Rounding on the Hundred Chart

Reporting Category Number and Number Sense

Topic Rounding to the nearest ten

Primary SOL 2.1 The student will

b) round two-digit numbers to the nearest ten.

Related SOL 2.4a

Materials
- Rounding on the Hundred Chart (attached)
- Transparent counters
- Two-color counters (red/yellow)
- Red and yellow colored pencils or crayons

Vocabulary

digit, ones, column, place value, rows, skip count, tens, *rounding, nearest, estimate*

Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

1. Distribute copies of the Rounding on the Hundred Chart and transparent counters. Starting at 0, have students count by tens to 100 and place a transparent counter on each number as they say it aloud. Since zero does not appear on the chart, talk to the students about where the zero should be, and if necessary, have students write a zero on their charts.

2. Select a number that is rather close to a ten, such as 29. Tell the students to find the number on their hundred charts and place a finger on the number. Ask, "What two tens does the number 29 fall between?" (20 and 30) "Which ten is 29 closest to?" (30) "How do you know that number is the closest ten?" (When counting, 29 is one number away from 30 and nine numbers away from 20.)

3. Distribute the two-color counters. Call out some randomly chosen numbers that lie rather close to a ten, including the number 30, and direct students to place the red side up if the number rounds up to the larger ten and the yellow side up if the number rounds down to the smaller ten. Ask a student to tell which color counter he/she placed on the number 30 and why.

4. Choose a few more numbers, such as 52, 14, 97, and 3. Discuss which ten each number rounds to. Each time, be sure to ask the students to explain their reasoning and place the appropriate color counter on their hundred chart.

5. Choose a number such as 75 to discuss how to round to a number that has a 5 in the ones place.   Students will learn that if the digit in the ones place is 5 or greater, they should round the number to the higher ten. Again, ask students to explain their reasoning and place the appropriate color counter on their hundred charts.

6. Allow students to work in pairs to continue to fill in the hundred chart and look for a rounding pattern. Distribute red and yellow pencils or crayons, and once students have

found a rounding pattern, have them record their findings permanently on their hundred charts.

7. When student pairs have been given time to explore and record, regroup as a whole class, and discuss the patterns they observed on the hundred chart. Invite students to share their observations with the class. (All numbers with a 1, 2, 3, or 4 in the ones place round to the smaller ten, and all numbers with a 5, 6, 7, 8, or 9 round to the larger ten.)

Assessment
- **Questions**
  - o Why do some numbers round to the larger ten and other numbers round to the smaller ten?
  - o What does the phrase "round to the nearest ten" mean?
  - o "Do any numerals, 0 through 9, present challenges when rounding? If so, what makes those numerals challenging?
- **Journal/Writing Prompts**
  - o John's class has not yet learned anything about rounding. Create a rounding rule with pictures or words that can help John learn to round to the nearest ten.
  - o Create a poem or a rhyme that can help you remember the rounding pattern you discovered on the hundred chart.
  - o Darnella has 75 jellybeans. Round 75 to the nearest ten, and explain in writing your reasoning.
- **Other**
  - o Monitor students as they are working with their partner. Be sure that students are recording their information on their hundred charts.
  - o Have students complete the following statements: "Today I learned…. Tomorrow I need to learn…."

Extensions and Connections (for all students)
- Show how rounding can be used in practical situations.
- Tell students that rounding is often used as a way to estimate something. Describe how rounding can help them estimate solutions for addition and subtraction problems.
- Discuss with students that in life, knowing when an estimate is appropriate or if an exact answer is necessary is an important skill. Compare and contrast situations where estimation is acceptable and where exact answers are required. (For example, a doctor prescribing medication must use an exact amount, but a person planning food for a party could use an estimate of the amount needed.)
- Challenge student to think about rounding larger numbers to the nearest tens. Ask whether the pattern observed with two-digit numbers will continue with 3-digit numbers and with 4-digit numbers. Have students explain why or why not.

Strategies for Differentiation
- Students having trouble using the hundred chart may find it helpful to cut the chart into rows and tape the rows together to create a number line.

- Students having trouble understanding the location of the smaller ten because it appears on the previous row may find it helpful to write in the smaller ten outside the border of the chart, as shown on the next page.

0	1	2	3	4	5	6	7	8	9	10
10	11	12	13	14	15	16	17	18	19	20
20	21	22	23	24	25	26	27	28	29	30
30	31	32	33	34	35	36	37	38	39	40
40	41	42	43	44	45	46	47	48	49	50

- Students may need to use base-10 blocks to create a visual representation of the number to be rounded. First, students will build the number to be rounded. Then, using the hundred chart, they will identify the ten that comes before and the ten that comes after.
- Display a hundred chart on an interactive whiteboard. Create a visual highlight for the two appropriate tens for the number being discussed.

Rounding on the Hundred Chart

Directions: Shade in the hundred chart below. If the number rounds to the larger ten, shade it red. If the number rounds to the smaller ten, shade it yellow.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

On the lines below, describe any patterns you see on the chart.

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