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## THINKING SKILLS AND KEY CONCEPTS

### GOALS

- Improve young children’s vocabulary development, observation skills, listening and speaking skills
- Clarify thinking processes required for content learning (describing, identifying similarities and differences, sequencing, and classifying)
- Improve students’ readiness for kindergarten regarding basic mathematics, social studies and science concepts, and skills

### THINKING SKILLS INSTRUCTION

#### **Describing Shapes**

Naming shapes, finding shapes to match a description, and describing characteristics of a shape

#### **Figural Similarities and Differences**

Matching and combining shapes

#### **Figural Sequences**

Recognizing and showing the next figure in a pattern

#### **Figural Classification**

Forming groups by shape or color

#### **Describing Things**

Matching a picture to a description, describing people or objects shown in pictures

#### **Verbal Similarities and Differences**

Selecting similar family members, occupations, food, and animals, and explaining how they are alike or different

#### **Verbal Classifications**

Explaining characteristics of a group, exceptions, and sorting objects into groups

### CONTENT OBJECTIVES

#### **MATHEMATICS OBJECTIVES**

##### **Properties of polygons**

Naming polygons, observing sides and angles, stating the properties of common polygons

##### **Reading and writing mathematical terms**

Recognizing and using geometry, ordinal, and directional words

##### **Pattern Recognition**

Recognizing sequential patterns

#### **SOCIAL STUDIES CONCEPTS**

##### **Family members**

Age, gender, relationships

##### **Occupations**

Identifying jobs, vehicles workers use, and buildings where they work

#### **SCIENCE CONCEPTS**

##### **Living or Non-Living Things**

Life cycle, reproduction, and food needs

##### **Plants or Animals**

Make or eat food, reproduction, and movement

##### **Animals**

Hatch or live birth, locomotion, size, body covering

##### **Using Senses**

Vision, hearing, taste, touch, and smell

### METHODS TO IMPROVE THINKING AND LEARNING

#### **DIRECT INSTRUCTION**

Prior knowledge, objective, practice, metacognition, and application

#### **DEVELOPMENTAL FORMS**

Concrete (manipulatives and pictures), semi-concrete (student book), abstract (discussion)

#### **COOPERATIVE LEARNING**

Paired problem solving, and think/pair/share

#### **WHOLE SENTENCE RESPONDING**

In thinking skills lessons, students speak in whole sentences.

#### **MENTAL MODELS**

Lessons develop mental models of basic mathematics, social studies, and science concepts.

#### **LANGUAGE INTEGRATION ACTIVITIES**

Developmental tasks including drawing projects and discussing picture books

### PROGRAM EVALUATION

- Student performance on early-learning standards for four year olds
- Student performance on vocabulary assessments

## Page 6: WHICH THING IS BLUE?

### LESSON

#### Stating the Objective:

Teacher Comment: **In this lesson, you will find the blue object in each row.**

#### Conducting the Lesson:

Teacher Comment: **The first row shows three vehicles: a bus, a truck, and a ship. Which vehicle is blue?**

Student Response: The truck is blue.

Teacher Comment: **Circle the picture of the truck.**

Teacher Comment: **The second row shows three signs: a handicapped sign, a stop sign, and a hospital sign. Which sign is blue?**

Student Response: The handicapped sign is blue.

Teacher Comment: **Circle the picture of the handicapped sign.**

Teacher Comment: **The third row shows three vehicles: a bicycle, a train, and a car. Which vehicle is blue?**

Student Response: The bicycle is blue.

Teacher Comment: **Circle the picture of the bicycle.**

#### Thinking About Thinking:

Teacher Comment: **What did you think about to find the right color?**

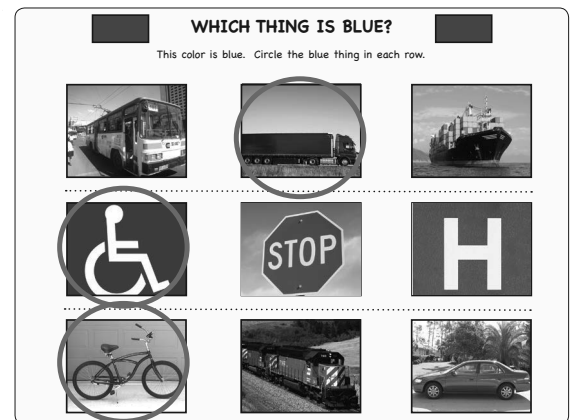
Student Response:

1. I looked at the blue box.
2. I looked for the same color.
3. I named the thing that is the same color.

#### Personal Application:

Teacher Comment: **When do you have to name a color?**

Student Response: I name a color to ask for food, toys, or clothes.



## Page 7: WHICH THING IS PURPLE?

### TEACHING SUGGESTION

- Many young children may not know that cabbages and onions can be purple. Show a purple cabbage or onion, or read a picture book that shows purple vegetables before teaching this lesson.

### LESSON

#### Stating the Objective:

Teacher Comment: **In this lesson, you will find the purple object in each row.**

## CHAPTER FOUR - GROUPING SHAPES (Pages 49-56)

### CURRICULUM APPLICATIONS

Language Arts: Decoding in reading readiness; recognizing sentence types from punctuation marks; forming letters

Mathematics: Recognizing properties of polygons

Science: Grouping natural objects by shape (leaves, fish, shells, etc.)

Social Studies: Identifying road signs from their shape

### Page 50: DESCRIBING A GROUP

#### LESSON

##### Introduction:

Teacher Comment: **We have described shapes by their size and color.**

##### Stating the Objective:

Teacher Comment: **In this lesson, you will match a shape to its group.**

##### Conducting the Lesson:

Teacher Comment: **The first shape is a red square. In which group does it belong?**

Student Response: It belongs in the group of squares.


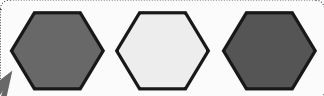



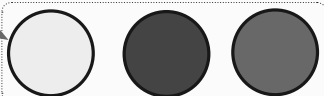
Teacher Comment: **Trace the dotted line from the red square to the group of squares.**

Teacher Comment: **In which group does the yellow circle belong?**

Student Response: The yellow circle belongs in the group of circles.

Teacher Comment: **Draw a line from the yellow circle to the group of circles.**

**DESCRIBING A GROUP**  
Trace the line from the shape to the group in which it belongs. Then draw a line from each shape to the group in which it belongs.

SHAPES	GROUPS
	
	
	

*Note: In the original image, a dotted line connects the red square to the group of squares, and a solid line connects the yellow circle to the group of circles.*

Teacher Comment: **In which group does the blue hexagon belong?**

Student Response: The blue hexagon belongs in the group of hexagons.

Teacher Comment: **Draw a line from the blue hexagon to the group of hexagons.**

##### Thinking About Thinking:

Teacher Comment: **What did you think about when you decided the group that the shape fit?**

Student Response:

1. I looked at the shape of the first block.
2. I looked at the groups to see which was the same.
3. I checked that it did not fit the other groups.

##### Personal Application:

Teacher Comment: **When do you group objects by shape, color, or size?**

Student Response: I group things when I put away forks and spoons or when I put away toys.