

Using Literature and Centers to Teach Early Literacy Skills in Math and Science



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“When children listen to stories and are exposed to a variety of print—either at home or during their early schooling—they usually have greater success in learning to read and write and in developing a wide range of thinking skills.” (Slaughter, 1993, p. 4)

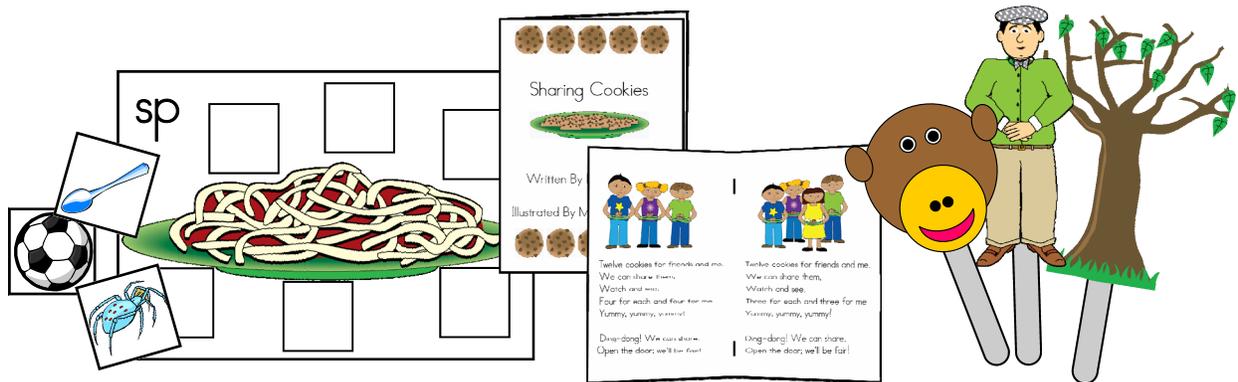
This professional resource has been written to assist teachers in planning quality classroom instruction that will enhance students’ learning.

The units in this manual have been developed around five popular children’s books that are typically read in prekindergarten and kindergarten classrooms. The books were chosen for three key reasons:

- The language used in the stories is repetitive and easy to understand.
- There is a close connection between the illustrations and text.
- The concepts presented in the stories are within most children’s grasp.

Adapted from Harste, J. C., & Burke, C. L. (1993). Foreword. In J. P. Slaughter, *Beyond storybooks: Young children and the shared book experience* (pp. v-vii). Newark, DE: International Reading Association.

The lessons within each unit are designed to provide an effective instructional process that explicitly teaches early skills and concepts in literacy, math, and science. The literacy section of each unit provides lessons to teach print conventions, letter knowledge and word recognition, phonological awareness, comprehension, and writing. Within the math section, lessons are included to teach patterns, numbers and operations, geometry and spatial sense, measurement, classification and data collection. Processes and concepts found in early childhood science curriculums are taught in the science lessons. Most lessons are designed to be taught in small instructional groups and/or centers. Because hands-on instruction is important in young students’ learning, blackline masters of manipulatives for many lessons have been included in the Appendices.



The units in this manual were written based on professional wisdom. The U.S. Department of Education calls professional wisdom, “the judgment that individuals acquire through experience” (Whitehurst, 2002). Region 4 presents this book in the hope that it will support and assist teachers as they work to instruct prekindergarten and kindergarten students.



Introduction

Summary of Story

Minnie will not play with Freddy because she is too busy doing exciting things with spaghetti.

Activating Prior Knowledge

Hold up a picture of a plate of spaghetti and say, "This is a picture of spaghetti. I love eating spaghetti. I remember my mom used to make spaghetti every Wednesday night. When I got home from school the house would smell of the spaghetti sauce. The sauce was so delicious I wanted to eat it right out of the pot. Do any of you have a favorite food? Turn to your neighbor and tell him or her what your favorite food is. Who prepares the food for you? Is there a special time when you get to eat it?"

Before Reading

Show the students the cover of the book. Point to the words in the title while saying, "The title of this book is *More Spaghetti, I Say!* The author is Rita Golden Gelman and the illustrator is Mort Gerberg. Look at the cover of the book and tell me what you think the book is about."

After the discussion say, "While I am reading the book, look carefully at the illustrations. Watch how the expression on the face of Freddy, the monkey in green pants, changes throughout the story. See if you can tell how the monkey is feeling by the expression on his face and the words that he says."

During Reading

Point out the different expressions Freddy makes. Encourage students to mimic his expressions while identifying how he might be feeling.

After Reading

Refer the students to the illustrations in the book. Encourage them to identify Freddy's feelings and determine a reason he might feel that way. Possible responses include the following: sad or disappointed because Minnie won't play with him; happy or excited because Minnie finally finishes eating the bowl of spaghetti; surprised because Minnie says she loves the spaghetti more than Freddy; angry because Minnie keeps eating more and more spaghetti; worried because Minnie starts to look sick; happy because Freddy discovers he likes eating spaghetti too.



Literacy Lesson: Letter Knowledge and Word Recognition

Objective

- Read some high-frequency words

Grouping Strategies

- Whole group
- Small group
- Centers
- Individual

Materials

- Chart paper and markers
- Sentence strips
- Pointer
- Pocket chart
- Wikki Stix[®]

Procedure

1. Before the lesson, write the following passage on both chart paper and sentence strips. Use a different color marker to write each sentence. Help the students commit the passage to memory by reading it together daily:
Mmmmmmm!
Spaghetti is good.
I love it.
I love it.
I love it.
I do.
I need more spaghetti.
I can't play with you.
2. Emphasize the words *I*, *love*, *it*, and *do* by asking students to underline the words using Wikki Stix[®].
3. Cut the words of the sentence apart. Each word will be its own word card. Have students sort the words by the number of letters they have. For example, *is*, *it*, and *do* would be placed together because they are all two-letter words.
4. Have the class reread the passage on the chart sentence by sentence. Help students use the words made from the cut-up sentence strips to recreate each sentence by putting the words in the order they appear on the chart.
5. Place the words *I*, *love*, *it*, and *do* on the word wall to help the students learn to read them accurately. Have students review the words on the word wall daily.
6. Once students understand how to use the materials, place the materials in a center so they can practice the activity independently.



Math Lesson: Patterns

Objective

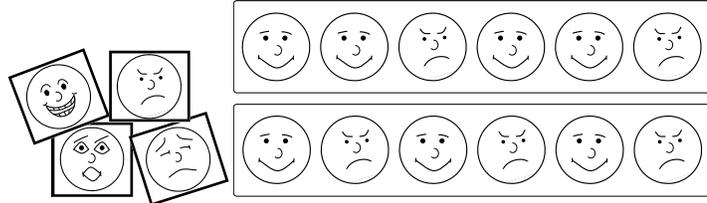
- Recognize, extend, and create patterns

Grouping Strategies

- Small group
- Centers
- Individual

Materials

- Face Pattern Cards and Face Pattern Strips (Appendix 1B)



Procedure

1. Before the lesson, copy, laminate, and cut out the Face Pattern Cards and Face Pattern Strips.
2. Explain to the students that patterns can be made through movement, through words, and through designs. Model an AB pattern using movement by touching your head, then your nose, then your head, and then your nose again. By pausing slightly after touching your nose and before touching your head again, you are demonstrating the pattern repeats as a segment: AB, AB.
3. Encourage the students to imitate the pattern as they recognize it. Have them say *head, nose* as they touch the correct body parts.
4. Complete another AB pattern using movement. Ask the students to identify the pattern. Encourage them to explain their reasoning.
5. Make an AB pattern using emotion words. Say, "Happy, sad," (pause) "happy, sad." Have students use the Pattern Cards to recreate the pattern. Explain to the students that they have created an AB pattern. Instead of saying, "happy, sad, happy, sad," when pointing to the faces, they can say "A, B, A, B."
6. Have students use the pattern cards and pattern strips to extend other patterns and/or create their own. Help them to label the patterns they create.
7. As students are working with the pattern-making materials, ask them questions such as the following:
 - Can you tell me about your pattern?
 - How could you make your pattern using colored inch cubes? Pennies?
 - Can you show me the part of your pattern that keeps repeating over and over again?
 - Can you read this pattern?
 - Can you record your pattern using letters?
8. Use the other Pattern Strips to help students recognize and extend more complicated patterns when they are ready.
9. Once students understand how to use the materials, place the materials in a center so they can practice the activity independently.



Science Lesson: Processes and Concepts

Unit One

More Spaghetti, I Say!

Objectives

- Participate in investigations
- Sort objects
- Create and use data charts

Grouping Strategies

- Small group
- Centers

Materials

- Different types of pasta: wagon wheels, macaroni, and shells
- Small zip-lock bags, one per student
- Sorting Pasta Graph, one per student and teacher
(Appendix 1C)

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9			
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Procedure

1. Before the lesson, make enough copies of the Sorting Pasta Graph for a small instructional group. Then place between 1 and 10 pieces of each type of pasta in zip-lock bags. Each bag should have different amounts of each type of pasta.
2. Show the students the Sorting Pasta Graph and bag of pasta. Tell the students they will use the graph to find out how many pieces of pasta are in the bag.
3. Model how to sort the pasta according to type. Name and describe the pasta as it is being sorted. Then place the pasta appropriately on the graph.
4. Now demonstrate how to refer to the graph to gather information. Do this by saying, "Look at the wagon wheels on the graph." (Show them a wagon wheel to ensure that they look at the right type of pasta.) "How many wagon wheels are on the graph? Can you count them?" (Help the students count the pasta.) "Did you notice the numbers on the side of the graph? By looking at the numbers on the graph, you can find out how many wagon wheels there are without counting." (Model for the students how to use the numbers for this purpose.)
5. Continue the lesson by referring to the graph, and model for students how to answer questions such as the following:
 - How many shells are on the graph? Macaroni? How do you know?
 - Which group of pasta has the most/least? How can you tell without counting the pieces of pasta?
 - Are there any groups of pasta that have the same amount of pieces? How can you tell without counting the pieces of pasta?
 - What does this graph tell you? What would be a good name for this graph? Can you write a name for the graph?
6. As students become more familiar with the use of graphs, place the graphs and the bags of pasta in a center for students to use during center time.



Literacy Center: Letter Knowledge and Word Recognition

Unit One

More Spaghetti, I Say!

Objectives

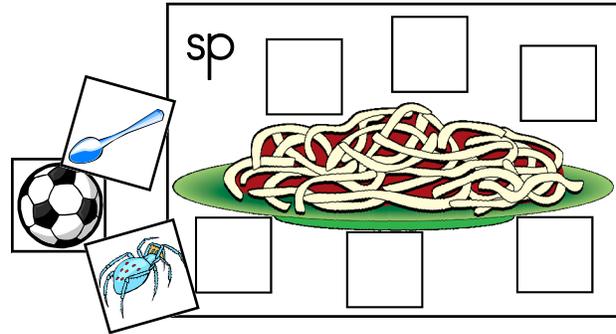
- Identify words that begin with the same sound
- Make some letter/sound matches

Grouping Strategies

- Small group
- Centers
- Individual

Materials

- Beginning Sound Mat and Picture Cards—/sp/ (Appendix 1D)



Procedure

1. Before the lesson, copy and laminate the Beginning Sound Mat and Picture Cards—/sp/. Cut out the 12 Picture Cards. Show the students the picture of spaghetti on the mat. Ask the students, “Can you tell me what this picture is? That is correct. It is a picture of spaghetti. Can you make the sounds that spaghetti begins with? That’s correct. Spaghetti begins with /sp/. What letters make those sounds?”
2. Separate and place the Picture Cards above the mat. Tell the students, “Here are twelve different pictures. Six of the pictures begin with the same sounds as *spaghetti* and six of them do not. We are going to sort the pictures by putting the ones that start the same as *spaghetti* in the boxes on the mat. We will place the pictures that do not start the same as *spaghetti* to the side of the mat. There are six boxes near the plate of *spaghetti* so we will need to find six pictures that start with /sp/.”
3. Point to the picture of the sponge and ask, “Can you tell me what you see in this picture? What is it called? That is correct, it is a picture of a *sponge*. Listen to the beginning sounds of *sponge*: /sp/, /sp/. Does *sponge* start with the same sounds as *spaghetti*? Yes. What should I do with the picture of the *sponge*? That is correct. I should put it in a box on the mat because it starts with /sp/.”
4. Say to the students, “Look at this next picture. Say the name of the picture. Tell your neighbor whether or not this picture has the same beginning sound as *spaghetti*. Then be prepared to tell me whether I should put the picture on the mat or not.”
5. Continue the same procedure with the rest of the pictures.
6. Once students understand how to use the materials, place the materials in a center so they can practice the activity independently.

Adapted from Region 4 Education Service Center. (2003). *Letter knowledge and early word recognition: Prekindergarten*. Houston, TX: Author.



Objectives

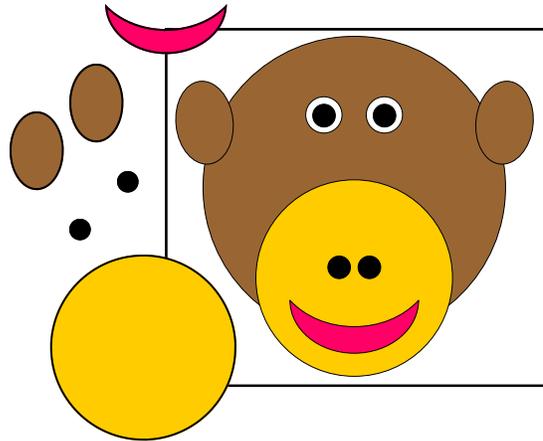
- Recognize and name shapes
- Put puzzles together

Grouping Strategies

- Small group
- Centers
- Individual

Materials

- Monkey Mat and Geometric Shapes, one set per student (Appendix 1F)
- Zip-lock bags



Procedures

1. Before the lesson, copy, laminate, and cut out the Monkey Mat and Geometric Shapes. Make enough copies of the manipulatives to provide a set for each student in a small instructional group. Place each set of the mat and the shapes in its own bag.
2. Show the students the Monkey Mat and Geometric Shapes. Tell the students they are going to use the shapes to make the face of a monkey.
3. Have the students sort the shapes by type. Then ask the students to point to and name each shape.
4. Model for the students how to use the shapes to make the monkey's face. Talk about the process as you complete the face. Say, "First I need to place the large circle in front of me. Then I'll use these small circles to make the eyes." Continue in this way until the face is completed.
5. Encourage the students to use the shapes to make the face of a monkey. Have them refer to the picture on the Monkey Mat for extra support.
6. After the students have made a face of a monkey, ask them questions such as the following:
 - How is the shape of the monkey's head like the shape used for its ear? How is it different?
 - Why can't we call the shape used for the ear a circle?
 - Can you find something in the room that is in the shape of a circle? The shape of an oval?
 - How many circles did you use to make the monkey's face?
 - Can you sort the shapes? Tell me how you sorted them.
 - (Point to the crescent.) Have you seen this shape before? Where have you seen it? How about if I turn the shape? (Turn the crescent to look like a crescent moon.) Have you seen this shape before?
7. Once students understand how to use the materials, place the materials in a center so they can practice the activity independently.