

## Chapter 3

# ACTIVITIES

The activities in this chapter are designed to give students direct experience with signs, symbols, and codes. The activities were created and tested by classroom teachers. Many of their experiences with these or similar activities are described in Chapter 4, “Stories.”

Activities 1-3 introduce students to the concepts and fundamental issues related to the purposes and design of signs and symbols. In Activities 2-7,

students apply the concepts to a variety of real-world situations. All of the activities are designed to give students experience with many of the concepts discussed in Chapter 2.

The activities are correlated to standards in Science, Mathematics, English Language Arts, and Social Sciences. The standards are listed by number or letter with each activity; the standards themselves are listed at the end of the chapter.

## OVERVIEW OF SIGNS, SYMBOLS, & CODES ACTIVITIES

Activity	Description	Analysis	Design	Classroom Story about this activity
<b>Beginning/Getting Started</b>				
1.	We See Them Here, There, and Everywhere!	x		Pp. 64-69
2.	New Signs for the Classroom	x	x	Pp. 80-92
3.	Signals for Getting Everyone’s Attention	x	x	Pp. 73-79
<b>Intermediate/Advanced</b>				
4.	Symbols on a Map or Floor Plan	x		Pp. 70-72
5.	Mystery Messages	x	x	Pp. 93-103
6.	Hand Signals for Classroom Use	x	x	Pp. 104-108
7.	Design Your Own Brand!	x	x	Pp. 108-115

# Activity No 1

## We See Them Here, There, and Everywhere

### Grade Level

K-2

### Prerequisite

An understanding of what signs and symbols are

### Overview

In this early childhood activity, students look for signs and symbols in their environment and try to figure out what they mean.

### Concept

Symbols, words, and graphics are all forms of communication.

### Skills

- Observing and recording
- Classifying and sorting

### Standards

- Benchmarks for Science Literacy: 2A, 8D, 12D
- National Science Education Standards: A
- Principles and Standards for School Mathematics: A1
- Standards for the English Language Arts: 3, 12

### Time Needed

Three to five 45-minute periods plus at least two field trips

### Materials

- Camera
- Collection of pictures of signs and symbols, including Worksheet #1 (p. 46)
- Chart paper
- Drawing paper
- Pencils
- Crayons
- Tape or thumb tacks
- Small sheets of paper
- Binder clips and stiff cardboard (for making clipboards)

### Procedure

1. Take the class on a field trip or neighborhood walk to look for signs. Take a camera with you. During the course of a field trip or neighborhood walk, ask the students to look for as many signs as they can find. If they have difficulty, point out some of the more common and familiar signs, such as "Stop," "Walk/Don't Walk," "McDonald's," "No Smoking," etc. Take photos of the signs they notice.

2. Bring the photos to class. Add pictures from magazines and catalogs, as well as Worksheet #1 so that your collection includes:

- signs with graphic symbols but no words
- signs that use words only
- signs that use both words and symbols

Ask the students to describe the signs and discuss how they are different from one another. Help students see that some signs have words, some signs have only pictures or symbols, and some have both words and pictures or symbols.

3. Ask students why a sign with only pictures or symbols might sometimes be better than a sign with words. (For example, you don't have to know how to read to figure out what the symbols mean.) Why are pictures with words sometimes better? (For example, it can be hard to make the meaning clear with only symbols or images.)
4. Divide the students into groups. Distribute copies of Worksheet #1, photos, and other pictures of some signs that use only words and some

that only have pictures. If a sign has words only, read it for the group (if necessary) and then ask group members to try to draw a single picture that says the same thing. For signs that have pictures or symbols only, ask the group members to try to figure out what the sign is saying and why the message is important.

5. Announce that the class is going on a Signs and Symbols Scavenger Hunt in and around the school. Provide each child with a clipboard made from stiff cardboard, a binder clip, and blank pieces of paper. Walk through the school with the homemade clipboards. Ask students to sketch at least one sign that they see along the way, including any words and graphic symbols included in the sign.
6. Back in the classroom, ask students to share their drawings with the class and try to figure out what the sign means. As the group discusses each sign, ask students to explain why the sign is needed.
7. Use students' sign drawings to make a bulletin board display.

### **Strategies/Tips**

Have students make a Signs and Symbols Book using their own drawings and/or pictures from magazines and other sources.

### **Extension**

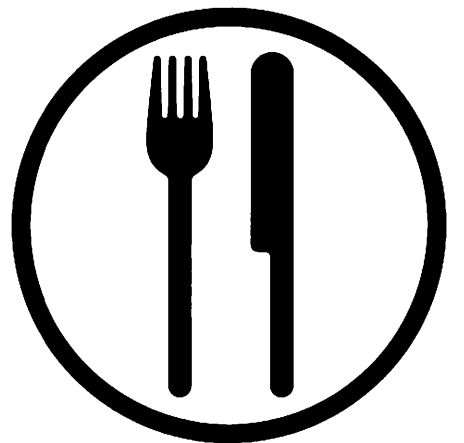
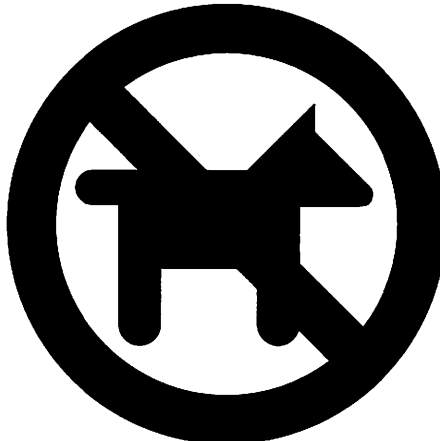
When you have a collection of signs and symbols displayed in the room, use them as the basis for a game of "I Spy." The first student might say, "I spy with my little eye a sign that means 'No Dogs Allowed.'" Can you guess which it is?" Play continues as each child has a turn.

### **For Special Needs Students**

Make puzzles out of common wordless signs and symbols. Glue large pictures of the signs to pieces of cardboard, laminate them, and then cut them up into puzzle pieces. Place these in a learning center. When a student successfully puts a puzzle together, ask him or her to tell you what the symbol means.

Worksheet #1

# We See Them Here, There, and Everywhere



# Activity №2

## New Signs for the Classroom

### Grade Level

1-5

### Prerequisites

- Knowledge of what signs and symbols are
- Ability to use art supplies

### Overview

In this activity, students design and make signs that are needed for their classroom.

### Concept

Words and pictures are both ways to communicate.

### Skills

- Observing and recording
- Identifying problems
- Designing solutions

### Standards

- Benchmarks for Science Literacy: 3B, 7C, 7D, 8D, 12D
- Curriculum Standards for Social Studies: X
- National Science Education Standards: E
- Principles and Standards for School Mathematics: R3
- Standards for the English Language Arts: 1, 3, 4

### Time Needed

- Two 45-minute lessons, then ongoing

### Materials

- Chart paper
- Pencils
- Paper
- Crayons
- Markers
- Oak tag
- Student journals
- Optional: book of signs, sign posters, camera and film

### Procedure

1. With the whole class, brainstorm a list of signs students commonly see in their daily lives. Record students' responses on chart paper.
2. Referring to the list, invite students to discuss the reasons they see so many signs in school, on the street, and in other places such as stores, bus stations, airports, and so on. What purposes do they serve? What would happen if they weren't there?
3. For homework, ask students to search for signs and symbols at home, on their way to and from school, in magazines, etc. In each case, they should try to figure out what the sign is saying and why it is needed in a particular place. Encourage students to draw signs in their journals and make notes on their meanings and uses.
4. Bring the whole class together and ask, "How could signs help us organize and use our classroom? What problems could be solved by having signs in the classroom?" Record students' ideas on chart paper.
5. Divide students into small groups of 3 or 4. Have the groups look at the list of classroom needs and choose one problem for which they will make a sign.
6. Students work together in each group to design a sign to address a classroom need. Individual students within a group can each create a sign to help solve the problem.
7. Bring the class together and have students share their work. They should describe the problem their sign is intended to address and explain how they think their sign does that.

8. For homework, students can make signs either for their homes or outdoors to meet a particular need. Encourage them to use symbols in their signs.

### **Strategies/Tips**

- Photographs of signs and symbols from familiar locations are very helpful in putting together a good assortment of signs and symbols. If at all possible, take a camera on scavenger hunts both inside and outside the school.
- Display photos and other pictures of signs around the room so students can refer to them freely. Invite everyone in class to contribute to the collection. From time to time, examine the classroom collection with the whole class and have students explain what a particular sign says, where it might be used, and why it is needed.
- Give students lots of time to read signs in their environment, to talk about signs in and around the classroom and school, and to discover what signs are used for. Allow this activity to happen naturally. The signs they make should fulfill real needs that the children themselves perceive.

- Model the process of designing a sign for the students by choosing an area of the classroom to make a sign for. Describe what you are doing and why, at each step in the process.

### **For Special Needs Students**

Design a game like “Concentration” where the students match the picture used in a sign with a word that means the same thing.

# Activity №3

## Signals for Getting Everyone's Attention

### Grade Level

K-4

### Prerequisites

None

### Overview

Students devise and test signals for getting the attention of students in class and outdoors.

### Concept

Signals are used to communicate without using words or pictures.

### Skills

- Observing and recording
- Designing solutions to a problem
- Collecting and analyzing data

### Standards

- Benchmarks for Science Literacy: 3B, 7C, 7D, 8D, 12D
- Curriculum Standards for Social Studies: VI, X
- National Science Education Standards: A, E
- Standards for the English Language Arts: 4, 12

### Time Needed

Three or four 45-minute class periods, plus neighborhood or school-grounds walks

### Materials

- Pencils
- Pads
- Markers
- Chart paper
- Binder clips and stiff cardboard (for making clipboards)

### Procedure

1. Ask the class, "What do you see or hear me doing when I want to get your attention in the classroom?" On chart paper, list all the methods they mention. Invite volunteers to demonstrate the actions they are describing. Follow-up with questions such as:
  - Which method of getting your attention works best?
  - Why do you think it works so well?
  - Are there some methods that don't seem to work?
2. Tell the class that they will be taking a walk in the neighborhood or on the school grounds, and that you will need to get their attention at various times during the walk. Ask: "What can I do to get your attention outdoors?" Record their responses on chart paper. Encourage students to discuss the pros and cons of each attention-getting method.

3. Select several of their ideas to try out on the next trip. Ask for two or three volunteers to collect data about each of the methods. Brainstorm possible ways of recording this data—e.g., counting the number of children who pay attention and the number who don't.
4. Just before the next trip, remind the data collectors what their jobs will be. During the trip, try to get the students' attention using each of the methods at least two or three times.
5. Back in class, analyze the data from the trip to see which of the methods seemed most effective. Discuss the pros and cons of each method.

### Strategies/Tips

Review the various proposals before taking the walking trip. Make sure the recorders know how they will collect the data.

### Extension

Have students write a creative story about "The Day the Teacher Couldn't Get the Class's Attention."

# Activity No. 4

## Symbols on a Map or Floor Plan

### Grade Level

3-6

### Prerequisites

Knowledge of the uses of signs and symbols; ability to read maps

### Overview

Students try to interpret the symbols on a park or zoo map, or a museum floor plan

### Concepts

- Symbols are used to represent real places and objects.
- To be effective, a symbol must be understood by its intended audience.

### Skills

- Problem-solving
- Interpreting symbols
- Observing and recording
- Reading a map
- Using a map key

### Standards

- Benchmarks for Science Literacy: 8D, 12D
- National Science Education Standards: A
- Principles and Standards for School Mathematics: G4, R3
- Standards for the English Language Arts: 1, 3, 12

### Time Needed

Three or four class periods, plus a field trip (optional)

### Materials

- Copies of a floor plan of a museum or a park or zoo map that uses symbols to represent familiar places and services, such as telephones, bathrooms, exits, etc.
- Chart paper
- Large drawings of symbols used on the floor plan or map
- Paper
- Pencils
- Binder clips and stiff cardboard (for making clipboards)

### Procedure

1. Cover the key or legend on the floor plan or map. Then let students examine the floor plan or map closely, looking for symbols. As they are studying it, initiate a discussion using questions like these:
  - What is this little picture?
  - What is it used for?
  - How can this help you find your way around the museum (or other place represented by the map)?Encourage students to speculate. Record all answers on chart paper without labeling them as right or wrong.
2. Show students the large drawings of symbols found on the floor plan or map, one at a time. Ask students what each symbol means, encouraging them to give reasons for their interpretations. Again, write their ideas on chart paper.
3. When students have considered all of the symbols, uncover the map key. Go through the symbols again, one at a time, and confirm what they stand for.



4. Next, place the symbols in context again by asking individual students to locate the places, objects, or services represented by the symbols on the map. For example:
- Where in the museum will I find a telephone?
  - Where is the boys' restroom?
  - Where is the elevator?
  - Where is the cafeteria?
5. If possible, visit the museum or other place represented by the floor plan or map and let students find the real things represented by the map symbols.

them. After the trip is over, conduct a sharing session to discuss the relationships between the symbols on the maps and the real things they represent. Pose the following questions:

- Are there symbols on this map that are difficult to understand?
- Are there items in the museum that should be represented by symbols, but are not?
- Can you improve the map by adding new symbols or redesigning ones that are already there?

### Strategies/Tips

If you are able to arrange a class visit to the museum, park, or zoo, prepare for the trip by re-examining the maps or floor plans with the class. Use the maps to plan your route, identifying landmarks you expect to pass on the way. Bring homemade clipboards and the maps or floor plans along on the trip. At the site, show the students how to orient themselves using the maps. Then ask the students to list the items represented by the map symbols as they pass

### Extensions

- Have students make a map of the classroom, cafeteria, or other area in the school and create symbols to represent meaningful parts of that space.
- Invite students to make maps of an imaginary place they've read about in a book, using symbols to stand for landmarks and other important features.

# Activity No 5

## Mystery Messages

### Grade Level

4-6

### Prerequisite

Understanding of the meaning and uses of signs and symbols

### Overview

Students create graphic symbols to express secret messages so others can understand them.

### Concepts

- Signs and symbols are only effective if they can be understood by the audience for which they are intended.
- Good design involves a process of evaluation and, often, redesign.

### Skills

- Brainstorming
- Collaboration
- Observing and collecting data
- Communicating in written, graphic, and spoken form
- Analyzing and evaluating designs
- Modifying designs based on evaluation results

### Standards

- Benchmarks for Science Literacy: 3B, 8D, 9A, 9B, 12D
- National Science Education Standards: E
- Principles and Standards for School Mathematics: R3
- Standards for the English Language Arts: 3, 4, 5, 12

### Time Needed

Five to ten 45-minute class sessions

### Materials

- Index cards
- Drawing paper
- Markers
- Chart paper

### Procedure

1. Have a brainstorming session to review what students know about signs and symbols, starting with questions like these:
  - What is a sign?
  - Why do we have signs?
  - What are some examples of signs intended for different purposes?
  - What is a symbol?

- What purpose does a symbol serve?
  - What's the difference between a sign and a symbol?
  - What do signs and symbols have in common?
  - Record students' responses on chart paper.
2. Pretend that you are from a planet where there are no signs or symbols. The students' job is to write a definition of those terms so you can understand what a sign is, what a symbol is, including how they are similar and how they are different.
  3. Divide students into groups of two or three. Give each group an index card with a "secret message" on it. Examples of messages you might use are:
    - NO WALKMANS ALLOWED
    - DANGER! DEEP HOLE!
    - SUNGLASSES FOR SALE
    - SCHOOL IS CLOSED
    - WET PAINT
    - SCIENCE LAB (or LIBRARY or CAFETERIA) THIS WAYTell them not to show their message to any other groups. They are to create a sign that expresses the message without using words.

4. When students have finished their signs, collect them and assign a number to each one. Have each student number a sheet of paper from 1 up to the total number of signs. Hold up the numbered signs one at a time so students can see them clearly. Ask students to write in words what they think each sign is saying.
5. Then go through the signs again and ask students to read their translations. Then have the sign's creators give the original message. For each sign, discuss what worked well and what didn't work, starting with questions like these:
  - What was confusing about this sign?
  - Which symbols made the sign's meaning clear?
  - What could you have done to make the sign easier to understand?
6. Based on the translations and subsequent discussion, encourage the groups to redesign their signs to make them clearer.

### Strategies/Tips

Analyzing the signs can lead to some general questions, for example:

- What does each color represent on a sign?
- What are some different ways of indicating, "DON'T," "NO," or "WARNING" on a sign?
- When is it necessary to use words as well as pictures?

### Extension

Have students create a graphic instruction manual (using no words) for a simple task, such as:

- How to tie shoelaces, a bow, or a necktie;
- How to make a peanut-butter-and-jelly sandwich;
- How to shuffle a deck of cards;
- How to play cat's cradle;
- How to sew on a button;
- How to make a paper airplane

Then test each manual by seeing if another group of students can perform the task correctly, just by following the instructions.

# Activity №6

## Hand Signals for Classroom Use

### Grade Level

3-6

### Prerequisites

- Understanding the uses of signs and symbols
- Familiarity with classroom routines and rules

### Overview

Students devise hand signals for communicating with the teacher during class.

### Concepts

Signals make it possible to communicate without using words.

### Skills

- Representing ideas non-verbally
- Designing solutions to a problem
- Evaluating possible designs

### Standards

- Benchmarks for Science Literacy: 3B, 7C, 7D, 12D
- Curriculum Standards for Social Studies: VI, X
- National Science Education Standards: A, E
- Principles and Standards for School Mathematics: DA&P1, DA&P3, R3
- Standards for the English Language Arts: 4, 11, 12

### Time Needed

Three to five 45-minute class periods

### Materials

- Chart paper
- Marker
- Paper
- Pencils

### Procedure

1. Start with a discussion about the different uses for hand signals, e.g.:
  - referees' and umpires' signals in soccer, football, basketball, baseball;
  - American Sign Language;
  - what orchestra conductors do;
  - signals used by animal trainers;
  - how police direct traffic; etc.
2. Then, with the whole class, brainstorm a list of reasons students need to communicate with the teacher during class, e.g.:
  - to ask permission to go to the restroom;
  - to get a drink of water;
  - to go to the pencil sharpener;
  - to ask a question;
  - to indicate they're not feeling well; etc.

Discuss the possible benefits of such a signal system, such as reducing noise in the room and being able to communicate from across the room so that interruptions are minimized. Record students' ideas on chart paper.

3. Divide students into pairs or small groups. Assign each group one of the student-teacher communication examples from the brainstorming list. Explain that they are to create a hand signal that students could use for that purpose.
  - Should any of the signals be redesigned to make them more effective? If so, how?
4. Have pairs or groups share the hand signals they came up with. As a class, choose the hand signals that seem to be most effective.
5. Challenge students to figure out a way to record the new signals so they can be taught and learned—for example, tracing hands in a particular position or taking a Polaroid picture.
6. Adopt the use of the hand signals for a week, with students observing and collecting data on how effective they are. After a week, bring the class together to analyze, evaluate, and discuss the results.
  - Were the hand signals understood when they were used?
  - Did they have the intended effect in the classroom? If not, why not?
  - Should a system like this be adopted in the class on a permanent basis? Why or why not?
7. Students can create a “key” for the hand signals that worked best and distribute it to other classes.

### Strategies/Tips

To test their designs, have students establish criteria for evaluating their hand signals. These might include:

- How clear is the message?
- How easy is it to perform the signal?
- How long does it take to learn?
- How effective are the signals at minimizing interruptions? etc.

As other classes adopt the signals, the group that created them can come up with ways of collecting data to see how well the criteria are being met. These tests can serve as a basis for redesigning the signals, if necessary.

# Activity №7

## Design Your Own Brand!

### Grade Level

4-6

### Prerequisite

Understanding of signs and symbols as ways of communicating without words

### Overview

Students analyze advertisements and package designs to determine what symbols they use to convey their messages. Then they create their own ads and/or package designs.

### Concepts

Many nonverbal aspects of design can be used effectively to attract people to a product.

### Skills

- Problem-solving
- Observing and recording
- Collecting and analyzing data
- Designing and testing solutions to a problem

### Standards

- Benchmarks for Science Literacy: 1B, 9B, 12D
- National Science Education Standards: A, E
- Principles and Standards for School Mathematics: DA&P1, DA&P3, R3
- Standards for the English Language Arts: 1, 3, 5, 11, 12

### Time Needed

Eight to twelve 45-minute class periods

### Materials

- An assortment of ads from magazines
- Discarded packages for popular consumer products (cereal, toys, etc.)
- Markers, crayons, colored pencils
- Oaktag
- Drawing paper
- Worksheet #7a
- Worksheet #7b

### Procedure

1. Have a discussion with the whole class about the role of advertising and product packaging design in getting consumers to buy specific products. Use questions like these to get the discussion going:
  - Do you have a favorite commercial or ad?
  - What makes it so appealing?
  - Do you make decisions about what to buy based on how packages are designed?
  - Why do companies advertise their products?
  - What techniques do advertisers use in their ads and packages to get people to notice and want their products?
2. Divide the class into pairs or small groups. Give each group one of the ads or product packages you've collected. Distribute Worksheet #7a (page 58) to each group and ask them to fill out the worksheet with reference to their ad or package.

3. Bring the class together and discuss students' analyses of the ads and packages in terms of the questions on the worksheet. Do other students agree with the analysis of each group? Why or why not?
4. Next, brainstorm a list of the kinds of products children buy most often. Have students think about categories of products rather than brand names. Write the categories on chart paper.
5. Divide the class into pairs or small groups again. Assign each group one of the categories of products from the list they've just made.
6. Explain to students that their job is to create an ad for a brand new product in the category they've been assigned. Part of their job is to give the product a name.
7. Distribute copies of Worksheet #7b (page 59) to each group. Have them use the worksheet as a way to organize their thinking about the product name and how to advertise it.
8. Give students sufficient class and homework time to work on their ad projects. When the ads are ready, set aside class time to look at all the ads and discuss them individually.
9. Have each group present its ad to the class. Their presentations should include answers to the questions on the worksheet and the reasons for their design choices. As the class discusses the ads, guide them to recognize how colors, shapes, and images work together as symbols in advertisements.
10. To follow up, have students watch for new ads and bring in examples that they think are particularly effective or ineffective. Set aside class time on a regular basis to discuss the ads. Create a classroom display of what students consider good and bad advertising and/or package design.

### **Strategies/Tips**

If a fundraising sale is taking place in the school, students could create their own "brands," ads and/or packages for identical products. Then they could test their designs by seeing how well each "brand" sold, and why.

Worksheet #7a

# Analyze This

Name/Group \_\_\_\_\_

Date \_\_\_\_\_

1. What kind of product is this?

---

---

2. Who is the “audience” for this product—that is, who does the manufacturer think will buy it?

---

---

3. What are the main colors used in this ad or package?

---

---

4. Does this ad or package show people? If so, describe them. What do they look like and what are they doing?

---

---

---

5. What images other than people are shown in this ad/package?

---

---

---

6. What is this ad trying to say about the product? How does it get its message across?

---

---

---

7. Do you think this is a good/effective ad or package design for the target audience? Why or why not?

---

---

---

---



**Worksheet #7b**

# Creating Your Own Design

Name/Group \_\_\_\_\_

Date \_\_\_\_\_

1. What kind of product are you creating an ad for?

---

---

2. What is the name of your product?

---

---

3. Who is the target audience for your product?

---

---

4. What colors do you think will appeal to your target audience in an ad for this kind of product?

---

---

5. Will you include people in your ad? If so, describe them. If not, why not?

---

---

6. Will you include other images in your ad? If so, describe them.

---

---

7. What message are you trying to send about your product?

---

---

8. Why do you think your ad will appeal to its audience?

---

---

# Standards References for Signs, Symbols, and Codes Activities

## **Benchmarks for Science Literacy**

*Benchmark 2A:* Patterns can be made by putting different shapes together or by taking them apart.

*Benchmark 3B:* People can use objects and ways of doing things to solve problems; designs that are best in one respect may be inferior in others.

*Benchmark 7C:* Rules and laws can sometimes be changed by getting most of the people they affect to agree to change them.

*Benchmark 7D:* In making decisions, it helps to take time to consider the benefits and drawbacks of alternatives; [these] can be taken into account more effectively if the people who will be affected are involved.

*Benchmark 8D:* Information can be sent and received in many different ways. Each way has advantages and disadvantages. Communication involves coding and decoding information. In any language, both the sender and the receiver have to know the same code.

*Benchmark 12D:* Students should be able to write instructions that others can follow in carrying out a procedure [and] make sketches to aid in explaining procedures or ideas.

## **Curriculum Standards for the Social Sciences**

*Performance Expectation VI:* Social studies programs should include experiences that provide for the study of how people create and change structures of power, authority, and governance.

*Performance Expectation X:* Social studies programs should include experiences that provide for the study of the ideals, principles, and practices of citizenship in a democratic republic.

## **National Science Education Standards**

*Content Standard A:* Students should develop abilities to do scientific inquiry.

*Content Standard E:* Students should develop understanding about science and technology.

## Principles and Standards for School Mathematics

*Algebra Standard (A1):* Understand, patterns, relations, and functions.

*Geometry Standard (G4):* Use visualization, spatial reasoning, and geometric modeling to solve problems.

*Data Analysis and Probability Standard (DA & P 1):* Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.

*Data Analysis and Probability Standard (DA & P 3):* Develop and evaluate inferences and predictions that are based on data.

*Representation Standard (R1):* Use representations to model and interpret physical, social and mathematical phenomena.

## Standards for the English Language Arts

1. Students read a wide variety of print and non-print texts to build an understanding of themselves, and of the cultures of the United States and the world ...
3. Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts ...
4. Students adjust their use of spoken, written, and visual language to communicate effectively with different audiences for a variety of purposes.
5. Students employ a wide range of strategies ... to communicate with different audiences for a variety of purposes.
11. Students participate as knowledgeable, reflective, creative, and critical members of a variety of literacy communities.
12. Students use spoken, written, and visual language to accomplish their own purposes.

