

Paper Chains

Strand: Number and Number Sense

Topic: Identifying ordinal positions first through tenth, using ordered sets of 10 concrete objects

Primary SOL: 1.3 The student, given an ordered set of ten objects and/or pictures, will indicate the ordinal position of each object, first through tenth.

Related SOL: 1.2b, 1.2c, 1.9

Materials

- *Henry the Fourth*, by Stuart J. Murphy
- 1-inch strips of construction paper (pre-cut and in ten different colors)
- Glue

Vocabulary

first, second, third, fourth, fifth, sixth, seventh, eighth, ninth, tenth, bottom, last, left, order, ordinal, position, right, top

Student/Teacher Actions: What should students be doing? What should teachers be doing?

1. If available, read the book *Henry the Fourth* by Stuart J. Murphy.
2. Discuss the story and the ordinal number words in the story. Ask: "*How many dogs come before Henry? How do you know? If there were five dogs, what would be the last dog's position? If there were three more dogs what would be the position of the last dog in the show?*"
3. Give each student 10 one-inch strips of different colored construction paper.
4. Have each student make a paper chain with 10 paper strips in the same color order. (Before the lesson, you should predetermine the order of the different colors for the paper chain.) Demonstrate how to glue the two ends of the first paper strip together in a loop. Have students get the second color they are supposed to use and put it through the first loop and then glue the two ends together. The loops should be intertwined to form a chain. Continue this process with students until their chain has 10 paper loops. Monitor students carefully so that the chains all use the same color order.
5. When the chain is complete, ask students to hold the chain in front of them with the blue (or whatever color is on an end) loop at the top. Practice naming the ordinal positions as they touch each link moving down the chain. Then ask children questions about the order of the chains. Examples include: *What color loop is fifth from the top? In what position is the yellow loop? If the yellow is fifth, what is the position of the next link?* Then ask students to consider if the bottom loop was first. Name the ordinal positions starting from the bottom. Follow up with questions.
6. Now ask students to lay their chain across their desk (or on the floor) so that the blue loop is on the left. Count the ordinal positions beginning from the left. Follow up with questions. Finally, ask students to consider if the right loop was first. Count the positions and follow up with questions.

7. Working with a partner or in a small group, have students take turns asking questions to each other about the chains. For example, *"What color is third if the green loop is closest to the door? What color is seventh? In which place is the blue loop? The green loop?"*
8. Have students turn their chains in another direction, and continue asking each other questions about the ordinal positions of the colored loops.
9. To provide closure, bring all students back together. Place a chain where students can see it, but don't tell them which loop is first. Ask a student to identify the third position and justify how they know. Then say, *"Oh...I see what you mean, but I was thinking it was this one"* (pointing to the third loop from the other side). Then ask, *"Why did we have different ideas about which one was third?" "What is important to know before you can tell the position?"* Reiterate that it is very important to know whether you should start at the top, the bottom, the left, or the right.

Assessment

- **Questions**
 - In which place is the (color) loop? How do you know?
 - Which color is first, fifth, tenth? How do you know?
 - How many loops come before yellow (or another color)?
- **Journal/writing prompts**
 - Henry was standing in a line of dogs. There were six dogs in front of him. What ordinal number describes Henry's position? Draw a picture to support your thinking.
 - Henry was the fifth dog in line. Jake was in line before him. Draw a picture to show Henry and Jake and their other dog friends standing in line. What is Jake's position?
- **Other Assessments**
 - Give each student 10 index cards or sticky notes to place in a line, and a set of different colored cubes. Ask students to put a red cube on the third card, a green cube on the sixth card, and so forth. Change the orientation of the line (top to bottom, bottom to top, left to right, right to left) and repeat. As you circulate among the students, clarifying, assisting, and conversing, make notes about how well students follow directions and demonstrate problem solving, as well as how accurately they place their cubes. Check for evidence of understanding.

Extensions and Connections

- Have students make a five-loop paper chain using two colors of construction paper strips. They should arrange their strips in an AB, AAB, etc., pattern. Challenge students to determine which color would come seventh if the pattern continued? Tenth? Ask them to explain their thinking.
- Have students put the months of the year in order. Ask students to name the eighth month, the sixth month, etc.
- Use a drawing of a set of stairs to address top to bottom and bottom to top. If you are at the top ready to go down the stairs, the first step will be at the top. If you are at the

bottom ready to go up the stairs, the first step will be at the bottom. Students can move a counter up and down the stairs.

- Use ordinal number words as students are lining up in the classroom.
- As students sequence events in a story, draw attention to the ordinal number words.
- As you do calendar activities, draw attention to the ordinal number words used. Examples include: dates – January 3rd, the third Friday of the month, the second day of the week, etc.

Strategies for Differentiation

- Vary the number of loops on the chain. Some students may need to just work with three or five loops at first. Others may be able to use more than ten loops.
- Write the ordinal number words and symbols on cards (first, 1st). Allow students to match the cards to the loops on the chain or other objects being counted. While reading the words and symbols is not an expectation, actually seeing the words and symbols may help some students to learn the ordinal number sequence.