

# You Can Do It!

Activities for Reading & Mathematics  
Aligned with Pennsylvania Academic Standards

## STRATEGIES TO PROMOTE ACHIEVEMENT IN READING

Researchers have identified five areas where the home and family can influence reading development in children:

§ Place value on literacy: Show your interest in reading by reading in front of children and encouraging them to read too.

§ Press for achievement: Let children know that they are expected to achieve and help them develop reading skills.

§ Make reading materials available: Homes with reading and writing materials for children, such as books, newspapers, writing paper, pencils and crayons, create more opportunities to develop literacy.

§ Read with children: Parents who read to preschoolers and listen as older children read aloud help children become readers.

§ Encourage opportunities for verbal interaction: The quantity and content of conversation between parents and children influence language and vocabulary development. Both are building blocks for reading success.

(Start Early, Finish Strong 1998)

## HOW FAMILIES CAN HELP

§ Read to and with your children for 30 minutes every day. It is very important to read out loud to your children before they start school. Help your children to read with you. Ask them to find letters and words on the page and talk with your children about the story.

§ Talk with infants and young children before they learn to read. Feed your child a diet of rich language experiences throughout the day. Talk with your children all day long, using short, simple sentences. Talking with them even before they can speak will help them later when they learn to read and write. Tell stories, sing songs, recite nursery rhymes or poems and describe the world around them. Name things. Make connections. Encourage your child's efforts to talk to you.

§ Help your children to read on their own. Reading at home helps children do better in school. Have lots of children's books in you home and visit the library every week. Help your children get their own library cards and let them pick out their own books.

§ If your child has a developmental delay, your child may find reading frustrating. Have books on tape in your home. Borrow or buy a tap player

that is easy to work. If you cannot find recordings of your child's favorite books, you or a family member could make recordings of them for your child to listen to while looking at the books.

§ Help your child to see that reading is important. Suggest reading as a free-time activity. Make sure your children have time in their day to read. Set a good example for your children by reading newspapers, magazines, and books.

§ Set up a reading area in your home. Set up a special place for reading and writing in your home. A well-lit reading corner filled with lots of good books can become a child's favorite place. Keep books that interest your children in places where they can easily reach them. As your children become better readers, make sure that you add harder books to your collection.

§ Give your children writing materials. Children want to learn how to write and to practice writing. Help them learn by having paper, pencils, pens or crayons for them in your home. Help your children write if they ask you. If your child has a special learning or physical need, regular pens and pencils may not be the best choice. Ask your pediatrician or people who work with your child at school or at the childcare center to suggest other writing materials your child can use.

§ Read and write with your children in their native language. Practicing their first language will help your children learn to read and write English.

§ Talk with your children as you do daily activities together. When you take your children places, talk with them about what you are doing and ask them questions. If your child cannot hear, use whatever form of communication your child usually uses.

§ Ask your children to describe events in their lives. Talking about their experiences makes children think about them. Giving detailed descriptions and telling complete stories also helps children learn about how stories are written and what the stories they read mean.

§ Monitor the amount and type of TV your children watch. Watch educational TV programs with your children that teach letter sounds and words or give information about nature and science.

§ Keep track of your children's progress in school. Ask your child's teacher for an assessment of your child's reading and literacy skills and ways in which you can bolster your child's literacy skills at home. Visit your children's classrooms to learn how your children are doing in school and how you can help your children become better students. Ask about the school's reading program and where your children need help.

§ Visit the public library often to spark an interest in books. Help your children obtain their own library cards and pick out their own books. Talk to a librarian, teacher, school reading specialist or bookstore owner for guidance about what books are appropriate for children at different ages and reading levels.

§ Become a learning partner/reading tutor to a child in your neighborhood or

from your local elementary school. Volunteer to read with or to a child for 30 minutes a week for at least eight weeks.

§ Help start a community reading program. Offer to volunteer as a reading tutor or serve as a community contact/coordinator for the program. (America Reads, 1999).

#### GOOD BOOKS MAKE READING FUN

Stories for young children should be of all kinds-folktales, funny tales, exciting tales, tales of the wondrous and stories that tell of everyday things.

What you'll need:

& A variety of interesting books

What to do:

& An essential step in learning to read is good books read aloud. Parents who read aloud to their children are teaching literacy concepts imply by sharing books. Encourage your children to listen, ponder, make comments, and ask questions.

& Be flexible enough to quickly abandon a book that does not appeal after a reasonable try at reading it. No one is meant to enjoy every book. And no one, especially a child, should be forced to read or listen to books that bore.

& Even after children have outgrown picture books they still enjoy hearing a story read aloud. Hearing a good story read well, especially if it is just a little beyond a child's own capabilities, is an excellent way to encourage independent reading. Not all books are best read aloud; some are better enjoyed silently. But there are plenty of children's books that are twice as satisfying when they are shared a chapter at a time before bed or during long car rides. There are some books that children should not miss, books that they will want to hear many times and ultimately read for themselves.

& Young children want to read what makes them laugh or cry, shiver and gasp. They must have stories and poems that reflect what they themselves have felt. They needed the thrill of imagining, of being for a time in some character's shoes for a spine-tingling adventure. They deserve to experience the delight and amazement that comes with hearing playful language. For children, reading must be equated with enjoying, imagining, wondering and reacting with feeling. If not, we should not be surprised if they refuse to read. So let your child sometimes choose the story or book that they want you to read to them.

& Give your child many opportunities to read and write stories, lists, messages, letters, notes and postcards to relatives and friends. Since the skills for reading and writing reinforce one another, your child's skills and proficiency in reading and writing will be strengthened if you help your child connect reading to writing and writing to reading.

Good Books Make Reading Fun 1.2. Reading Critically in All Content Areas.  
B. Understand and use a variety of media.

## ARTFUL ARTISTS

Children love to be creative when it comes to drawing, and illustrations add visual imagery to stories.

What you'll need:

- & Drawing paper
- & Pens and pencils
- & Magic markers or crayons

What to do:

- & Find a fable, fairy tale or other short story for your child to read.
- & Then ask your child to illustrate a part of the story he or she likes best or describe a favorite character.
- & Have the child dictate or write a few sentences that tell about this picture.

Artful Artists 1.2. Reading Critically in All Content Areas. C. Produce work in at least one literary genre that follows the conventions of the genre.

## SHOPPING YOUR WAY WITH WORDS

Use your weekly shopping trip as an opportunity to help your child develop reading and writing skills.

What you'll need:

- & Paper and pencils
- & Newspaper ads
- & Supermarket coupons

What to do:

- & As you make out your grocery shopping list, give your child a sheet of paper and read the items to him or her.
- & If the child asks for spelling help, write the words correctly for him or her to copy or spell the words aloud as your child writes them.
- & Ask your child to look through the newspaper ads to find the prices of as many items as possible.
- & Your child can write these prices on the list and then look through your coupons to select the ones you can use.
- & Take your child to the supermarket and ask him or her to read each item to you as you shop.

Shopping Your Way With Words 1.2. Reading Critically in All Content Areas. B. Understand and use a variety of media.

## 'COOKBOOKING'

Cooking is always a delight for children, especially when they can eat the results!

What you'll need:

- & Easy-to-read recipes
- & Cooking utensils

& Paper and pencils

What to do:

& Show your child a recipe and go over it together.

& Ask your child to read the recipe to you as you work, and tell the child that each step must be done in a special order.

& Let your child help mix the ingredients.

& Allow your child to write down other recipes from the cookbook that he or she would like to help make.

'Cookbooking' 1.2. Reading Critically in All Content Areas A. Read and understand essential content-analyze test.

### DICTIONARY WORDS

A dictionary is a valuable learning tool, especially if your child makes up his or her own booklet of words that are challenging.

What you'll need:

& Paper and pencils

& A stapler

& Old magazines

& Newspaper and supplements

What to do:

& Encourage your child to make a dictionary by putting together several sheets of paper for a booklet.

& Ask your child to write at the top of each page a new word he or she has recently learned.

& If the word can be shown in a picture, have him or her look through magazines and newspapers to find pictures that illustrate the words and paste them on the correct pages.

& Have your child write the meaning of each word and a sentence using each new word.

& Your child can then use some or all of these sentences as the basis for a creative story.

& Have your child read this story to you and other family members.

Dictionary Words 1.2. Reading Critically in All Content Areas A. Read and understand essential content-make inferences.

### JOURNALS

Keeping a journal is a way for your child to write down daily events and record his or her thoughts.

What you'll need:

& Two notebooks one for your child and one for you!

What to do:

& Help your child start a journal. Talk about what a journal is and discuss

topics that can be written about, such as making a new friend, an interesting school or home activity just complete, or how your child felt on the first day of school.

& Encourage your child to come up with other ideas.

& Keep a journal yourself and compare notes at the end of the week.

& You and your child each can read aloud parts of your journals that you want to share.

#### Journals 1.4. Types of Writing

1.2. Reading Critically in All Content Areas A. Write narrative pieces-use relevant illustrations.

#### GREETINGS AND SALUTATIONS

Everyone loves to get mail, especially when the card has been personally designed.

What you'll need:

& Paper and pencils

& Crayons and magic markers

& Stamps and envelopes

What to do:

& Ask your child to list the birthdays of family members, relatives and friends.

& Show your child some store-bought birthday cards with funny, serious or thought-provoking messages.

& Your child can then create his or her own birthday card by using a folded piece of paper, making an attractive cover and writing a short verse inside.

& Then your child can mail the cards to friends and relatives for their birthdays.

#### Greetings and Salutations 1.4. Types of Writing

1.2. Reading Critically in All Content Areas A. Write narrative pieces-use relevant illustrations.

#### MAP YOUR WAY TO SUCCESS

Children love to read road maps and this activity actually helps them with geography.

What you'll need:

& A road map or atlas

& Paper and pencil

What to do:

& When planning a vacation, let your child see the road map and help you plan where you will drive.

& Talk about where you will start and where you will end up.

& Help your child follow the route between these two points.

& Encourage your child to write to the Chamber of Commerce for brochures about places you will see on your trip.

Map Your Way to Success 1.2. Reading Critically in All Content Areas A. Read and understand essential content-make inferences.

### WHAT'S IN THE NEWS?

Newspapers are a form of daily communication with the outside world, and provide lots of learning activities for children.

What you'll need:

& Newspapers

& Scissors

& Colored pencils

What to do:

& Clip out an interesting news story and cut the paragraphs apart. Ask your child to read the paragraphs and put them in order.

& Ask your child to read a sort editorial printed in your local newspaper and to underline all the facts with a green pencil and all the opinions with an orange pencil.

& Clip pictures in the newspaper. Ask your child to tell you about the picture or list adjectives to describe the picture.

& Have your child first look up the movie page by using the index in the newspaper. After a movie has been chosen, have your child study the picture or text in the ad and tell you what he or she thinks the movie is about.

& Have your child pick a headline and turn it into a question. Then the child can read the article to see if the question is answered.

& Ask your child to clip food coupons from the newspaper for your grocery shopping trips. First, talk about which products you use and which you do not. Then the child can cut out the right coupons and put them into categories such as drinks and breakfast items. You can then cash in the coupons at the store.

& Pick out an interesting article from the newspaper. As you are preparing lunch or dinner, tell your child that you are busy and ask him or her to read the article to you.

What's in the News? 1.1. Learning to Read Independently. G. Demonstrate after reading understanding-retell, clarify, connect.

### GIVING THE GIFT OF READING

Reading a book is more fun when you have a homemade bookmark to mark your spot.

What you'll need:

& Pieces of lightweight cardboard

& Pens and pencils

& Paper

& Crayons and magic markers

What to do:

& Provide your child with a piece of cardboard about 6" long ´ 2" wide

& On one side of the bookmark, have your child draw a picture of a scene from a book he or she has read.

& On the other side, ask your child to write the name of the book, its author, publisher publication date, and a few sentences about eh book.

& After making several of these bookmarks, you might ask the child to send them to friends and relatives as gifts accompanied by a short note.

Giving the Gift of Reading 1.5. Quality of Writing.

1.1. Learning to Read Independently. D. Write with an awareness of the stylistic aspects of composition-use sentences.

#### LET YOUR FINGERS DO THE WALKING

The telephone book contains a wealth of information and is a good tool for reading and writing.

What you'll need:

& A telephone book, including the yellow pages

& Paper and pencils

What to do:

& Have your child look through the yellow pages of the telephone directory, select a particular service and write a clever or funny ad for it.

& Have your child read this ad to you.

& Help your child to find your own or a friend's listing in the white pages of the telephone book.

& Explain the different entries (for example, last name and address), along with the abbreviations commonly used.

Let Your Fingers do the Walking 1.2. Reading Critically in All Content Areas

A. Read and understand essential content-make inferences.

#### WORD WEBS

Words can be used to describe other words. Everyone likes to play with words and use words to talk about other words.

What you'll need:

& Paper and pencil

What to do:

& Choose a word such as vehicle and write it in the center of a sheet of paper. Then ask your child to think of other words that tell more about the word vehicle. Children might think about types of vehicles (buses, cars, trucks, boats), uses for vehicles (transportation, recreation), and words

describing how vehicles look and move (sturdy, fast, dangerous).

& Then ask your child to write the words on the sheet and connect them to the main word vehicle. This will show your child how the words are linked to the main word and form a "word web."

Word Webs 1.1. Learning to Read Independently. F. Understand the meaning of and apply key vocabulary across subject areas.

### LESSONS LEARNED

An important part of reading is guessing what the lesson or theme of a story is.

What you'll need:

& A collection of fables from the library.

What to do:

& Choose a short fable to read to your child. Read the story but stop before you get to the moral at the end of the story. Ask your child to state what lesson the story has to tell. Then read the moral (usually the last line of the fable).

& At the end of this game, talk to your child about the story. Where there any surprises in the story?

Lessons Learned 1.3. Reading, Analyzing and Interpreting Literature. A. Read and understand works of literature.

### FAVORITE WRITERS

Children who read a great deal often have favorite writers. These writers become favorites because of clever ways they use language or special story lines they develop.

What you'll need:

& Several books by your child's favorite writer.

& A notebook.

What to do:

& Have your child check out from the library several books by a favorite writer. As your child reads each book, have the child jot down in a small notebook interesting phrases, or sentences, and special observations the author makes.

& Skim one or more of the books yourself, and read some phrases you like to your child in the author's words.

Favorite Writers 1.3. Reading, Analyzing and interpreting Literature. C. Analyze how the author uses literary devices to convey meaning.

### USING TELEVISION TO STIMULATE READING

Capitalize on this form of entertainment and use TV to help rather than

hinder your child's learning.

What you'll need:

& TV

& TV selection guide

& Colored highlighters

& A calendar page for each month

& Paper and pencils

What to do:

& Ask your child to tell you about favorite TV characters using different kinds of words.

& As your child watches commercials on television, ask him or her to invent a product and write slogans or an ad for it.

& Encourage your child to watch such programs as "Reading Rainbow" and "Electric Company." Urge older children to watch such programs as "Children's Classics," "60 Minutes" and selected documentaries. These programs are informative. Discuss interesting ideas covered in the programs and direct your child to maps, encyclopedias, fiction, or popular children's magazines for more information.

& Have your child name 10 of his or her favorite shows. Ask your child to put them into categories according to the type of show they are, such as family shows, cartoons, situation comedies, sports, science fiction or news and information, you might suggest a few others that would broaden experiences.

& Prepare a monthly calendar with symbols such as a picture of the sun to represent an outdoor activity or a picture of a book to represent reading. Each time your child engages in a daily free time activity, encourage him or her to paste a symbol on the correct calendar date. This will give you an idea of how your child spends his or her free time. It also encourages a varied schedule.

& Ask each child in your family to pick a different color. Using the TV listing, have each child use this color to circle one TV program that he or she wants to watch each day. Alternate who gets first choice. This serves two purposes. It limits the amount of time watching TV and it encourages discriminating viewing.

& Devise a rating scale from 1 to 5. Ask your child to give a number to a certain TV program and to explain why such a rating was given.

& Have your child keep a weekly TV log and write down five unfamiliar words heard or seen each week. Encourage your child to look up the meanings of these words in the dictionary or talk about them with you.

Using Television to Stimulate Reading 1.1. Learning to Read Independently.

D. Identify basic facts and ideas in text-clarify understanding.

## BUILDING STORIES

Stories are built in much the same way that houses are. Just as houses have floors, walls and a roof, stories have some basic parts. Every story has characters (the people or animals in the story), a setting (the time and place the story occurs), a problem (a difficulty that the character(s) have to overcome and solve), and a resolution (a solution to the difficulty or problem). Knowing the parts of a story helps children understand the whole story.

What you'll need:

& A brief story or a fable.

What to do:

& Choose a short story, fable or fairy tale for your child to read. You may want to read the story ahead of time to make sure it works for this activity.

& Make an outline on lined paper with the following parts:

Title:

Main Character:

Setting:

Problem:

Resolution:

& Ask your child to read part of the story and to identify the character(s).

Say "Is Molly a character in the story? Is she a main character? Yes, the story is mostly about Molly and her science project. Let's write that on the sheet where it says main character."

& Then ask your child to tell you where and when the story takes place (a town or a city, state or country, today or in the past). This is the setting of the story.

& Then, after your child reads about half of the story, stop and say, "What is the problem the main character of this story is facing or having? Let's write that on the sheet where it says problem."

& When your child finishes the story, ask the child how the problem in the story was worked out. Say, "That is the resolution of the story. Let's write that on the sheet."

Building Stories 1.1. Learning to Read Independently. B. Identify and use common organizational structures...to comprehend information.

## THE ONE-MINUTE DASH

Reading quickly and with ease is very important to successful reading, but, like running, it requires a lot of coaching and practice. To become a fluent reader, your child must practice reading quickly. Remember, however, that too much practice at one time is not helpful.

What you'll need:

& A watch or clock with a second hand and a book. Your child must be able to read the book with little or no help.

What to do:

& Tell your child, "Let's play a game called the one-minute dash. I want to see how many words you can read in one minute." (Point to a place in the book where the child should begin reading.)

& Then, "When I say Go, I want you to begin reading. After one minute, I'll tell you to stop." When your child is ready to start, say "Get Ready...Set...GO!" Check your watch. After a minute, ask your child to stop reading.

& Count the total number of words your child read. If you like, make a chart to show how many words per minute your child has read in a week, two weeks, a month or more.

The One-Minute Dash 1.1. Learning to Read Independently. H. Demonstrate fluency and comprehension in reading.

### WORD WIZARD

Learning about words is important to learning inside and outside school. The more words a child knows, the more the child will learn.

What you'll need:

& A newspaper, magazine or book

& A notebook

What to do:

& Have your child find a word in a newspaper, magazine, or book that he or she does not know and has not seen before. For example, your child may not know the word foretell (meaning "to predict or tell beforehand," as in, "The woman in red could foretell the future").

& Your child might also find a word that is familiar but used in a new way. For example, the word boat means a small vessel used for getting around by water. However, when boat is used in the sentence, "The people were all in the same boat," it means "faced with the same problems."

& Ask your child to listen for a new word in everyday talk or look for a new word in the newspaper. Have your child find a new word in the newspaper. Have your child find a new word or an old word used in a new way each day. Ask your child to keep track of the words in a special notebook.

Word Wizard 1.1. Learning to Read Independently. D. Identify the basic ideas and facts in texts using strategies, illustrations, and headings.

### IN LAUGHING ORDER: THE COMIC STRIPS

When children read about events, they must keep the major actions in order. Children can develop a sense for order while reading comic strips.

What you'll need:

& Your child's favorite comic strip.

What to do:

& Find a comic strip that you and your child enjoy.

- & Before reading the strip, cut it out and separate the frames.
- & Mix them up and ask your child to put the frames in the correct order.
- & Once they are in order, have your child read the comic strip and tell you what the strip means or is saying.

In Laughing Order: The Comic Strip 1.2. Reading Critically in All Content Areas. A. Read and understand essential content of informational texts- evaluate organization.

### TALL TALE RETELL

Children love to read and talk about tall tales-stories about events, people and places that are bigger than life and not real.

What you'll need:

- & A book of tall tales (ask your librarian for help in finding a tall tale book).

What to do:

- & Have your child choose a tall tale to read. Ask your child to read it silently. Then ask your child to tell you how the tall tale reminds him or her of something that has happened in real life-at home, at school or in the news.
- & At another time, ask your child to tell you what the story is about-but ask your child to add something to the story that was not in the original story. Tell your child that you are going to be listening very carefully to guess the part of the story your child made up! Try to figure out the "tall tale" part that your child added to the story.

Tall Tale Retell 1.1. Learning to Read Independently G. Demonstrate after reading understanding and interpretation of both fiction non-fiction.

### WORD FAMILIES

Words come in all shapes and sizes, but many words that children read and hear come in word families.

What you'll need:

- & Pencil and paper

What to do:

- & Give your child a word (such as add) this found in many other words (such as addition and adding). Ask your child to think of other words that are "roots" for related words, such as compete, and ask the child to write out the related words (competition, competitor, competitive).
- & Ask your child to keep a record of the "word families." See how many words made from root words your child can find in a month.

Word Families 1.1. Learning to Read Independently. E. Acquire a reading vocabulary by correctly identifying and using words.

## THE MOOSE CAFÉ

Opportunities for reading and writing are all around us-even when the subject is food.

What you'll need:

& Menus

What to do:

& Go with your child to several restaurants to ask for free copies of their menus. Take them home. Ask your child to read several of the items on each menu with their descriptions.

& Then ask your child to make up a menu for an imaginary restaurant---the Moose Café or the Tuna Bake Bistro-with creative descriptions.

The Moose Café 1.2. Reading Critically in All Content Areas. B. Use and understand a variety of media-catalogues.

## THE DICTIONARY GAME

Working with reference books like a dictionary is important to learning about words.

What you'll need:

& Paper, pencil, a dictionary and the list of questions given below, each written on a separate piece of paper.

What to do:

& Fold each question in half and put them all in a hat. Ask your child to read a question and then use the dictionary to answer it.

& Is a burnoose the cousin of a moose?

& Can you bustle, hustle, and jostle at the same time?

& Is a hog likely to hog all the hogmeat?

& How much bread is there in breadfruit?

& Is it possible for a fowl to have a jowl?

& Can a gnu be a guru to a few?

& Is a lingbird likely to linger long on a clothesline?

& Are calligraphy and orthography the same?

& Can you abandon an abalone?

& Can an ermine be a hermit?

& Explain why we drive on a parkway and park on a driveway.

& Can a sphinx put a jinx on you?

& Once your child answers these questions, ask your child to develop some questions for you, using challenging words from the dictionary.

The Dictionary Game 1.1. Learning to Read Independently. E. Acquire a reading vocabulary by correctly identifying and using words-suffixes and prefixes.

## MY TURN, YOUR TURN-OUR STORY

Writing stories is fun, but it really comes alive when your child creates and writes a story with you.

What you'll need:

& Paper, pencil and a story title

What to do:

& Create or choose an exciting title for a story you would like to write with your child, such as "The Golden Eye" or "Suddenly Midnight and Silence."

Write the title on a sheet of paper and invite your child to write the first sentence. You write the second line. Take turns writing sentences until the story is complete.

& When the story is finished, invite the family to a story-reading session, or read the story to the family during dinner.

My Turn, Your Turn-Our Story 1.4. Types of Writing.

1.2. Reading Critically in All Content Areas. A. Write poems, plays and multi-paragraph stories.

## JOURNEY JOURNAL

A journal is an excellent way for your child to write about everyday events and to record thoughts. It is fun to keep a journal when on a special trip.

What you'll need:

& Journals or notebooks and pencils for you and your child.

What to do:

& Plan a special trip with your child to a museum, zoo, sports game or other place of special interest to your child. Ask your child to take along a journal to use for noting interesting things seen or heard.

& Tell your child you are taking a journal too, so that you also can write about your experiences. Compare your journals throughout the day, and especially at the end of the journey.

Journey Journal 1.4. Types of Writing A. Write short stories.

## FAMILY WORDS MATTER

Reading and writing can enable family members to share important life stories.

What you'll need:

& Letters from grandparents or other family members.

What to do:

& Select a family member whom your child knows well and likes. Ask the family member to write a letter to your child. The letter should tell a story, funny event or some thing about your child.

& When your child receives the letter, have the child read the letter. Ask your child to write a return letter to the family member, telling a story or

something about the family member that the family has told the child.  
& Repeat the letter with another family member.  
Adapted from READ\*WRITE\*NOW! 1997

Family Words Matter 1.4. Types of Writing

1.2. Reading Critically in All Content Areas A. Write poems, plays, and multi-paragraph stories.

Gregory Braswell

Age 9

St. Elizabeth School

Pompano Beach, Florida

Hard Drive to Short

Baseball is my favorite sport, so I liked reading this book. It is about a boy name Sandy who plays shortstop for a team called the Spacemen. Every week, Sandy has to leave games early. He doesn't tell his teammates why he has to leave because he thinks they will make fun of him.

When Sandy gets into trouble, he learns the hard way who his real friends are. Hard Drive to Short taught me a lesson: Stick with the friends you have, not the ones you think are cool.

Hard Drive to Short by Matt Christopher (Little Brown and Company, 1969), 145 pages. Cover illustration © 1991 Glenn Harrington

The Cat and the Mice

a fable by Aesop

The Mice were much bothered by a Cat. They decided to hold a council to see what could be done about the matter. During the meeting a young mouse there said, "If the Cat had a little bell tied to her neck, it would tinkle every time she made a step. This would warn us, and we would have plenty of time to reach our homes in safety."

All the Mice, applauded this clever scheme until one of them spoke up and said, "It's a fine plan. But which one of us is going to put the bell on the Cat?"

THE BABOON'S UMBRELLA

The Baboon was taking his daily walk in the jungle. He met his friend, the Gibbon, on the path.

"My good friend," said the Gibbon, "how strange to find you holding an open umbrella over your head on such a sunshiny day as this."

"Yes," said the Baboon. "I am most annoyed. I cannot close this

disagreeable umbrella. It is stuck. I would not think of walking without my umbrella in case it should rain. But, as you see, I am not able to enjoy the sunshine underneath this dark shadow. It is a sad predicament."

"There is a simple solution," said the Gibbon. "You need only to cut some holes in your umbrella. Then the sun will shine on you."

"What a good idea!" cried the Baboon. "I do thank you."

The Baboon ran home. With his scissors, he cut large holes in the top of his umbrella. When the Baboon returned to his walk, the warm sunshine came down through the holes.

"How delightful!" said the Baboon.

However, the sun disappeared behind some clouds. There were a few drops of rain. Then it began to pour. The rain fell through all of the holes in the umbrella. In just a short time, the unhappy Baboon was soaked to the skin.

The City Mouse and the Country Mouse

a fable by Aesop

here was once a happy little Country Mouse, who lived in a big wheat field. In the summer she feasted on grains of wheat or on bits of bread from the farmers' lunch boxes. When the weather grew cold she moved into the farmhouse and picked up bits of cake and bread and cheese which the cook dropped on the kitchen floor. These she stored away in her little mouse hole in the attic until she had a good supply laid in for the winter.

Now one day during the winter the little Country Mouse's cousin, City Mouse, came to visit her. When they had chatted for a while, the little Country Mouse took her visitor to see her attic pantry. Proudly she showed her the mound of cheese bits, the heaps of bread and cake crumbs, and the neat piles of nuts and dried peas.

But when the City Mouse had eaten a hearty dinner, she wiped her whiskers daintily and said, "You poor thing! So this is the way you live, on left-overs dried up in the attic. Come with me to the city and I will show you a real feast!"

The Country Mouse immediately felt rather ashamed of her simple home, so she quietly went along with the City Mouse to visit her.

The City Mouse led the way into a huge brick house, up a great staircase, and into a dining room.

The rich people who lived in the big house with the City Mouse were just having dinner, so the two little mice hid behind the door.

"Keep very still," said the City Mouse. "When they leave the table we can have all the food that is left."

The eyes of the little Country Mouse grew big and round at that, for she had never seen so much food in her whole busy life. So she sat very still until, with a scuffling of feet and scraping of chairs, the big people left the table.

"Come on," squeaked the City Mouse. Peeking cautiously to the right and left she led the way across the room, up onto a chair, and from the chair onto

the table, with the Country Mouse scampering along behind her.

The Country Mouse took a long look around her at the table still crowded with good things, and sighed a deep, happy sigh.

"This is wonderful," she said, taking a big bite out of a beautiful cheese. "You live just like a prince!"

She had scarcely finished squeaking when, with a snarl, a cat pounced up on the table. After her came the cook, shouting and waving a big spoon. And into the room bounded two dogs, barking fiercely. Then there was a terrible row! In the midst of it the two mice skittered down to the floor and dodged into a handy hole.

"We'll wait until it is quiet again and then I'll go home as fast as I can. You are welcome to all the fine food you can get, my friend. As for me, I prefer my dry crusts in my peaceful attic!"

### HALF FULL, HALF EMPTY

It is helpful to explore whole numbers and fractions through measurement and estimation. Children can see relationships and the usefulness of studying fractions.

What you'll need:

- ~ Clear container, with straight sides, that holds at least 4 cups
- ~ Masking tape
- ~ Marker
- ~ Measuring cup with 1,  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{8}$  cup measures on it
- ~ Uncooked rice, popcorn kernels or water
- ~ Other containers with which to compare

What to do:

- ~ Have your child run a piece of masking tape up the side of the container so that it is straight from the bottom to the top.
- ~ For younger children, use a 1-cup measure. For older children, use  $\frac{1}{2}$ ,  $\frac{1}{4}$ , and  $\frac{1}{8}$  cup measures. Pour the chosen amount of a substance listed above into the container.
- ~ Mark the level of the jar on the masking tape by drawing a line with a marker and writing 1 for one cup or  $\frac{1}{2}$ ,  $\frac{1}{4}$ , or  $\frac{1}{8}$  on the line.
- ~ Follow this procedure until the container is full, and the tape is marked in increments to the top of the container. Now, the jar is marked evenly to measure the capacity of other containers.
- ~ While filling different containers, ask your child "thinking" questions.
- ~ How many whole cups do you think this container will hold?
- ~ How many  $\frac{1}{2}$ ,  $\frac{1}{4}$ , or  $\frac{1}{8}$  cups do you think this container will hold?
- ~ How many  $\frac{1}{2}$  cups equal a cup?
- ~ How many  $\frac{1}{4}$  cups equal a  $\frac{1}{2}$  cup? A cup?
- ~ How many  $\frac{1}{8}$  cups equal a  $\frac{1}{4}$  cup? A  $\frac{1}{2}$  cups? A cup?

This activity provides a "hands-on" opportunity for children to experience fractions while making connections to the real world.

Half Full, Half Empty 2.1 Numbers, Number Systems and Number Relationships. D. Use drawings, diagrams or models to show the concept of fraction as part of a whole.

#### NEWSPAPER SEARCH

Search through the newspaper for mathematical data.

What you'll need:

~ Newspaper

What to do:

~ Numbers in the news. Find the following things in the paper.

~ A graph

~ A number less than 10

~ Something that comes in 2s, 3s, 4s

~ The days of the week

~ A number more than 100

~ A number that is more than 100 but less than 999

~ A symbol or word for inches, feet or yards

~ A schedule of some kind

~ A triangle

~ A weather symbol

~ A percent sign

~ Sports statistics

~ List it. Provide your child with the grocery section of the newspaper in order to make up a list of food that will feed the family for a week and meet a budget or a certain amount of money. Have your child make a chart and use a calculator to figure the cost of more than one item. If the total for the groceries is too great, talk about which items can be eliminated. Could the list be cut down by a few items or by buying less of another item? What will best serve the needs of the family?

~ For a fraction of the cost. Give your child a few coupons and grocery ads from the paper. Help your child match the coupons to some of the grocery items in the ad. What fraction of the cost is the coupon? For example, if an item costs 79 cents and the coupon is for 10 cents off, what fraction of the cost can be saved? (About  $\frac{1}{8}$ .) What percent are you saving on the item? (About  $12\frac{1}{2}$  percent.)

One of the main ways people use numbers is for planning. Knowing how to plan how much things will cost before going to the store and how to read schedules and weather information from the paper will help your child understand the world.

Newspaper Search 2.8. Algebra and Functions. F. Describe a realistic situation using information given in equations, inequalities, tables or graphs.

#### LET'S PLAY STORE

What you'll need:

- ~ Empty containers (cartons or boxes)
- ~ Old magazines
- ~ Books
- ~ Newspapers
- ~ Calculator
- ~ Pencil or crayon
- ~ Paper

What to do:

- ~ Help your child collect empty containers so that you can play as if you were shopping at the grocery store. Gather the items and put them on a table.
- ~ Help your child think of a price for each item. Mark the prices on the containers. You can even mark some items on sale.
- ~ Pretend to be the customer while your child is the cashier.
- ~ Teach your child the difference between the math symbols (+, -, ÷, ×, and =) and how they are used when using the calculator. Help your child add the prices of each item on the calculator and total the amount using the (=) symbol. Have your child write the total on a piece of paper, which will be your receipt.
- ~ While you and your child play store, you can ask questions like how much would it cost to buy three cartons of eggs? How much does 1 box of soap cost, if they are 2 for \$5.00? How much is my bill, if I don't buy the cereal? How much more will it cost if I buy this magazine? Have your child estimate the amounts of the items you are buying. Check to see if the estimation is correct on the calculator.
- ~ Learning to use the calculator will help your child understand and apply estimation and reasoning skills, as well as learn addition, subtraction, division, and multiplication.

Let's Play Store 2.2. Computation and Estimation A. Create and solve word problems involving addition, subtraction, multiplication and division of whole numbers.

## NAPKIN FRACTIONS

What to do:

- ~ Make fractions fun.
- ~ Fold paper towels or napkins into large and small fractions.
- ~ Start with halves and move to eighths and sixteenths.
- ~ Use magic markers to label the fractions.

Napkin Fractions 2.1. Numbers, Number Systems and Number Relationships. B. Use whole numbers and fractions to represent quantities.

## TRACKING TIME

What you'll need:

~ Clock or watch, newspaper, blank paper, and graph paper (can be hand-drawn)

What to do:

~ Together with your child, keep track of the time he or she spends watching television as well as doing homework. Make a table listing the 7 days of 1 week. Keep two columns, one for television and one for homework. At the end of the week, see if together you can make a graph comparing the two different activity columns.

~ While watching television, make a chart showing how much time in every hour is used for commercials compared to how much time is used for the actual show. Do this for every half-hour of television you watch. Then make a bar or pie chart showing the two amounts. Time the minutes carefully.

~ Together with your child, keep track of how he or she spends time in one 24-hour period: time spent sleeping, eating, playing, reading, and going to school. Measure a strip of paper that is 24 inches long. Let each inch represent 1 hour. Color in the number of hours for each activity. When finished, make the strip into a circle and place it on a black piece of paper. Trace around the circle. Then make lines from the center of the circle to the edge of each color. Your child has just made a circle (pie) chart of how he or she spends 24 hours. Compare this with how other people in your family spend their time.

~ Statistics includes collection information, analyzing it, and describing or presenting the findings in an organized way.

Tracking Time 2.3. Measurement and Estimation A. Compare measurable characteristics of different objects on the same dimensions (e.g., time, temperature, area, length, weight, capacity, perimeter).

## MATH MARKS

What to do:

~ Are they really necessary? Ask your children to look through the newspaper to find and list as many percentages and decimal numbers as possible—sale prices, sports scores, bank rates.

~ Ask what would happen without those marks.

Math Marks 2.2. Computation and Estimation G. Apply estimation strategies to a variety of problems including time and money.

## TREASURE HUNT

Everyone's house has hidden treasures. There is a lot of math you and your child can do with them.

What you'll need:

~ Buttons

~ Screws

- ~ Washers
- ~ Bottle caps
- ~ Old keys
- ~ Seashells
- ~ Rocks
- ~ Anything else you can count

What to do:

- ~ Find a container to hold the treasures.
- ~ Sort and classify the treasures. For example, do you have all the same sized screws or keys? How are they alike? How are they different?
- ~ Use these treasures to tell addition, subtraction, multiplication and division stories. For example, if we share 17 buttons among three friends, how many will we each get? Will there be some left over? Or, if we have 3 shirts that need 6 buttons each, do we have enough buttons?
- ~ Organize the treasures by one characteristic and lay them end-to-end. Compare and contrast the different amounts of that type of treasure. For example, there are 3 short screws, 7 long screws and 11 medium screws. There are 4 more medium screws than long ones. This may also provide an opportunity to talk about fractions:  $\frac{7}{21}$  or  $\frac{1}{3}$  of the screws are long.
- ~ Finding a container to hold the treasures gives your child practice in spatial problem solving. The treasures may help you to explain the concepts of addition, subtraction, multiplication and division because they can be moved around and grouped together so your child can count the items.

Treasure Hunt 2.9. Geometry A. Name and label geometric shapes in two and three dimensions (e.g., circle/sphere, square/cube, triangle/pyramid, rectangle/prism).

FILL IT UP

Children enjoy exploring measurement and estimation. Empty containers can provide opportunities to explore comparisons, measurement, estimation and geometry.

What you'll need:

- ~ Empty containers in different shapes (yogurt cups, margarine tubs, juice boxes with tops cut off, pie tins)
- ~ Rice, popcorn kernels, or water
- ~ Marker
- ~ Masking tape
- ~ Paper

What to do:

- ~ Have your child choose an empty container each day and label it for the day by writing the day on a piece of masking tape and sticking it on the container.
- ~ Discover which containers hold more than, less than or the same as the container chosen for that day by filling the day's container with water,

uncooked rice or popcorn kernels; pour the substance from that container into another one. Is the container full, not full or overflowing? Ask your child "Does this mean the second container holds more than the first, less, or the same amount?"

~ Ask your child questions to encourage comparison, estimation and thinking about measurement.

~ Put all the containers that hold more in one spot, those that hold less in another and those that hold the same in yet another. Label the areas "more," "less" and "the same."

~ After the containers have been sorted, ask "Do we have more containers that hold more, hold less or hold the same?" "How many containers are in each category?"

The process of predicting, filling the containers and comparing how much each will hold gives your child the opportunity to experiment with measurement without worrying about exact answers.

Fill It Up 2.2. Computation and Estimation F. Demonstrate skills for using fraction calculators to verify conjectures, confirm computations and explore complex problem-solving situations.

#### NEWSPAPER MATH

What to do:

~ Use the Weather section to check temperatures across the nation and the world.

~ Discuss baseball and football scores and averages on the sports pages.

Who are the high scorers? What are they percentages?

Newspaper Math 2.3. Measurement and Estimation. F. Use scale measurements to interpret maps or drawings.

#### LICENSE PLATE RIDDLES

What you'll need:

~ License plates

~ Paper

~ Pencil

What to do:

~ While traveling in a car, or on a bus, everyone watches for license plates, focusing on one in particular for 5 minutes. The object is to use the digits on the license plate to make the largest 3-digit number possible. When a player chooses a license plate during the 5-minute watching period, they call out the 3-digit number they have made from the license plate. The person with the largest number wins the round. Try the next round so the winner is the person with the smallest 3-digit number.

~ Let each letter on a license plate be worth the value of its position in the alphabet. A = 1, M = 13, Z = 26. Each person chooses a license plate and

adds the value of the letters. The person with the lowest or the highest value wins the round.

~ For younger children, this activity can be simplified by having them find the largest single digit, or double digit, or even add all the numbers on the license plate, or just recognize digits.

This activity helps children to develop their knowledge of numbers and to think algebraically.

License Plate Riddles 2.1. Numbers, Number Systems and Number Relationships. J. Estimate, approximate, round or use exact numbers as appropriate.

### HOW LONG? HOW FAR?

What you'll need:

~ Information about how far you're traveling and how long it will take

What to do:

~ Many times when you are on the go, you are headed somewhere that requires you to be there by a certain time.

~ Ask you children how far they think you have traveled and how much more you have to travel. Yards? Blocks? Miles?

~ Talk about how long it takes to get to your destination. If it is 3:15 now, and it takes 45 minutes to get there, ask if you will make it for a 4:15 appointment? How much extra time will there be? Will we be late?

This car, bus, or train traveling exercise provides many opportunities for children to use mental math and estimation to calculate time and distance problems.

How Long? How Far? 2.2. Computation and Estimation. E. Use estimation skills to arrive at conclusions.

### TOTAL IT

What you'll need:

~ License plates

~ Paper

~ Pencil

~ Calculator

What to do:

~ As you are traveling in your car, or on a bus, each person takes turns calling out a license plate number.

~ All players try to add the numbers in their heads. Talk about what strategies were used in the mental math addition. Were the numbers added by 10s like  $2 + 8$ ? Were doubles like  $6 + 6$  added?

~ Try different problems using the numbers in a license plate. For example, if you use the plate number 663M218, ask "Using the numbers on the plate,

can you make 5?"

~ 5 using two numbers? "Yes,  $3 + 2 = 5$ "

~ 5 using three numbers? "Yes,  $(3 + 2) - 1 = 5$ "

~ 5 using four numbers? "Yes,  $(6 + 3 + 1) \div 2 = 5$ "

~ 5 using five numbers? "Yes,  $(6 + 6 + 3) - (8 + 2) = 5$ "

~ 5 using six numbers? "Yes,  $(6 + 6) + (3 - 1) - (8 + 2) = 5$ "

Try using a calculator for these activities. See if you can solve these problems faster using the calculator.

Total It 2.2. Computation and Estimation B. Solve single- and double-digit addition and subtraction problems with regrouping in vertical form.

### EASE ON DOWN THE ROAD

What to do:

~ A gallon of gas costs \$1.24 a gallon. What does it cost for 5 gallons? 10 gallons? 15 gallons? What is an easy way to figure this out? How can you estimate the cost by rounding the cost per gallon?

~ The speed limit is 55 miles per hour. How far will you go in 1 hour? Two hours? Three hours? How long will it take to go 500 miles? Use a calculator to check your answers.

An important algebra concept is finding relationships between two quantities such as miles per hour or cost per gallon.

Ease on Down the Road 2.2. Computation and Estimation B. Solve single- and double-digit addition and subtraction problems with regrouping in vertical form.

### GUESS IF YOU CAN

When children practice asking questions about numbers, they can develop an understanding of the characteristics and meanings of numbers.

What you'll need:

~ Questions about numbers

What to do:

~ Let your child think of a number between a stated range of numbers while you try to guess the number by asking questions. Here is a sample conversation:

Child: I am thinking of a number between 1 and 100.

Parent: Is it more than 50?

Child: No.

Parent: Is it an even number?

Child: No.

Parent: Is it more than 20 but less than 40?

Child: Yes.

Parent: Can you divide this number up into 3 equal parts?

And so on...

~ After you guessed your child's number, let your child guess a number from you by asking similar questions.

The questions asked demonstrate many different levels of math. They can serve as learning tools for explaining concepts. For example, you can take the opportunity to explain what an even number is if your child does not know.

Guess If You Can 2.2. Computation and Estimation. E. Use estimation skills to arrive at conclusions.

#### GET READY

What you'll need:

~ Grocery store coupons and paper

What to do:

~ Involve the family in making a shopping list. Mark checks or tallies next to each item to indicate the number needed. This helps children learn to collect data.

~ Involve the children in predicting how much milk or juice will be needed for a week. You might decide to estimate by cups, explaining that 4 cups are equal to a quart and 4 quarts are equal to a gallon. Also, try estimating by liters. How does a liter compare to a gallon?

~ Choose coupons that match the items on the grocery list. Discuss how much money will be saved on various items by using coupons.

~ Preparing a shopping list from advertised prices can help children with mental math and estimation.

Get Ready 2.3. Measurement and Estimation. E. Determine the appropriate unit of measure.

#### CARD SUPPORT

Have your children sharpen their math skills even more.

What you'll need:

~ Deck of cards

~ Paper

~ Pencil

What to do:

~ How many numbers can we make? Give each player a piece of paper and a pencil. Using the cards from 1 (ace) to 9, deal 4 cards out with the numbers showing. Use all four cards and a choice of any combination of addition, subtraction, multiplication and division. Have each player see how many different answers a person can get in 5 minutes. Players get one point for each answer. For example, suppose the cards drawn are 4, 8, 9, and 2.

What numbers can be made? Here are some possibilities:

$$4 + 9 + 8 + 2 = 23$$

$$4 + 9 - (8 + 2) = 3$$

$$(8 - 4) \cdot (9 - 2) = 28$$

$$(9 - 8) \cdot (4 - 2) = 2$$

~ Make the most of it. This game is played with cards from 1 (ace) to 9. Each player alternates drawing one card at a time, trying to create the largest 5-digit number possible. As the cards are drawn, each player puts the cards down in their "place" (ten thousands, thousands, hundred, tens, ones) with the numbers showing. One round goes until each player has 6 cards. At that point, each player chooses one card to throw out to make the largest 5-digit number possible.

~ Fraction fun. This game is played with cards 1 (ace) to 10, and 2 players. Each player receives one-half of the cards. Players turn over 2 cards each at the same time. Each player tried to make the largest fraction by putting the 2 cards together. The players compare their fractions to see whose is larger. For example, if you are given a 3 and a 5, the fraction  $\frac{3}{5}$  could be made; if the other person is given a 2 and an 8, the fraction could be  $\frac{2}{8}$ . Which is larger? The larger fraction takes all cards and play continues until one player has all the cards.

Card Support 2.2. Computation and Estimation E. Determine through estimations the reasonableness of answers to problems involving addition, subtraction, multiplication and division of whole numbers.

## PROBLEM SOLVERS

These games involve problem solving, computation, understanding number values and chance. They help children develop different ways to see and work with numbers by using them in different combinations to achieve a goal.

What you'll need:

- ~ Deck of cards
- ~ Paper
- ~ Pencil

What to do:

### Super Sums

- ~ Each player writes the numbers 1 - 12 on a piece of paper. The object of the game is to be the first to cross off all the numbers on the list.
- ~ Use only the cards ace (one) through 6 in every suit. Each player picks two cards and adds up the numbers on them. The player can choose to mark off the numbers on the list by using the total value, or crossing off two or three numbers that make that value. For example, if the player picks a 5 and a 6, the player can cross out 11, or 5 and 6, or 7 and 4, or 8 and 3, or 9 and 2, or 10 and 1, or 1, 2 and 8.

Make 100:

- ~ Remove all the cards from the deck except ace through 6. Each player

draws 8 cards from the deck.

~ Each player decides whether to use a card in the tens place or the ones place so that the numbers add up to a sum as close to 100 as possible without going over. For example, if a player draws two aces (ones), a 2, a 5, two 3s, a 4, and a 6, the player can use the numbers this way: 30, 40, 10, 5, 6, 1, 3, 2. They add up to 97.

Problem Solvers 2.2. Computation and Estimation E. Determine through estimations the reasonableness of answers to problems involving addition, subtraction, multiplication and division of whole numbers.

### LAUNDRY MATH

What to do:

- ~ Sharpen skills by doing a necessary household job.
- ~ Ask your youngster to sort laundry-before or after washing.
- ~ Talk about the number and categories of items. Ask: How many socks? How many sheets? And you may find a lost sock as well.

Laundry Math 2.1. Numbers, Number Systems and Number Relationships. A. Use expanded notation to represent whole numbers or decimals.

### NAME THAT COIN!

Children love to look at coins but sometimes can't identify them or determine their value. This guessing game helps young children learn to recognize coins, and develop problem-solving and higher level thinking skills.

What you'll need:

- ~ Penny
- ~ Nickel
- ~ Dime
- ~ Quarter

What to do:

- ~ Look at the coins and talk about what color they are, the pictures on them and what they are worth.
- ~ Put a penny, nickel and dime on the floor or table. Tell your child that you're thinking of a coin. Give hints to help the child figure out what coin you're thinking of. For example, "My coin has a man on one side and a building on the other."
- ~ Let your child think about what you've said while looking at the coins. Ask, "Can you make a guess?"
- ~ If you need to, add another clue: "My coin is silver." Keep giving clues until your child guesses the coin.
- ~ Add the quarter to the coins and continue the game.
- ~ Have your child give you clues for you to guess the coin.

Name the Coin! 2.1. Numbers, Number Systems and Number Relationships.  
E. Count, compare and make a change using a collection of coins and one-dollar bills.

### FAMILY PORTRAIT

Have your child get to know members of your family by collecting information and picturing it on a graph. Graphs help people of all ages understand information at a glance.

What you'll need:

- ~ Paper
- ~ Pencil
- ~ Crayons

What to do:

- ~ Choose an inherited family characteristic, like hair color.
- ~ Count how many people in the family have the different hair colors.
- ~ Make a graph. For example, if 5 people have brown hair, draw 5 heads side by side to show these people. Do the same for the other hair colors.
- ~ By looking at the lengths of the lines of heads, your child can quickly see which hair color is the most common.

Family Portrait 2.1. Numbers, Number Systems and Number Relationships.  
A. Use expanded notation to represent whole numbers or decimals.

### MONEY MATCH

This activity helps children count change. Lots of repetition will make it even more effective.

What you'll need:

- ~ A die to roll
- ~ 10 of each coin (penny, nickel, dime)
- ~ 6 quarters

What to do:

- ~ For young players (5- and 6-year-olds), use only 2 different coins (pennies and nickels or nickels and dimes). Older children can use all coins.
- ~ Explain that the object of the game is to be the first player to earn a set amount (10 or 20 cents is a good amount).
- ~ The first player rolls the die and gets the number of pennies shown on the die.
- ~ Players take turns rolling the die to collect additional coins.
- ~ As each player accumulates 5 pennies or more, the 5 pennies are traded for a nickel.
- ~ The first player to reach the set amount wins.
- ~ Add the quarter to the game when the children are ready.

Counting money, which involves counting by 1s, 5s, 10s, and 25s, is a

challenging skill and usually does not come easily to children until about the third grade.

Money Match 2.1. Numbers, Number Systems, and Number Relationships. E. Count, compare and make change using a collection of coins and one-dollar bills.

#### WEIGH ME

What to do:

- ~ Teach estimating skills
- ~ Ask your children to guess the weight of several household objects—a wastebasket, a coat, a full glass of water.
- ~ The show children how to use a scale to weigh the objects.
- ~ Next, have them estimate their own weight, as well as that of other family members, and use the scale to check their guesses.

Weigh Me 2.2. Computation and Estimation. E. Determine through estimations the reasonableness of answers to problems involving addition, subtraction, multiplication and division of whole numbers.

#### PICTURE PUZZLE

Using symbols to stand for numbers can help make math fun and easier for your children to understand.

What you'll need:

- ~ Coin
- ~ 2 decks of cards
- ~ Scratch paper to keep score

What to do:

- ~ Flip a coin to tell if the winner of this game will be the person with "more" (a greater value card) or "less" (a smaller value card).
- ~ Remove all face cards (jacks, queens, and kings) and divide the remaining cards in the stack between the two players.
- ~ Place the cards face down. Each player turns over one card and compares: Is mine more or less? How many more? How many less?

This activity, for young children, encourages number sense and helps them learn about the relationships of numbers (more or less) and about adding and subtracting. By counting the shapes on the cards and looking at the printed numbers on the card, they can learn to relate the number of objects to the numeral.

Picture Puzzle 2.1. Numbers, Number Systems and Number Relationships. E. Count, compare and make change using a collection of coins and one-dollar bills.

## A TRIP TO THE SUPERMARKET

What to do:

- ~ Plan ahead with the 3 R's.
- ~ Ask your child to choose a dish to prepare for a meal—a pudding, a salad, a sandwich.
- ~ Have your child check to see what supplies are on hand and then make a shopping list.
- ~ At the supermarket, let your child select the food on the list.
- ~ First, your child decides which items are the best buys and makes selections.
- ~ Also have your child write the price of each item on the list and if possible figure the total, checking the prices against the sales receipt.

A Trip to the Supermarket 2.2. Computation and Estimation. G. Apply estimation strategies to a variety of problems including time and money.

## LOOK IT UP

These activities help children understand how items can be organized and grouped in logical ways. Understanding that there is a logical order to the way things are arranged in the newspaper, and in the book of solids, helps show that math skills can be used in organizing written material. Comparing information, such as sale prices at stores, also helps children see logical relationships that can be applied to writing.

What you'll need:

- ~ Newspaper
- ~ Paper
- ~ Scissors
- ~ Glue

What to do:

### SECTION SELECTION

- ~ Show your child that the paper is divided into different sections, and explain that each section serves a purpose. Show that each section is lettered, and how the pages are numbered.

### AD ADVENTURE

- ~ Provide your child with grocery store ads from the newspaper. See how many items are listed and the prices. Compare prices at different stores. Ask which store has the best bargains, and why. Talk about the difference in prices between items bought at regular price, items on sale and items bought with coupons. What happens when an item is bought on sale and with a coupon?

### SOLID SEARCH

- ~ Look at the store ads or coupons for pictures of all the cylinders, boxes or cubes you can find. What are their different uses? Paste the pictures on paper and make a book of "geometric solids." Have one page for each solid.

Look it Up 2.1. Numbers, Number Systems, and Number Relationships. C. Represent equivalent forms of the same number through the use of concrete objects, drawings, word names and symbols.

### IT'S IN THE BAG

What you'll need:

~ After getting home from grocery shopping, have your child guess how many objects there are in a bag. Ask: Is it full? Could it hold more? Could it tear if you put more in it? Are there more things in another bag of the same size? Why do some bags hold more or less than others?

~ Put several 1 pound items in a bag. Let your child pick it up. Estimate the weight and then count the items. Was your estimate close or not?

~ Estimate the weight of the bag of groceries. Does it weigh 5 pounds, 10 pounds, or more? How can you check your estimate? Now compare one bag to another. Which is lighter or heavier? Why?

Explore ways to estimate volume and weight by looking in the bag and feeling how much it weighs. Compare it to a known weight (such as a 5 pound bag of sugar).

It's In the Bag 2.3. Measurement and Estimation. A. Compare measurable characteristics of different objects on the same dimensions (e.g., time, temperature, area, length, weight, capacity, perimeter).

### MONEY'S WORTH

When children use coins to play games, it may help them use coins in real life.

What you'll need:

~ Coins

~ Coupons

What to do:

~ Coin clues. Ask your child to gather some change in his or her hand without showing what it is. Start with amounts of 25 cents or less. Ask your child to tell you how much money and how many coins there are. Guess which coins are being held. For example, "I have 17 cents and 5 coins. What coins do I have?" (3 nickels, and 2 pennies).

~ Clip and save. Cut out coupons and tell how much money is saved with coins. For example, if you save 20 cents on detergent, say 2 dimes. Ask your child what could be purchased using the savings from the coupon. A pack of gum? A pencil? How much money could be saved with 3, 4 or 5 coupons? How could that money be counted out in coins and bills? What could be purchased with that savings? A pack of school paper? A magazine? How much money could be saved with coupons for a week's worth of groceries? How would that money be counted out? What could be purchased with that savings? A book? A movie ticket?

Counting money involves thinking in patterns or groups of amounts: 1s, 5s, 10s, 25s. Start with these activities by having your child first separate the coins or coupons by types: all the pennies together, all the nickels, all the dimes, all the quarters; the coupons for cereal, the coupons for cake and brownie mixes, the coupons for soap.

Money's Worth 2.2. Computation and Estimation. I. Select a method for computation and explain why it is appropriate.

#### ON THE MOVE

What to do:

- ~ Sharpen math skills on trips.
- ~ Use even short trips around town.
- ~ For example, at the gas station, ask your child how much gas you needed and the cost per gallon.
- ~ On the highway, ask your children to read the signs and check the different speed limits.
- ~ Then ask them to watch the speedometer readings and notice how fast or slow the car is going.
- ~ Have your children estimate distances between cities and check the estimates on a road map.

On the Move 2.2. Computation and Estimation. G. Apply estimation strategies to a variety of problems including time and money.

The Twelve Days of Christmas

Created by Judy Brown, 1992

Adapted from The Twelve Days of Christmas

Used by permission of Judy Brown

Materials:

- ~ Student Worksheet
- ~ Price Data
- ~ Calculators

Object of the lesson: Find the total cost of the items in the song, "The 12 Days of Christmas."

Content/Procedure: This project is designed to be used as a warm-up activity during the 12 days preceding Christmas.

- ~ On the First day give the students a copy of the student worksheet. Post the price of the first gift.
- ~ Students should understand that they will need to purchase a partridge in

a pear tree for each of the 12 days. On the chart students will enter 12 for the number of gifts needed, the price of one gift item posted by the teacher, the cost of this gift (12 x price) and the total to date.

~ On the second day 2 turtledoves are given. This gift is given for 11 days. The price of one gift (a pair of turtledoves is posted by the teacher. Students calculate the cost of the gift (11x price, because turtledoves are priced in pairs). The total to date will be the sum of the cost for days 1 and 2.

The Twelve Days of Christmas 2.8. Algebra and Functions A. Recognize, describe, extend, create and replicate a variety of patterns including attribute, activity, number and geometric patterns.

### The Twelve Days of Christmas Student Worksheet

The prices have risen this year (1997) in PNC Bank's annual Christmas Price Index. Use the daily information given below to determine the total cost of the gifts given in the song.

Day	New Present	Days given	Number of gifts given	Price of one gift item	Cost of this gift	Total to date of gifts
-----	-------------	------------	-----------------------	------------------------	-------------------	------------------------

1	A partridge	in a pear tree				
---	-------------	----------------	--	--	--	--

2	2 turtledoves					
---	---------------	--	--	--	--	--

3	3 French hens					
---	---------------	--	--	--	--	--

4	4 calling birds					
---	-----------------	--	--	--	--	--

5	5 gold rings					
---	--------------	--	--	--	--	--

6	6 geese a laying					
---	------------------	--	--	--	--	--

7	7 swans a swimming					
---	--------------------	--	--	--	--	--

8	8 maids a milking					
---	-------------------	--	--	--	--	--

9	9 ladies dancing					
---	------------------	--	--	--	--	--

10	10 lords a leaping					
----	--------------------	--	--	--	--	--

11	11 pipers piping					
----	------------------	--	--	--	--	--

12	12 drummers drumming					
----	----------------------	--	--	--	--	--

Total gifts given.....

## SQUASH THAT BOX

Grades 4 - 5

Ever notice what happens when you flatten cereal boxes, tin cans, or other 3-dimensional shapes for recycling? Or do you ever wonder how they design and make all those interesting containers you find in the department store? Mathematicians call the flat, unfolded designs of 3-dimensional shapes "nets."

What you'll need:

- ~ Small cardboard boxes
- ~ Aluminum cans
- ~ Cardboard tubes from toilet paper or paper towels.

What to do:

- ~ Explain to your child that when we recycle materials, we need to flatten them. Ask him or her why (to save space). Ask your child to imagine what shapes will be created when you flatten the boxes or cans. Some people crush cans, which is not the same as flattening. When you take apart a cylinder, you have two circles for the ends and the flat cylinder makes a rectangle. Cut a cardboard tube lengthwise. What shape do you see (a rectangle)? What will a cereal box look like if you carefully unfold it and cut along the edges?
- ~ Unfold a cardboard box, without showing your child the original box. Ask your child to imagine what the original box looked like. What shape will it be when it is put back together? How will the ends look?
- ~ Have your child trace all the faces of a box or other 3-dimensional shapes by laying every side and top and bottom on the paper to be traced. Ask the child the names of the drawn 2-dimensional shapes.
- ~ Have your child study a box. Then see if your child can draw a net (the unfolded version) of the box. Unfold the box to see how closely the drawn net corresponds to the actual net. What would the net of a pyramid look like? What would the net of a cube look like?

Recognizing 2-dimensional shapes in 3-dimensional objects and visualizing shapes are essential skills in fields as varied as architecture, manufacturing, medicine, and design.

Squash That Box 2.3. Measurement and Estimation. B. Select and use standard tools to measure the size of figures with specified accuracy, including length, width, perimeter and area.

## SIMPLY SYMMETRICAL

What you'll need:

- ~ Paper
- ~ Pencil

- ~ Marker or crayon
- ~ Magazine pictures
- ~ Scissors
- ~ Glue

What to do:

- ~ Explore your house for symmetrical designs. See how many your child can find. Look at wallpaper, floor tiles, pictures, bedspread, and appliances.
  - ~ Cut out a magazine picture that is symmetrical. Cut it along the line of symmetry. Paste one half of the picture on the paper. Have your child draw the missing half.
  - ~ Write your child's name in big block letters, then write your name. Which name has more letters with lines of symmetry? How many letters have one line of symmetry? How many of each letter have two? (a B has one line, an H has two). Does anyone have a name with all symmetrical letters? (BOB is one.) Can any letter be turned upside down and still look the same? (Yes, H, I, O, S and X are symmetrical around a center point.) Go through the alphabet, making a list of the letters that look the same on both sides and those that look different.
  - ~ Fold a sheet of paper in half lengthwise. Have your child draw half of a circle, heart, or butterfly from the top to bottom along the fold on each side of the paper. Help you child cut out the shapes that were drawn. Unfold the paper to see the symmetrical figure. Have your child color and glue the full figure on another sheet of paper to display the design.
- A shape can be symmetrical when two parts of it are exactly alike. This exercise helps young children develop an understanding of symmetry and a sense of geometric patterns.

Simply Symmetrical 2.3. Measurement and Estimation. B. Select and use standard tools to measure the size of figures with specified accuracy, including length, width, perimeter and area.

## GET INTO SHAPES

What to do:

- ~ Show your child the pictures of shapes (cone, cylinder, square boxes, and rectangular prism) before going to the store. This will help your child identify them when you get to the store.
- ~ At the store, ask your child questions to generate interest in the shapes. Which items are solid? Which are flat? Which shapes have flat sides? Which have circles for faces? Which have rectangles? Do any have points at the top?
- ~ Point out shapes and talk about their qualities and their use in daily life. Look to see what shapes stack easily. Why do they? Try to find some cones. How many can you find? Look for stacks that look like a pyramid. Determine which solids take up a lot of space and which ones stack well. Discuss why

space is important to the grocer and why the grocer cares about what stacks well. (More space allows for more products to be stored).

Recognizing the different shapes that food is packaged in, such as square boxes, rectangular boxes, cones and cylinders, will help children connect math and volume principles to the real world.

Get Into Shapes 2.9. Geometry A. Name and label geometric shapes in two and three dimensions (e.g., circle/sphere, square/cube, triangle/pyramid, rectangle/prism).

## LIVING WITHIN OUR MEANS

What to do:

- ~ Teach children who have allowances or regular spending money how to budget.
- ~ Ask them to make a two-column list of expenses and income.
- ~ Under expenses, they list what they expect to spend for movies, bus tokens, lunches, etc.
- ~ Then, have your youngsters add all the expenses and subtract the total from the income.
- ~ Ask them to think of ways to reduce their spending.
- ~ If their income is more than their expenses, talk about a savings plan.

Living Within Our Means 2.4. Mathematical Reasoning and Connections B. Use models, number facts, properties and relationships to check and verify predictions and explain reasoning.

## WEIGHING IN

What you'll need:

- ~ A grocery scale or your scale at home

What to do:

- ~ Help your child examine the scale in the grocery store or the one you have at home. Explain that pounds are divided into smaller parts called ounces and 16 ounces equal a pound.
- ~ Gather the produce you are purchasing, and estimate the weight of each item before weighing it. If you need 1 pound of grapes, ask your child to place the first bunch of grapes on the weighing scale, and then estimate how many more or fewer grapes are needed to make exactly 1 pound.
- ~ Let your child hold an item in each hand and guess which item weighs more. Then use the scale to check.
- ~ Ask questions to encourage thinking about measurement and estimation. You might want to ask your child: How much do you think 6 apples will weigh? More than a pound, less than a pound, or equal to a pound? How much do the apples really weigh? Do they weigh more or less than you estimated? Will 6 potatoes weigh more or less than the apples? How much

do potatoes cost per pound? If they cost 10 cents per pound, what is the total cost?

~ Try weighing items using the metric system. How many grams does an apple weigh? How many kilograms does a sack of potatoes weigh? How does a kilogram compare to a pound?

~ Let your child experiment with the store scale by weighing different products.

There are many opportunities to increase estimation and measurement skills by weighing objects in the produce section of the grocery store.

Weighing In 2.3. Measurement and Estimation E. Determine the appropriate unit of measure.

### CHECK IT OUT

What you'll need:

~ Money

What to do:

~ Have your child estimate the total price of items in a shopping cart. An easy way to estimate totals is to assign an average price to each item. If you have 10 items and the average price for each item is \$2, the total price estimate would be about \$20.

~ Using the estimated total, ask your child: If I have 10 one dollar bills, how many ones will I have to give the clerk? If I have a 20 dollar bill, how much change should I receive? If I get coins back, what coins will I get?

~ At the checkout counter, what is the actual cost? How does this compare to your estimate? When you pay for the items, will you get change back?

~ Count the change with your child to make sure the change is correct.

~ Help your child use mental math by estimating cost. Then have your child participate in the checkout process where the total is added up, money is exchanged, and change is returned.

Check It Out 2.2. Computation and Estimation A. Create and solve word problems involving addition, subtraction, multiplication and division of whole numbers.

### PUT IT AWAY

What you'll need:

~ Paper

~ Pencil

~ Ruler

~ Computer

What to do:

~ After getting home from grocery shopping, find one characteristic that is the same for some of the products. For example, some are boxes and some

are cans.

- ~ Put together all the items that have the same characteristic.
- ~ Find another way to group these items.
- ~ Continue sorting, finding as many different ways to group the items as you can.
- ~ Play "Guess My Rule." In this game, you sort the items and ask your child to guess your rule for sorting them. Then, reverse roles and let your child sort the items so that you can guess their rule.
- ~ Using paper, pencil, ruler and computer, make a chart of how many items are in each category.

Putting away groceries helps children develop classifying and reasoning skills and the ability to examine data or information.

Put it Away 2.3. Measurement and Estimation A. Develop formulas and procedures for determining measurements (e.g., area, volume, distance).

#### IN THE NEWS

Young children love to look at the newspaper. It is fun for them to realize that there are things for them to see and do with the paper.

What you'll need:

- ~ Newspaper
- ~ Glue
- ~ Paper
- ~ Scissors
- ~ Pencil or crayon

What to do:

- ~ Newspaper numbers. Help your child look for numbers 1 - 100 in the paper. Cut the numbers out and glue them in order onto a large piece of paper. For children who can not count to 100 or recognize numerals that large, only collect up to the number they do know. Have your child say the numbers to you and practice counting. Collect only numbers within a certain range, like the numbers between 20 and 30. Arrange the numbers on a chart, grouping all the numbers with 2s in them, all the numbers with 5s and so on.
- ~ Counting book. Cut out pictures from the newspaper and use them to make a counting book. Page one will have one thing on it, page 2 will have 2 things that are alike, page 3 will have 3 things that are alike and so on. All the things on the pages have to be the same. At the bottom of each page, write the number of items on the page and the word for the item. Have your child dictate a story to you about what is on the page.
- ~ Being able to read and understand the newspaper involves more than just the ability to read the words and understand what they say. It also involves the ability to read and understand numbers.

In the News 2.1. Numbers, Number Systems and Number Relationships C.

Represent equivalent forms of the same number through the use of concrete objects, drawings, word names and symbols.

### HOW MUCH DOES IT COST?

What to do:

- ~ Put mathematics skills to work
- ~ Help your children understand living costs by discussing household expenses with them. For example, make a list of monthly bills-heat, electricity, telephone, mortgage or rent.
- ~ Fold the paper to hide the costs and ask your youngsters to guess the cost of each item.
- ~ Unfold the paper. How do the estimates compare with the actual costs? Were they close?

How Much Does it Cost? 2.2. Computation and Estimation G. Apply estimation strategies to a variety of problems including time and money.

### TARGET TOSS

#### DIRECTIONS

Math Standard: 2.1 (Numbers, Number Systems, and Number Relationships)

Objective: to reinforce understanding of place value

Number of Players: 2 - 4

How to Play: In turn, each player tosses nine small beans/chips onto the "Target Toss" playing area. Any beans/chips that fall outside the target are not played. After counting the beans/chips that land in each circle, the player writes down the number represented by the placement of the nine beans/chips. For example, a toss of two chips in the center, three in the middle, and four in the outer ring would be 432. The player then reads the number correctly aloud. After everyone has had a turn, the numbers are placed on the chalkboard from lowest to highest. The player with the highest number wins that round.

Variation: Have each player write their number in expanded form and word form.

Geo - Shape Game

#### Directions

Math Standard: 2.9. Shapes and their properties, using geometric principles to solve problems.

Objective: identify shapes based on their unique properties

Number of players: 2 - large group

How to play: Each player covers the "FREE" space on his/her card. The caller will randomly name two- and three-dimensional shapes. Players locate each

shape according to the definition and/or characteristics of the shape then cover it with a chip. The first player to fill a row, column or diagonal wins the round.

Variation: Play may continue until the entire card is filled.

Let's practice for Mathematics Standard 2.9 - Name and label geometric shapes in two- and three-dimensions. Mark your free space in the center.

Cover each shape called to fill a row, column, or diagonal in order to win the game. Good Luck!

S H A P E

-

FREE

GEOMETRY BINGO ANSWER KEY

RIGHT

TRIANGLE HEXAGON DECAGON SPHERE RECTANGULAR  
PRISM

SQUARE RHOMBUS

RECTANGULAR QUADRILATERAL RECTANGLE  
QUADRILATERAL QUADRILATERAL RHOMBUS  
QUADRILATERAL QUADRILATERAL  
GEOMETRY BINGO ANSWER KEY

PENTAGON

CIRCLE PYRAMID TRIANGLE CUBE HEXAGON

CYLINDER

CONE RIGHT ANGLE RIGHT ANGLE OCTAGON PENTAGON