Smartboard Basics: Attribute Sorts

Summary

Not only will students learn about attributes, sorting and shapes, but this very simple Smartboard lesson can be extended in a surprising number of ways. Sorts can be made open or controlled, teacher led or student created. Those without an interactive white board can easily use magnetic shapes. This lesson also encourages oral language development.

Additional Core Ties

English Language Arts Grade 1

Speaking and Listening Standard 6

Time Frame

5 class periods of 15 minutes each

Group Size

Large Groups

Materials

Interactive whiteboard with shape and sort pages. Chart paper, markers.

Background for Teachers

These lessons require a beginning familiarity with the Smartboard. While sorting has an element of spontaneity, it is better to prepare a list of possible sorts beforehand, especially if teachers use the "what's my sort" or "does it fit my sort?" activities to lead students to more sophisticated sorts.

Student Prior Knowledge

Students need basic shape vocabulary- triangle, rectangle, square, circle and an understanding of what defines these shapes. For example, a triangle has three straight sides, three corners and is closed. The Kindergarten mathematics core introduces these concepts.

Intended Learning Outcomes

Intended learning outcomes include:students will demonstrate a positive learning attitude, students will develop appropriate vocabulary and problem solving skills, students will sort and classify objects, students will share ideas and use mathematical concepts to communicate.

Instructional Procedures

Day 1: Introduce the concepts of differences and similarities, attributes and sorting during a carpet discussion. For example, have some students stand side by side and then chart a list of similarities and differences. It can be as obvious as boys and girls or as subtle as shoe laces, no laces. Most first graders know how to sort so the concept of attributes, sorting by the shared qualities of objects, can easily be introduced. In each of these lessons the teacher can broaden thinking by creating a group and then adding members, asking "what's my sort?" or "does this fit my sort?" Both of these quick extensions will push first graders beyond the obvious sorts to more thoughtful variations. Day 2: begin with the open sort page which only has objects and no divided space. Most students are intrigued by the Smartboard so they can be randomly called upon to participate unless the sort is particularly difficult. The open sort will likely result in sorts by color, size and shape. When students sort, ask

them to explain their reasoning. Students should be encouraged to use more complex "because" sentences. When they respond simply with the name of the shape, ask students to define the shape's attributes: sides, corners, closed. It may seem simplistic, but first graders resist the idea that a shape is defined by its attributes, not its position on the page, that is a triangle is a triangle, no matter which way it is turned, as long as it has the required attributes. Day 3-5: the remaining sorts grow progressively more difficult, beginning with the obvious four part sort to the more difficult two way sort. The two way sort may include size, straight or curved, corners or no corners. Some students may create "not sorts" which take more thought. For example, triangles, not triangles. If students only chose obvious sorts extend their thinking by playing "what's my sort?" or "does this fit my sort?"

Strategies for Diverse Learners

Even simple sorting can become challenging. Teachers should know their students well enough to call on them to sort rather than asking for volunteers. Struggling students can do basic sorts and the Smartboard adds to their courage to be in front of the class. Table teams or student pairs can also sort. The actual manipulation, moving the shapes, seems to reinforce sorting and attributes. Again all students should be asked to explain their reasoning.

Extensions

These lessons can easily be extended to include more complex shapes.There are also numerous extensions for sorting organic objects. Leaves, in particular, can be sorted by a wide variety of attributes. This type of activity works well in small groups. Once sorted, a team spokesperson can present the team's rationale and students can use recording sheets to draw their sort. Then have teams sort the same objects in a different way. This type of sorting can lead to introducing the concept of scientific classification and organization.

Assessment Plan

While most assessment is informal observation and discussion, a more formal assessment can be made by having students sort and glue shapes to paper or color certain shapes in a group. But the quickest way to assess an understanding of the attributes is to have the students draw the shapes independently.

Authors

victoria piper