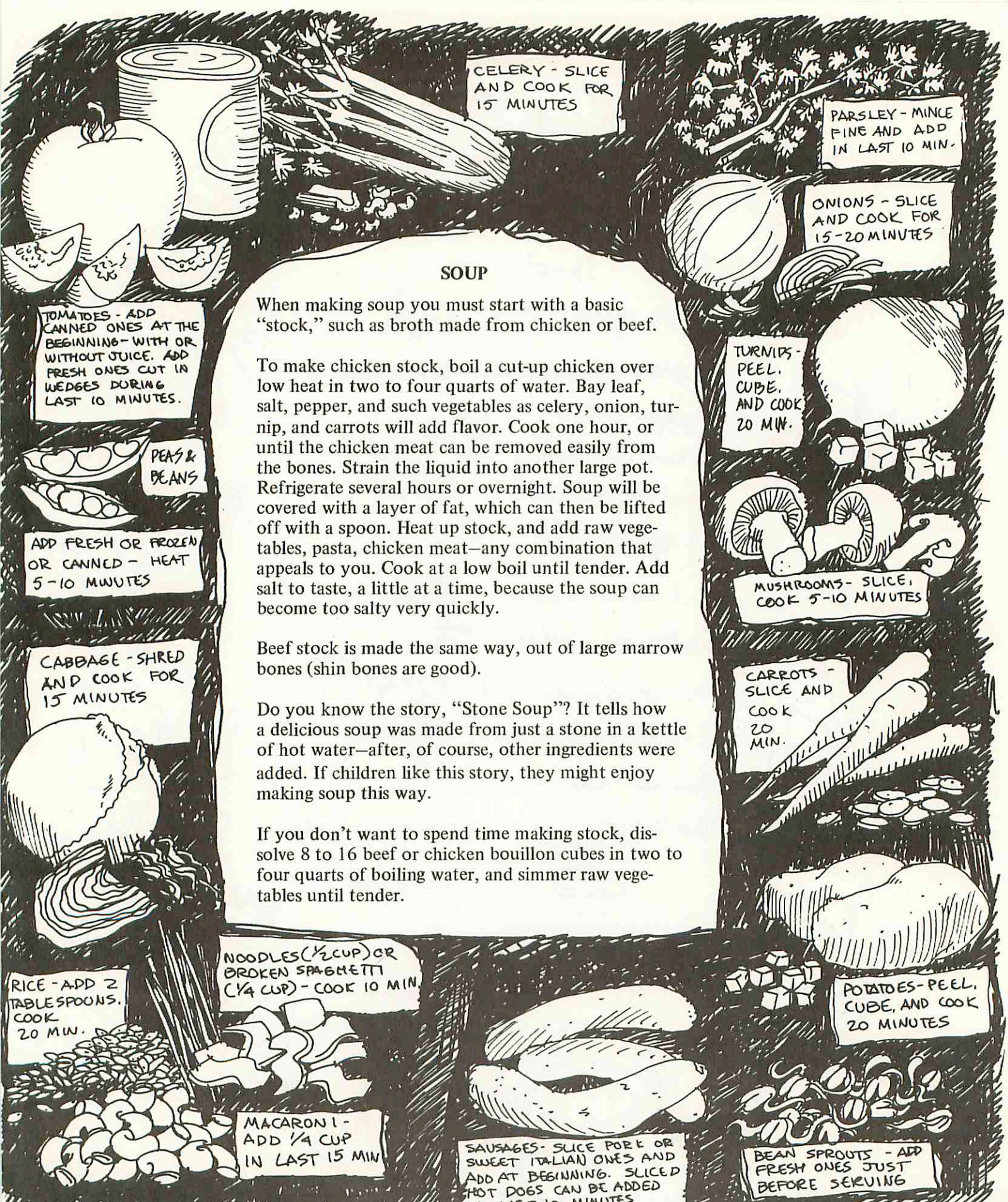
2 teaspoons baking soda

Preheat oven to 350°

Mix everything together, put in 2 loaf pans

Bake for 1 hour

Let cool at least 30 minutes



SOUP

When making soup you must start with a basic "stock," such as broth made from chicken or beef.

To make chicken stock, boil a cut-up chicken over low heat in two to four quarts of water. Bay leaf, salt, pepper, and such vegetables as celery, onion, turnip, and carrots will add flavor. Cook one hour, or until the chicken meat can be removed easily from the bones. Strain the liquid into another large pot. Refrigerate several hours or overnight. Soup will be covered with a layer of fat, which can then be lifted off with a spoon. Heat up stock, and add raw vegetables, pasta, chicken meat—any combination that appeals to you. Cook at a low boil until tender. Add salt to taste, a little at a time, because the soup can become too salty very quickly.

Beef stock is made the same way, out of large marrow bones (shin bones are good).

Do you know the story, "Stone Soup"? It tells how a delicious soup was made from just a stone in a kettle of hot water—after, of course, other ingredients were added. If children like this story, they might enjoy making soup this way.

If you don't want to spend time making stock, dissolve 8 to 16 beef or chicken bouillon cubes in two to four quarts of boiling water, and simmer raw vegetables until tender.

Visit a market with a group of children and buy vegetables and fruits. Cut them up and dip them in softened cream cheese, wheat germ, granola, honey, cinnamon and sugar, flavored gelatin mix (dry), yogurt, melted chocolate. What else can you try?

Make instant pudding or fruit gelatin desserts. What can you add? What happens when they cool?

Make popcorn in a glass or plastic popper so children can watch what happens.

Make French toast. What tastes good on it?

What kinds of sandwiches can you make?

How many ways can you prepare scrambled eggs?

Pick three or four related foods and have a tasting party:

- Citrus fruits. How are they alike? How are they different?
- Mild cheeses, or cottage cheese fixed different ways.
- Grapes, grape jelly on crackers, grape juice, grape gelatin.
- Cranberries, cranberry juice, cranberry sauce, cranberry muffins.
- Raw and cooked vegetables. How does cooking change the flavor? The texture?
- Contrast flavors: sweet, sour, salty, fruity . . .
- Contrast textures: crunchy, smooth, creamy, chewy, soft, hard . . .

If you blindfold the children, can they identify foods by taste and smell? By touch?

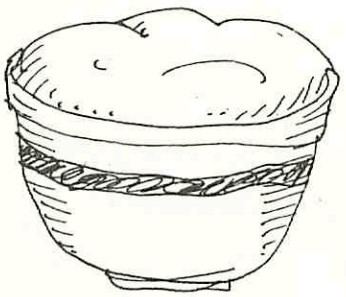
"I found that colors helped children to tell measures apart. On the measuring cup I put red tape at the 1/2 cup mark, blue tape at the 3/4 mark, and so on. If the recipe called for 1/2 cup of milk, I would write that on a poster in red—to match the tape on the measuring cup. When I went over the recipe with the children, before we started cooking, I would say something like, 'put in half a cup of milk—filled up to the red mark.'

"I used drawings on the poster, too, showing tools, bowls, ingredients, and so on. Between the color-coding and the drawings, even three-year-olds were able to 'read' through the recipe with me and understand what to do."

—A Preschool Teacher

Recipe Ideas

SHAPABLE DOUGH



Mix together:

1 package yeast
1 1/2 cups warm water
a tablespoon sugar
1 teaspoon salt
4 cups flour

Preheat oven to 425°

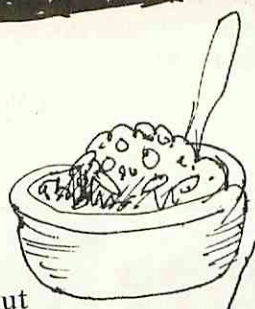
Let the children twist the dough into different shapes.

To make pretzels, beat a whole egg, and brush it on the dough. Sprinkle with coarse salt. Cook five minutes. Turn and cook five minutes more.

Can you think of other ways to flavor the dough? Try adding molasses, sprinkling seeds on top, etc.

Children might make one giant flat cookie sculpture by taking turns shaping and adding on pieces. (This should be built on a cookie sheet.)

GRANOLA



Mix together:

1 box of oatmeal
1 jar of wheat germ
1/2 cup shredded coconut
1 teaspoon salt
1/4 cup sesame seeds
1 tablespoon cinnamon
1/2 cup almonds
1/4 cup sunflower seeds

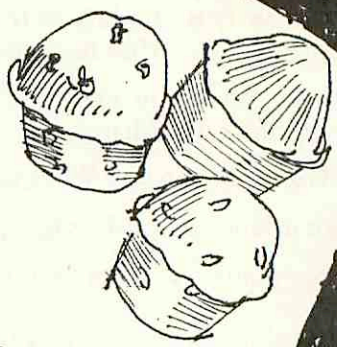
Add:

1 1/2 cups honey
1/3 cup salad oil
1 tablespoon vanilla

Set oven at 275°.

Mix thoroughly. Divide the mixture in half and spread evenly on two cookie sheets. Bake about 45 minutes until golden brown. Cool five to ten minutes, then stir. Store in a container with a tight cover.

BASIC MUFFINS

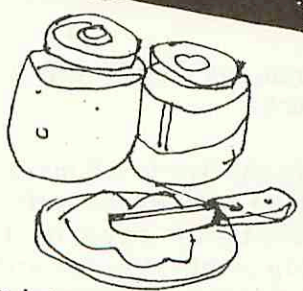


2 cups all-purpose flour
2 tablespoons sugar
2 teaspoons baking powder
1 teaspoon salt
1 egg beaten
1 cup milk
1/2 stick melted butter or margarine
An assortment of cut-up fruit, nuts, cinnamon, etc.

Preheat oven to 400°.

Sift flour, sugar, baking powder, and salt into one bowl. Combine egg, milk, and melted butter in second bowl. Stir to mix. Add all at once to flour mixture. Stir lightly, until liquid is just absorbed (batter will be lumpy). Spoon into 12 greased muffin cups. Fill each cup about 2/3 full. (Each child can add pieces of fruit, nuts, cinnamon, etc., as he or she wishes.) Bake 25 minutes, or until brown and springy to the touch. Serve hot.

BUTTER



1 pint heavy sweet cream
1/2 teaspoon (or less) salt

Have the children pour the cream into a blender or mixing bowl and beat until very stiff. When the cream is very stiff, add 1/3 cup very cold water; this separates the butter fat from the whey. Continue beating until the butter fat rises. Skim off the fat, put it in a clean bowl, and press it with a spoon or spatula to get the moisture out. Drain the liquid off. Add a little salt, mix, and serve with bread or crackers.

Another way to make butter is to give each child a baby food jar half-filled with heavy cream. Let the children shake the jars until the butter is separated from the whey. Drain off the whey, add a little salt to the butter, and spread on bread or crackers.

FROZEN FOODS

Popsicles

Fill small paper cups with different kinds of sweet fruit juices or chocolate milk. Insert a popsicle stick or plastic spoon in each. Put the cups in the freezer for an hour or so, until frozen. Remove cups, and let them stand for a few minutes, until the popsicles can be removed easily from the paper cups.

Yogurt Ice

Combine one quart yogurt, one large can of frozen juice (or mashed fresh fruit), honey, and vanilla. Freeze.

Maple Sugar Candy

Freeze water in a large flat pan. Boil maple syrup for about seven minutes and pour a little on the ice. The syrup will freeze immediately, and can be lifted off and eaten. (You can use syrup blends instead of pure maple syrup.)

Look at "Water Things" in the science section to see what else you can do with ice.

What happens when you leave something that has been frozen out of the freezer for a long time?

What happens when you freeze something?

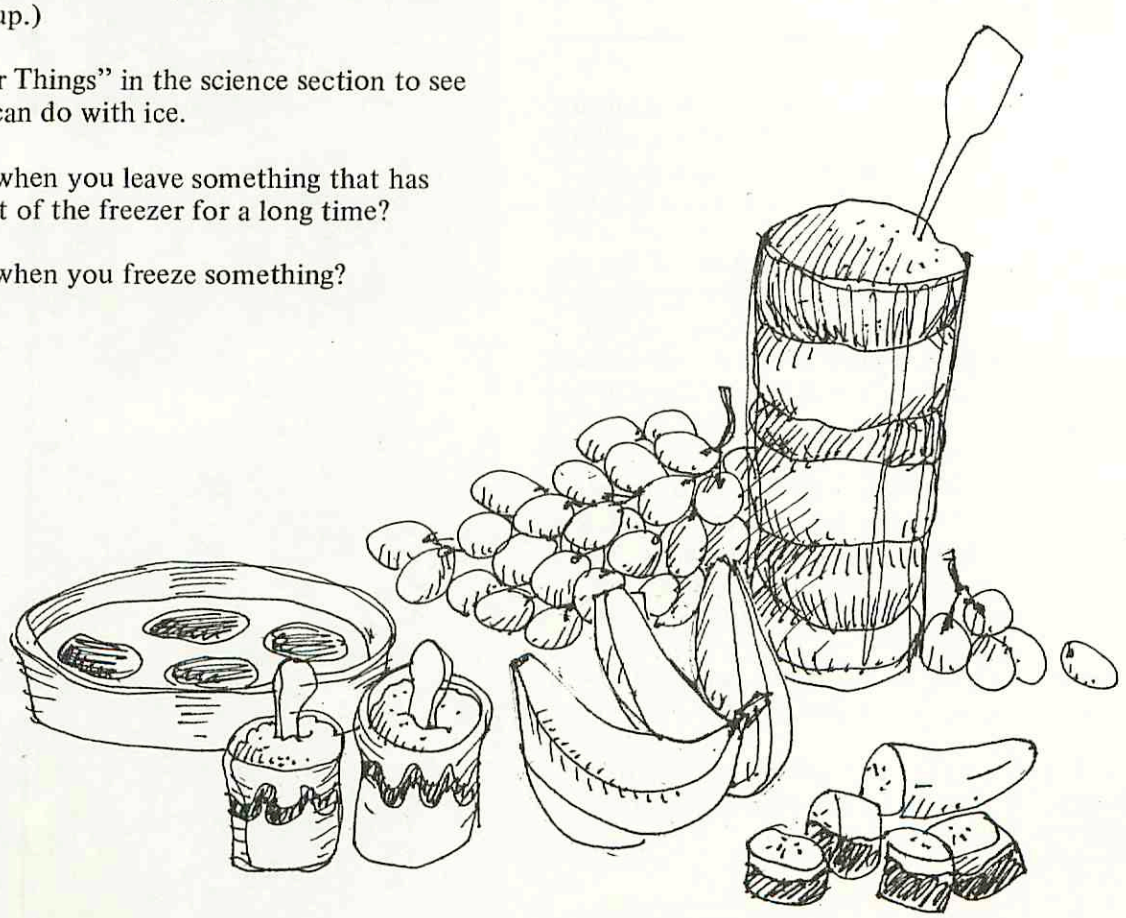
YOGURT

You might want to try this on your own before doing it with children.

1 quart milk for every ten children (whole, skimmed, canned, or powdered)

1/2 cup commercially sold plain yogurt for a starter.

Heat the milk until hot to touch but not so hot that it burns you. (If you have a liquid thermometer, heat to 115°.) Remove from heat and pour into a glass jar or styrofoam bucket. Add yogurt starter and mix well. Cover, and keep in a warm place (radiator, yogurt maker, or oven; temperature should be about 100°) until thickened (three to five hours). Chill overnight. Serve with sweetened fruit, honey, jam, cinnamon and sugar, spinach with granola. Or make cold yogurt soup: mix with chicken stock, fresh mint, and cucumber; chill.



Stories and Plays

Choosing Stories to Read

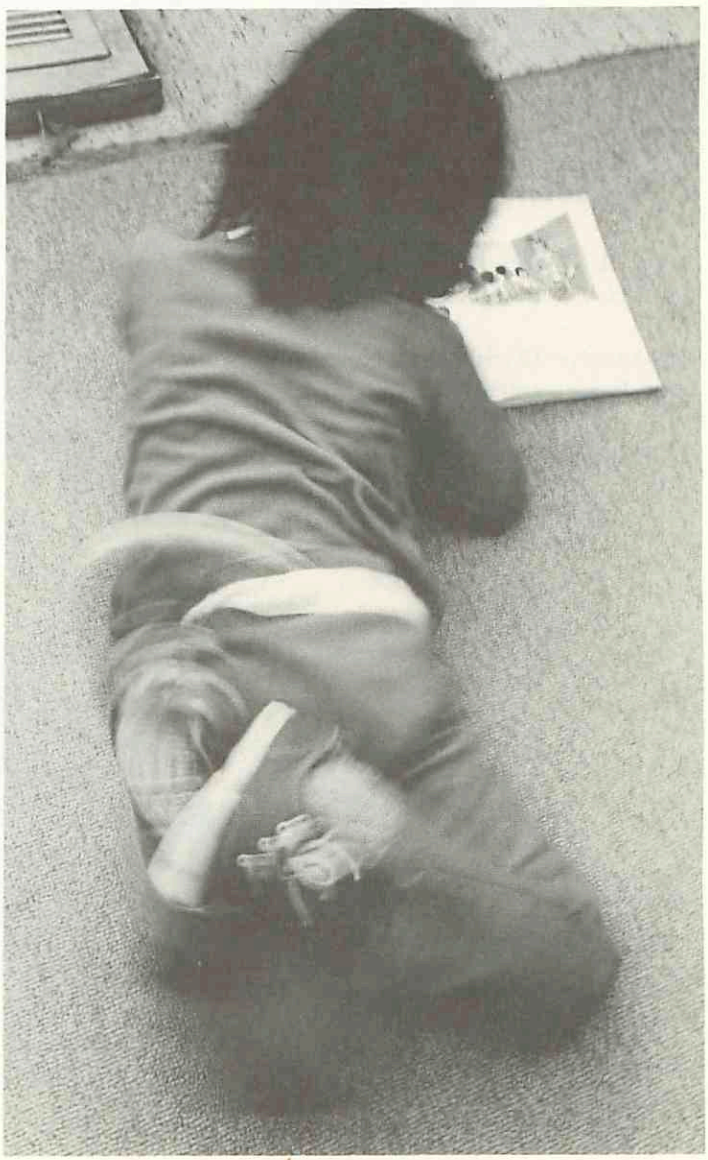
Plan to spend only about ten minutes reading stories and showing pictures to the children, or they will start getting restless and lose interest. For longer stories, break them into chapters and read a portion at a time.

Select books that contain a lot of pictures. If the pictures are bold and clear, they can be seen by a large group. If they are full of tiny details, they are best enjoyed by one or two children at a time. Go over the pictures and pick out details with the children, if they are interested.

Read the story yourself before reading it to the children. Think of ways to animate your reading. Or, you may prefer to tell the story rather than read it straight from the book. If you know the story beforehand, you may want to act out parts of it.

Make sure the children can see all the pages; otherwise they will be climbing all over your back.

Consult the bibliography for book ideas. Talk to a local children's book librarian as well. Take some children to the library.



Making Books

While children love familiar stories written by adults, they are also fond of making up their own stories and turning these tales into books.

Basic Steps:

- Fold several sheets of paper together to make a booklet. (Four pages is ample for a two- or three-year-old, but older children's stories may run eight or ten pages.)
- Copy down the story. A young child will want to tell the story while you write, but a slightly older child may want to copy it into his or her book after you have written it out on a sheet of paper. Still older children may want to do the writing themselves.
- Illustrate the book. Children can draw right on the pages, make small paintings on the easel and paste them in, or cut illustrations from newspapers or magazines.

Variations:

- Suggest to the children that they choose their illustrations first. Drawings, paintings, or magazine pictures can be used. The Sunday comics are also useful, as they illustrate a whole story in sequence.
- Children are especially enthusiastic about writing stories around photographs of people and places they know.
- Cover up the words in a book and let the children write their own version.
- Take a familiar character, or make one up, and write new adventures for him or her. Come back to this character from time to time.
- Bring the children into a group. Ask one child to offer a name, another a description. Choose another child to contribute the first sentence, another the next sentence, another the next sentence, and so on.
- Seat children around a strange, unrelated collection of objects—an old felt hat, a bead, a picture of a fish, and a toy truck, for instance. Have them make up a story that involves all of these objects.
- Record the children reading or telling their stories individually. When you have collected several, play these stories back for a whole group of children. Some children may want to record in groups or pairs. Each can take a part, or one could do the telling while another creates sound effects.
- If children write and illustrate their stories on mimeograph masters, you can run them off on the machine and give everyone a copy. If some children would like to do just the writing, other children might enjoy doing just the illustrations.

Puppets and Plays

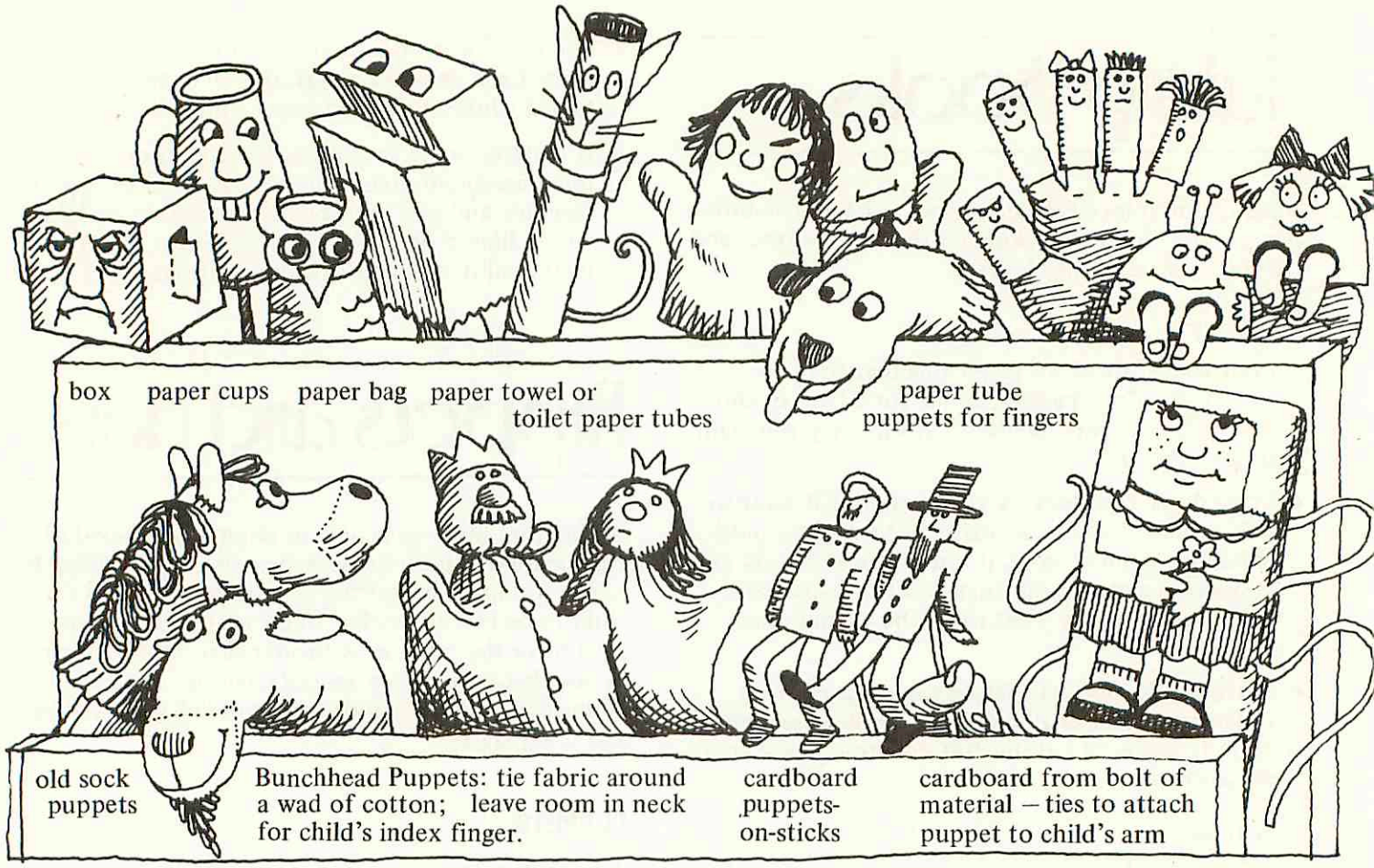
A play that involves people or puppets is a wonderful chance for a child to be someone else. Just holding the simplest puppet or putting on a costume invites a child to be braver, bolder, funnier, crazier, wilder than he or she often is. A theater that houses puppets or people can be a very special environment that encourages a child to explore the world of story-telling and role-playing.

PUPPETS

Provide lots of yarn for hair, a jar of buttons for eyes, and costume fabrics of different colors, textures, lengths, and widths. Provide help in gluing, cutting, and pinning, but encourage the children to create their own roles, puppets, and plays. Asking questions and talking freely can help them get started:

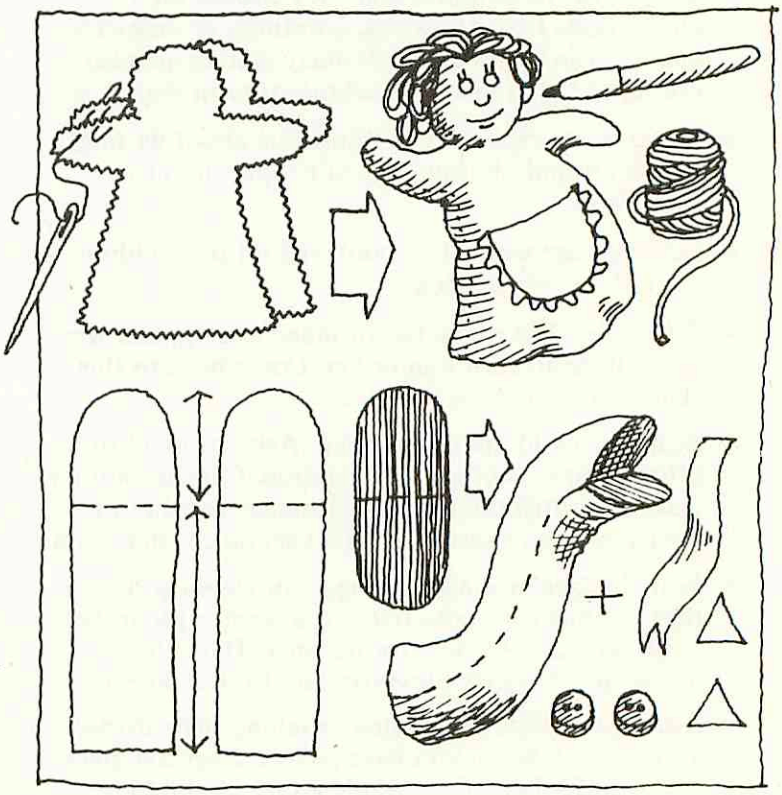
- "What is something funny that happened to you?"
- "What would a very, very scary monster look like?"
- "Could you make a puppet of your dog? Your brother?"

Once they've begun to invent, don't be alarmed if they create characters like a one-eyed, three-armed clown, or a father who is half-superman and half-monster; such inventions may just be a blend of fantasy and reality that pleases a child.



DOLL PUPPETS

Fold a piece of fabric about 16 inches square in half. With a marking pen or chalk, draw the outline of a doll-shaped puppet. Cut the figure out with pinking shears. (You should have two identical pieces from which to make one puppet.) Sew the two pieces together at the edges, leaving the bottom open (children will need help with this). Add clothes, features, hair, etc.



DRAGON PUPPETS

Cut the pattern shown in the diagram from material. Where the long pieces start to curve, mark a "stopping line." Sew the long sides together up to the stopping line, leaving the straight bottom open.

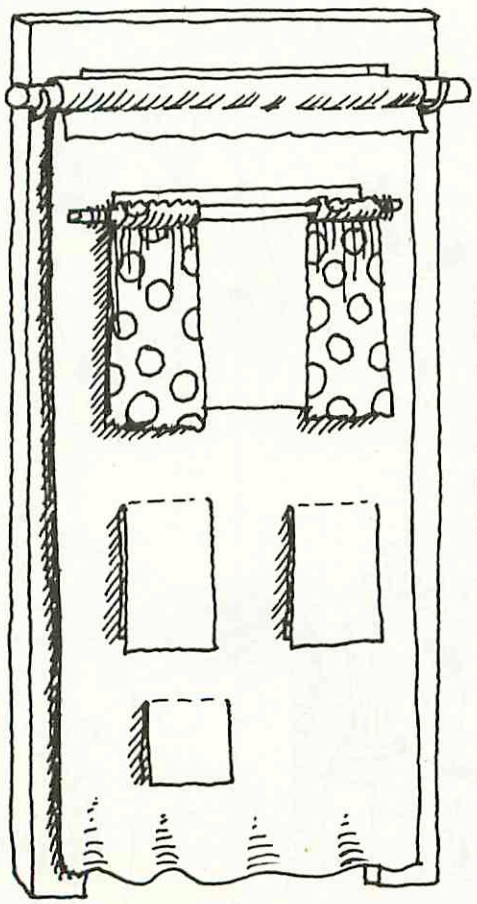
Spread the curved ends apart, and sew in the small oval piece. Gently turn the puppet inside out, so that the stitches are hidden. Now sew or draw on features—teeth, a tongue in the mouth, eyes, ears, etc. (This is a lot of sewing for a child, and may work best as a long-term, individual project, with lots of help from you.)

THEATERS

Theaters need to be sturdy, and large enough to hold several excited, active children. Even if they are made from plain cardboard boxes, bright poster paint and a curtain can make theaters exciting. Children enjoy designing their own theaters. It doesn't matter if the colors are crazy and the lines crooked; what counts is that they are creating a magical place, quite apart from the familiar, predictable classroom setting.

HANGING CURTAIN PUPPET THEATER

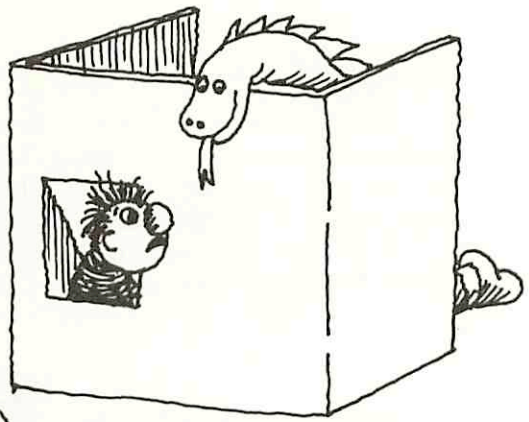
With pinking shears cut a large rectangle of material, big enough to fill a doorway. Cut out a center space for the stage. Curtains can hang from a thin dowel sewn onto the back side. By cutting extra flaps in other places, you can provide for surprise entrances and exits. Sew a seam along the top, slip in a long pole, and hang in a doorway, on nails or hooks.



curtain on a dowel taped or glued to back of cut-out area

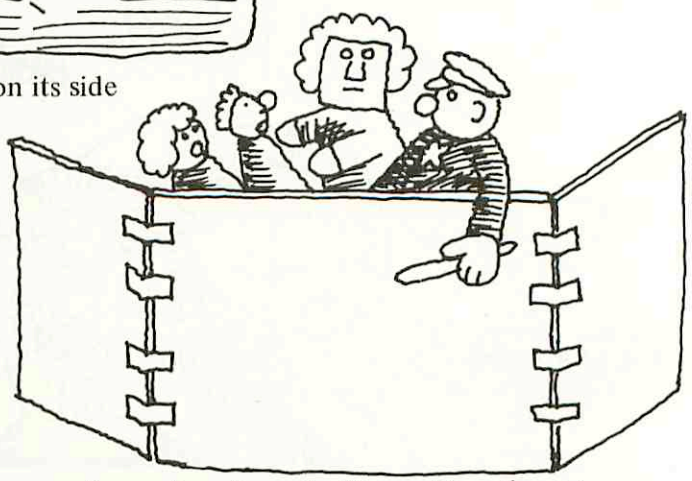
PLAYS

Until they are older, children will probably have no interest in doing "Goldilocks and the Three Bears" exactly as written. Plays and puppet shows that young children make up may seem short, unconnected, or confused to you at first. But if you listen closely, you will hear them reliving and reshaping their personal experiences, and adding elements of fantasy. You will hear snatches of familiar stories, bits of important conversations, attempts at trying out adult roles, various moods, and personalities. As you watch them perform during the year, observe how they become more aware of their audience and better able to work together in presenting a story. You may also find that they take on a wider variety of roles.



a large cut-out cardboard box

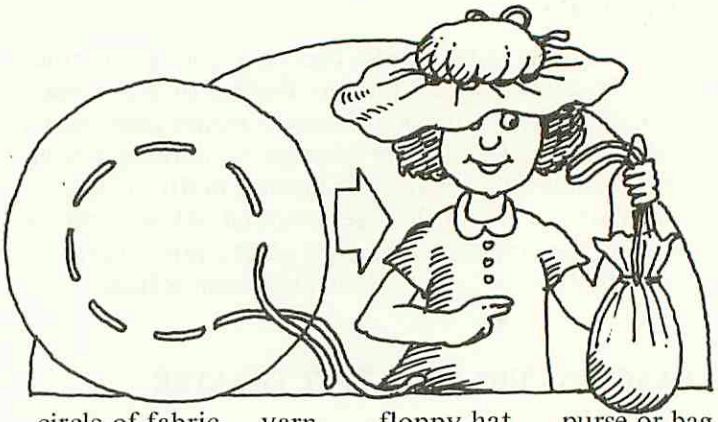
a large table turned on its side



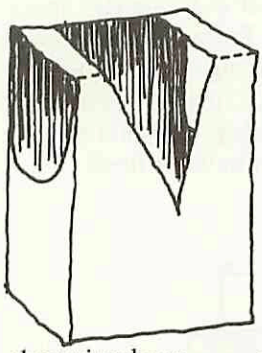
three sections of cardboard with masking tape hinges

Costumes and Masks

Making-believe becomes even more exciting when there is a chance to make and wear a costume. Dress-up clothes from the housekeeping corner encourage children to try on the familiar roles of father and mother—to be "grown up." But there is also a place for the specially made costume—the cape, the flowing skirt, the fierce mask, the floppy wig. These help to create the sense of being someone or something entirely new.



circle of fabric yarn floppy hat purse or bag

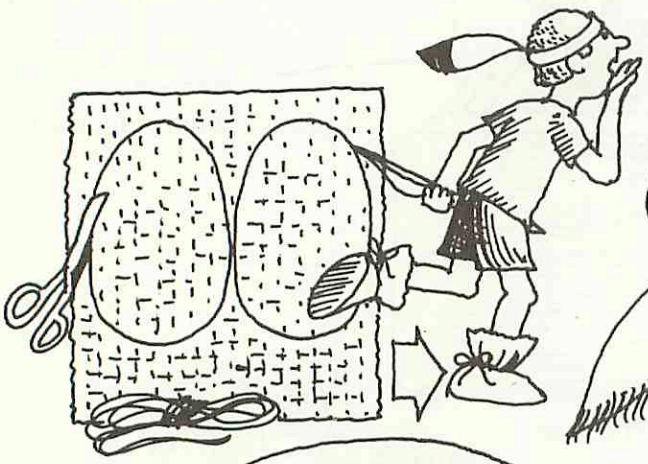


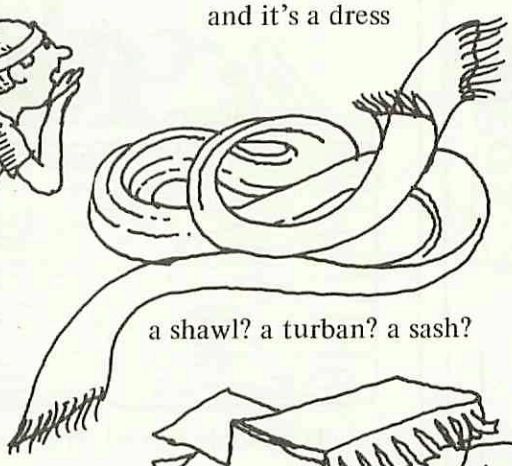
shopping bags
a vest – cut it larger and it's a dress

wig – yarn glued onto ribbon

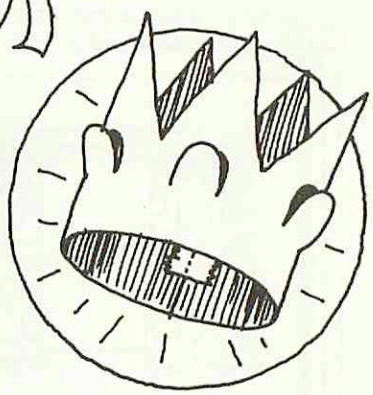
MOCCASINS

Trace two ovals five to six inches larger than the child's feet onto a piece of burlap. Cut out. Using doubled yarn, sew with running stitch around the edges. Leave six to eight inches of extra thread. Gather the moccasin together around the child's ankles. Tie closed.





a shawl? a turban? a sash?



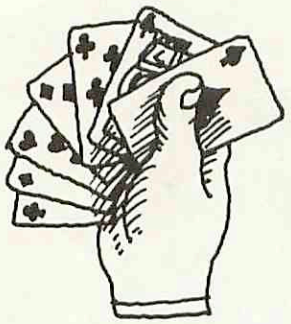
crown

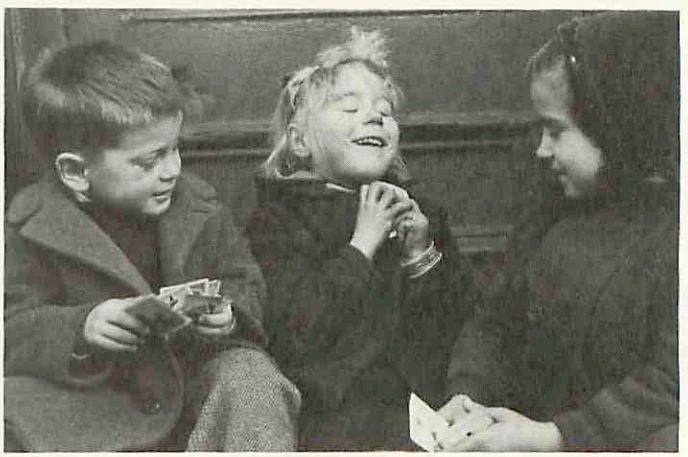
paper-plate hats paper plate masks

paper bags

paint, yarn, paper, and fabric scraps create features

Games





Cards

When you first bring a deck of cards to class, let the children fool around with it. After a few days, you might suggest that they sort the cards by color, number, and suit. Can they find as many red-people cards as black-people cards? Can they find all the sevens? All the diamonds?

If the children want to learn a card game, you might explain the game and play it a couple of times with the cards face up so all players can see them. If the children have trouble holding all of their cards, reduce the number of cards per hand, or play with only half a deck.

"When the children in my class had a hard time holding cards in their hand so that no one could see them, they decided to build walls around their cards with small blocks. This way they could lay their cards on the table in front of them, but no one else could peek."

—A Preschool Teacher

CONCENTRATION (two to five players, or one person alone)

To play this game, it is important to remember the position of cards laid on a table, in order to find matching pairs of numbers. Spread out a deck of cards, face down, one at a time. One child begins the game by turning any two cards face up so that all players can see them. If the cards have the same number, the child takes this pair off the board and turns over two more cards. If no pair is made, the two cards are turned face down again and another child takes a turn.

The game is over when all the cards are in pairs. The player with the most pairs wins the game.

BATTLE

Battle is a simple card game based purely on chance. There is no set number of players in this game, nor is there a set number of cards per hand. Just pass out cards until the deck is used up. Players are not to look at their cards—they should be kept in a stack, face down.

At a given signal all players turn over their top cards. The player with the highest number showing takes all the other upturned cards and puts them to the side of his or her stack. If two people turn over cards with the same number, and it is the highest number, they have a battle: each of the two battlers lays three cards face down, then one face up. The one with the highest number showing wins all eight cards. The game then continues as before.

When a player's stack of cards runs out, that player shuffles the cards he or she has won and plays with them. The game is over when one player has won all the cards in the deck. Or, as this can take a very long time, you might end the game by setting a time limit and counting cards at that point to see who has the most.

Lotto

Lotto is a game in which children match cards to their twins on a master board. Many different types of lotto games are sold commercially, but with a little bit of imagination you can create them yourself from materials in your fieldsite.

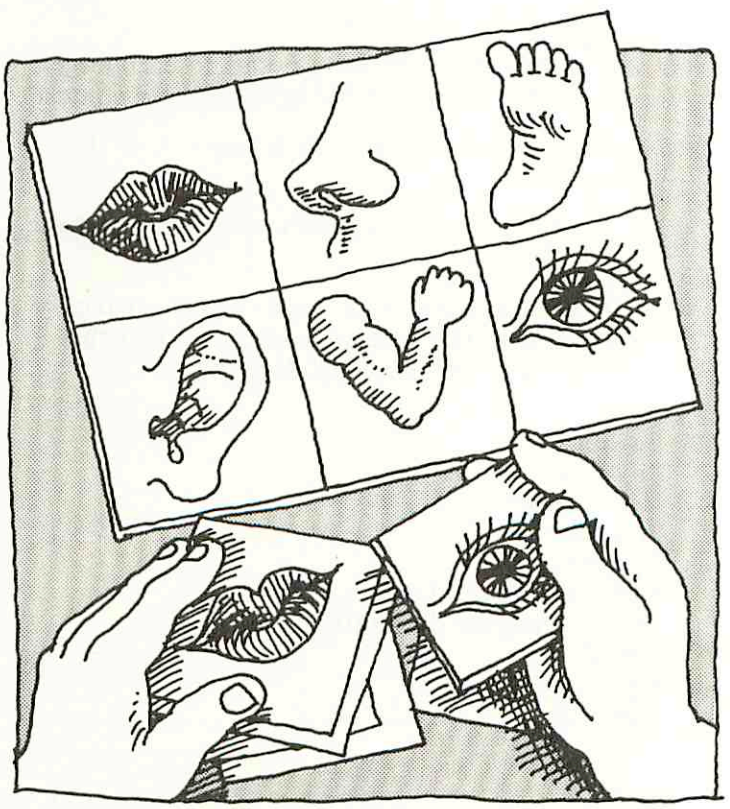
SHAPE LOTTO

Mark off six equal sections on each of two large sheets of sturdy paper such as oak tag. On one sheet draw or paste six different shapes; this is your master board.

Draw or paste these same shapes on the second sheet of paper and cut the sections apart to form six shape cards.

Let the children play around with the game. Do they match up the cards with the same shapes on the master sheet?

You might try adapting Bingo for young children in similar ways.



Active Games

TARGET TOSS

Basic Steps:

- Set up several targets two or three feet apart in a corner of the room or playground. Mark off a throwing line about four or five feet from the targets. (Targets can be drawn on the floor with chalk, or made from paper or boxes and taped down.) Let each child find a throwing piece—preferably something small and flat like a block—and tape his or her name on it. Children can take turns trying to hit a target from the throwing line. After everyone has had a turn, check to see who came closest to the target.

Variations:

- If the targets are in a clear progression of difficulty—farther and farther from the throwing line, for example—children can play to see how far they can throw. (Move the throwing line farther back if the game is too easy as set up.)
- Assign a different number of points to each target, based on the throwing difficulty, and hold contests.
- Ask the thrower to name which target he or she will try to hit.
- Let one child be caller and choose which target the other players aim for.
- If you want to color-code targets and throwing pieces, each child could try to hit the target that matches his or her throwing piece.

- Bowling
  Lily Pads
  Hide and Seek
  Red Rover
  Leap Frog
  Red Light, Green Light
  Who's Sitting on the Button?
  May I?
  Tag
  Simon Says

Guessing Games

You can make a guessing game out of almost anything. Here are two very different kinds to play.

TOUCH AND TELL

Basic Steps:

- Gather together a few small familiar objects such as a crayon, a coin, and a bottle cap. Show the objects to the children, and let them name and feel each object. Then put all the objects in a paper bag. Let the children take turns feeling inside the bag (without looking) to find an object. You might let them hunt for any object at first, and then ask them to pick out one specific thing.

Variations:

- Show children an object exactly like one in the bag, except that it is bigger. Ask them to pick the smaller mate out of the bag.
- Put things with different odors in separate bags and ask children to identify what's inside by smell.
- Let children fill (and decorate) their own bags, and ask others to guess the contents by touch, taste, or smell.

WHAT AM I?

Draw pictures of different animals, or cut pictures out of magazines and paste them onto pieces of paper. Give each player a different animal card. Let each child act out his or her animal, while the other children try to guess what it is. You may need to start this game by acting out a few animals yourself, before the children catch on.

You can substitute any number of subjects for animals in this game, such as familiar people or daily activities.

Other Resources

Using Free and Inexpensive Materials

ON THE PLAYGROUND

Cartons, crates, barrels; concrete blocks, bricks, stones; large cable spools, ladders, sewage pipes, ropes, tires, sawhorses, tree trunks, planks.

DRESS-UP PLAY

Dresses, pants, shirts, blouses, skirts; hats, helmets, scarves, crowns; high heels, sandals, slippers, boots; shawls, coats, capes; beads, earrings, bracelets, pins, belts; fans, glasses, gloves, handbags, wallets, aprons, vests, white coats for doctors, nurses, bakers, etc.; mirrors, compacts, clothes racks, coat hangers.

HOUSEKEEPING

Old televisions, radios, record players, irons, toasters, telephones; dolls, doll clothes and furniture, stuffed toys; brooms, dustpans, brushes, rags, clothes tub, soap powder; crates, sawhorses, baskets, grocery carts, shopping bags; play money or other "currency"—pegs, golf tees, popsicle sticks; supermarket items—milk cartons, baby-food jars, cereal boxes, tin cans.

SAND AND WATER PLAY

Plastic jugs, bags, boxes, pails, bottles, tin cans, muffin tins, cake tins, funnels, sieves, cups of different sizes, jars with lids, teapots, coffee pots; watering cans, garden hoses; shovels, spoons, rakes, scoops; wood, cork, wire, straws, stones, string, rubber bands, sponges, styrofoam, netting, cheesecloth, marbles, rubber balls, balloons, bubble pipes; hand towels. mops, aprons, dustpans, brushes, brooms; soap, food coloring.

WEIGHING AND BALANCING

Spools, bottle caps, clothes pins, stones, shells, buttons, styrofoam, sponge rubber, corks, blocks, washers, nuts, bolts, rubber balls, rice, flour, sugar, noodles, coffee, tea, bran, kidney beans, dried peas, nuts, chestnuts, pine cones, sawdust, soap flakes, rolls of Life Savers, sugar cubes (for making weights); labeled plastic containers for storage.

COUNTING, SORTING, GROUPING, MEASURING, ORDERING

Shells, stones, golf tees, marbles, toothpicks, straws, washers, bottle caps, buttons, beads, laces, spools, pipe cleaners, ribbons, colored sticks, popsicle sticks, canceled stamps; string, rope or hoops for enclosures; playing cards, dominoes, checkers, dice, old clocks, egg timers, stopwatches, wristwatches, metronomes, cash registers, scales, adding machines; calendars, train, bus, plane schedules; maps; tape measures, yardsticks, rulers.

MAKING COLLAGES

Yarn, thread, ribbon, lace, stones, shells, bottle caps, broom straws, straws, toothpicks, pipe cleaners, twigs, fabric, paper, wood chips, feathers, sawdust, sand, macaroni, rice, excelsior, packing paper, beads, sequins, buttons, foam rubber, cork, scrap rubber, seaweed, leaves, pine needles, seeds, wax, chalk, wire, string; glue, rubber cement, cake paints.

PAINTING

Muffin tins, empty plastic squeeze bottles, jars with lids, tin cans; sheets of plastic, newspaper, aprons; paper towels, sponges; string, rope, or clothesline and pins for hanging papers; straws, sticks, twigs, toothpicks to use as brushes; mustard, coffee, tea, mud, vegetable juice, to use as paint; wax, liquid starch.

PRINTING

Ink rollers—tin cans, toilet paper or paper towel cardboard tubes, rolling pins, pencils, hair curlers, candles; paper towels for ink pads; objects to print—forks, spoons, potato mashers, buttons, corks, jar lids, cut-up sponge, blocks, clay, corrugated board, vegetables, rubber bands, paper clips, string, fabric, bottle caps, lace, rickrack.

CLAY

Plastic bags and covered tins for storage; tools for modeling—pencils, feathers, twigs, forks, knives, spoons, rolling pins, pebbles, shells, leaves, toothpicks.

SCULPTURE

Scrap wood, cardboard, styrofoam, string, wire, nails, toothpicks, pipe cleaners, straws, sticks, tin foil, assorted paper; glue, stapler, rubber cement.

SEWING AND NEEDLEWORK

Silk, lace, organdy, net, nylon, corduroy, wool, velvet, burlap, felt, cotton; yarn, ribbon, rickrack, fringing, decorative tape, lace edging, thread, embroidery floss; buttons, beads, sequins, buckles, snaps, zippers; needles, pins, knitting needles.

CONSTRUCTION AND WOODWORK

Small cartons and containers, as for eggs, milk, cookies, vegetables, ice cream, cheese, margarine; plastic bottles and jugs: tubes from toilet paper, paper towels, wrapping paper; broom handles, spools; bottle caps, lids; elastic bands, string, rope, wire, glue, paste, tape, paper clips, staples, brass paper fasteners; wallpaper, rug, drapery, and linoleum pieces; scrap metal, wood, pipes, wheels, tires; gears from clocks, radios, fans, cars, irons, toasters; handles, knobs, hinges, fittings; large crates, cartons, barrels; nuts, bolts, nails, washers, screws.

Some Sources for Free and Inexpensive Materials

LUMBER SUPPLY COMPANIES: scrap wood, damaged bricks, concrete blocks, doweling.

HARDWARE STORES: sample wallpaper books, sample tile charts, linoleum samples.

RUG COMPANIES: sample swatches, end pieces, large cardboard tubes.

CONTRACTORS: lumber, tile, linoleum, wallpaper, pipes, wire, molding wood, etc. Arrange with a contractor to go to a construction site at the end of a job, to collect scrap building materials.

SUPERMARKETS: cartons, packing material, fruit crates, cardboard, display materials, display racks, posters.

DEPARTMENT STORES: fabric swatches, rug swatches, cardboard from fabric bolts, corrugated packing cardboard.

PHONE COMPANY (PUBLIC RELATIONS DEPARTMENT): colored wires.

ELECTRIC POWER COMPANY (PUBLIC RELATIONS DEPARTMENT): wire, large spools to use as tables, packing materials.

GARMENT FACTORIES: yarns, buttons, decorative tape, fabric scraps.

PLASTICS COMPANY: trimmings, cuttings, tubing, odd-shaped scraps.

LEATHER CRAFT COMPANY/SHOE FACTORY: scrap leather and laces.

PLUMBERS: wires, pipes, tile scraps, linoleum.

PAPER COMPANIES: samples of unused papers, end cuts, damaged sheets.

METAL SPINNING COMPANY: shavings, scrap pieces.

JUNK YARD: wheels, moving parts from clocks, radios, fans, cars, irons, toasters, typewriters; handles from drawers, doors, cars, knobs, broomsticks; hinges and fittings.

TILE AND CERAMICS COMPANY: tile by the pound (inexpensive) and broken pieces.

YARD SALE: old toys, books, pots, pans.

Music Books

Every Child's Book of Nursery Songs. Donald Mitchell and Carey Blyton. Crown.

Folk Songs of China, Japan, Korea. Betty Warner Dietz and Thomas Choonbai Park. John Day.

The Cat in the Hat Song Book. Dr. Seuss. Random.

The Sesame Street Song Book. Simon and Schuster.

A Fiesta of Folk Songs from Spain and Latin America. Henrietta Yurchenceo. Putnam.

The Golden Song Book. Katherine Tyler Wessells. Golden Press.

More Songs to Grow On. Beatrice Landeck. Edward B. Marks Music Corporation.

Sally Go Round the Sun. Edith Fowke. Doubleday.

Records

Alice in Wonderland

Winnie-the-Pooh

Folk Songs and Stories—Burl Ives.

Peter and the Wolf

American Talk Songs for Children

Black Beauty and Other Great Stories

Billy the Kid

Rodeo

Nutcracker Suite

Having Fun with Ernie and Bert, Original Cast Record, and *Sesame Street 2.* Sesame Street Records.

American Game and Activity Songs for Children. Pete Seeger.

Woody Guthrie Songs for Children

Peter, Paul, and Mommy. Peter, Paul, and Mary.

Free to Be You and Me. Marlo Thomas.

Little White Duck. Burl Ives.

Lollipop Tree. Burl Ives.

Music for Children. Carl Orff.

Mary Poppins

Chitty Chitty Bang Bang

Dr. Doolittle

You are Special: Mr. Rogers

Yellow Submarine. The Beatles.

Abiyoyo. Pete Seeger

Art and Craft Books

Creative Crafts. Hils. Van Nostrand.

25 Kites That Fly. Hunt. Dover.

Creating with Puppets. Kampmann. Van Nostrand.

Symmography. Kreischer. Crown.

Stitchery: Art and Craft. Krevitsky. Van Nostrand.

Batik: Art and Craft. Krevitskv. Van Nostrand.

Banners and Hangings. LaLiberté and McIlhany. Van Nostrand.

Modelling and Sculpture. Vol. 1-3. Lanteri. Dover.

Doll Making: A Creative Approach. Laury. Van Nostrand.

Modern Mosaic Techniques. Lovoos and Pardmore. Watson Guptill.

Creating Art from Anything. Meilach. Reilly and Lee.

Introducing Crayon Technique. Pluckrose. Watson Guptill.

Illustrated Hassle Free Make Your Own Clothes Book. Rosenbud and Wiener. Avenel.

Craft Series. Sunset. Golden.

Art from Found Materials. Stribling. Crown.

Weaving Is for Anyone. Wilson. Van Nostrand.

Rug Tapestries and Wool Mosaics. Wiseman. Van Nostrand.

Making Things. Wiseman. Little, Brown.

Stories

AGES TWO AND THREE

ABC. Bruno Munari. World.

A Child's ABC of Cars and Trucks. Anne Alexander. Doubleday.

Things. Phoebe and Tris Dunn. Doubleday.

Angus and the Cat. Marjorie Flack. Doubleday.

Ask Mr. Bear. Marjorie Flack. Doubleday.

Chicken Little Count to Ten. Margaret Friskey. Children's Press.

Goodnight Moon. Margaret Wise Brown. Harper.

My Baby Brother. Patsy Scarry. Golden.

The Little Auto. Lois Lenski. Walck.

What Do They Say? Grace Skaar. Scott.

The Bundle Book. Ruth Krauss. Harper.

Gilberto and the Wind. Marie Ets. Viking.

The Box with Red Wheels. Maud and Miska Petersgam. Macmillan.

The Noisy Book. Margaret Wise Brown. Harper.

A Pocketful of Poems. Marie Allen. Harper.

Where's My Baby? H. A. Rey. Houghton Mifflin.

The House That Jack Built. Paul Galdone. Whittlesey.

Everybody Has a House. Mary McBurney Green. Scott.

Nutshell Library. Maurice Sendak. Harper.

AGES THREE, FOUR, AND FIVE

A Hole Is to Dig. Ruth Krauss. Harper.

Bedtime for Francis. Russell Hoban. Harper.

Bread and Jam for Francis. Russell Hoban. Harper.

Caps for Sale. Esphyr Slobodkina. Scott.

Mrs. Tiggy-Winkle. Beatrix Potter. Warne.

The Quiet Noisy Book. Margaret Wise Brown. Harper.

The Snowy Day. Ezra Jack Keats. Viking.

Best Friends. Russell Hoban. Harper.

Saturday Walk. Ethel Wright. Scott.

Will I Have a Friend? Miriam Cohen. Macmillan.

Peter's Chair. Ezra Jack Keats. Harper.

Too Many Crackers. Helen Buckley. Lothrop.

Curious George Goes to the Hospital. Margaret and H.A. Rey. Houghton Mifflin.

Corduroy. Don Freeman. Viking.

Katy and the Big Snow. Virginia Burton. Houghton Mifflin.

Over in the Meadow. John Langstaff. Harcourt.

Wake Up Farm. Alvin Tresselt. Lothrop.

The Growing Story. Ruth Krauss. Harper.

The Backward Day. Ruth Krauss. Harper.

One Snail and Me. Emilie McLeod. Little, Brown.

Harry the Dirty Dog. Gene Zion. Harper.

Is It Hard? Is It Easy? Mary Green. Scott.

My Red Umbrella. Robert Bright. Morrow.

Make Way for Ducklings. Robert McClosky. Viking.

The Littlest Cowboy. Joan Walsh Anglund. Harcourt.

AGES FOUR, FIVE, AND SIX

Blueberries for Sal. Robert McClosky. Viking.

Grandmother and I. Helen Buckley. Lothrop.

Harold and the Purple Crayon. Crockett Johnson. Harper.

Mike Mulligan and His Steam Shovel. Virginia Lee Burton. Houghton Mifflin.

Mr. Rabbit and the Lovely Present. Charlotte Zolotow. Harper.

The Big Snow. Berta and Elmer Hader. Macmillan.

The Cow Who Fell in the Canal. Phyllis Krasilovsky. Doubleday.

The Great Big Wild Animal Book. Feodor Rojankovsky. Golden.

The Little Engine That Could. Mabel Bragg. Platt and Munk.

The Story of Ferdinand. Munro Leaf. Viking.

One Morning in Maine. Robert McClosky. Viking.

My Friend John. Charlotte Zolotow. Harper.

The Guinea Pigs That Went to School. Leonard Meshover. Follett.
Where the Wild Things Are. Maurice Sendak. Harper.
In the Night Kitchen. Maurice Sendak. Harper.
Letter to Amy. Ezra Jack Keats. Viking.
Stevie. John Steptoe. Harper.
Moy Moy. Leo Politi. Scribner's.
Aloha from Bobby. Arnold Spilka. Walck.
My Dog Is Lost. Ezra Jack Keats. Crowell.
Playtime in Africa. Efua Sutherland. Atheneum.
Swimmy. Leo Lionni. Pantheon.
Frederick. Leo Lionni. Pantheon.
Be Nice to Spiders. Margaret Graham. Harper.
Sylvester and the Magic Pebble. William Steig. Simon and Schuster.
In a Spring Garden. Richard Lewis. Dial.

AGES FIVE, SIX, AND SEVEN

Dear Garbage Man. Gene Zion. Harper.
Horton Hears a Who! Dr. Seuss. Random.
Madeleine. Ludwig Bemelmans. Viking.
Mike's House. Julia L. Sauer. Viking.
Stone Soup. Marcia Brown. Scribner's
The Color Kittens. Margaret Wise Brown. Golden.
The Five Chinese Brothers. Bishop and Wiese. Macmillan.
The Plant Sitter. Gene Zion. Harper.
The Story of Babar. Jean de Brunhoff. Random.
Two Is a Team. L. and J. Beim. Harcourt.
5A and 7B. Eleanor Schick. Macmillan.
The New Friend. Charlotte Zolotow. Abelard.
Five Friends at School. P. Buckler and H. Jones. Holt.
The Quarreling Book. Charlotte Zolotow. Harper.
Racoons Are for Loving. Miriam Bourne. Random.
Evan's Corner. Elizabeth Hall. Holt.
Salt Boy. Mary Perrine. Houghton Mifflin.
The Three Visitors. Marjorie Hopkins. Parents.
William, Andy and Ramon. Peter Buckler. Holt.
Crow Boy. Taro Yashima. Viking.
A Visit to the Firehouse. James Collier. Norton.
Little Bear. Else Minarik. Harper.
The Complete Nonsense Book. Edward Lear. Dodd.
The Cat in the Hat. Dr. Seuss. Random.
Hailstones and Halibut Bones. Mary O'Neill. Doubleday.
Benjie. Joan Lexau. Dial.
Olaf Learns to Read. Joan Lexau. Dial.
Sam, Bangs, and Moonshine. Evelyn Ness. Holt.

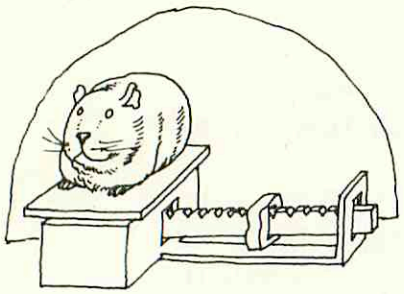
Cookbooks

Recipes can be found everywhere—in magazines, newspapers, books, and in the files of people you know who love to cook. Whatever your source, be sure that the dish you choose appeals to children, is easy to prepare, allows them to do most of the preparation, and leaves room for experimentation. Be sure too that you have all the necessary equipment.

Two general cookbooks you might find useful are *McCall's,* published by Random House, and the *Betty Crocker Cookbook* (McGraw-Hill). Children's cookbooks include the following.

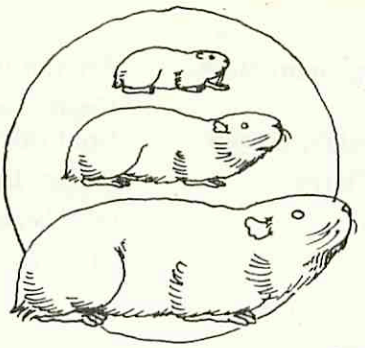
Around the World in 80 Dishes. Polly and Tasha van der Linde. Scroll.
Betty Crocker Boys and Girls Cookbook. Golden.
The Down to Earth Cookbook. Anita Borghese. Scribner's.

You might also want to examine special interest cookbooks: recipes from other countries and cultures, especially those represented by children at the fieldsite; organic foods; cookies, breads, and cakes; and so on.



size

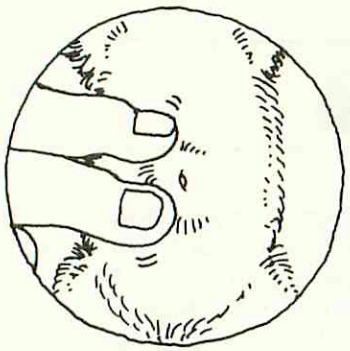
weight?
girth?
length?



how fast do they grow?
record their development?

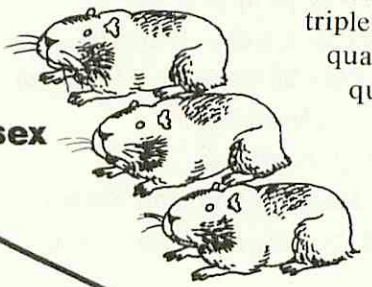
how many

twins?
triplets?
quadruplets?
quintuplets?



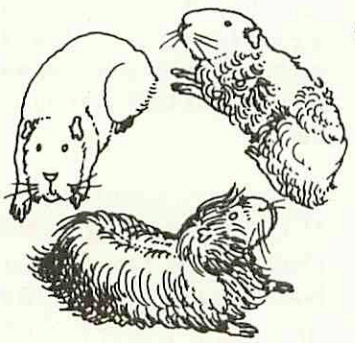
What Do They Look Like?

sex



do they have belly buttons?
what are belly buttons?

feet and toes?
make footprints?
plaster?
ink pad?



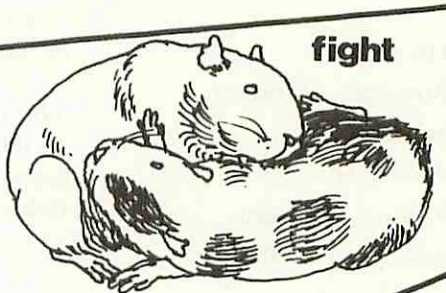
color
hair type

What were
their parents like?
hair type?
color?

How Do They Feel?

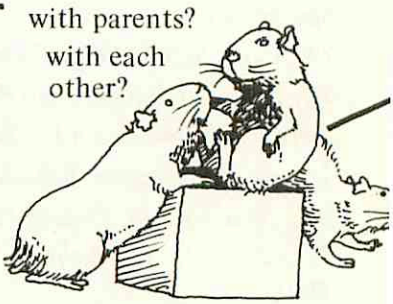
smooth?
bristly?
warm?
soft?

fight



play

with parents?
with each other?



What Can They Do?

sleep

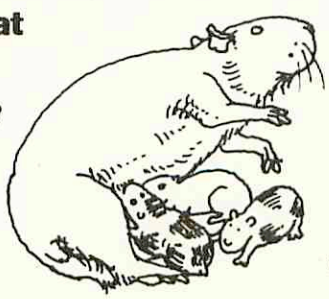
how long each day?

eat

pellets?
record how much they eat?

fresh fruit and vegetables?
record what they like?

do they have teeth?
how many?
do they hurt their mother while nursing?



drink

water?
from bottle?
from dish?

mother's milk?
how many nipples?
how many babies?

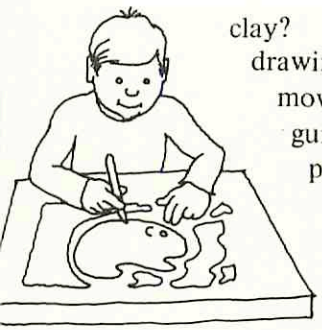
see

hear

make sounds

what kind?
when?

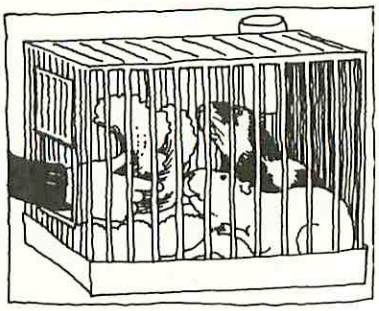
What Can You Do When a Litter of Guinea Pigs is Born?



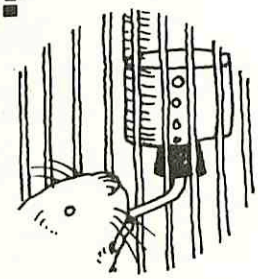
What Activities Can You Do?

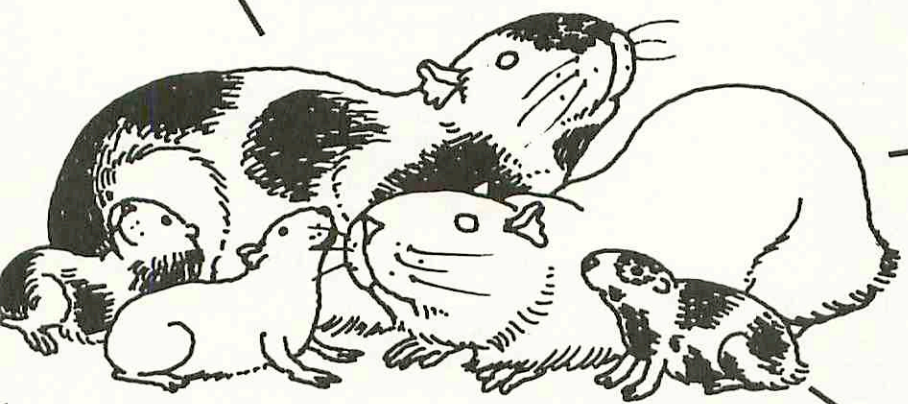
clay?
drawings?
movement?
guinea pig cookies?
poems?
songs?
stories?
dictated by children?
read?

How Can We Care For Them?



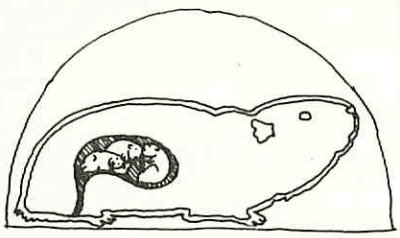
place to live?
food and water?
cleanliness?
bedding?
exercise?
warmth?
names?





Where Did They Come From?

pregnancy
length?

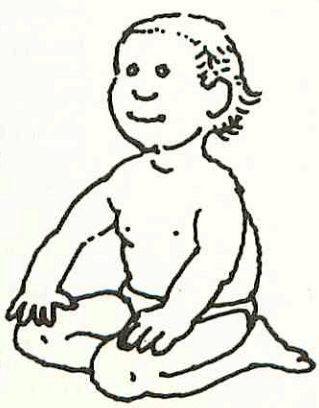


mating
female?
male?

Where Did Babies Come From?

humans

mating?
female?
male?
visit by a father-to-be?
visit by a pregnant woman?
length of pregnancy?
what does she feel like?
does the fetus sleep?
can the baby's heart be heard?
can the baby's movement be felt?



other animals

mating?
female?
male?
pregnancy?
length?
bring others into the classroom?

DOING THINGS

Developers:
Toby H. Grover
Lucy Lyons
John Nove
Dennie Wolf

Editor:
Anne Glickman

Designer:
Diana Ritter

EXPLORING CHILDHOOD PROGRAM

Director:
Marilyn Clayton Felt

Curriculum Coordinator:
Ruth N. MacDonald

Module Head:
Susan Christie Thomas

Project Manager:
Kathleen L. Horani

Senior Scholars:
Jerome Kagan, Professor of Human Development, Harvard University

James Jones, Assistant Professor of Social Psychology, Harvard University

Freda Rebelsky, Professor of Psychology, Boston University

Consultants:
T. Berry Brazelton, Pediatrician and Clinical Assistant Professor, Harvard University

Urie Bronfenbrenner, Professor of Human Development and Family Studies, Cornell University

Jerome S. Bruner, Watts Professor of Psychology, Department of Experimental Psychology, Oxford University

Betty H. Bryant, Nursery School Director, Center for Child Care Research, Education Testing Service, Princeton, New Jersey

Courtney Cazden, Professor of Education, Harvard University

Joan Goldsmith, Co-Director, The Institute of Open Education/ Antioch Graduate Center

Patricia Marks Greenfield, Associate Professor of Psychology, University of California at Los Angeles

John Herzog, Associate Professor of Education, Northeastern University

David Kantor, Director of Research and Development, Boston Family Institute

Beatrice Blyth Whiting, Professor of Education and Anthropology, Harvard University

Developers:
Norma Arnow
Wendy Johnson Barnes
Ellen Grant
Rogier Gregoire
Toby Grover
Patricia Hourihan
Margaret Janey
Peggy Lippitt
Ronald Lippitt
Karlen Lyons
Lucy Lyons
Pamela Matz
Jim McMahon
John Nove
Judith Salzman
Jeanette Stone
Ianthe Thomas
Juliet Vogel
Sandra Warren
Dennie Wolf

Filmmakers:
Henry Felt
John Friedman
Mark Harris
Lynn Smith
David Vogt

Film Staff:
David Barnett
David Berenson
Frank Cantor
Elvin Carini
Edward T. Joyce
Allegra May
David Nelson
Charles Scott
Dan Seeger
Charles L. White, Jr.

Editors:
Marcia Mitchell
Marjorie Waters
Nancy Witting

Design:
Myra Lee Conway
Roz Gerstein
Diana Ritter
Michael Sand
Karen Shipley
Judy Spock
Alison Wampler

Production:
Patricia A. Jones
Scott Paris

Parent Education:
Louis Grant Bond
Naarah Thornell

Teacher Education:
Michael J. Cohen
Marjorie Jones
Edward Martin
Barbara S. Powell
Emma Wood Rous

Evaluation:
Geraldine Brookins
Martin Chong
Catherine Cobb
Joan Costley
Sherryl Graves
Aisha Jones
Eileen Peters

Regional Evaluators:
John R. Browne
Karen M. Cohen
Judith McMurray
Mark Walker
Kaffie Weaver

Regional Field Coordinators:
Florence J. Cherry
Thomas A. Fitzgerald
Andrea J. Love
Annie Madison
T. David Wallsteadt
Dianne H. Willis

Support Staff:
Florence Bruno
Genevra Caldon
Bushra Karaman
Pamela Ponce de Leon
Maria Rainho
Denise Weaver

Distribution Coordinator:
Steve Westlund

Illustration Credits:
Ariel Mathers: Inside covers, pp. 12-13, 32-33, 34, 36, 37, 44-45.
Mark Harris: pp. 3, 22.
Roy Ditosti: pp. 4-5
Bob Barner: pp. 8-9, 16-17, 18, 20, 21.
Alison Wampler: pp. 10-11, 24, 25, 26, 27, 28, 29.
Eva and Louis Millette: p. 15.
Berenice Abbott: p. 23.
Roz Gerstein: p. 30.
Wendi E. Lombardi: p. 35.
Ruth Orkin: p. 36 (right).

EDUCATION DEVELOPMENT CENTER/SOCIAL STUDIES PROGRAM

Director:
Janet Hanley Whitla

Senior Associate:
Peter B. Dow

Director of Evaluation:
Karen C. Cohen

Director of Publications:
Anne Glickman

Director of Teacher Education:
Rita Holt

Director of Special Projects:
Nona P. Lyons

Director of Field Services:
Dennen Reilley

EXPLORING CHILDHOOD has been developed by the Social Studies Program of Education Development Center under grants from The Children's Bureau, Office of Child Development; the National Institute of Mental Health; and with the support of the Office of Education.