

Topics: patterns, data analysis, sorting, critical thinking

Materials List

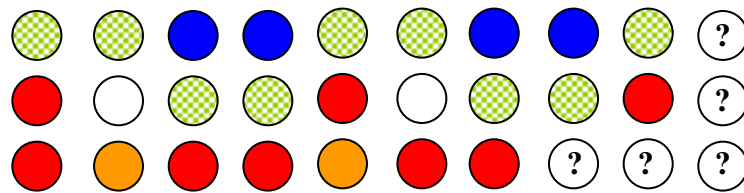
- ✓ 5 ml vials
- ✓ Color-coded end caps (variety of colors)
- ✓ Vial holder (tray)

This activity can be used to teach:

- Color, sorting, and basic patterning for Pre-K
- Classify objects (Common Core Math Standards: Grade K, Measurement and Data, 3)
- Describe shapes (Common Core Math Standards: Grade K, Geometry, 1)

Pattern Lab

Investigating Patterns with Primary Learners



Students will love investigating patterns with these color-coded lab vials! Copy, extend, or create... the more practice the better.

Assembly

1. Color-code the vials by pushing desired end caps into the tops of the lids.
2. Prepare a few possible patterns in advance.

To Do and Notice

1. Show the student(s) a finished colored vial pattern. Begin with a very basic pattern, such as “blue, red, blue, red...” or “A, B, A, B...”
2. Build the pattern together with the children.
3. Depending on the level of the students, either repeat steps 1-3, or challenge students to create patterns by themselves, and then have a classmate copy the pattern.

The Math Behind the Activity

Creating, describing, and extending patterns are part of the “Statistics, Data Analysis, and Probability” strand of the Mathematics Standards for California. Like all skills, development should begin at a very early age. As students’ abilities grow, more difficult patterns should be introduced. Eventually, students will be ready to represent patterns as mathematical equations. Pattern recognition is also important in language development for such skills as decoding, writing conventions (left to right), and seeing one piece of a repeating pattern as a single entity.

Taking it Further

- Depending on abilities, challenge students to create patterns using 3, 4, or even 5 colors.
- Students can build the pattern using vials, and then represent the patterns on paper using words.
- As another variation, provide written or picture patterns and ask students to model the represented pattern using manipulatives (colored vials).
- To develop the skill of seeing the repeating piece of a pattern, instruct students to repeat the pattern “X” number of times (i.e. – Pattern = Red, Red, Blue; repeat this pattern 4 times.)
- More complex patterns can “wrap around” rows. In other words, the tray has 40 holes that could hold 4 short patterns of 10, 2 longer patterns of 20, or 1 very long pattern of 40.

Web Resources (Visit www.raft.net/raft-idea?isid=315 for more resources!)