Decimal Round-Up/Round-Down – A Co-Teaching Lesson Plan

Co-Teaching Approaches
A "(Y)" in front of the following list items indicates the approach is outlined in the lesson. A "(N)" in front of the following list items indicates the approach is not outlined in the lesson.

- (Y) Parallel Teaching
- (Y) Team Teaching

- (N) Station Teaching
- (N) One Teach/One Observe

- (N) Alternative Teaching
- (Y) One Teach/One Assist

Subject
Grade 5 Mathematics

Strand
Number and Number Sense

Topic
Rounding Decimals

Standards
5.1   The student, given a decimal through thousandths, will round to the nearest whole number, tenth, or hundredth.

Outcomes
Students should be able to round a given number to the nearest tenth, hundredth, and whole number, explaining the process in terms of a number line and a rule for rounding.

Materials
- Ten-sided number generators (or decks of cards with face cards removed)
- Decimal Round-Up/Round-Down activity sheet (attached)
- Place-value chart

Vocabulary

decimal, hundredth, tenth, thousandth, rounding

Co-Teacher Actions

Lesson Component	Co-Teaching Approach(es)	General Educator (GE)	Special Educator (SE)
Anticipatory Set	One Teach/One Assist	Display a decimal in the thousandths place, such as 34.726. Ask a volunteer to read the number, using place-value names. Lead a review discussion of decimal place values, asking questions such as, "What place is the 2 in? How about the 6? The 7?"	As partner displays the problem, monitor student work throughout the classroom. Help solve any misconceptions, and prompt students to answer questions as necessary.
		Ask students to round 34.7 to the nearest whole. Turn and talk with a partner about how this was done, and compare the results. Have a student explain to class. Repeat with 37.4.	Monitor partner talk, listening for appropriate use of vocabulary. Prompt with proper vocabulary when necessary.
Lesson Activities/ Procedures	Parallel Teaching	1. Ask, "If this were a monetary amount, $34.726, how would we determine the amount to the nearest penny?" (Guide students to recall that the nearest cent is the same as the nearest hundredth of a dollar.) Have a student display this on a prepared number line on the board:	1. Ask, "If this were a monetary amount, $34.726, how would we determine the amount to the nearest penny?" (Guide students to recall that the nearest cent is the same as the nearest hundredth of a dollar.) Have a student display this on a prepared number line on the board:
		Ask, "What digit is in the hundredths place?" Have a student underline the digit: $34.7<u>2</u>6. Ask partners to discuss the result when this number is rounded to the nearest hundredth. Select a student to share their	Ask, "What digit is in the hundredths place?" Have a student underline the digit: $34.7<u>2</u>6. Ask partners to discuss the result when this number is rounded to the nearest hundredth. Select a student to share their

Lesson Component	Co-Teaching Approach(es)	General Educator (GE)	Special Educator (SE)
		discussion and result. (Select a pair that used the number line and another that used the rule to discuss their strategies.) (Students can see that on the number line, $34.726 is closer to $34.730 than to $34.720. Therefore, $34.726 rounds to $34.730, or $34.73. Guide students to look at the thousandths place. Because the digit 6 is equal to or greater than 5, then the hundredths digit, 2, would be rounded up to 3. Thus, $34.726 rounds to $34.73.) 2. Follow the same process to round the number to the nearest tenth. Select students to discuss both rounding strategies. (Ask students how this might be shown on a number line, with the endpoints being $34.00 and $35.00.) Which number to the nearest tenth is $34.726 closest to? Students may underline the numeral in the tenths place (e.g.; $34.<u>7</u>26), if they need help focusing on the place value for rounding.] 3. Follow the same process to round 34.726 to the nearest whole. It will be helpful to think of this as rounding $34.726 to the nearest dollar. Select students to discuss both rounding	discussion and result. (Select a pair that used the number line and another that used the rule to discuss their strategies.) (Students can see that on the number line, $34.726 is closer to $34.730 than to $34.720. Therefore, $34.726 rounds to $34.730, or $34.73. Guide students to look at the thousandths place. Because the digit 6 is equal to or greater than 5, then the hundredths digit, 2, would be rounded up to 3. Thus, $34.726 rounds to $34.73.) 2. Follow the same process to round the number to the nearest tenth. Select students to discuss both rounding strategies. (Ask students how this might be shown on a number line, with the endpoints being $34.00 and $35.00) Which number to the nearest tenth is $34.726 closest to? Students may underline the numeral in the tenths place (e.g.; $34.<u>7</u>26), if they need help focusing on the place value for rounding. 3. Follow the same process to round 34.726 to the nearest whole. It will be helpful to think of this as rounding $34.726 to the nearest dollar. Select students to discuss both rounding

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		strategies. (Students may underline the numeral in the ones place [e.g., $3<u>4</u>.726$], if they need help focusing on the place value for rounding. Which whole dollar amount is $34.726 closest to?)	strategies. (Students may underline the numeral in the ones place [e.g., $3<u>4</u>.726$] if they need help focusing on the place value for rounding. Which whole dollar amount is $34.726 closest to?)
Guided/ Independent Practice	Team Teaching	Have students draw five cards, or roll the die five times, to create a five-digit number. Have partners round this number, justifying their strategy for rounding, to the nearest whole, tenth, and hundredth places. Select students to explain their results and process for rounding to the class. The GE will distribute number generators/cards and the Decimal Round-Up/Round Down activity sheet to students. Students will work with a partner. Monitor students as they work. Listen for the use of the vocabulary, asking the "Why?" and "How do you know?" questions, and select students to share their thinking and examples during closure.	Have students draw five cards, or roll the die five times, to create a five-digit number. Have partners round this number, justifying their strategy for rounding, to the nearest whole, tenth, and hundredth places. Select students to explain their results to the class. The SE will distribute number generators/cards and the Decimal Round-Up/Round Down activity sheet to students. Monitor students as they work. Listen for the use of the vocabulary, ask the "Why?" and "How do you know?" questions, and select students to share their thinking and examples during closure.
Closure	One Teach/One Assist	Bring students back to the center of the classroom. Have students share some	Bring students back to the center of classroom. Have students share some

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		questions/answers that they had throughout the assessment.	questions/answers that they had throughout the assessment.
Formative Assessment Strategies	Team Teaching	Students will work in pairs to complete the activity. The GE will circulate through the classroom to ensure understanding. Collect and assess the Decimal Round-up/Round-down worksheet (especially Nos. 9 and 10). **Exit Ticket** Charlie rolled the number 42.537. Round this to the nearest tenth and to the nearest hundredth, and explain your thought process with one of the roundings.	Students will work in pairs to complete the activity. Teacher will circulate amongst the classroom to ensure understanding
Homework		Students will complete the spiral review homework assignment for the day.	Students will complete the spiral review homework assignment for the day.

Specially Designed Instruction
- The GE and the SE will monitor the appropriate student use of vocabulary, justifications for rounding, and explanations.
- The GE and SE will ask refocusing questions to guide students who may be struggling.

Accommodations
- Assistance with directions.
- Check work frequently to ensure understanding.
- Vocabulary of place value and sample, labeled number will be left visible on the board as student support throughout the rounding activity.
- The activity will allow for multiple opportunities for using the vocabulary in their justifications during the discussions with their partners.

Modifications

- This activity can be modified to whole number place-value rounding, or just rounding to the ones, or tenths place.

Notes

- "Special educator" as noted in this lesson plan might be an EL teacher, speech pathologist, or other specialist co-teaching with a general educator.

Note: The following pages are intended for classroom use for students as a visual aid to learning.

Decimal Round-Up/Round-Down

Name: _____**Partner's Name:** _____**Date** _____

Directions: For each item below, roll a number generator (or draw a card) enough times to fill in each blank to create a decimal number. Then round each decimal number to the nearest hundredth, tenth, and whole. Be sure you can explain your process.

1. Roll or draw a card four times: _____. _____ ____ ____   My partner's number: _____

Nearest hundredth _____ . _____ _____ Nearest tenth _____. _____ Nearest whole _____ ._____

2. Roll or draw a card four times: _____. _____ ____ ____   My partner's number: _____

Nearest hundredth _____ . _____ _____ Nearest tenth _____. _____ Nearest whole _____ ._____

3. Roll or draw a card four times: _____. _____ ____ ____   My partner's number: _____

Nearest hundredth _____ . _____ _____ Nearest tenth _____. _____ Nearest whole _____ ._____

4. Roll or draw a card five times: _____. _____ ____ ____ _____ My partner's number: _____

Nearest hundredth _____ . _____ _____ Nearest tenth _____. _____ Nearest whole _____ ._____

5. Roll or draw a card five times: _____. _____ ____ ____ _____ My partner's number: _____

Nearest hundredth _____ . _____ _____ Nearest tenth _____. _____ Nearest whole _____ ._____

6. Roll or draw a card five times: _____. _____ ____ ____ _____ My partner's number: _____

Nearest hundredth _____ . _____ _____ Nearest tenth _____. _____ Nearest whole _____ ._____

7. Roll or draw a card five times: _____. _____ ____ ____ _____ My partner's number: _____

Nearest hundredth _____ . _____ _____ Nearest tenth _____. _____ Nearest whole _____ ._____

8. Roll or draw a card five times: _____. _____ ____ ____ _____ My partner's number: _____

Nearest hundredth _____ . _____ _____ Nearest tenth _____. _____ Nearest whole _____ ._____

9. Choose one of your partner's numbers and explain how it was rounded to the nearest tenth, using a number line.

10. Choose a different one of your partner's numbers and explain how it was rounded to the nearest hundredth, using a rule.