

Algebra/Geometry Institute Summer 2005



Lesson Plan One: Patterns

Faculty Name: Leslie Patten

School: Cypress Park Elementary, Cleveland, Mississippi

Grade Level: 5th

1 Teaching objective(s)

The students will explore, recognize, and model various patterns.

2 Instructional Activities

Tell the students, "Today we will be learning how to explore, recognize, and model patterns." Ask "Can anyone tell me what a pattern is? If so, tell them to give a brief definition and an example." Give time for discussion.

Tell the students "A pattern is a complex of integrated parts functioning as a whole. Patterns are very important to us because they allow us to understand the world around us. Patterns are the key to dealing with our world. We use patterns in everyday life even though it may not seem like we do." Give the students some examples such as: traffic patterns, weather patterns that allows predictions, floors, walls, and even the making of clothes (quilts).

Ask the students "Can you find a pattern in this room?" Discuss.

Tell the students that now we are going to try some examples of patterns at our desks. Put these examples on the overhead and give time for the students to complete.

(5-10 minutes)

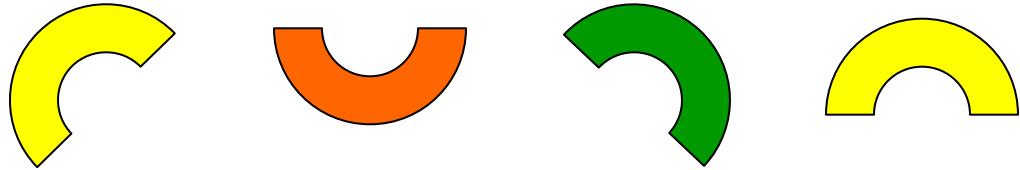
Find the next two answers for each. Answers may vary.

- Angela, Craig, Emily, _____, _____ (possible answers: George, Isabelle)
- 9, 27, 81, _____, _____ (answer: 243, 486)
- a, to, say, four, Reese, _____, _____ (possible answers: anyone, explore)
- 6, 18, 21, 63, 66, 198, _____, _____ (answer: 201, 603)

While students are working at their desks, the teacher will walk around the room observing students work. While waiting for all students to finish, have the students create a pattern for another classmate to complete. After giving time to complete, call on random students to share answers. Discuss as a whole.

(5-10 minutes)

Divide the class into five groups of four. Tell the students “We will now work on an activity called Pasta Patterns.” Pass out the activity sheet (attachment) to each table or group along with baggies of needed materials (pasta). Go over directions as a class. Have students then pour out their bag of pasta and sort by shape. Emphasize there are many ways to create a pattern and they will be using different ones such as shape, position, size, number, and color to create pasta patterns.



Have the students work cooperatively to achieve each pattern. Walk around to make sure students are following directions and using the pasta pieces to model different patterns.

When everyone has finished, discuss the purpose of patterning with the pasta pieces. Let them know that when they model and recognize patterns they are using logic, planning, and organization to solve problems. They use these same skills in math everyday.

(20-25 minutes)

After discussion, pass out “Bean Patterns” activity sheet (attachment). Tell the students to read the directions carefully and completely. This activity is timed. The students only have ten minutes to complete. Turn in all work when the ten minutes is up to be graded.

(10 minutes)

3 Materials and Resources

Overhead

Pasta pieces (four types)

Pasta Pattern activity sheet

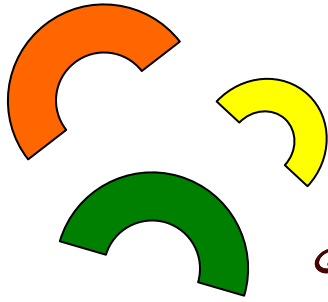
Bean Patterns activity sheet

Textbook: Bassarear, Tom and Houghton Mifflin Company: Mathematics for Elementary School Teachers; Copyright 1997.

Textbook: Hands On, Inc.: Patterns and Functions Kindergarten through Grade Nine; Copyright 1990.

4 Assessment

- As the students are working on their pasta patterns sheet, the teacher will walk around the room and observe the students. The teacher will be looking for: students working together, all students participating, and students modeling and understanding the concept correctly.
- The “Bean Patterns” activity sheet will be taken up and graded for accuracy.
- The concept covered will be on the chapter test.



Name: _____

Pasta Patterns

Activity sheet

Directions:

- Using the pasta given, as a group you will create patterns based on the attributes discussed earlier in class. These are shape, position, size, number, and color. So you should model five different patterns using the pasta.
- Begin by creating a pattern of shape, then a pattern of position, then a pattern of size, then a pattern of number, then a pattern of color.
- For your next step, work together to create some patterns using a combination of attributes. An example might be color and position, or size and pattern.
- After all patterns have been modeled, draw one of your models below and tell what attribute(s) were used.

Name: _____



Bean Patterns

Activity sheet

Directions:

Say you were given three different bags of beans, each bag being a different kind of bean and there were five beans in each bag. Your assignment is to create (model) as many patterns as possible with the amount of beans you were given.

- Assign a symbol for each bean type; example:
A=lima
B=red
C=pinto
so your symbols would be A B and C. You will use these to show your patterns on your paper.
- You will only be given 10 minutes to come up with as many patterns as possible.
- There are two rules that must be followed.
Rule 1: each pattern must use as many of the fifteen beans as possible.
Rule 2: each pattern must repeat itself at least one time within the fifteen beans (pattern must be seen two full times).
- When the ten minutes is up, all papers will be taken up to be checked and graded for pattern accuracy.
- You may complete this assignment on the back of this sheet, or on another sheet which must be stapled to this one when turned in.