Hour by Hour

Topic
Awareness of the clock as a number line

Key Questions
How are the numbers on a clock similar to those on a number line?
How do we read an analog clock to nearest hour?

Learning Goals
Students will:
1. relate the numbers on a clock to those on a number line, and
2. read an analog clock to the nearest hour.

Guiding Document
*NCTM Standards 2000**
- *Recognize the attributes of length, volume, weight, area, and time*
- *Understand how to measure using nonstandard and standard units*

Math
Measurement
time

Integrated Processes
Observing
Relating
Applying

Materials
Demonstration clock (see *Management 1)*
12 sheets of 8 $\frac{1}{2}$" x 11" card stock (see *Management 2)*
Red card stock hour hand (see *Management 3)*
12-inch ruler
Sticky notes
Red masking tape

Management
1. Construct a demonstration clock with numbers one to 12 in red. This can be done by using red magnetic numbers on a metal pizza pan or by writing the numbers one to 12 using a red permanent marker on a heavy-duty paper plate. The short red hour hand can be made by covering a piece of magnet strip with red masking tape for the magnetic clock or by covering a small bobby pin with red masking tape for the paper plate clock. To help the students develop a visual memory of the clock numbers, you need to be able to cover or remove the numbers on the demonstration clock.
2. On 12 sheets of 8 $\frac{1}{2}$" x 11" card stock, write the numbers one to 12 using a red marker.
3. Copy the hour hand on red card stock, cut it out and attach it to the end of the ruler to make an hour hand.

Procedure
1. Give each of 12 children one of the number cards and have them order themselves in a straight line from one to 12. Instruct the children to place their number under their arm and join hands with a classmate on each side. Emphasize how their line is like a number line. Invite the two end students to join hands and form a circle. Direct the students to turn to face the inside of the circle so that their number cards can be read from the center of the circle. Discuss how the number line has become a number "circle." Point out that if they go around the circle, the numbers increase until 12 and then start at one again.
2. Discuss how their number circle looks like a clock. Hold up the demonstration clock for the students to see the similarities. Explain that each number on the clock represents a time of day such as one o'clock, two o'clock, etc.
3. Place the hour hand in the center of the circle of children and ask the class, "What hour does the hand point to?" Repeat this process many times. Then point to a spot between two numbers and ask, "What number is it after?"
4. To help students develop a visual memory of the clock numbers, have the children in the 12, 3, 6, and 9 positions turn their number cards around so the numbers do not show. Point the hour hand to one of the "turned around" hours and ask, "What hour does the hand point to?" Point to a spot between two numbers and ask, "What number is it after?"
5. With the 12, 3, 6 and 9 cards turned to once again show the numbers, have children at 1, 2, 4, 5, 7, 8, 10, and 11 positions turn their cards around to hide their numbers. Point the hour hand to one of the "turned around" hours and ask the children, "To what hour does the hand point?" Point to a spot between two numbers and ask, "What hour is it after?"
6. Continue reinforcing the children's visual memories by using the demonstration clock. Cover the 12, 3, 6, and 9 using sticky notes and ask the students to

identify the covered numbers. Point the hour hand to the covered numbers and ask to what hour the hand is pointing.

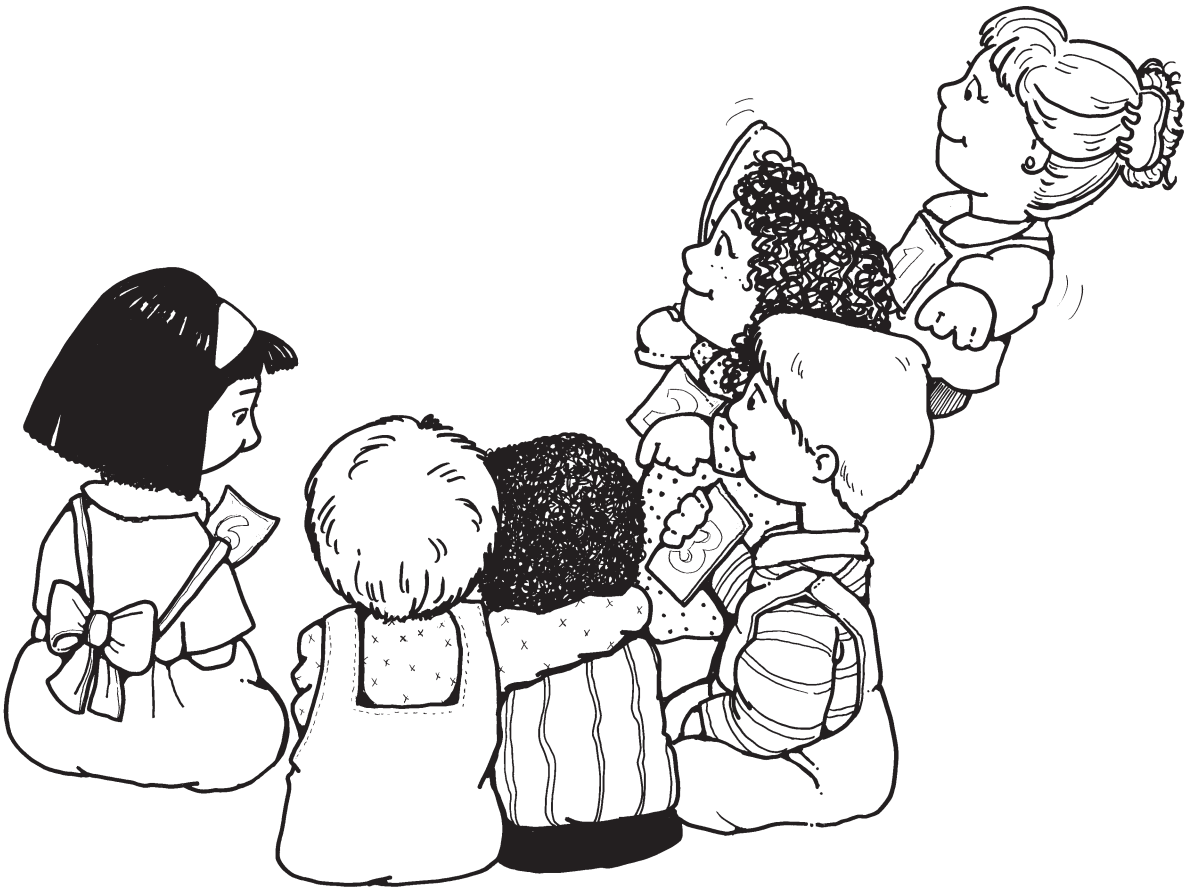
7. Take the sticky notes off these numbers and cover the 1, 2, 4, 5, 7, 8, 10, and 11. Continue with the sequence described above.

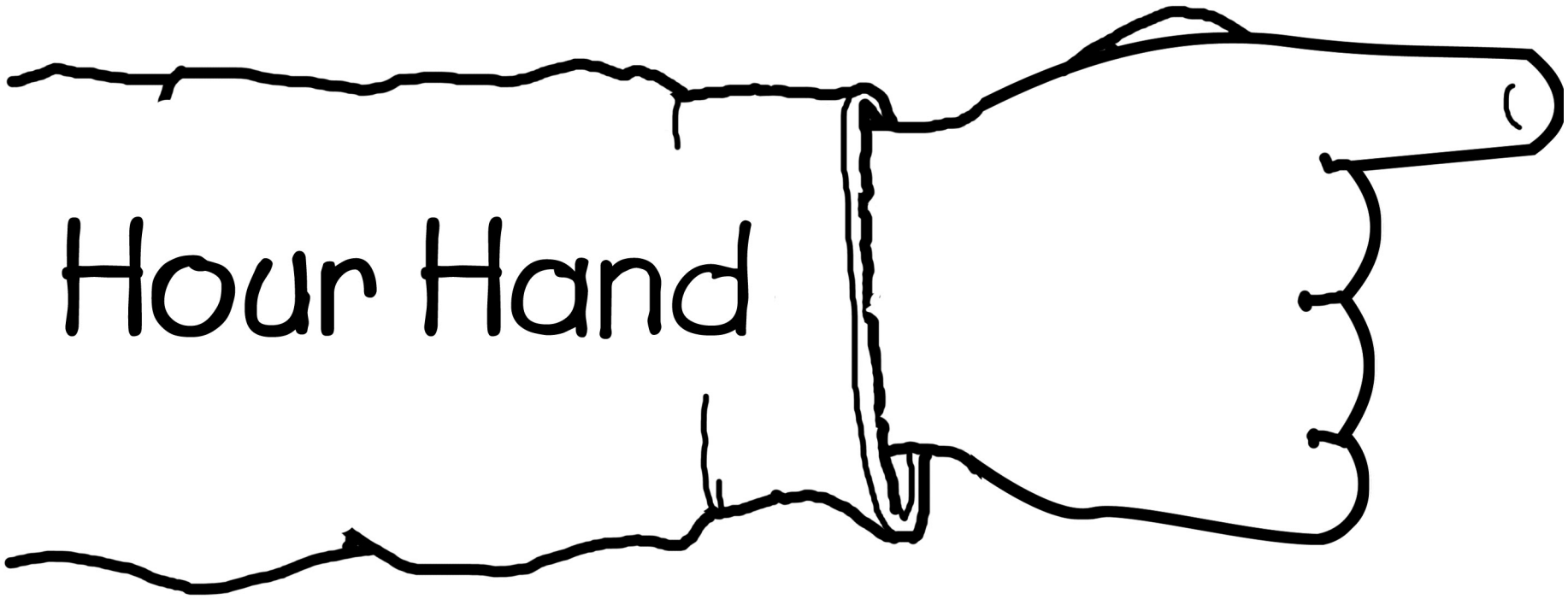
Discussion

1. How is a clock like a number line?
2. What does the little hand on a clock tell us?
3. What hour falls between 12 and two on the clock?
4. What hour is after the four on a clock?
5. How did you know what the turned around numbers were?
6. What counting pattern is used on a clock?

Evidence of Learning

Listen for accuracy as children read the hour hands on a student clock.





Copy onto red card stock
and attach to a 12-inch ruler.